



1.1.1: The Institutional ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment

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Date:24.07.2021

CIRCULAR

This is to inform that the below mentioned staff members are appointed as Institutional Academic Committee members for the Academic year 2021-22 to discuss Institutional academic matters.

S NO	NAME OF THE FACULTY	DESIGNATION	SIGNATURE
1	Dr.K. BALAJI ,PRINCIPAL,AIPS	CHAIRPERSON	
2	Dr. Y JAYAPRADHA, DIRECTOR-HR	MEMBER	
3	Dr.NIHAR RANJAN DAS,VICE PRINCIPAL,AIPS IQAC COORDINATOR	MEMBER	
4	Dr.M.RAMAKRISHNA PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY	MEMBER	
5	Dr.B.MANJULA ASSOCIATE PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY PRACTICE	MEMBER	
6	Dr. G. SAI KIRAN	MEMBER	
7	Dr. K. NAGARAJU	MEMBER	
8	M.RAJASHEKAR,PHYSICAL DIRECTOR	MEMBER	
9	S.SRIDEVI,LIBRARIAN	MEMBER	

PRINCIPAL

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Copy to:

1.ALL HODs

2.IQAC Coordinator





INSTITUTIONAL ACADEMIC PLANNING & ADVISORY COMMITTEE

Institutional Academic Planning & Advisory Committee Members For the Academic Year 2021-2022

S NO	NAME OF THE FACULTY	DESIGNATION
1	Dr.K. BALAJI ,PRINCIPAL,AIPS	CHAIRPERSON
2	Dr. Y JAYA PRADHA,DIRECTOR-H.R	MEMBER
3	Dr.NIHAR RANJAN DAS,VICE PRINCIPAL,AIPS IQAC COORDINATOR	MEMBER
4	Dr.M.RAMAKRISHNA PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY	MEMBER
5	Dr.B.MANJULA ASSOCIATE PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY PRACTICE	MEMBER
6	Dr. G. SAIKIRAN, PROFESSOR	MEMBER
7	Dr. K. NAGARAJU, PROFESSOR	MEMBER
8	M.RAJASHEKAR,PHYSICAL DIRECTOR	MEMBER
9	S.SRIDEVI,LIBRARIAN	MEMBER

Functions of the Academic Committee:

1. The academic committee is responsible for imbibing the best practices to provide an improved academic system for the present and future students.
2. The committee is also accountable for practices, such as conducting academic award functions to honor students for academic excellence.
3. Propose the academic requirements (Theory, Laboratory and Examination related) of each Department.
4. Scheduling of various academic activities.
5. Review of the academic activities.
6. Perform such other functions as may be assigned by the governing body



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AIPS/AC/2021-2022/01

Date: 31.07.2021

CIRCULAR

This is to inform all the staff members that Institutional Academic Committee will be meeting on 06.08.2021 at 10.00 AM in the Principal's chamber to discuss the following agenda. All members are requested to attend the meeting without fail.

Agenda:

1. Preparation of institute academic calendar of 2021-22
2. Value added courses
3. Hospital training sessions and visits
4. Pharmacological and Analytical Project works
5. Research works and collaboration
6. Workshops/FDPs
7. Industrial visits
8. Training and Placements
9. Sports/NSS activities
10. Any other issues

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Copy to:

1. All HODS
2. IQAC coordinator
3. All the Committee Members





MINUTES OF THE INSTITUTIONAL ACADEMIC PLANNING & ADVISORY COMMITTEE

The Institutional Academic Committee meeting was held on 06.08.2021 at 10AM in Principal's chamber. The principal welcomed the staff and briefed on the above objective of the Institutional Academic Committee meeting. The principal started the deliberations by discussing the Academic issues and emphasized the need to concentrate on new University regulations.

Agenda Item 1:

Preparation of Institute academic calendar of 2021-22.

Resolution:

- Dr. NiharRanjanDas IQAC Coordinator, prepared the college Academic Calendar based on the Academic Calendar issues by the University and is handed over to the Head of the Department of Pharmacy.
- Department wise Academic Calendar was prepared by the Head of the Department basing on the Calendar issued by the Coordinator and was sent to the IQAC coordinator for his approval.
- Timetables were prepared and workloads were allotted to the faculty based

Academic

Calendar of the institute as per the curriculum of the current semester.

Agenda Item 2

Value added Courses

Resolution:

Dr. G. Sai Kiran, Professor, The member of the committee have been proposed that value added courses should be included in each department though it's not included in the curriculum as it finds important for the development and employability of the students.

Agenda Item 3:

Hospital training sessions and visits:

Resolution:

The members suggested that every student should complete at least one internship per year.



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Agenda Item 4:

Pharmacological and Analytical Project works

Resolution:

The members of the committee assigned the faculty to guide the students in project

Agenda Item 5:

Research Works

Resolutions

- Dr. Y. Jayapradha, advised the faculty members to Publish at least one research paper per semester in High Indexed Journal. The entire remaining faculty were suggested to publish one paper in Scopus journal.
- Dr. B. Manjula advised all the faculty members to attend the FDP every year.
- Dr. K. Nagaraju, advised all the faculty members to undergo Internship Academic Interaction programmes.

Agenda Item 6:

Training and placements

Resolution:

- The Principal, AIPS staff members discussed and took a resolution and informed the faculty members to implement the following from the academic year.
- Students who cleared all the subjects and secured CGPA above 7 should enroll for GPAT Programme.
- Students who cleared all the subjects and obtained CGPA between 6-7 should enroll for PGECET Programme.
- All the remaining students should attend CRT classes conducted by the college.
- Dr. M. Rama Krishna, informed the faculty members to organize various activities in the form of Competitions, Guest lectures, Career guidance, Entrepreneurship programmes etc for the students to improve their knowledge, skills and keep them abreast with the changing demands of the industries.

Agenda Item 7:

Workshops/FDPS

Resolution: Dr. Y. Jayapradha, suggested the faculty to attend the FDP every year.



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- She suggested the importance of providing training programmers to non-teaching staff in Ms Office, Ms Word and Excel which are very useful in drafting and for preparing documents.
- She also advised the English faculty to train the junior faculty and nonteaching staff to compose emails, notices, official letters, circulars which are necessary for the needs of their job and also for the professional development of the institution

Agenda Item 8:

Industrial Visits

Resolution:

- Dr. K. Balaji, proposed an idea of organizing regular industrial visits for the students in reputed industries like Pfizer, Aurabindo
- To acquire knowledge on the working of men and machinery in different pharmacy

Industries

- Dr. Nihar Ranjan Das suggested for arranging at least two guest lecturers to students in a semester.

Agenda Item 9:

Sports/NSS Activities

Resolution:

- M. Rajashekar proposed organizing Sports activities for the students and encourages the students to participate in competitions at the university, state or national level Tournaments
- He also informed the faculty members to conduct various technical events and NSS activities like Blood donation camps, Plantation drive, Swachh Bharat Campaign, Health check-up programs etc.

Agenda Item 10

Any other Issues Resolution:

Resolution

- Dr. Nihar Ranjan Das, the IQAC coordinator instructed all the staff members to maintain updated stock registers, Maintenance registers, Complaint registers etc of all the laboratories duly verified by the committee.
- It was also resolved after the discussion and should follow IQAC Audit Action Taken Report.

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List of Academic Planning & Advisory Committee Members attended

S.no	Name of the faculty	Designation	Signature
1	Dr.K. BALAJI PRINCIPAL,AIPS	CHAIR PERSON	
2	Dr.Y.JAYAPRADA,DIRECTOR- H.R	MEMBER	
3	Dr.NIHAR RANJAN DAS,VICE PRINCIPAL,AIPS IQAC COORDINATOR	MEMBER	
4	Dr.M.RAMAKRISHNA PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY	MEMBER	
5	Dr. B. MANJULA ASSOCIATE PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY PRACTICE	MEMBER	
6	Dr. G. SAI KIRAN, PROFESSOR	MEMBER	
7	Dr. K. NAGARAJU PROFESSOR	MEMBER	
8	M.RAJASHEKAR,PHYSICAL DIRECTOR	MEMBER	
9	S.SRIDEVI,LIBRARIAN	MEMBER	




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Date: 28.10.2021

DEPARTMENT OF PHARMACY

CIRCULAR

This is to inform that the Department Academic Committee (DAC) will be held on 02.11.2021
10:30AM at Principal Sir's chamber

Agenda:

1. Preparation of Department progress for the academic year 2021-2022
2. Value added courses related to medical coding, Clinical SAS
3. Certificate courses/ Internship programs on Instrumentation handling
4. Project works on Pharmacological activities and Analytical designs
5. Research works on Plant extracts and their Pharmacological action
6. Training and Placements with respect to Multinational Pharmaceutical Industry needs
7. Industrial visits to formulation Pharmaceutical Industries
8. Extracurricular/ Co-curricular activities
9. Sports/NSS activities
10. Any other issues

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Copy to:

1. All HODS
2. IQAC coordinator
3. All the Committee Members



MINUTES OF THE INSTITUTIONAL ACADEMIC PLANNING & ADVISORY COMMITTEE

The Institutional Academic Committee meeting was held on 02.11.2021 at 10AM in Principal's chamber. The principal welcomed the staff and briefed on the above objective of the institutional Academic Committee meeting. The principal started the deliberations by discussing the Academic Issues and emphasized the need to concentrate on new University regulations.

Agenda Item 1:

Preparation of Department progress for the academic year 2021-22

Resolution:

Dr. M. Rama Krishna, HOD Pharmacy Analysed the results of B.Pharmacy 2020-2021 academic year and expressed satisfaction for getting more than 86% of pass percentage. Committee congratulated the faculty who met the target of 91% or more.

Agenda Item 2:

Value added Courses related to medical coding, Clinical SAS

Resolution:

The members of the committee have been proposed that value added courses related to medical coding, medical scribing and clinical SAS related to be included in each department though it's not included in the curriculum as it finds important for the development and employability of the B. Pharmacy

The members of the committee have been proposed that value added courses related to Quality Assurance and Quality control, Pharmaceutical technology and Pharmacological Assays should be included in each department though its not included in the curriculum as it finds important for the development and employability of the M.Pharmacy students.

Agenda Item 3:

Certificate courses/Internship programs on Instrumentation handling

Resolution:

- The members suggested that every B. Pharmacy students should complete certification courses/Internship courses related to latest instrumentation handling, thesis writing courses.

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Agenda Item 4:

Project works on Pharmacological activities and Analytical designs

Resolution:

- The members of the committee assigned the faculty to guide the B.Pharmacy students in project works related to plant extracts and pharmacological activities, pharmaceuticals related projects and analytical projects.
- The members of the committee assigned the faculty to guide the students to perform real time projects related to drug design and drug development

Agenda Item 5:

Research works on Plant Extracts and their Pharmacological

action

Resolution:

- Dr. K. Balaji, Principal advised the faculty members to publish atleast one research Paper per semester in High Indexed Journal. The entire remaining faculty were

Suggested

to publish one paper in Scopus journal.

- Dr. K. Nagaraju Professor advised all the faculty members to attend the FDP programs every year.

Agenda Item 6:

Training and placements with respect to Multinational Pharmaceutical Industry needs

Resolution:

- The Principal, AIPS staff members discussed and took a resolution and informed the faculty members to implement the following from the academic year:
- Students who cleared all the subjects and secured CGPA above 7 should enroll for GPAT Programme Students who cleared all the subjects and obtained CGPA between 6-7 should
- All the remaining students should attend CRT classes conducted by the college.
- Dr. M. Rama Krishna, informed the faculty members to organize various activities in the form of Competitions, Guest lectures, Career guidance, Entrepreneurship programmes etc for the students to improve their knowledge, skills and keep them abreast with the changing demands of the industries.

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Agenda Item 7:

Industrial Visits to formulation Pharmaceutical Industries

Resolution:

- Dr. G. SAIKIRAN proposed an idea of organizing regular industrial visits for the students in reputed multinational Pharmacy industries like Pfizer, Aurabindo, Dr. Reddys Laboratories, DIVIS Laboratories.
- To acquire knowledge on the working of men and machinery in different pharma industries.
- P. Lavanya suggested for arranging at least two guest lecturers to students in a Semester.

Agenda Item 8:

Sports/NSS Activities

Resolution:

- M. Rajashekar proposed organizing Sports activities for the students and encourages the students to participate in competitions at the university, state or national level tournaments.
- He also informed the faculty members to conduct various technical events and NSS He activities like Blood donation camps. Plantation drive, Swacch Bharat Campaign, Health check-up programs etc.,


Agenda Item 9:

Any other Issues

Resolution:

- The IQAC coordinator instructed all the staff members to maintain updated stock registers, Maintenance registers, Complaint registers etc of all the laboratories duly verified by the committee.
- It was also resolved after the discussion and should follow IQAC Audit Action Taken Report




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List of DAC Members attended

s.no	Name of the faculty	Designation	Signature
1	Dr.K. BALAJI ,PRINCIPAL,AIPS	CHAIR PERSON	
2	Dr. Y JAYAPRADHA,DIRECTOR- HR	MEMBER	
3	Dr.NIHAR RANJAN DAS, VICE PRINCIPAL,AIPS IQAC COORDINATOR	MEMBER	
4	Dr.M.RAMAKRISHNA PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY	MEMBER	
5	Dr. G. SAI KIRAN PROFESSOR	MEMBER	
6	Dr. K. NAGARAJUPROFESSOR	MEMBER	
7	P. LAVANYA, ASSOCIATE PROFESSOR	MEMBER	
8	M.RAJASHEKAR,PHYSICAL DIRECTOR	MEMBER	
9	S.SRIDEVI,LIBRARIAN	MEMBER	

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DEPARTMENT OF PHARMACY PRACTICE

CIRCULAR

Date: 28.07.2021

This is to inform that the Department Academic Committee (DAC) will be held on 02.08.2021 10:30AM at Principal Sir's chamber.

Agenda:

1. Preparation of department progress for the academic year 2021-22
2. Hospital training and Hospital visits
3. Clinical Project works
4. Community centers correlated training
5. Placement in Pharma - IT Sector Companies.
6. Value added courses
7. Research works
- 8 Sports/NSS activities
9. Any other issues

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Copy to:

1. All HODS
2. IQAC coordinator
3. All the Committee Members



MINUTES OF THE INSTITUTIONAL ACADEMIC PLANNING & ADVISORY COMMITTEE

The Institutional Academic Committee meeting was held on 02.08.2021 at 10AM in Principal's chamber. The principal welcomed the staff and briefed on the above objective of the Institutional Academic Committee meeting. The principal started the deliberations by discussing the Academic issues and emphasized the need to concentrate on new University regulations.

Agenda Item 1:

Preparation of Department progress for the academic year 2022-23

Resolution:

- Dr. B.Manjula, HOD Pharmacy Practice analysed the results of Pharm.D 2020-2021 academic year and expressed satisfaction for getting more than 85% of pass percentage. Committee congratulated the faculty who met the target of 90% or more.

Agenda Item 2:

Hospital training and Hospital visits

Resolution:

- Dr. P. Swathi suggested faculty to train the students to participate in bed side learning.
- Dr. Evangeleen proposed an idea of organizing regular hospital visits for the students in reputed hospitals like Global hospital, Gandhi hospital

Agenda Item 3:

Clinical Project works:

Resolution:

The members suggested that every student should complete at least one clinical project which includes both cases and controls:

Agenda Item 4

Community centers correlated training

Resolution:

The members of the committee assigned the Pharmacy practice faculty to The members of the committee assigned the Pharmacy practice faculty to guide the students to participate in community center correlated training such as B.P monitoring, Glucose monitoring

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Agenda Item 5:

Placement in Pharma - IT Sector Companies:

Resolution:

- The Principal, AIPS staff members discussed and took a resolution and informed and the faculty members to implement the following from the academic year.
- Students should attend CRT classes conducted by the college.
- Dr. Md Abdul Azeeminformed the faculty members to organize various activities in the form of Competitions, Guest lectures, Career guidance, Entrepreneurship programmes etc for the students to improve their knowledge, skills and keep them abreast with the changing demands of the industries.

Agenda Item 6:

Value added courses

Resolution:

The members of the committee have been proposed that value added courses related to clinical SAP, clinical research, Pharmacovigilance should be included in each department though its not included in the curriculum as it finds important for the development and employability of the students.

Agenda Item 7:

Research works

Resolution:

- Dr. B.Manjula advised the faculty members to publish atleast one research paper per semester in High Indexed Journal. The entire remaining faculty were suggested to publish one paper in Scopus journal

Agenda Item 8:

Sports/NSS activities

Resolution:

- M.Rajashekar proposed organizing Sports activities for the students and encourages the students to participate in competitions at the university, state or national level tournaments.

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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by PCI, AICTE & Affiliated to JNTUH)

Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.



- MD Abdul Azeem also informed the faculty members to conduct various technical events and NSS activities like Blood donation camps, Plantation drive, Swachh Bharat Campaign, Health check-up programs etc.


Agenda Item 9:

Any other Issues

Resolution:

- Dr. NiharRanjanDas The IQAC coordinator instructed all the staff members to maintain updated stock registers, Maintenance registers, and Complaint registers of all the laboratories duly verified by the committee.
- It was also resolved after the discussion and should follow IQAC Audit Action Taken Report




PRINCIPAL
Avanthi's Institute of Pharmaceutical Sciences
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Ranga Reddy Dist.



List Of DAC Members attended

S.no	Name of the faculty	Designation	Signature
1	Dr.K. BALAJI ,PRINCIPAL,AIPS	CHAIR PERSON	
2	Dr. Y.JAYAPRADHA,DIRECTOR-H.R	MEMBER	
3	Dr.NIHAR RANJAN DAS, VICE PRINCIPAL,AIPS IQAC COORDINATOR	MEMBER	
4	Dr.B.MANJULA ASSOCIATE PROFESSOR AND HEAD. DEPARTMENT OF PHARMACY PRACTICE	MEMBER	
5	MD. ABDUL AZEEM, ASSOCIATE PROFESSOR	MEMBER	
6	P. SWATHI PATEL, ASSISTANT PROFESSOR	MEMBER	
7	Dr. EVANGELEEN, ASSISTANT PROFESSOR	MEMBER	
8	M.RAJASHEKAR,PHYSICAL DIRECTOR	MEMBER	
9	S.SRIDEVI,LIBRARIAN	MEMBER	

HOD



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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

REVISED ACADEMIC CALENDAR 2021-22

B. Tech./B.Pharm. I YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Induction programme	09.12.2021 to 18.12.2021	
2	1 st Spell of Instructions	20.12.2021	12.02.2022 (7 Weeks)
	Holidays	08.01.2022	16.01.2022
3	First Mid Term Examinations	14.02.2022	19.02.2022 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	26.02.2022	
5	2 nd Spell of Instructions	21.02.2022	30.04.2022 (10 Weeks)
6	Second Mid Term Examinations	02.05.2022	07.05.2022 (1 Week)
7	Preparation Holidays and Practical Examinations	09.05.2022	14.05.2022 (1 Week)
8	Submission of Second Mid Term Exam Marks to the University on or before	14.05.2022	
9	End Semester Examinations	16.05.2022	28.05.2022 (2 Weeks)

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	30.05.2022	
2	1 st Spell of Instructions	30.05.2022	23.07.2022 (8 Weeks)
3	First Mid Term Examinations	26.07.2022	30.07.2022 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	06.08.2022	
5	2 nd Spell of Instructions	01.08.2022	24.09.2022 (8 Weeks)
6	Second Mid Term Examinations	26.09.2022	01.10.2022 (1 Week)
7	Preparation Holidays and Practical Examinations	03.10.2022	08.10.2022 (1 Week)
8	Submission of Second Mid Term Exam Marks to the University on or before	08.10.2022	
9	End Semester Examinations	10.10.2022	22.10.2022 (2 Weeks)




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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

REVISED ACADEMIC CALENDAR 2021-22

B. Tech./B.Pharm. II YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Dussehra Recess	11.10.2021	16.10.2021 (1 Week)
2	Commencement of I Semester classwork	18.10.2021	
3	1 st Spell of Instructions	18.10.2021	11.12.2021 (8 Weeks)
4	First Mid Term Examinations	13.12.2021	18.12.2021 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	24.12.2021	
6	2 nd Spell of Instructions	20.12.2021	12.02.2022 (8 Weeks)
7	Second Mid Term Examinations	14.02.2022	19.02.2022 (1 Week)
8	<i>Continuation of 2nd Spell of Instructions</i>	<i>21.02.2022</i>	<i>26.02.2022 (1 Week)</i>
9	Practical Classes, Examinations and Preparation Holidays	28.02.2022	05.03.2022 (1 Week)
10	Submission of Second Mid Term Exam Marks to the University on or before	26.02.2022	
11	End Semester Examinations	07.03.2022	19.03.2022 (2 Weeks)

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	21.03.2022	
2	1 st Spell of Instructions (including Summer Vacation)	21.03.2022	28.05.2022 (10 Weeks)
3	Summer Vacation	09.05.2022	14.05.2022 (1 Week)
4	First Mid Term Examinations	30.05.2022	04.06.2022 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	11.06.2022	
6	2 nd Spell of Instructions	06.06.2022	30.07.2022 (8 Weeks)
7	Second Mid Term Examinations	01.08.2022	06.08.2022 (1 Week)
8	Preparation Holidays and Practical Examinations	08.08.2022	16.08.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	16.08.2022	
10	End Semester Examinations	17.08.2022	30.08.2022 (2 Weeks)



[Handwritten Signature]

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REGISTRAR

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Gunthapally (V), Abdullapurmet (M)
R.R. Dist. Telangana.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

REVISED ACADEMIC CALENDAR 2021-22

B. Tech./B.Pharm. III & IV YEARS I & II SEMESTERS


I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	06.09.2021	
2	1 st Spell of Instructions (including Dussehra Recess)	06.09.2021	06.11.2021 (9 Weeks)
3	Dussehra Recess	11.10.2021	16.10.2021 (1 Week)
4	First Mid Term Examinations	08.11.2021	13.11.2021 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	20.11.2021	
6	2 nd Spell of Instructions	15.11.2021	08.01.2022 (8 Weeks)
7	Second Mid Term Examinations	02.02.2022	02.02.2022 to 28.02.2022
8	Practical Examinations		As per the convenience of the Colleges
9	Submission of Second Mid Term Exam Marks to the University on or before	02.03.2022	
10	End Semester Examinations	09.02.2022	02.03.2022

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	03.03.2022	
2	1 st Spell of Instructions	03.03.2022	30.04.2022 (8 Weeks)
3	First Mid Term Examinations	02.05.2022	07.05.2022 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	14.05.2022	
5	Summer Vacation	09.05.2022	14.05.2022 (1 Week)
6	2 nd Spell of Instructions (including Summer Vacation)	16.05.2022	09.07.2022 (8 Weeks)
7	Second Mid Term Examinations	11.07.2022	16.07.2022 (1 Week)
8	Preparation Holidays and Practical Examinations	18.07.2022	23.07.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	23.07.2022	
10	End Semester Examinations	26.07.2022	06.08.2022 (2 Weeks)




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 Gunthapally (V), Abdullapurmet (M),
 R.R. Dist. Telangana.


 22/2/22
REGISTRAR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

ACADEMIC CALENDAR 2021-22

PHARM. D (REGULAR) AND PHARM.D (PB) I YEAR

Pharm. D (Regular) and Pharm.D (PB) I Year

S. No	Description	Duration	
		From	To
1	Commencement of classwork	09.12.2021	
2	1 st Spell of Instructions (including Supplementary Examinations)	09.12.2021	09.03.2022 (13 Weeks)
3	Supplementary Examinations	03.01.2022	08.01.2022 (1 Week)
4	First Mid Term Examinations	10.03.2022	16.03.2022 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	23.03.2022	
6	2 nd Spell of Instructions	17.03.2022	08.06.2022 (12 Weeks)
7	Second Mid Term Examinations	09.06.2022	15.06.2022 (1 Week)
8	Submission of Second Mid Term Exam Marks to the University on or before	22.06.2022	
9	3 rd Spell of Instructions	16.06.2022	07.09.2022 (12 Weeks)
10	Third Mid Term Examinations	08.09.2022	14.09.2022 (1 Week)
11	Preparation Holidays and Practical Examinations	15.09.2022	28.09.2022 (2 Weeks)
12	Submission of Third Mid Term Exam Marks to the University on or before	22.09.2022	
13	End / Supplementary Examinations	29.09.2022	14.10.2022 (2 Weeks)


REGISTRAR

06/12/21




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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

REVISED ACADEMIC CALENDAR 2021-22

PHARM. D (REGULAR) AND PHARM.D (PB) II YEAR

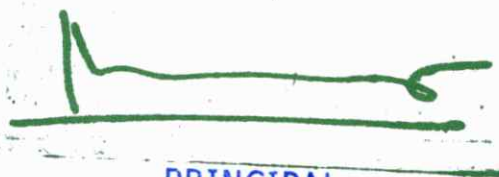
Pharm. D (Regular) and Pharm.D (PB) II Year

S. No	Description	Duration	
		From	To
1	Dussehra Recess	11.10.2021	16.10.2021 (1 Week)
2	Commencement of classwork		18.10.2021
3	1 st Spell of Instructions (including Supplementary Examinations)	18.10.2021	15.01.2022 (13 Weeks)
4	Supplementary Examinations	22.11.2021	27.11.2021 (1 Week)
5	First Mid Term Examinations	17.01.2022	22.01.2022 (1 Week)
6	Submission of First Mid Term Exam Marks to the University on or before		29.01.2022
7	2 nd Spell of Instructions	24.01.2022	16.04.2022 (12 Weeks)
8	Second Mid Term Examinations	18.04.2022	23.04.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before		30.04.2022
10	3 rd Spell of Instructions (including summer vacation)	26.04.2022	30.07.2022 (14 Weeks)
11	Summer vacation	15.05.2022	29.05.2022 (2 Weeks)
12	Third Mid Term Examinations	01.08.2022	06.08.2022 (1 Week)
13	Preparation Holidays and Practical Examinations	08.08.2022	20.08.2022 (2 Weeks)
14	Submission of Third Mid Term Exam Marks to the University on or before		16.08.2022
15	End / Supplementary Examinations	22.08.2022	03.09.2022 (2 Weeks)


27/7/22

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

Academic Calendar 2021-22

Pharm. D (Regular) III, IV, V, VI Years and Pharm.D (PB) III Year

Pharm. D (Regular) III, IV, V Years

S. No	Description	Duration	
		From	To
1	Commencement of classwork		09.08.2021
2	1 st Spell of Instructions (including Dussehra Recess)	09.08.2021	06.11.2021 (12 Weeks)
3	Dussehra Recess	11.10.2021	16.10.2021
4	First Mid Term Examinations	08.11.2021	13.11.2021 (1 Week)
5	2 nd Spell of Instructions	15.11.2021	12.02.2022 (13 Weeks)
6	Submission of First Mid Term Exam Marks to the University on or before		20.11.2021
7	Supplementary Examinations	22.11.2021	27.11.2021
8	Second Mid Term Examinations	14.02.2022	19.02.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before		26.02.2022
10	3 rd Spell of Instructions	21.02.2022	07.05.2022 (11 Weeks)
11	Third Mid Term Examinations	09.05.2022	14.05.2022 (1 Week)
12	Preparation Holidays and Practical Examinations	16.05.2022	28.05.2022 (2 Weeks)
13	Submission of Third Mid Term Exam Marks to the University on or before		21.05.2022
14	End / Supplementary Examinations	30.05.2022	11.06.2022 (2 Weeks)
15	Summer vacation	13.06.2022	18.06.2022 (1 Week)

Pharm. D (Regular) VI Year and Pharm.D (PB) III Year

S. No	Description	Duration	
		From	To
1	Commencement of internship in General ward	09.08.2021	05.02.2022 (6 Months)
2	Report submission of internship in General ward		07.02.2022
3	Commencement of internship in Specialty ward-1	08.02.2022	07.04.2022 (2 Months)
4	Report submission of internship in Specialty ward-1		09.04.2022
5	Commencement of internship in Specialty ward-2	11.04.2022	10.06.2022 (2 Months)
6	Report submission of internship in Specialty ward-2		11.06.2022
7	Commencement of internship in Specialty ward-3	13.06.2022	12.08.2022 (2 Months)
8	Report submission of internship in Specialty ward-3		13.08.2022
9	Final viva of internship		17.08.2022



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 7/8/21
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

REVISED ACADEMIC CALENDAR 2021-22

Pharm. D (Regular) III, IV, V, VI Years


Pharm. D (Regular) III, IV, V Years

S. No	Description	Duration	
		From	To
1	Commencement of classwork	09.08.2021	
2	1 st Spell of Instructions (including Dussehra Recess)	09.08.2021	06.11.2021 (12 Weeks)
3	Dussehra Recess	11.10.2021	16.10.2021
4	First Mid Term Examinations	08.11.2021	13.11.2021 (1 Week)
5	2 nd Spell of Instructions	15.11.2021	12.02.2022 (13 Weeks)
6	Submission of First Mid Term Exam Marks to the University on or before	20.11.2021	
7	Supplementary Examinations	22.11.2021	27.11.2021
8	Second Mid Term Examinations	14.02.2022	19.02.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	26.02.2022	
10	3 rd Spell of Instructions	21.02.2022	14.05.2022 (12 Weeks)
11	Third Mid Term Examinations	16.05.2022	21.05.2022 (1 Week)
12	Preparation Holidays and Practical Examinations	23.05.2022	04.06.2022 (2 Weeks)
13	Submission of Third Mid Term Exam Marks to the University on or before	28.05.2022	
14	End / Supplementary Examinations	06.06.2022	18.06.2022 (2 Weeks)
15	Summer vacation	20.06.2022	25.06.2022 (1 Week)


22/12/22

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

REVISED ACADEMIC CALENDAR 2021-22

M.Tech./ M.Pharm. I YEAR I & II SEMESTERS


I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	15.11.2021	
2	1 st Spell of Instructions	15.11.2021	08.01.2022 (8 Weeks)
3	First Mid Term Examinations	<i>As per the convenience of the Colleges</i>	
4	Submission of First Mid Term Exam Marks to the University on or before	25.01.2022	
5	2 nd Spell of Instructions	17.01.2022	19.03.2022 (9 Weeks)
6	Second Mid Term Examinations	21.03.2022	26.03.2022 (1 Week)
7	Preparation Holidays and Practical Examinations	28.03.2022	01.04.2022 (1 Week)
8	Submission of Second Mid Term Exam Marks to the University on or before	01.04.2022	
9	End Semester Examinations	04.04.2022	20.04.2022 (2 Weeks)

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	21.04.2022	
2	1 st Spell of Instructions (including Summer Vacation)	21.04.2022	25.06.2022 (9 Weeks)
3	Summer Vacation	09.05.2022	14.05.2022 (1 Week)
4	First Mid Term Examinations	27.06.2022	02.07.2022 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	09.07.2022	
6	2 nd Spell of Instructions	04.07.2022	27.08.2022 (8 Weeks)
7	Second Mid Term Examinations	29.08.2022	03.09.2022 (1 Week)
8	Preparation Holidays and Practical Examinations	05.09.2022	10.09.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	10.09.2022	
10	End Semester Examinations	12.09.2022	24.09.2022 (2 Weeks)




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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
REVISED ACADEMIC CALENDAR 2021-22
M.Tech./ M.Pharm. II YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	09.11.2021	
2	1 st Spell of Instructions	09.11.2021	31.12.2021 (8 Weeks)
3	Preparation of Project Work Proposals	09.11.2021	04.12.2021 (4 Weeks)
4	Project Work Review-I: (Project approval / commencement)	06.12.2021	11.12.2021
5	Last date for submission of list of approved PRC-I students from the College to the University Examination branch.	14.12.2021	
6	First Mid Term Examinations	03.01.2022	07.01.2022 (1 Week)
7	Submission of First Mid Term Exam Marks to the University on or before	19.01.2022	
8	2 nd Spell of Instructions	17.01.2022	12.03.2022 (8 Weeks)
9	Second Mid Term Examinations	14.03.2022	19.03.2022 (1 Week)
10	Preparation Holidays and Practical Examinations	21.03.2022	26.03.2022 (1 Week)
11	Submission of Second Mid Term Exam Marks to the University on or before	26.03.2022	
12	End Semester Examinations	28.03.2022	09.04.2022 (2 Weeks)

II SEM

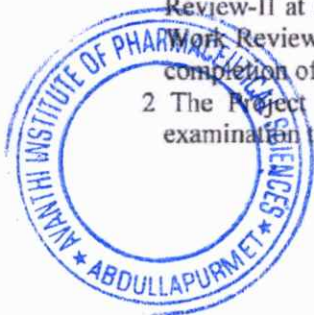
S. No	Description	Duration	
		From	To
1	Commencement of II Semester (Project Work Continuation) (13.12.2021 to 11.04.2022 – 17 weeks)	11.04.2022	
2	Project Work Review -II (Phase-I)	11.04.2022	16.04.2022 (1 Week)
3	** Project Work Review -II (Phase-II)	05.05.2022	07.05.2022 (3 days)
4	Last date for submission of PRC-II marks	11.05.2022	
5	Project Work Review -III (Phase -I) (18.04.2022 to 10.09.2022 – 21 Weeks)	12.09.2022	17.09.2022
6	Last date for submission of Project Work Review-III (Phase-I) Marks	24.09.2022	
7	* Date of eligibility of thesis submission	24.09.2022	
8	Submission of Thesis and Project Viva -Voce Examination (PRC-III Phase-I)	---	
9	** Project Work Review - III (Phase -II) (19.09.2022 to 17.12.2022 – 13 Weeks)	19.12.2022	21.12.2022 (3 days)
10	Last date for submission of Project Work Review -III (Phase-II) Marks	22.12.2022	
11	Submission of Thesis and Project Viva -Voce Examination (Phase-II) follows	---	

* After completion of 40 weeks from the date of approval of project work proposal and subject to approval of Project Work Review-III.

** Phase-II will be conducted only for unsuccessful students in Phase -I

Note: 1 The unsuccessful students in Project Work Review-II (Phase-II) shall appear for Project Work Review-II at the time of Project Work Review-III. These students shall reappear for Project Work Review-III in the next academic year at the time of Project Work Review -I only after completion of Project Work Review -II, and then Project Work Review -III follows.

2 The Project Viva-Voce External examination Marks must be submitted on the day of examination to the University.



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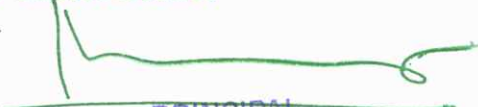
INSTITUTIONAL ACADEMIC CALENDER

ACADEMIC YEAR 2021-2022

S.NO	DATE	NAME OF THE EVENT
AUGUST	02.08.2021	ACADEMIC COMMITTEE MEETING OF DEPARTMENT OF PHARMACY
	06.08.2021	INSTITUTIONAL ACADEMIC COMMITTEE MEETING
	09.08.2021	COMMENCEMENT OF INTERNSHIP IN GENERAL WARD
SEPTEMBER	06.09.2021	COMMENCEMENT OF I SEMESTER CLASSWORK OF III & IV YEARS
	06.09.2021-06.11.2021	1 ST SPELL OF INSTRUCTIONS (INCLUDING DUSSEHRA RECESS) OF I SEMESTER OF III & IV YEARS
	09.09.2021	ACADEMIC COMMITTEE MEETING OF I SEMESTER OF
	10.09.2021	VINAYAKA CHAVITHI
	20.11.2021	FIRST MID TERM EXAMINATIONS FOR M PHARM 1 ST YEAR
	24.09.2021	NSS DAY
	15.11.2021	COMMENCEMENT OF 1 ST SEMESTER FOR M PHARM 1 ST SPELL OF INSTRUCTIONS FOR M PHARM 1 ST YEAR
	25.09.2021	WORLD PHARMACIST DAY
	OCTOBER	02.10.2021
06.10.2021		BATHUKAMMA STARTING DAY
11.10.2021-16.10.2021		DUSSEHRA RECESS OF I SEMESTER 2 ND YEAR
15.10.2021		VIJAYA DASAMI
18.10.2021		COMMENCEMENT OF I SEMESTER CLASSWORK OF 2 ND YEAR
18.10.2021-11.12.2021		1 ST SPELL OF INSTRUCTIONS OF I SEMESTER OF 2 ND YEAR
11.10.2021		DUSHEERA RECESS FOR PHARM D III,IV,V,VI YEARS
19.10.2021		EID MILADUN NABI
20.10.2021		BONALU
NOVEMBER	2.11.2021	ACADEMIC COMMITTEE MEETING DEPARTMENT OF PHARMACY
	04.11.2021	DEEPAVALI
	08.11.2021-13.11.2021	FIRST MID TERM EXAMINATIONS OF I SEMESTER OF III & IV YEARS
	08.11.2021	FIRST MID TERM EXAMINATIONS FOR PHARM D III,IV,V,VI YEARS
	09.11.2021	COMMENCEMENT OF I SEMESTER CLASSWORK 1 ST SPELL OF INSTRUCTIONS
	14.11.2021	CHILDREN'S DAY
	15.11.2021	1 ST SPELL OF INSTRUCTIONS FOR M PHARM
	15.11.2021-08.01.2022	2 ND SPELL INSTRUCTIONS OF I SEMESTER OF III & IV YEARS COMMENCEMENT OF 1 ST SEMESTER CLASSWORK

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	19.11.2021	KARTIKA PURNIMA
	21.11.2021-25.11.2021	NATIONAL PHARMACY WEEK
	22.11.2021	SUPPLEMENTARY EXAMINATIONS FOR PHARM D II, III, IV, V, VI YEARS TREE PLANTATION SWATCH BHARAT
	23.11.2021	GENDER SENSITIZATION PROGRAMME
DECEMBER	01.12.2021	WORLD AIDS DAY
	08.12.2021	TELENGANA HARITHAHARAM
	06.12.2021	PROJECT WORK REVIEW 1
	10.12.2021	AWARENESS ON WEB COUNSELLING
	13.12.2021-18.12.2021	FIRST MID TERM EXAMINATION OF I SEMESTER OF 2 ND YEAR
	18.12.2021	WOMEN'S RIGHTS
	14.12.2021	LAST DATE FOR SUBMISSION OF LIST OF APPROVED PRC I STUDENTS FROM THE COLLEGE TO THE UNIVERSITY EXAMINATION BRANCH
	09.12.2021-18.12.2021	INDUCTION PROGRAMME OF I SEMESTER OF 1 ST YEAR
	20.12.2021-12.02.2022	1 ST SPELL OF INSTRUCTIONS I SEMESTER OF 1 ST YEAR
	09.12.2021	COMMENCEMENT OF CLAAWORK FOR PHARM D 1 ST YEAR 1 ST SPELL OF INSTRUCTIONS FOR PHARM D 1 ST YEAR
	20.12.2021-12.02.2022	2 ND SPELL OF INSTRUCTIONS OF I SEMESTER OF 2 ND YEAR
	25.12.2021	CHRISTMAS
	26.12.2021	BOXING DAY
	30.12.2021	ANNUAL DAY CELEBRATIONS
JANUARY	01.01.2022	NEW YEAR DAY
	03.01.2022	SUPPLEMENTARY EXAMINATIONS FOR PHARM D I YEAR SUBMISSION OF 1 ST MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE FIRST MID TERM EXAMS FOR M PHARM 2 ND YEAR
	06.01.2022	AWARENESS PROGRAMME ON DURG MENACE
	07.01.2022	PONGAL CELEBRATIONS
	10.03.2022	FIRST MID TERM EXAMINATIONS FOR PHARM D 1 ST YEAR
	12.01.2022	NATIONAL YOUTH DAY
	14.01.2022	BHOGI
	15.01.2022	SANKRANTI
	17.01.2022	2 ND SPELL OF INSTRUCTIONS 1 ST MID TERM EXAMINATIONS FOR PHARM D 2 ND YEAR 2 ND SPELL OF INSTRUCTIONS
	21.01.2022	ANTI RAGGING COMMITTEE MEETING
	22.01.2022	BETI BACHAO BETI PADHAO
	25.01.2022	SUBMISSION OF 1 ST MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE
	24.01.2022	SAVE GIRL CHILD

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		2 ND SPELL OF INSTRUCTIONS OF PHARM II YEAR
	29.01.2022	SUBMISSION OF FIRST MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE
	9.01.2022	GOVERNIG BODY MEETING
	26.01.2022	REPUBLIC DAY
FEBUARY	02.02.2022-	SECOND MID TERM EXAMINATIONS OF I SEMESTER OF III
	28.02.2022	& IV YEARS
	07.02.2022	REPORT SUBMISSION OF INTERNSIP IN GENERAL WARD
	08.02.2022	COMMENCEMENT NOF INTERNSHIP IN SPECIALITY WARD 1
	13.02.2022	GUEST LECTURE FOR B.PHARM
	14.02.2022	SECOND MID TERM EXAMINATIONS FOR PHARM D III,IV,V,VI YEARS
		PRACTICAL EXAMINATIONS OF I SEMESTER OF III & IV YEARS
	09.02.2022-	END SEMESTER EXAMINATION OF I SEMESTER OF III & IV
	02.03.2022	YEARS
	10.02.2022	ACADEMIC COMMITTEE MEETING OF II SEMESTER
	14.02.2022-	FIRST MID TERM EXAMINATIONS OF I SEMESTER OF 1 ST
	19.02.2022	YEAR
	14.02.2022-	SECOND MID TERM EXAMINATION OF I SEMESTER OF 2 ND
	19.02.2022	YEAR
	21.02.2022-	2 nd SPELL OF INSTRUCTIONS OF I SEMESTER OF 1 ST YEAR
	30.04.2022	
	21.02.2022	3 RD SPELL OF INSTRUCTIONS FOR PHARM D III,IV,V,VI YEARS
21.02.2022-	CONTINUATION OF 2 ND SPELL OF INSTRUCTIONS OF I	
26.02.2022	SEMESTER OF 2 ND YEAR	
24.02.2022	NATIONAL WOMEN'S DAY	
26.02.2022	SUBMISSION OF SECOND MID TERM MID TERM EXAMS TO THE UNIVERSITY ON OR BEFORE FOR PHARM D III,IV,V,VI YEARS	
28.02.2022-	PRACTICAL CLASSES, EXAMINATIONS AND PREPARATION	
05.03.2022	HOLIDAYS OF I SEMESTER OF 2 ND YEAR	
MARCH	01.03.2022	MAHA SHIVARATRI
	03.03.2022	COMMENCEMENT OF II SEMESTER CLASSWORK OF III & IV YEARS
	03.03.2022-	1 ST SPELL OF INSTRUCTIONS OF II SEMESTER OF III & IV
	30.04.2022	YEARS
	07.03.2022-	END I SEMESTER EXAMINATIONS OF 2 ND YEAR
	19.03.2022	
	10.03.2022	GUEST LECTURE FOR PHARM.D
	14.03.2022	2 ND MID TERM EXAMS
17.03.2022	2 ND SPELL OF INSTRUCTIONS FOR PHARM DIST YEAR	
08.03.2022	INTERNATIONAL WOMEN'S DAY	
09.03.2022	FACULTY DEVELOPMENT PROGRAM	

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	18.03.2022	HOLI
	21.03.2022	COMMENCEMENT OF II SEMESTER CLASSWORK OF 2 ND YEAR 2 ND MID TERM EXAMINATIONS PREPARATION HOLIDAYS AND PRACTICAL EXAMINATIONS
	21.03.2022- 28.05.2022	1 ST SPELL OF INSTRUCTIONS (INCLUDING SUMMER VACATIONS) OF II SEMESTER OF 2 ND YEAR 2 ND MID TERM EXAMINATIONS
	23.03.2022	SUBMISSION OF THE FIRST MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE FOR PHARM D 1 ST YEAR
	25.03.2022	FRESHER'S DAY CELEBRATIONS
	26.03.2022	SUBMISSION OF 2 ND MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE
	28.03.2022	PREPARATION HOLIDAYS AND PRATICAL EXAMINAZTIONS FOR M PHARM EBD SEMSTER FOR M PHARM 2 ND YEARS
	30.03.2022- 31.03.2022	BIO-ADHYAYAN 2022
APRIL	02.04.2022	UGADI
	04.04.2022	END SEMSTER EXAMINATIONS
	05.04.2022	BABU JAGJIVAN RAM'S BIRTHDAY
	01.04.2022	SUBMISSION OF 2 ND MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE
	07.04.2022	WORLD HEALTH DAY
	09.04.2022	REPORT SUBMISSION OF INTERNSHIP IN SPECIALITY WARD 1
	10.04.2022	SRI RAMA NAVAMI
	11.04.2022	REPORT SUBMISSION OF INTERNSHIP IN SPECIALITY WARD 2
	14.04.2022	Dr.AMBEDKAR'S BIRTHDAY
	15.04.2022	GOOD FRIDAY
	18.04.2022	TRADITIONAL DAY 2 ND MID TERM EXAMINATIONS
	20.04.2022	WORLD EARTH DAY
	21.04.2022	COMMENCEMENT OF II SEMESTER CLASSWORK 1 ST SPELL OF INSTRUCTIONS
	26.04.2022	3 RD SPELL OF INSTRUCTIONS
	30.04.2022	SUBMISSION OF 2 ND MID TERM EXAMS MARKS TO THE UNIVERSITY ON OR BEFORE
MAY	02.05.2022- 07.05.2022	SECOND MID TERM EXAMINATIONS OF I SEMESTER OF 1 ST YEAR
	02.05.2022- 07.05.2022	FIRST MID TERM EXAMINATIONS OF II SEMESTER OF III & IV YEARS
	03.05.2022	RAMZAN
	05.05.2022	Project Work Review -II (Phase-1)

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	09.05.2022	SUMMER VACATION
	11.05.2022	Last date for submission of PRC-II marks Project Work Review -III (Phase-1) (18.04.2022 to 10.09.2022-21 Weeks)
	09.05.2022-14.05.2022	PERPARATION HOLIDAYS AND PRACTICAL EXAMINAIONS OF I SEMESTER OF 1 ST YEAR
	16.05.2022-28.05.2022	END I SEMESTER EXAMINATIONS OF 1 ST YEAR THIRD MID TERM EXAMINATIONS FOR PHARM D III,IV,V,VI YEARS
	16.05.2022-09.07.2022	2 ND SPELL OF INSTRUCTIONS (INCLUDING SUMMER VACATIONS) OF II SEMESTER OF III & IV YEARS
	20.05.2022	BLOOD DONATION CAMP
	23.05.2022	PREPARATION HOLIDAYS AND PRATICAL EXAMINATIONS FOR PHARM D III,IV,V,VI YEARS.
	28.05.2022	WORLD NUTRITION DAY SUBMISSION OF THE THIRD MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE FOR PHARM D III,IV,V,VI YEARS
	30.05.2022	COMMENCEMENT OF II SEMESTER CLASSWORK OF 1 ST YEAR
	30.05.2022-04.06.2022	FIRST MID TERM EXAMINATIONS OF II SEMESTER OF 2 ND YEAR
	30.05.2022-23.07.2022	FIRST SPELL OF INSTRUCTIONS OF II SEMESTER OF 1 ST YEAR
JUNE	06.06.2022-30.07.2022	2 ND SPELL OF INSTRUCTIONS OF II SEMESTER OF 2 ND YERA
	06.06.2022	FAREWELL DAY OF B PHARMACY END/SUPPLEMENTARY EXAMS FOR PHARM D III,IV,V,VI YEARS
	11.06.2022.	REPORT SUBMISSION OF INTERNSHIP IN SPECIALITY WARD 3
	13.06.2022	SUMMER VACCATION COMMENCEMENT OF INTERNSHIP IN SPECIALITY WARD 3
	16.06.2022	3 RD SPELL OF EXAMINATIONS FOR PHARM D I ST YEAR
	09.06.2022	SECOND MID TERM EXAMINATIONS FOR PHARM D 1 ST YEAR
	22.06.2022	SUBMISSION OF SECOND MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE
	27.06.2022	1 ST MID TERM EXAMINATIONS FOR M PHARM
	20.06.2022	SUMMER VACCATION FOR PHARM D III,IV,V,VI YEARS
JULY	26.07.2022-30.07.2022	FIRST MID TERM EXAMINATION OF II SEMESTER OF 1 ST YEAR
	04.07.2022	2 ND SPELL OF INSTRUCTIONS FOR M PHARM
	09.07.2022	SUBMISSION OF 1 ST MID TERM EXAMS MARKS TO THE UNIVERSITY ON OR BEFORE
	11.07.2022-16.07.2022	SECOND MID TERM EXAMINATIONS OF II SEMESTER OF 3 RD AND 4 TH YEARS
	18.07.2022-	PREPARATION HOLIDAYS AND PRACTICAL

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	23.07.2022	EXAMINATIONS OF II SEMESTER OF 3 RD AND 4 TH YEARS
	25.07.2022	THIRD MID TERM EXAMINATIONS FOR PHARM D 2 ND YEAR
	26.07.2022-06.08.2022	END II SEMESTER OF 3 RD AND 4 TH YEARS
AUGUST	01.08.2022-24.09.2022	2 ND SPELL OF INSTRUCTIONS OF II SEMESTER OF 1 ST YEAR PREPARATION HOLIDAYS AND PRATICALS EXAMINATIONS
	01.08.2022-06.08.2022	SECOND MID TERM EXAMINATIONS OF II SEMESTER 2 ND YEAR SUBMISSION OF THIRD MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE
	08.08.2022-16.08.2022	PREPARATION HOLIDAYS AND PRACTICAL EXAMINATIONS OF II SEMESTER OF 2 ND YEAR END /SUPPLEMENTARY EXAMINATIONS FOR PHARM D 2 ND YEAR
	09.08.2021	COMMENCEMENT OF CLASSWORK FOR PHARM D III,IV,V,VI 1 ST SPELL OF INSTRUCTIONS FOR PHARM D III,IV,V,VI YEARS
	29.08.2022	2 ND MID TERM EXAMINATIONS FOR M PHARM
	17.08.2022	FINAL VIVA OF INTERNSHIP FOR M PHARM
	17.08.2022-30.08.2022	END II SEMESTER EXAMINATIONS OF 2 ND YEAR
SEPT	08.09.2022	THIRD MID TERM EXAMINATIONS FOR PHARM D I ST YEAR
	05.09.2022	PREPARTION HOLIDAYS AND PRACTICAL EXAMINATION
	10.09.2022	SUBMISSION OF 2 ND MID TERM MARKS TO THE UNIVERSITY ON OR BEFORE
	15.02.2022	PREPARATION HOLIDAYS AND PRATICAL EXAMINATIONS
	12.09.2022	END SEMESTER EXAMINATIONS
	12.09.2022	PROJECT WORK REVIEW III
	29.09.2022	END\SUPPLEMENTARY EXAMINATIONS FOR PHARM D 1 ST YEAR
	24.09.2022	LAST DATE FOR SUBMISSION OF PROJECT WORK REVIEW 3 (PHASE 1)MARKS DATE OF ELIGIBILITY OF THEIS SUBMISSION
	22.09.2022	SUBMISSIONS OF THIRD MID TERM EXAM MARKS TO THE UNIVERSITY ON OR BEFORE
OCTOBER	03.10.2022-08.10.2022	PREPARATION HOLIDAYS AND PRACTICAL EXAMIANCTIONS OF II SEMESTER OF 1 ST YEAR
	10.10.2022-21.10.2022	END II SEMESTER EXAMINATIONS OF 1 ST YEAR
DEC	19.12.2022	PROJECT WORK REVIEW III
	22.12.2022	LAST DATE FOR SUBMISSION OF PROJECT WORK REVIEW III PHASE 2 MARKS

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DEPARTMENT OF PHARMACY ACADEMIC CALENDER 2021-2022

(B. PHARMACY)

EVENT	I YEAR		II YEAR		III YEAR		IV YEAR	
	SEM I	SEM II	SEM I	SEM II	SEM I	SEM II	SEM I	SEM II
COMMENCEMENT OF CLASSWORK	20-12-2021	30-05-2022	18-10-2021	21-03-2022	06-09-2021	03-03-2022	06-09-2021	03-03-2022
I SPELL OF INSTRUCTION	20-12-2021	30-05-2022	18-10-2021	21-03-2022	06-09-2021	03-03-2022	06-09-2021	03-03-2022
I MID OF EXAMINATION	14-02-2022	26-07-2022	13-12-2021	30-05-2022	08-11-2021	02-05-2022	08-11-2021	02-05-2022
II SPELL OF INSTRUCTION	21-02-2022	01-08-2022	20-12-2021	06-06-2022	15-11-2021	16-05-2022	15-11-2021	16-05-2022
II MID OF EXAMINATION	02-05-2022	26-09-2022	14-02-2022	01-08-2022	02-02-2022	11-07-2022	02-02-2022	11-07-2022
PREPARATION AND PRACTICALS	09-05-2022	03-10-2022	28-02-2022	08-08-2022	02-02-2022	18-07-2022	02-02-2022	18-07-2022
END EXAMINATIONS	16-05-2022	10-10-2022	07-03-2022	17-08-2022	09-02-2022	26-07-2022	09-02-2022	26-07-2022

M.R. Krishna

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DEPARTMENT OF PHARMACY ACADEMIC CALENDER 2021-2022

(M PHARM I & II YEAR)

EVENT	I YEAR	
	SEM-I	SEM-II
COMMENCEMENT OF CLASSWORK	15-11-2021	21-04-2022
I SPELL OF INSTRUCTION	15-11-2021	21-04-2022
I MID OF EXAMINATION	20-12-2021	27-06-2022
II SPELL OF INSTRUCTION	17-01-2022	04-07-2022
II MID OF EXAMINATION	21-03-2022	29-08-2022
PREPARATION AND PRACTICALS	28-03-2022	05-09-2022
END EXAMINATIONS	04-04-2022	12-09-2022

DESCRIPTION	II YEAR
I SEM	
COMMENCEMENT OF I SEM CLASSWORK	09-11-2021
I ST SPELL OF INSTRUCTIONS	09-11-2021
PROJECT WORK REVIEW- 1	06-12-2021
LAST DATE FFOR SUBMISSION OF PRC-1	14-12-2021
I MID OF EXAMINATIONS	03-01-2022
II SPELL OF INSTRUCTIONS	17-01-2022
II MID OF EXAMINATION	14-03-2022
PREPARATION AND PRACTICALS	21-03-2022
END EXAMINATIONS	28-03-2022



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DESCRIPTION	II YEAR
II SEM	
COMMENCEMENT OF II SEMESTER	11-04-2022
PROJECT WORK REVIEW-II(PHASE-I)	11-04-2022
PROJECT WORK REVIEW-II (PHASE-II)	05-05-2022
LAST DATE FOR SUBMISSION OF PRC-II	11-05-2022
PROJECT WORK REVIEW-III (PHASE-I)	12-09-2022
LAST DATE FOR SUBMISSION OF PROJECT WORK REVIEW-III	24-09-2022
DATE OF ELIGIBILITY OF THESIS SUBMISSION	24-09-2022
SUBMISSION OF THESIS AND PROJECT VIVA VOCE EXAMINATION (PRC-III PHASE-I)	10-12-2022
PROJECT WORK REVIEW-III (PHASE-II)	19-12-2022
LAST DATE FOR SUBMISSION OF PROJECT WORK REVIEW-III (PHASE-II)	22-12-2022
SUBMISSION OF THESIS AND PROJECT VIVA VOCE EXAMINATION (PHASE-II)	15-01-2023

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DEPARTMENT OF PHARMACY PRACTICE

ACADEMIC CALENDER 2021-2022

(PHARM. D I YEAR – V YEAR)

DESCRIPTION	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
COMMENCEMENT OF CLASSWORK	09-12-2021	18-10-2021	09-08-2021	09-08-2021	09-08-2021
I SPELL OF INSTRUCTION	09-12-2021	18-10-2021	09-08-2021	09-08-2021	09-08-2021
I MID OF EXAMINATION	10-03-2022	17-01-2022	08-11-2021	08-11-2021	08-11-2021
II SPELL OF INSTRUCTION	17-03-2022	24-01-2022	15-11-2021	15-11-2021	15-11-2021
II MID OF EXAMINATION	09-06-2022	18-04-2022	14-02-2022	14-02-2022	14-02-2022
III SPELL OF INSTRUCTION	16-06-2022	26-04-2022	21-02-2022	21-02-2022	21-02-2022
III MID OF EXAMINATION	08-09-2022	25-07-2022	16-05-2022	16-05-2022	16-05-2022
PREPARATION AND PRACTICALS	15-09-2022	01-08-2022	23-05-2022	23-05-2022	23-05-2022
END EXAMINATIONS	29-09-2022	16-08-2022	06-06-2022	06-06-2022	06-06-2022




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PHARM D VI YEAR

S.NO	DESCRIPTION	VI YEAR
1	COMMENCEMENT OF INTERNSHIP IN GENERAL WARD	09-08-2021
2	REPORT SUBMISSION OF INTERNSHIP IN GENERAL WARD	07-02-2022
3	COMMENCEMENT OF INTERNSHIP IN SPECIALITY WARD-1	08-02-2022
4	REPORT SUBMISSION OF INTERNSHIP IN SPECIALITY WARD -1	09-04-2022
5	COMMENCEMENT OF INTERNSHIP IN SPECIALITY WARD-2	11-04-2022
6	REPORT SUBMISSION OF INTERNSHIP IN SPECIALITY WARD -2	11-06-2022
7	COMMENCEMENT OF INTERNSHIP IN SPECIALITY WARD-3	13-06-2022
8	REPORT SUBMISSION OF INTERNSHIP IN SPECIALITY WARD -3	13-08-2022
9	FINAL VIVA OF INTERNSHIP	17-08-2022

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PHARM-D

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PHARM D WORK LOAD 2021-2022

S.No	Name of the faculty	Subjects	Class	No of periods	Total Workload	signature
1	MD.ABDUL AZEEM	M.BIO	I YR	7	14	
		CP	IV YR	7		
2	Dr. P. SWATHI PATEL	HAP	I YR	7	17	
		CP	II YR	3		
		CT	IV YR	3		
		CR	V YR	4		
3	Dr. RAVI NAYAK	HP	IV YR	6	16	
		PJ	III YR	2		
		P.MICRO	II YR	7		
		CLERKSHIP	V YR	1		
4	Dr. EMMANUEL EVANGILEEN	P.THER-II	III YR	7	18	
		P.THER-I	II YR	7		
		EPIDEMIOLOGY	V YR	4		
5	Dr. V. ANUDEEP	PATHO	II YR	4	21	
		P.THRER-III	IV YR	7		
		CP&PTDM	V YR	3		
		PA	III YR	7		
6	U. RISHIKA	POC	I YR	7	21	
		MC	III YR	7		
		BPPK	IV YR	7		
7	Dr. K LEEMA	P.COL-I	II YR	7	16	
		PIC	I YR	6		
		BSRM	IV YR	3		
8	I. SWATHI	P.CEUT	I YR	6	20	
		PF	III YR	6		
		P.CEU	II-II(A,B) B.PHARM	8		
9	P.V PAVAN KUMAR	PF	III YR	6	19	
		P.CO&PHYTO	II YR	7		
		P.CEUT	I YR	6		



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S.No	Name of the faculty	Subjects	Class	No of periods	Total Workload	signature
10	Dr. P.SRILATHA	PF	III YR	6	19	
		P.CO&PHYTO	II YR	7		
		P.CEU	I YR	6		


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DEPARTMENT OF PHARMACY PRACTICE

A.Y 2021-22 TIME TABLE

PHARM.D VI YEAR

W.E.F: 09.08.2021

COLLEGE TIMINGS:9:30AM-3:50PM

DAY	9.30AM-10.20AM	10.20AM-11.10AM	11.10AM-12.00PM	12.00AM-12.50PM	12.50P M-1.20P M	1.20P.M-2.10PM	2.10PM-3.00PM	3.00PM-3.50PM
MON	CARDIOLOGY	NEPHROLOGY	NEUROLOGY	UROLOGY	L	CRITICAL CARE	PULMONORY	CASE PRESENTATION
TUE	PULMONORY	CRITICAL CARE	UROLOGY	NEPHROLOGY	U	NEUROLOGY	CARDIOLOGY	CASE PRESENTATION
WED	CRITICAL CARE	PULMONORY	NEPHROLOGY	CARDIOLOGY	N	UROLOGY	NEUROLOGY	CASE PRESENTATION
THU	UROLOGY	NEUROLOGY	PULMONORY	CRITICAL CARE	C	NEPHROLOGY	CARDIOLOGY	CASE PRESENTATION
FRI	NEUROLOGY	CRITICAL CARE	UROLOGY	PULMONORY	H	CARDIOLOGY	NEPHROLOGY	CASE PRESENTATION
SAT	CARDIOLOGY	NEPHROLOGY	CRITICAL CARE	UROLOGY		PULMONORY	NEUROLOGY	CASE PRESENTATION

Monday	Dr. Evangileen/Dr. Ravinayak	Assistant Professor/ Assistant Professor
Tuesday	Dr. V. Anudeep/Dr. K. Leema	Assistant Professor/ Assistant Professor
Wednesday	Dr. Ravi nayak/V. Anudeep	Assistant Professor/ Assistant Professor
Thursday	Dr. Evangileen/Dr. Ravinayak	Associate Professor
Friday	Dr. MD. Abdul Azeem/ Dr. K. Leema	Assistant Professor/ Assistant Professor
Saturday	Dr. V. Anudeep/Dr. K. Leema	Assistant Professor/ Assistant Professor


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DEPARTMENT OF PHARMACY PRACTICE

A.Y 2021-22 TIME TABLE

PHARMLD V YEAR W.E.F: 09.08.2021 COLLEGE TIMINGS:9:30AM-3:50PM

DAY	9.30AM-10.20AM	10.20AM-11.10AM	11.10AM-12.00PM	12.00AM-12.50PM	12.50PM-1.20PM	1.20P.M-2.10PM	2.10PM-3.00PM	3.00PM-3.50PM	
MON	CR	P&PE	CPK&PDM	TEST	L U N C H	P&PE	SEMINAR	CR	
TUE	CR	SEMINAR				CPK&PDM	P&PE	TEST	
WED	HOSPITAL VISIT					HOSPITAL VISIT			
THU	CPK&PDM	CR	P&PE	CLERKSHIP		HOSPITAL VISIT			
FRI	HOSPITAL VISIT					HOSPITAL VISIT			
SAT	HOSPITAL VISIT					HOSPITAL VISIT			

SUBJECTNAME	FACULTYNAME	DESIGNATION
Clinical Research	P. SWATHI	Assistant Professor
Pharmaco Epidemiology and Pharmaco Economics	Dr. EVANGILEEN	Assistant Professor
Clinical pharmacokinetics & Pharmacotherapeutic drug Monitoring	Dr. V. ANUDEEP	Assistant Professor
Clerkship*	Dr.. RAVINAYAK	Assistant Professor
Project work(six months)	Dr. V.ANUDEEP/ Dr. EVANGILEEN/P.SWATHI	Assistant Professor


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DEPARTMENT OF PHARMACY PRACTICE

A.Y 2021-22 TIME TABLE

PHARM.D IV YEAR

W.E.F: 09.08.2021

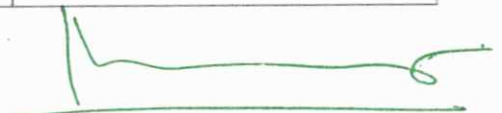
COLLEGE TIMINGS:9:30AM-3:50PM

DAY	9.30AM-10.20AM	10.20AM-11.10AM	11.10AM-12.00PM	12.00AM-12.50PM	12.50PM-1.20PM	1.20P.M-2.10PM	2.10PM-3.00PM	3.00PM-3.50PM
MON	CT	B&RM	P.THER-III	HP	L U N C H	BPK (T)	TEST	CP
TUE	BPK	P.THER-III (T)	CP	TEST		B&RM	HP(T)	CT
WED	P.THER-III	SEMINAR				HOSPITAL VISIT(P.THER-III)		
THU	P.THER-III	HP	HP	CP		LIBRARY/SPORTS		
FRI	CP(T)	HOSPITAL VISIT				HOSPITAL VISIT		
SAT	B&RM	BPK				BPK	TEST	CT

SUBJECTNAME	FACULTYNAME	DESIGNATION
Pharmacotherapeutics-III	Dr. V. Anudeep	Assistant Professor
Hospital pharmacy	Dr. Ravinayak	Assistant Professor
Clinical pharmacy	MD. Abdul Azeem	Associate Professor
Biostatistics and Research methodology	Dr. K. Leema/k. Vimala	Assistant Professor
Biopharmaceutics and pharmacokinetics	U. Rishika	Assistant Professor
Clinical toxicology	Dr. P. Swathi	Assistant Professor
Pharmacotherapeutics-III Lab	Dr. V. Anudeep	Assistant Professor
Hospital pharmacy Lab	Dr. Ravinayak	Assistant Professor
Clinical pharmacy Lab	MD. Abdul Azeem	Associate Professor
Biopharmaceutics and pharmacokinetics Lab	I. Swathi	Assistant Professor


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DEPARTMENT OF PHARMACY PRACTICE

A.Y 2021-22 TIME TABL

PHARM.D III YEAR

W.E.F: 09.08.2021

COLLEGE TIMINGS:9:30AM-3:50PM

DAYS	9.30AM-10.20AM	10.20AM-11.10AM	11.10AM-12.00PM	12.00AM-12.50PM	12.50PM-1.20PM	1.20P.M-2.10PM	2.10PM-3.00PM	3.00PM-3.50PM
MON	P.A LAB		P.A		L U N C H	M.C	P.J	SEMINARS
TUE	M.C LAB		P.THER.-II			P.F (T)	P.THER.-II	P.COL-II
WED	P.F LAB		P.THER.-II			M.C (T)	P.COL-II	P.A
THU	P.A	P.F	P. THER.-II LAB (HOSPITALVIST)			P.THER.-II LAB(HOSPITAL VISIT)		
FRI	P.COL-II LAB		M.C			P.J	P.THER II (T)	P.COL-II (T)
SAT	P.F	P.J	LIBRARYSPORTS			M.C	P.COL-II	P.A(T)

SUBJECTNAME	FACULTYNAME	DESIGNATION
Pharmacology-II	Dr. K. Leema	Assistant Professor
Pharmaceutical Analysis	Dr. V. Anudeep	Assistant Professor
Pharmacotherapeutics-II	Dr. Evangileen	Assistant Professor
Pharmaceutical Jurisprudence	Dr. Ravinayak	Assistant Professor
Medicinal Chemistry	U. Rishika	Assistant Professor
Pharmaceutical Formulations	P. Srilatha /P.V.Pavan kumar	Assistant Professor/ Assistant Professor
Pharmacology-II	Dr. K. Leema	Assistant Professor
Pharmaceutical Analysis-Lab	Dr. V. Anudeep	Assistant Professor
Pharmacotherapeutics-II-Lab	Dr. Evangileen	Assistant Professor
Medicinal Chemistry-Lab	U. Rishika	Assistant Professor
Pharmaceutical Formulations-Lab	P. Srilatha /P.V.Pavan kumar	Assistant Professor/ Assistant Professor

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DEPARTMENT OF PHARMACY PRACTICE

A.Y 2021-22 TIME TABLE

PHARM.D II YEAR

W.E.F: 11.10.2021

COLLEGE TIMINGS:9:30AM-3:50PM

DAYS	9.30AM-10.20AM	10.20AM-11.10AM	11.10AM-12.00PM	12.00AM-12.50PM	12.5PM-1.20PM	1.20P.M-2.10PM	2.10P M-3.00P M	3.00PM - 3.50PM
MON	P.COL-I	CP	P.PHY.	P.THER.-I	L U N C H	LIBRARY/SPORTS		
TUE	P.THER.-I	MICRO	P.PHY	LIBRARY		SEMINARS	CP	
WED	P.PHY.	MICRO	P.COL-I	MICRO		MICRO		
THU	P.COL-I	LIBRARY	P.COG&PHYTO	P.COG&PHYTO		P.COG&PHYTO.		
FRI	CP	P.PHY	P.THER.-I(T)	P.COL-I(T)		SEMINARS		
SAT	MICRO (BS)	P.THER.-I	P.THER.-ILAB(HOSPITAL VISIT)			P.THER.-ILAB (HOSPITAL VISIT)		

Subject Name	Faculty Name	Designation
Pathophysiology	Dr. V. Anudeep	Assistant Professor
Pharmaceutical Microbiology	Dr. Ravinayak	Assistant Professor
Pharmacognosy & Phytopharmaceuticals	P.V. Pavan kumar	Assistant Professor
Pharmacology-I	Dr. K. Leema	Assistant Professor
Community Pharmacy	Dr. P. Swathi	Assistant Professor
Pharmacotherapeutics-I	Dr. Evangileen	Assistant Professor
Pharmaceutical Microbiology -Lab	Dr. Ravinayak	Assistant Professor
Pharmacognosy & Phytopharmaceuticals-Lab	P.V. Pavan kumar	Assistant Professor
Pharmacotherapeutics-I-Lab	Dr. Evangileen	Assistant Professor

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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by PCI, AICTE & Affiliated to JNTUH)

Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.



DEPARTMENT OF PHARMACY PRACTICE

A.Y 2021-22 TIME TABLE

PHARM.D I YEAR W.E.F: 09.12.2021 COLLEGE TIMINGS:9:30AM 3:50PM

DAYS	9.30AM-10.20AM	10.20AM-11.10AM	11.10AM-12.00PM	12.00AM-12.50PM	12.50PM-1.20PM	1.20P.M-2.10PM	2.10PM-3.00PM	3.00PM-3.50PM
MON	B.CHEM.	HAP	POC	P.CEU (T)	L U N C H	PIC		
TUE	PIC	RM	POC (T)	TEST		LIBRARY/SPORTS		
WED	HAP	POC	B.CHEM. (T)	PIC (T)		POC		
THU	POC	RM/RB	P. CEU	PIC		HAP		
FRI	B.CHEM.	RM/RB	P. CEU	B. CHEM.		B.CHEM.		
SAT	HAP	RM/RB	TEST	HAP (T)		P.CEU.		

Subject name	Faculty name	Designation
Human Anatomy And Physiology	Dr. P. Swathi	Assistant Professor
Pharmaceutics	I. Swathi /P.V. Pavan kumar	Assistant Professor
Medicinal Biochemistry	Dr. MD. Abdul Azeem	Associate Professor
Pharmaceutical Organic Chemistry	U. Rishika	Assistant Professor
Pharmaceutical Inorganic Chemistry	Dr. K.Leema	Assistant Professor
Remedial Mathematics/ Biology	K. Vimala	Assistant Professor
Human Anatomy And Physiology Lab	Dr. P. Swathi	Assistant Professor
Pharmaceutics Lab	I. Swathi /P.V. Pavan kumar	
Medicinal Biochemistry Lab	Dr. MD. Abdul Azeem	Associate Professor
Pharmaceutical Organic Chemistry Lab	U. Rishika	Assistant Professor
Pharmaceutical Inorganic Chemistry-Lab	Dr. K.Leema	Assistant Professor


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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
(Established by Act No.30 of 2008)
Kukatpally, Hyderabad-500085, Telangana State (India)

Academic Regulations of M.Pharm. (Regular/Full Time) Programmes, 2022-23 (R22)
(CBCS)

(Effective for the students admitted into I year from the Academic Year 2022-23 and onwards)

1.0 Post-Graduate Degree Programmes in Pharmacy (PGP in Pharmacy) Jawaharlal Nehru Technological University Hyderabad (JNTUH) offers **Two Years (Four Semesters)** full-time Master of Pharmacy (M.Pharm.) Degree programmes, under Choice Based Credit System (CBCS) at its constituent (non-autonomous) and affiliated colleges in different specializations.

2.0 Eligibility for Admissions

2.1 Admission to the PGPs shall be made subject to eligibility, qualification and specializations prescribed by the University from time to time, for each specialization under each M.Pharm. programme.

2.2 Admission to the post graduate programme shall be made on the basis of either the merit rank or Percentile obtained by the qualified student in the relevant qualifying GPAT Examination/ the merit rank obtained by the qualified student in an entrance test conducted by Telangana State Government (PGE CET) for M.Pharm. programmes / an entrance test conducted by JNTUH/ on the basis of any other exams approved by the University, subject to reservations as laid down by the Govt. from time to time.

2.3 The medium of instructions for all PG Programmes will be **ENGLISH** only.

3.0 M.Pharm. Programme (PGP in Pharmacy) Structure

3.1 The M.Pharm. Programmes in Pharmacy of JNTUH are of Semester pattern, with **Four Semesters** consisting of **Two** academic years, each academic year having **Two Semesters** (First/Odd and Second/Even Semesters). Each Semester shall be of 23 weeks duration (inclusive of Examinations), with a minimum of **100** instructional days per Semester.

3.2 The student shall not take more than **four** academic years to fulfill all the academic requirements for the award of M.Pharm. degree from the date of commencement of first year first semester, failing which the student shall forfeit the seat in M.Pharm. programme.

3.3 **UGC/PCI** specified definitions/descriptions are adopted appropriately for various terms and abbreviations used in these PG academic regulations, as listed below:

3.3.1 Semester Scheme

Each Semester shall have 'Continuous Internal Evaluation (CIE)' and 'Semester End Examination (SEE)'. Choice Based Credit System (CBCS) and Credit Based Semester System (CBSS) are taken as 'references' for the present set of Regulations. The terms 'SUBJECT' and 'COURSE' imply the same meaning here and refer to 'Theory Subject', or 'Lab Course', or 'Design Subject', or 'Mini Project with Seminar', or 'Dissertation', as the case may be.

3.3.2 Credit Courses

All subjects/courses are to be registered by the student in a semester to earn credits which shall be assigned to each subject/course in an L: T: P: C (Lecture Periods: Tutorial Periods: Practical Periods:



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Credits) structure based on the following general pattern:

- One credit for one hour/week/semester for theory/lecture (L) courses
- One credit for two hours/ week/semester for laboratory/ practical (P) courses or tutorials (T)

Other student activities like study tour, guest lecture, conference/workshop participations, technical paper presentations and mandatory courses (**Audit Courses**) will not carry any credits.

3.3.3 Subject Course Classification


All subjects/courses offered for the Post-Graduate Programme in Pharmacy (M.Pharm. Degree Programme) are broadly classified as follows. The University has followed in general the guidelines issued by UGC/PCI.

S.No.	Broad Course Classification	Course Group/ Category	Course Description
1	Core Courses (CoC)	PC- Professional Core	Includes subjects related to the Specialization in Pharmacy
		Dissertation	M.Pharm. Project or PG Project or Major Project
		Mini Project/ Seminar	Mini Project/Seminar based on core contents related to the Specialization in Pharmacy
2	Elective Courses (EiE)	PE - Professional Electives	Includes elective subjects related to the Specialization in Pharmacy
		OE - Open Electives	Elective subjects which include inter-disciplinary subjects or subjects in an area outside the Specialization in Pharmacy
3	Mandatory Courses	--	Non-Credit Audit Courses

4.0 Course Registration

- 4.1 A 'Faculty Advisor or Counselor' shall be assigned to each specialization, who will advise on the Post Graduate Programme (PGP), its Course Structure and Curriculum, Choice/Option for Subjects/ Courses, based on his competence, progress, pre-requisites and interest.
- 4.2 The Academic Section of the College invites 'Registration Forms' from students within 15 days from the commencement of class work through 'ON-LINE SUBMISSIONS', ensuring 'DATE and TIME Stamping'. The ON-LINE Registration Requests for any 'CURRENT SEMESTER' shall be completed BEFORE the commencement of SEEs (Semester End Examinations) of the 'PRECEDING SEMESTER'.
- 4.3 A Student can apply for ON-LINE Registration, ONLY AFTER obtaining the 'WRITTEN APPROVAL' from his Faculty Advisor, which should be submitted to the College Academic Section through the Head of Department (a copy of it being retained with Head of Department, Faculty Advisor and the Student).
- 4.4 If the Student submits ambiguous choices or multiple options or erroneous entries during ON-LINE Registration for the Subject(s) / Course(s) under a given/ specified Course Group/ Category as listed in the Course Structure, only the first mentioned Subject/ Course in that Category will be taken into consideration.




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4.5 Subject/ Course Options exercised through ON-LINE Registration are final and CANNOT be changed, nor can they be inter-changed; further, alternate choices also will not be considered. However, if the Subject/ Course that has already been listed for Registration by the University in a Semester could not be offered due to unforeseen or unexpected reasons, then the Student will be allowed to have alternate choice either for a new Subject, if it is offered, or for another existing Subject (subject to availability of seats). Such alternate arrangements will be made by the Head of Department, with due notification and time-framed schedule, within the FIRST WEEK from the commencement of Class-work for that Semester.

5.0 Attendance Requirements

The programmes are offered based on a unit system with each subject being considered a unit. Attendance is calculated separately for each subject.

5.1 Attendance in all classes (Lectures/Laboratories) is compulsory. The minimum required attendance in each theory subject (**also mandatory audit courses**) including the attendance of mid-term examination / Laboratory etc. is **80%**. Two periods of attendance for each theory subject shall be considered, if the student appears for the mid-term examination of that subject. **This attendance should also be included in the fortnightly upload of attendance to the University. The attendance of mandatory audit courses should be uploaded separately to the University.** A student shall not be permitted to appear for the Semester End Examinations (SEE), if his attendance is less than **80%**.

5.2 A student's Seminar report and presentation on Mini Project shall be eligible for evaluation, only if he ensures a minimum of **80%** of his attendance in Seminar presentation classes on Mini Project during that Semester.

5.3 **Condoning of shortage of attendance** (between 70% and 80%) up to a maximum of 10% (considering the days of attendance in sports, games, NCC, NSS activities and Medical grounds) in each subject (Theory/Lab/Mini Project with Seminar) of a semester shall be granted by the College Academic Committee on genuine reasons.

5.4 A prescribed fee per subject shall be payable for condoning shortage of attendance after getting the approval of College Academic Committee for the same. The College Academic Committee shall maintain relevant documents along with the request from the student.

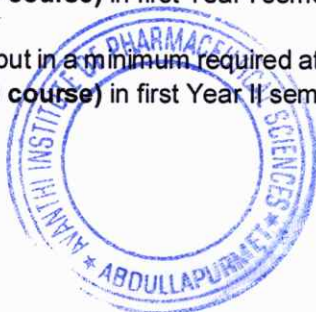
5.5 Shortage of Attendance below 70% in any subject shall in **no case be condoned**.

5.6 A Student, whose shortage of attendance is not condoned in any Subject(s) (Theory/Lab/Mini Project with Seminar) in any Semester, is considered as 'Detained in that Subject(s), and is not eligible to write Semester End Examination(s) of such Subject(s), (in case of Mini Project with Seminar, his/her Mini Project with Seminar Report or Presentation are not eligible for evaluation) in that Semester; and he/she has to seek re-registration for those Subject(s) in subsequent Semesters, and attend the same as and when offered.

5.7 A student fulfills the attendance requirement in the present semester, shall not be eligible for readmission into the same class.

5.8 a) A student shall put in a minimum required attendance in at least **three theory subjects (excluding mandatory(audit) course)** in first Year I semester for promotion to first Year II Semester.

b) A student shall put in a minimum required attendance in at least **three theory subjects (excluding mandatory(audit) course)** in first Year II semester for promotion to second Year I Semester.





6.0 Academic Requirements

The following academic requirements must be satisfied, in addition to the attendance requirements mentioned in item no. 5. The performance of the candidate in each semester shall be evaluated subject-wise, with a maximum of 100 marks per subject / course (theory / practical), based on Internal Evaluation and Semester End Examination.

6.1 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/course, if he secures not less than **40%** of marks (**30** out of **75** marks) in the Semester End Examination, and a minimum of **50%** of marks in the sum total of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of Letter Grades and this implies securing '**D**' Grade or above in a subject.

6.2 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to **Mini Project**, if student secures not less than **50%** marks (i.e. 50 out of 100 allotted marks). The student would be treated as failed, if student (i) does not submit a report on Mini Project or does not make a presentation of the same before the evaluation committee as per schedule or (ii) secures less than 50% marks in Mini Project evaluation. The failed student may reappear once for the above evaluation, as and when they are scheduled again; if the student fails in such 'one reappearance' evaluation also, the student has to reappear for the same in the next subsequent semester, as and when it is scheduled.

6.3 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to **seminar & assignment**, if student secures not less than 50% marks i.e. 50 out of 100 allotted marks. **50** marks are allotted for **Seminar**, **50** marks are allotted for **Assignment**, **Total 50+50 = 100 marks**. The student would be treated as failed, if student (i) does not submit a report on seminar/does not submit the assignments as prescribed or does not make a seminar presentation before the evaluation committee as per schedule or (ii) secures less than 50% (i.e. < **25** marks out of **50**) marks in each of the seminar & assignment evaluations. The student failed in seminar evaluation may reappear once for it, as and when it is scheduled again; The student failed in assignment evaluation may submit the assignments once again for the evaluation, as and when the assignment submission is scheduled again. If the student fails in such 'one reappearance' evaluation also, the student has to reappear for the same in the next subsequent semester, as and when it is scheduled.

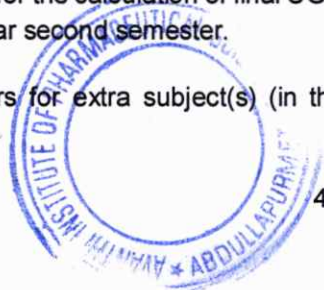
6.4 A student shall register for all subjects for total of **98** credits as specified and listed in the course structure for the chosen specialization, put in required the attendance and fulfill the academic requirements for securing **98** credits obtaining a minimum of '**D**' Grade or above in each subject, and all **98** credits securing Semester Grade Point Average (**SGPA**) ≥ 6.0 (in each semester) and final Cumulative Grade Point Average (**CGPA**) (i.e., CGPA at the end of PGP) ≥ 6.0 , and shall **pass all the mandatory audit courses** to complete the PGP successfully.

Note: (1) The SGPA will be computed and printed on the marks memo only if the candidate passes in all the subjects offered and gets minimum '**D**' grade in all the subjects.

(2) CGPA is calculated only when the candidate passes in all the subjects offered in all the semesters

6.5 Marks and Letter Grades obtained in all those subjects covering the above specified **98** credits alone shall be considered for the calculation of final CGPA, which will be indicated in the Grade Card /Marks Memo of second year second semester.

6.6 If a student registers for extra subject(s) (in the parent specialization or other specializations of



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Pharmacy) other than those listed subjects totaling to 98 credits as specified in the course structure, the performance in extra subject(s) (although evaluated and graded using the same procedure as that of the required 98 credits) will not be considered while calculating the SGPA and CGPA. For such extra subject(s) registered, percentage of marks and Letter Grade alone will be indicated in the Grade Card/Marks Memo, as a performance measure, subject to completion of the attendance and academic requirements as stated in items 5 and 6.1 - 6.4.

- 6.7 When a student is detained due to shortage of attendance in any subject(s) in any semester, no Grade allotment will be made for such subject(s). However, he is eligible for re-registration of such subject(s) in the subsequent semester(s), as and when next offered, with the academic regulations of the batch into which he is re-registered, by paying the prescribed fees per subject. In all these re-registration cases, the student shall have to secure a fresh set of internal marks and Semester End Examination marks for performance evaluation in such subject(s), and SGPA/CGPA calculations.
- 6.8 A student eligible to appear for the Semester End Examination in any subject, but absent from it or failed (failing to secure 'D' Grade or above), may reappear for that subject at the supplementary examination as and when conducted. In such cases, his Internal Marks assessed earlier for that subject will be carried over, and added to the marks secured in the supplementary examination, for the purpose of evaluating his performance in that subject.
- 6.9 A Student who fails to earn 98 credits as per the specified course structure, and as indicated above, within four academic years from the date of commencement of his first year first semester, shall forfeit his seat in M.Pharm. programme and his admission **shall stand cancelled**.

7.0 Evaluation - Distribution and Weightage of Marks

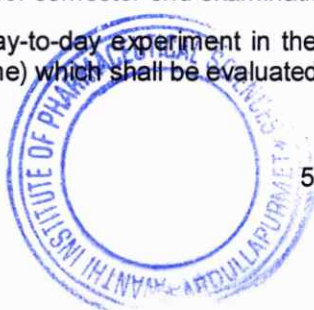
The performance of a student in each semester shall be evaluated subject-wise (irrespective of credits assigned) for a maximum of 100 marks. The performance of a student in every theory subject/course will be evaluated for 100 marks, with 25 marks allotted for CIE (Continuous Internal Evaluation) and 75 marks for SEE (Semester End-Examination).

- 7.1 For theory subjects, 75 marks shall be awarded for the performance in the Semester End Examination and 25 marks shall be awarded for Continuous Internal Evaluation (CIE). The Continuous Internal Evaluation shall be made based on the average of the marks secured in the two Mid-Term Examinations conducted, first Mid-Term examinations in the middle of the Semester and second Mid-Term examinations during the last week of instruction. Each Mid-Term Examination shall be conducted for a total duration of 120 minutes with Part 'A' as compulsory consisting of 5 questions carrying 2 marks each (10 marks), and Part 'B' with 3 questions to be answered out of 5 questions, each question carrying 5 marks (15 marks). The details of the Question Paper pattern for Semester End Examination (Theory) are given below:

- The Semester End Examination will be conducted for 75 marks. It consists of two parts.
 - i) Part A for 25 marks, ii) Part B for 50 marks.
- Part A is compulsory and consists of 5 questions, one from each unit and carrying 5 marks each.
- Part B consists of 5 questions carrying 10 marks each. There will be two questions from each unit and only one should be answered.

- 7.2 For practical subjects there shall be a Continuous Internal Evaluation (CIE) during the semester for 25 marks and 75 marks for semester end examination. Out of the 25 marks for internal evaluation:

1. A write-up on day-to-day experiment in the laboratory (in terms of aim, components/procedure, expected outcome) which shall be evaluated for 5 marks



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2. 10 marks for viva-voce in the course concerned.
3. Internal practical examination conducted by the laboratory teacher concerned shall be evaluated for 10 marks.

The Semester End Examination shall be conducted with an external examiner and the laboratory teacher. The external examiner shall be appointed from the cluster/other colleges which will be decided by the examination branch of the University.

In the Semester End Examination held for 3 hours, total 75 marks are divided and allocated as shown below:

1. 10 marks for Synopsis
2. 50 marks for experiment
3. 15 marks for viva-voce on concerned laboratory course

A student has to secure 50 marks (i.e. 50% out of the 100 marks) allotted for CIE and SEE taken together.

7.3 There shall be Mini Project during I year II semester for **internal evaluation** of 100 marks. The Departmental Academic Committee (DAC) will review the progress of the mini project during the presentations and evaluate the same for 50 marks. Mini Project Viva Voce will be evaluated by the DAC for another 50 marks before the semester end examinations. Student shall carryout the mini project in consultation with the mini project supervisor which may include critically reviewing the literature, project implementation and submit it to the department in the form of a report and shall make an oral presentation before the DAC consisting of Head of the Department, Mini Project supervisor and two other senior faculty members of the department. The student has to secure a minimum of 50% of marks in i) mini project presentation and ii) mini project viva voce, to be declared successful. If he fails to obtain the minimum marks, he has to reappear for the same as and when scheduled.


7.4 There shall be **seminar & assignment** during I Year I Semester & I Year II Semester for **internal evaluation** of **100 marks**. **50 marks** are allotted for **Seminar**, **50 marks** are allotted for **Assignment**, **Total 50+50 = 100 marks**.

For **Seminar**, the student in consultation with the seminar supervisor shall collect the information on a specialized topic, prepare a report, and submit it to the department. The Departmental Academic Committee (DAC) consisting of Head of the Department, seminar supervisor and two other senior faculty members of the department will evaluate the seminar report for 50 marks before the semester end examinations. The student has to secure a minimum of 25 marks (i.e. 50% out of the 50 marks) allotted to be declared successful. If he fails to obtain the minimum marks, he has to reappear for the same as and when scheduled.

For **Assignment**, the student is required to submit **one assignment from each theory subject/course** in I Year I Semester & I Year II Semester before the commencement of Semester End Examinations.

- In I Year I Semester there are 5 theory courses and 5 assignments are to be submitted in total, one assignment each to the concerned theory subject teacher. The concerned theory subject teacher will evaluate the assignment for 10 marks. So 5 assignments will be evaluated for 50 marks in total.
- In I Year II Semester there are 4 theory courses and 4 assignments are to be submitted in total, one assignment each to the concerned theory subject teacher. The concerned theory subject teacher will evaluate the assignment for 12.5 marks. So 4 assignments will be evaluated for 50 marks in total.





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The student has to secure a minimum of 25 marks (i.e. 50% out of the 50 marks) allotted to be declared successful. If he fails to obtain the minimum marks, he may submit the assignments once again for the evaluation, as and when the assignment submission is scheduled again.

- 7.5 There shall be comprehensive viva-voce during II year I semester for **external evaluation** of 100 marks. It shall be evaluated by the committee consisting of an external examiner, Head of the Department, and two other senior faculty members of the department before the semester end examinations. The external examiner shall be appointed from the cluster/other colleges which will be decided by the examination branch of the University. The student has to secure a minimum of 50 marks (i.e. 50% out of the 100 marks) allotted to be declared successful. If he fails to obtain the minimum marks, he has to reappear for the same as and when scheduled.
- 7.6 Every candidate shall be required to submit a dissertation on a topic approved by the Dissertation Review Committee.
- 7.7 A Dissertation Review Committee (DRC) shall be constituted with the Head of the Department as Chairperson, Dissertation Supervisor and one senior faculty member of the Department offering the M.Pharm. programme.
- 7.8 Registration of Dissertation Work: A candidate is permitted to register for the Dissertation Work after satisfying the attendance requirement in all the subjects, both theory and laboratory.
- 7.9 After satisfying 7.8, a candidate must present in Dissertation Work Review - I, in consultation with his Dissertation Supervisor, the title, objective and plan of action of his Dissertation work to the Dissertation Review Committee (DRC) for approval within four weeks from the commencement of Second year First Semester. Only after obtaining the approval of the DRC can the student initiate the Dissertation work.
- 7.10 If a candidate wishes to change his supervisor or topic of the Dissertation, he can do so with the approval of the DRC. However, the DRC shall examine whether or not the change of topic/supervisor leads to a major change of his initial plans of Dissertation proposal. If yes, his date of registration for the project work starts from the date of change of Supervisor or topic as the case may be.
- 7.11 A candidate shall submit his Dissertation progress report in two stages at least with a gap of **three** months between them.
- 7.12 The work on the Dissertation shall be initiated at the beginning of the II year and the duration of the Dissertation is two semesters. A candidate is permitted to submit Dissertation Thesis only after successful completion of all theory and practical courses with the approval of DRC not earlier than 40 weeks from the date of approval of the Dissertation work. For the approval of DRC the candidate shall submit the draft copy of thesis to the Head of the Department and make an oral presentation before the DRC.
- 7.13 The Dissertation Work Review - II in II Year I Sem. carries internal marks of 100. Evaluation should be done by the DRC for 50 marks and the Supervisor will evaluate the work for the other 50 marks. The Supervisor and DRC will examine the Problem Definition, Objectives, Scope of Work, Methodology Adopted, Literature Survey in the same domain and progress of the Dissertation Work. A candidate has to secure a minimum of 50% of marks to be declared successful in Dissertation Work Review - II. If he fails to obtain the minimum required marks, he has to reappear for Dissertation Work Review - II as and when conducted.




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- 7.14 The Dissertation Work Review - III in II Year II Sem. carries 100 internal marks. Evaluation should be done by the DRC for 50 marks and the Supervisor will evaluate it for the other 50 marks. The DRC will examine the overall progress of the Dissertation Work and decide whether or not the Dissertation is eligible for final submission. The evaluation shall be done as per the criteria given below:

Evaluation of Dissertation Book (Internal Evaluation):

Objective(s) of the work done	- 10 Marks
Methodology adopted	- 30 Marks
Results and Discussions	- 50 Marks
Conclusions and Outcomes	- 10 Marks
Total	- 100 Marks

A candidate has to secure a minimum of 50% of marks to be declared successful in Dissertation Work Review - III. If he fails to obtain the required minimum marks, he has to reappear for Dissertation Work Review - III as and when conducted.

- 7.15 For Dissertation Evaluation (Viva Voce) in II Year II Sem. there are external marks of 100 and it is evaluated by the external examiner. The evaluation shall be done as per the criteria given below:


Evaluation of Presentation (External Evaluation):

Presentation of work	- 40 Marks
Communication skills	- 20 Marks
Viva-Voce	- 40 Marks
Total	- 100 Marks

The candidate has to secure a minimum of 50% marks in Dissertation Evaluation (Viva-Voce) examination. If he fails to obtain the required minimum marks, he has to reappear for the same as and when conducted.

- 7.16 Dissertation Work Reviews - II and III shall be conducted in phase I (Regular) and Phase II (Supplementary). Phase II will be conducted only for unsuccessful students in Phase I. The unsuccessful students in Dissertation Work Review - II (Phase II) shall reappear for it at the time of Dissertation Work Review - III (Phase I). These students shall reappear for Dissertation Work Review - III in the next academic year at the time of Dissertation Work Review - II only after completion of Dissertation Work Review - II, and then Dissertation Work Review - III follows. The unsuccessful students in Dissertation Work Review - III (Phase II) shall reappear for Dissertation Work Review - III in the next academic year only at the time of Dissertation Work Review - II (Phase I).
- 7.17 After approval from the DRC, a soft copy of the thesis should be submitted for ANTI-PLAGIARISM check and the plagiarism report should be submitted to the University and be included in the final thesis. The Thesis will be accepted for submission, if the similarity index is less than 30%. If the similarity index has more than the required percentage, the student is advised to modify accordingly and re-submit the soft copy of the thesis after one month. The maximum number of re-submissions of thesis after plagiarism check is limited to TWO. The candidate has to register for the Dissertation work and work for two semesters. After three attempts, the admission is liable to be cancelled. The college authorities are advised to make plagiarism check of every soft copy of theses before submissions.
- 7.18 Three copies of the Dissertation Thesis certified by the supervisor shall be submitted to the College/School/Institute, after submission of a research paper related to the Dissertation work in a UGC approved journal. A copy of the submitted research paper shall be attached to thesis.
- 7.19 The thesis shall be adjudicated by an external examiner selected by the University. For this, the




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Principal of the College/School/Institute shall submit a panel of **three** examiners from among the list of experts in the relevant specialization as submitted by the supervisor concerned and Head of the Department.

- 7.20 If the report of the external examiner is unsatisfactory, the candidate shall revise and resubmit the Thesis. If the report of the examiner is unsatisfactory again, the thesis shall be summarily rejected. Subsequent actions for such dissertations may be considered, only on the specific recommendations of the external examiner and /or Dissertation Review Committee. No further correspondence in this matter will be entertained, if there is no specific recommendation for resubmission.
- 7.21 If the report of the examiner is satisfactory, the Head of the Department shall coordinate and make arrangements for the conduct of Dissertation Viva-Voce examination. The Dissertation Viva-Voce examination shall be conducted by a board consisting of the Supervisor, Head of the Department and the external examiner who adjudicated the Thesis. The candidate has to secure a minimum of 50% of marks in Dissertation Evaluation (Viva-Voce) examination.
- 7.22 If he fails to fulfill the requirements as specified in 7.21, he will reappear for the Dissertation Viva-Voce examination only after three months. In the reappeared examination also, if he fails to fulfill the requirements, he will not be eligible for the award of the degree, unless he is asked to revise and resubmit his Dissertation Work by the board within a specified time period (within **four** years from the date of commencement of his first year first semester).
- 7.23 The Dissertation Viva-Voce External examination marks must be submitted to the University on the day of the examination.
- 7.24 For mandatory audit courses, a student has to secure 50 marks out of 100 marks (i.e. 50% of the marks allotted) in the continuous internal evaluation for passing the subject/course. These marks should also be uploaded along with the internal marks of other subjects.
- 7.25 No marks or letter grades shall be allotted for mandatory audit courses. Only Pass/Fail shall be indicated in Grade Card.

8.0 Re-Admission/Re-Registration

8.1 Re-Admission for Discontinued Student

A student, who has discontinued the M.Pharm. degree programme due to any reason whatsoever, may be considered for '**readmission**' into the same degree programme (with the same specialization) with the academic regulations of the batch into which he gets readmitted, with prior permission from the authorities concerned, subject to item 6.7.

- 8.2 If a student is detained in a subject (s) due to shortage of attendance in any semester, he may be permitted to **re-register** for the same subject(s) in the same category (core or elective group) or equivalent subject, if the same subject is not available, as suggested by the Board of Studies of that department, as and when offered in the subsequent semester(s), with the academic regulations of the batch into which he seeks re-registration, with prior permission from the authorities concerned, subject to item 3.2
- 8.3 **A candidate shall be given only one-time chance to re-register and attend the classes for a maximum of two subjects in a semester**, if the internal marks secured by a candidate are less than 40% and failed in those subjects but fulfilled the attendance requirement. A candidate must re-register for failed subjects within **four weeks** of commencement of the class work and secure the required





minimum attendance. In the event of the student taking this chance, his Continuous Internal Evaluation (internal) marks and Semester End Examination marks obtained in the previous attempt stand cancelled.

9.0 Examinations and Assessment - The Grading System

- 9.1 Grades will be awarded to indicate the performance of each student in each Theory Subject, or Lab/Practicals, or Mini Project with Seminar, Dissertation, etc., based on the percentage of marks obtained in CIE + SEE (Continuous Internal Evaluation + Semester End Examination, both taken together) as specified in Item 7 above, and a corresponding Letter Grade shall be given.
- 9.2 As a measure of the student's performance, a 10-point Absolute Grading System using the following Letter Grades (PCI Guidelines) and corresponding percentage of marks shall be followed:

% of Marks Secured in a Subject/Course (Class Intervals)	Letter Grade (PCI Guidelines)	Grade Points
Greater than or equal to 90%	O (Outstanding)	10
80 and less than 90%	A (Excellent)	9
70 and less than 80%	B (Good)	8
60 and less than 70%	C (Fair)	7
50 and less than 60%	D (Average)	6
Below 50%	F (FAIL)	0
Absent	Ab	0

- 9.3 A student obtaining 'F' Grade in any Subject is deemed to have 'failed' and is required to reappear as 'Supplementary Candidate' for the Semester End Examination (SEE), as and when conducted. In such cases, his Internal Marks (CIE Marks) in those subjects will remain as obtained earlier.
- 9.4 If a student has not appeared for the examinations, 'Ab' Grade will be allocated to him for any subject and shall be considered 'failed' and will be required to reappear as 'Supplementary Candidate' for the Semester End Examination (SEE), as and when conducted.
- 9.5 A Letter Grade does not imply any specific marks percentage; it is only the range of percentage of marks.
- 9.6 In general, a student shall not be permitted to repeat any Subject/ Course (s) only for the sake of 'Grade Improvement' or 'SGPA/ CGPA Improvement'.
- 9.7 A student earns Grade Point (GP) in each Subject/ Course, on the basis of the Letter Grade obtained by him in that Subject/ Course. The corresponding 'Credit Points' (CP) are computed by multiplying the Grade Point with Credits for that particular Subject/ Course.

Credit Points (CP) = Grade Point (GP) x Credits For a Course

- 9.8 The student passes the Subject/ Course only when he gets $GP \geq 6$ (D Grade or above).
- 9.9 The Semester Grade Point Average (SGPA) is calculated by dividing the Sum of Credit Points ($\sum CP$) secured from ALL Subjects/ Courses registered in a Semester, by the Total Number of Credits registered during that Semester. SGPA is rounded off to TWO Decimal Places. SGPA is thus computed as

$$SGPA = \frac{\sum_{i=1}^N C_i G_i}{\sum_{i=1}^N C_i} \dots \text{For each Semester,}$$



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where 'i' is the Subject indicator index (taking into account all Subjects in a Semester), 'N' is the no. of Subjects 'REGISTERED' for the Semester (as specifically required and listed under the Course Structure of the parent Department), C_i is the no. of Credits allotted to the i^{th} Subject, and G_i represents the Grade Points (GP) corresponding to the Letter Grade awarded for that i^{th} Subject.

- 9.10 The Cumulative Grade Point Average (CGPA) is a measure of the overall cumulative performance of a student over all Semesters considered for registration. The CGPA is the ratio of the Total Credit Points secured by a student in ALL registered Courses in ALL Semesters, and the Total Number of Credits registered in ALL the Semesters. CGPA is rounded off to TWO Decimal Places. CGPA is thus computed from the I Year Second Semester onwards, at the end of each Semester, as per the formula

$$\text{CGPA} = \left\{ \sum_{i=1}^M C_i G_i \right\} / \left\{ \sum_{i=1}^M C_i \right\} \dots \text{for all } S \text{ Semesters registered}$$

(ie., upto and inclusive of S Semesters, $S \geq 2$),

where 'M' is the TOTAL no. of Subjects (as specifically required and listed under the Course Structure of the parent Department) the Student has 'REGISTERED' for from the 1st Semester onwards upto and inclusive of the Semester S (obviously $M > N$), 'j' is the Subject indicator index (taking into account all Subjects from 1 to S Semesters), C_j is the no. of Credits allotted to the j^{th} Subject, and G_j represents the Grade Points (GP) corresponding to the Letter Grade awarded for that j^{th} Subject. After registration and completion of I Year I Semester however, the SGPA of that Semester itself may be taken as the CGPA, as there are no cumulative effects.

Illustration of calculation of SGPA

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
Course 1	4	A	9	4 x 9 = 36
Course 2	4	O	10	4 x 10 = 40
Course 3	4	C	7	4 x 7 = 28
Course 4	3	B	8	3 x 8 = 24
Course 5	3	A	10	3 x 10 = 30
Course 6	3	C	7	3 x 7 = 21
	Total Credits = 21			Total Credit Points = 179

$$\text{SGPA} = 179/21 = 8.52$$

Illustration of calculation of CGPA

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
I Year I Semester				
Course 1	4	A	9	4 x 9 = 36
Course 2	4	A	9	4 x 9 = 36
Course 3	4	B	8	4 x 8 = 32
Course 4	3	O	10	3 x 10 = 30
Course 5	3	B	8	3 x 8 = 24





Course 6	3	D	6	3 x 6 = 18
I Year II Semester				
Course 7	4	B	8	4 x 8 = 32
Course 8	4	O	10	4 x 10 = 40
Course 9	4	A	9	4 x 9 = 36
Course 10	3	D	6	3 x 6 = 18
Course 11	3	C	7	3 x 7 = 21
Course 12	3	A	9	3 x 9 = 27
	Total Credits = 42			Total Credit Points = 350

$$\text{CGPA} = 350/42 = 8.33$$

10.0 Award of Degree and Class

10.1 If a student who registers for all the specified Subjects/ Courses as listed in the Course Structure, satisfies all the Course Requirements, and passes the examinations prescribed in the entire PG Programme (PGP), and secures the required number of **98 Credits** (with $\text{CGPA} \geq 6.0$), shall be declared to have 'QUALIFIED' for the award of the M.Pharm. Degree in the chosen specialization of Pharmacy that he was admitted into.

10.2 Award of Class

After a student has earned the requirements prescribed for the completion of the programme and is eligible for the award of M.Pharm. Degree, he shall be placed in one of the following three classes based on the CGPA:

Class Awarded	CGPA
First Class with Distinction	≥ 7.50
First Class	$6.00 \leq \text{CGPA} < 7.49$
Second Class	$5.00 \leq \text{CGPA} < 5.99$

A student with final CGPA (at the end of the PGP) < 6.00 shall not be eligible for the Award of Degree.

11.0 Withholding of Results

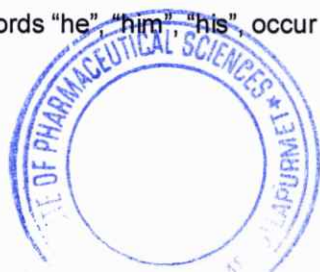
If the student has not paid the dues, if any, to the University or if any case of indiscipline is pending against him, the result and degree of the student will be withheld and he will not be allowed into the next semester.

12.0 General

12.1 **Credit:** A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.

12.2 **Credit Point:** It is the product of grade point and number of credits for a course.


12.3 Wherever the words "he", "him", "his", occur in the regulations, they shall include "she", "her".





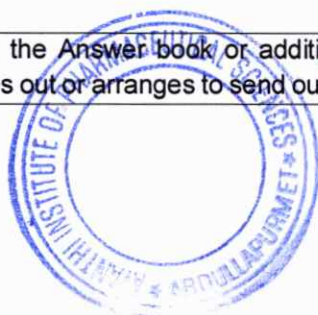
- 12.4 The academic regulation should be read as a whole for the purpose of any interpretation.
- 12.5 In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the University is final.
- 12.6 The University may change or amend the academic regulations or syllabi at any time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the University.




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**MALPRACTICES RULES****DISCIPLINARY ACTION FOR IMPROPER CONDUCT IN EXAMINATIONS**

S.No	Nature of Malpractices/Improper conduct	Punishment
	If the candidate:	
1.(a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers or any other form of material concerned with or related to the subject to the examination (theory or practical) in which he is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the subject of the examination).	Expulsion from the examination hall and cancellation of the performance in that subject only.
(b)	Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell phones with any candidate or persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him.
2.	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject to the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the subjects of that Semester/year. The Hall Ticket of the candidate is to be cancelled and sent to the University.
3.	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate, who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
4.	Smuggles in the Answer book or additional sheet or takes out or arranges to send out the	Expulsion from the examination hall and cancellation of performance in that subject and



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	question paper during the examination or answer book or additional sheet, during or after the examination.	all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
5.	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.
6.	Refuses to obey the orders of the Chief Superintendent/Assistant – Superintendent/ any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in- charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The candidates also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them.
7.	Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
8.	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already






		appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat.
9.	If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat. Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.
10.	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11.	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester/year examinations.
12.	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the University for further action to award suitable punishment.	

Malpractices identified by squad or special invigilators

1. Punishments to the candidates as per the above guidelines.
2. Punishment for institutions: (if the squad reports that the college is also involved in encouraging malpractices)
 - (i) A show cause notice shall be issued to the college.
 - (ii) Impose a suitable fine on the college.
 - (iii) Shifting the examination centre from the college to another college for a specific period of not less than one year




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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

(Established by Act No. 30 of 2008)

Kukatpally, Hyderabad, Telangana (India).

ACADEMIC REGULATIONS OF B.PHARM. (REGULAR/FULL TIME) STUDENTS
WITH EFFECT FROM THE ACADEMIC YEAR 2022-23 (R-22)

1.0 Under-Graduate Degree Programme in Pharmacy

1.1 JNTUH offers a 4-year (8 semesters) **Bachelor of Pharmacy (B.Pharm.)** degree programme, under Choice Based Credit System (CBCS) at its affiliated colleges with effect from the academic year 2022-23.

2.0 Eligibility for admission

2.1 Admission to the under graduate programme shall be made either on the basis of the merit rank obtained by the qualified candidate in entrance test conducted by the Telangana State Government (EAMCET) or the University or on the basis of any other order of merit approved by the University, subject to reservations as prescribed by the government from time to time.

2.2 The medium of instructions for the entire under graduate programme in Pharmacy will be **English** only.

3.0 B.Pharm. Programme structure

3.1 A student after securing admission shall pursue the under graduate programme in B.Pharm. in a minimum period of **four** academic years (8 semesters), and a maximum period of **eight** academic years (16 semesters) starting from the date of commencement of first year first semester, failing which student shall forfeit seat in B.Pharm course.

A student shall register for all subjects for covering **209** credits and each student shall secure **209** credits (with CGPA \geq 6) required for the completion of the under graduate programme and award of the B.Pharm. degree.

3.2 **UGC/ PCI** specified definitions/ descriptions are adopted appropriately for various terms and abbreviations used in these academic regulations/ norms, which are listed below.

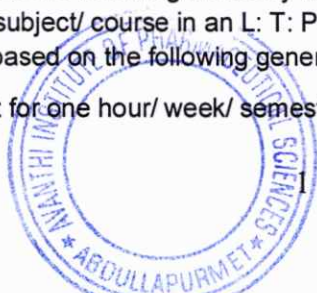
3.2.1 Semester scheme


Each under graduate programme is of 4 academic years (8 semesters) with the academic year being divided into two semesters of **23** weeks (\geq 100 instructional days) each, each semester shall have - 'Continuous Internal Evaluation (CIE)' and 'Semester End Examination (SEE)'. Choice Based Credit System (CBCS) and Credit Based Semester System (CBSS) as indicated by UGC and curriculum/ course structure as suggested by PCI are followed.

3.2.2 Credit courses

All subjects/ courses are to be registered by the student in a semester to earn credits which shall be assigned to each subject/ course in an L: T: P: C (lecture periods: tutorial periods: practical periods: credits) structure based on the following general pattern.

- One credit for one hour/ week/ semester for theory/ lecture (L) courses.




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- One credit for two hours/ week/ semester for laboratory/ practical (P) courses or tutorials (T).

Courses like Environmental Sciences, Human Values and Professional Ethics, Gender Sensitization Laboratory and student activities like NCC/NSO and NSS are identified as mandatory courses. These courses will not carry any credits.

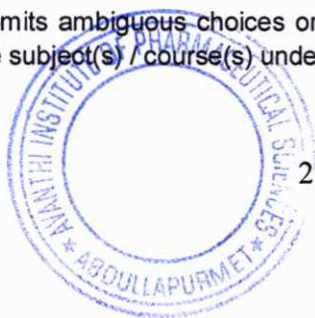
3.2.3 Subject Course Classification

All subjects/ courses offered for the under graduate programme in Pharmacy (B.Pharm. degree programmes) are broadly classified as follows. The university has followed almost all the guidelines issued by PCI/UGC.

S. No.	Broad Course Classification	Course Group/ Category	Course Description
1	Foundation Courses (FnC)	BS – Basic Sciences	Includes mathematics, physics and chemistry subjects.
2		PS - Pharmaceutical Sciences	Includes fundamental Pharmacy Subjects.
3		HS – Humanities and Social sciences	Includes subjects related to humanities, social sciences and management.
4	Core Courses (CoC)	PC – Professional Core	Includes core subjects related to the parent discipline.
5	Elective Courses (E/C)	OE – Open Electives	Includes elective subjects related to inter-disciplinary areas of Pharmacy or other than Pharmacy
6	Core Courses	Project Work	B.Pharm. project or UG project or UG major project
7		Seminar	Seminar/ Colloquium based on core contents related to parent discipline.
10	Minor courses	-	1 or 2 Credit courses (subset of HS)
11	Mandatory Courses (MC)	-	Mandatory courses (non-credit)

4.0 Course registration

- 4.1 A 'faculty advisor or counselor' shall be assigned to a group of 15 students, who will advise student about the under graduate programme, its course structure and curriculum, choice/option for subjects/ courses, based on their competence, progress, pre-requisites and interest.
- 4.2 The academic section of the college invites 'registration forms' from students before the beginning of the semester through 'on-line registration', ensuring 'date and time stamping'. The on-line registration requests for any 'current semester' shall be **completed before the commencement of semester end examinations of the 'preceding semester'**.
- 4.3 A student can apply for **on-line** registration, **only after** obtaining the '**written approval**' from faculty advisor/counselor, which should be submitted to the college academic section through the Head of the Department. A copy of it shall be retained with Head of the Department, faculty advisor/ counselor and the student.
- 4.5 If the student submits ambiguous choices or multiple options or erroneous entries during **on-line** registration for the subject(s) / course(s) under a given/ specified course group/ category as listed in

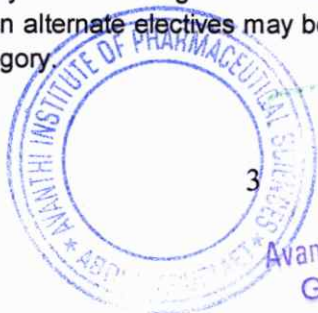



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the course structure, only the first mentioned subject/ course in that category will be taken into consideration.

- 4.6 Subject/ course options exercised through **on-line** registration are final and **cannot** be changed or inter-changed; further, alternate choices also will not be considered. However, if the subject/ course that has already been listed for registration by the Head of the Department in a semester could not be offered due to any unforeseen or unexpected reasons, then the student shall be allowed to have alternate choice either for a new subject (subject to offering of such a subject), or for another existing subject (subject to availability of seats). Such alternate arrangements will be made by the Head of the Department, with due notification and time-framed schedule, within the **first week** after the commencement of class-work for that semester.
- 4.7 **Open Electives:** Students have to choose one open elective (OE-I) in III year I semester, one (OE-II) in III year II semester, one (OE-III) in IV year I semester and one (OE-IV) in IV year II semester from the list of Open Electives.
- 5.0 **Subjects/ courses to be offered**
- 5.1 A typical section (or class) strength for each semester shall be 60.
- 5.2 A subject/ course may be offered to the students, **only if** a minimum of 20 students (1/3 of the section strength) opt for it. The maximum strength of a section is limited to 80 (60 + 1/3 of the section strength).
- 5.3 If more entries for registration of a subject come into picture, then the Head of Department shall decide, whether or not to offer such a subject/ course for **two (or multiple) sections**.
- 6.0 **Attendance requirements:**
- 6.1 Attendance in all Courses (Lectures/Laboratories/Seminar/Project Work) is compulsory. The minimum required attendance in aggregate of all the subjects/ courses including the attendance of mid-term examination/ Laboratory etc. is **80%**. Two periods of attendance for each theory subject shall be considered, if the student appears for the mid-term examination of that subject. A student shall not be permitted to appear for the Semester End Examinations (SEE), if his attendance is less than **80%** (excluding attendance in mandatory courses like Environmental Sciences, Human Values and Professional Ethics, Gender Sensitization Laboratory, NCC/NSO, NSS and Industrial Training) for that semester.
- 6.2 Condoning of shortage of attendance (between 70% and 80%) up to a maximum of 10% (considering the days of attendance in sports, games, NCC, NSS activities and Medical grounds) in each semester shall be granted by the College Academic Committee on genuine and valid grounds, based on the student's representation with supporting evidence.
- 6.3 A stipulated fee shall be payable towards condoning of shortage of attendance.
- 6.4 Shortage of attendance below 70% in aggregate shall in **no case be condoned**.
- 6.5 **Students whose shortage of attendance is not condoned in any semester are not eligible to take their end examinations of that semester. They get detained and their registration for that semester shall stand cancelled. They will not be promoted to the next semester. They may seek re-registration for all those subjects registered in that semester in which student was detained, by seeking re-admission into that semester as and when offered; in case if there are any open electives, the same may also be re-registered if offered. However, if those electives are not offered in later semesters, then alternate electives may be chosen from the same set of elective subjects offered under that category.**




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6.6 A student fulfilling the attendance requirement in the present semester shall not be eligible for readmission into the same class.

7.0 Academic requirements

The following academic requirements have to be satisfied, in addition to the attendance requirements mentioned in item no. 6.

7.1 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course, if student secures not less than 40% marks (30 out of 75 marks) in the semester end examination, and a minimum of 50% of marks in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of letter grades, this implies securing 'D' grade or above in that subject/ course. For practicals/laboratory courses, a student should secure not less than 50% of marks in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of letter grades, this implies securing 'D' grade or above.

7.2 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to Practice School (or) Industrial Training if the student secures not less than 50% marks (i.e. 50 out of 100 allotted marks) in each of them. The student is deemed to have failed, if he (i) does not submit a report on Practice School (or) Industrial Training, (ii) does not make a presentation of the same before the evaluation committee as per schedule, or (iii) secures less than 50% marks in Practice School (or) Industrial Training evaluations.

A student may reappear once for each of the above evaluations, when they are scheduled again; if the student fails in such 'one reappearance' evaluation also, the student has to reappear for the same in the next subsequent semester, as and when it is scheduled.

7.3 Promotion Rules

S. No.	Promotion	Conditions to be fulfilled
1	First year to second year	Regular course of study of first year.
2	Second year to third year	(i) Regular course of study of second year. (ii) Must have passed all the subjects/ courses up to I Year II Semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
3	Third year to fourth year	(i) Regular course of study of third year. (ii) Must have passed all the subjects/ courses up to II Year II Semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.

7.3 A student shall register for all subjects covering **209 credits** as specified and listed in the course structure, fulfills all the attendance and academic requirements for 209 credits, 'earn all 209 credits' by securing SGPA ≥ 6.0 (in each semester) and CGPA (at the end of each successive semester) ≥ 6.0 to successfully complete the under graduate programme.

7.4 After securing the necessary 209 credits as specified for the successful completion of the entire under graduate programme, the student shall be eligible to get his CGPA and shall be indicated in the grade card of IV year II semester. However, the performance of student in the earlier individual semesters, with the corresponding SGPA and CGPA for which grade cards have already been given will not be altered.



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- 7.5 If a student registers for some more 'extra subjects' other than those listed subjects totaling to **209 credits** as specified in the course structure, the performances in those 'extra subjects' (although evaluated and graded using the same procedure as that of the required **209 credits**) will not be considered while calculating the SGPA and CGPA. For such 'extra subjects' registered, % of marks and letter grade alone will be indicated in the grade card as a performance measure, subject to completion of the attendance and academic requirements as stated in regulations 6 and 7.1 – 7.4 above.
- 7.6 A student eligible to appear in the end semester examination for any subject/ course, but absent from it or failed (thereby failing to secure 'D' grade or above) may reappear for that subject/ course in the supplementary examination as and when conducted. In such cases, CIE assessed earlier for that subject/ course will be carried over, and added to the marks to be obtained in the SEE supplementary examination for evaluating performance in that subject.
- 7.7 A student **detained in a semester due to shortage of attendance, may be re-admitted when the same semester is offered in the next academic year for fulfillment of academic requirements.** The academic regulations under which student has been readmitted shall be applicable. However, no grade allotments or SGPA/ CGPA calculations will be done for the entire semester in which student has been detained.
- 7.8 A student **detained due to unfulfillment of promotion rules, shall be promoted to the next academic year only after fulfilling the promotion rules.** The academic regulations under which student has been readmitted shall be applicable to him.

- Note:** (1) The SGPA will be computed and printed on the marks memo only if the candidate passes in all the subjects offered and gets minimum 'D' grade in all the subjects.
- (2) CGPA is calculated only when the candidate passes in all the subjects offered in all the semesters.

8.0 Evaluation - Distribution and Weightage of marks

- 8.1 The performance of a student in every theory subject/course will be evaluated for 100 marks, with 25 marks allotted for CIE (Continuous Internal Evaluation) and 75 marks for SEE (Semester End-Examination).
- 8.2 In CIE, for theory subjects, during a semester, there shall be two mid-term examinations. Each Mid-Term examination consists of two parts i) **Part – A** for 10 marks, ii) **Part – B** for 10 marks with a total duration of 2 hours as follows:

1. Mid Term Examination for 20 marks:
 - a. Part - A: 10 Multiple Choice/ Objective Questions paper for 10 marks.
 - b. Part - B: Descriptive paper for 10 marks. Long Answer Questions for 5 marks (answer 1 out of 2). Short Answer Questions for 5 marks (answer 2 out of 3, each carries 2.5 marks).

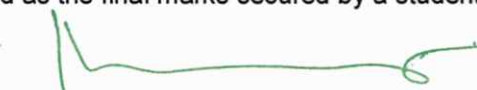
While the first mid-term examination shall be conducted on 50% of the syllabus, the second mid-term examination shall be conducted on the remaining 50% of the syllabus.

Five (5) marks are allocated for assignments (as specified by the subject teacher concerned). The first assignment should be submitted before the conduct of the first mid-term examination, and the second assignment should be submitted before the conduct of the second mid-term examination. The average of the two assignments shall be taken as the final marks for assignment (for 5 marks).

The average of marks secured in the Two Mid-term examinations, along with the average marks secured in the two assignments will be considered as the final marks secured by a student in the CIE.



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8.3 The details of the end semester question paper pattern are as follows,

- The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.
- Part-A is compulsory question which consists of fifteen sub-questions. The first ten sub-questions are of Objective type/ Multiple Choice Questions, 2 from each unit and carry 1 mark each. The next five sub-questions are Short Answer Questions one from each unit and carry 3 marks each.
- Part-B consists of five Long Answer Questions (numbered from 2 to 6) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

8.3 For practical subjects there shall be a Continuous Internal Evaluation (CIE) during the semester for 15 marks and 35 marks for semester end examination. Out of the 15 marks for internal evaluation:

1. A write-up on day-to-day experiment in the laboratory (in terms of aim, components/procedure, expected outcome) which shall be evaluated for 5 marks
2. 5 marks for viva-voce in the course concerned.
3. Internal practical examination conducted by the laboratory teacher concerned shall be evaluated for 5 marks.

The Semester End Examination shall be conducted with an external examiner and the laboratory teacher. The external examiner shall be appointed from the cluster/other colleges which will be decided by the examination branch of the University.

In the Semester End Examination held for 3 hours, total 35 marks are divided and allocated as shown below:

1. 05 marks for Synopsis
2. 25 for experiment
3. 05 marks for viva-voce on concerned laboratory course


A student has to secure 25 marks (i.e. 50% out of the 50 marks) allotted for CIE and SEE taken together.

8.4 There shall be an Industrial Training in IV year I semester. For the Industrial Training, the student shall be required to work for at least 150 hours spread over four weeks in a Pharmaceutical Industry/Hospital. It includes Production unit, Quality Control department, Quality Assurance department, Analytical laboratory, Chemical manufacturing unit, Pharmaceutical R&D, Hospital (Clinical Pharmacy), Clinical Research Organization, Community Pharmacy, etc. After the IV year I semester and before the commencement of IV year II semester, the student shall submit satisfactory report of the work and certificate duly signed by the authority of training organization to the head of the institute.

8.5 **Practice School:** In the IV year I semester, every candidate shall undergo a practice school for a period of 150 hours evenly distributed throughout the semester. The student shall opt any one of the domains for practice school declared by the departmental committee from time to time. At the end of the practice school, every student shall submit a printed report (in triplicate) on the practice school he/she attended (not more than 25 pages). The report shall be submitted to the departmental committee consisting of Head of the Institution, Head of the Department and a senior faculty member. The practice school report shall be evaluated for 100 marks and grade point shall be awarded.



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- 8.6 All the students shall undertake a UG major project under the supervision of a teacher and submit a report. The area of the project shall directly relate any one of the elective subject opted by the student in semester VIII. The project shall be carried out in group not exceeding 5 in number. The project report shall be submitted in triplicate (typed & bound copy not less than 25 pages).

The internal and external examiner appointed by the University shall evaluate the project at the time of the Practical examinations of other semester(s). Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of five students). The projects shall be evaluated as per the criteria given below.

Evaluation of Dissertation Book (Internal Evaluation):

Objective(s) of the work done	- 15 Marks
Methodology adopted	- 20 Marks
Results and Discussions	- 20 Marks
Conclusions and Outcomes	- 20 Marks
Total	- 75 Marks

Evaluation of Presentation (External Evaluation):

Presentation of work	- 25 Marks
Communication skills	- 20 Marks
Viva-Voce	- 30 Marks
Total	- 75 Marks

The **75 marks** assigned to the **dissertation book** shall be **same for all the students** in a group. However, the 75 marks assigned for presentation shall be awarded based on the performance of individual students in the given criteria. A student has to secure 75 marks (i.e. 50% of the allotted 150 marks) to be declared successful in the project.

- 8.7 For mandatory courses Environmental Science, Human Values and Professional Ethics, Gender Sensitization Lab and Industrial Training a student has to secure 50 marks out of 100 marks (i.e. 50% of the marks allotted) in the continuous internal evaluation for passing the subject/course.
- 8.8 For mandatory courses NCC/ NSO and NSS, a 'satisfactory participation certificate' shall be issued to the student from the authorities concerned, only after securing $\geq 80\%$ attendance in such a course.
- 8.9 No marks or letter grade shall be allotted for all mandatory/non-credit courses.
- 9.0 **Grading procedure**
- 9.1 Marks will be awarded to indicate the performance of student in each theory subject, laboratory / practicals and UG major project. Based on the percentage of marks obtained (Continuous Internal Evaluation plus Semester End Examination, both taken together) as specified in item 8 above, a corresponding letter grade shall be given.
- 9.2 As a measure of the performance of student, a 10-point absolute grading system using the following letter grades (as per UGC/ PCI guidelines) and corresponding percentage of marks shall be followed:

% of Marks Secured in a Subject/Course (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
Greater than or equal to 90%	O (Outstanding)	10
80 and less than 90%	A (Excellent)	9
70 and less than 80%	B (Good)	8
60 and less than 70%	C (Fair)	7



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50 and less than 60%	D (Average)	6
Below 50%	F (FAIL)	0
Absent	Ab	0

- 9.3 A student obtaining 'F' grade in any subject shall be deemed to have 'failed' and is required to reappear as a 'supplementary student' in the semester end examination, as and when offered. In such cases, internal marks in those subjects will remain the same as those obtained earlier.
- 9.4 A student who has not appeared for examination in any subject, 'Ab' grade will be allocated in that subject, and student shall be considered 'failed'. Student will be required to reappear as a 'supplementary student' in the semester end examination, as and when offered.
- 9.5 A letter grade does not indicate any specific percentage of marks secured by the student, but it indicates only the range of percentage of marks.
- 9.6 A student earns grade point (GP) in each subject/ course, on the basis of the letter grade secured in that subject/ course. The corresponding 'credit points' (CP) are computed by multiplying the grade point with credits for that particular subject/ course.

Credit points (CP) = grade point (GP) x credits For a course

- 9.7 The student passes the subject/ course only when $GP \geq 6$ ('D' grade or above)
- 9.8 The semester grade point average (SGPA) is calculated by dividing the sum of credit points (ΣCP) secured from all subjects/ courses registered in a semester, by the total number of credits registered during that semester. SGPA is rounded off to **two** decimal places. SGPA is thus computed as

$$SGPA = \{ \sum_{i=1}^N C_i G_i \} / \{ \sum_{i=1}^N C_i \} \dots \text{For each semester,}$$

where 'i' is the subject indicator index (takes into account all subjects in a semester), 'N' is the no. of subjects 'registered' for the semester (as specifically required and listed under the course structure of the parent department), C_i is the no. of credits allotted to the i^{th} subject, and G_i represents the grade points (GP) corresponding to the letter grade awarded for that i^{th} subject.

- 9.9 The cumulative grade point average (CGPA) is a measure of the overall cumulative performance of a student in all semesters considered for registration. The CGPA is the ratio of the total credit points secured by a student in **all** registered courses in **all** semesters, and the total number of credits registered in **all** the semesters. CGPA is rounded off to **two** decimal places. CGPA is thus computed from the I year II semester onwards at the end of each semester as per the formula

$$CGPA = \{ \sum_{j=1}^M C_j G_j \} / \{ \sum_{j=1}^M C_j \} \dots \text{for all S semesters registered}$$

(i.e., up to and inclusive of S semesters, $S \geq 2$),

where 'M' is the total no. of subjects the student has 'registered' i.e., from the 1st semester onwards up to and inclusive of the 8th semester, 'j' is the subject indicator index (takes into account all subjects from 1 to 8 semesters), C_j is the no. of credits allotted to the j^{th} subject, and G_j represents the grade points (GP) corresponding to the letter grade awarded for that j^{th} subject. After registration and completion of first year first semester, the SGPA of that semester itself may be taken as the CGPA, as there are no cumulative effects.

Illustration of calculation of SGPA

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
Course 1	4	A	9	4 x 9 = 36
Course 2	4	O	10	4 x 10 = 40



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Course 3	4	C	7	4 x 7 = 28
Course 4	3	B	8	3 x 8 = 24
Course 5	3	A	10	3 x 10 = 30
Course 6	3	C	7	3 x 7 = 21
	Total Credits = 21			Total Credit Points = 179

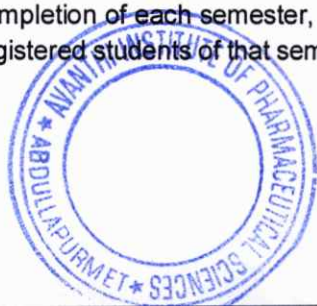
$$\text{SGPA} = 179/21 = 8.52$$

Illustration of calculation of CGPA

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
I Year I Semester				
Course 1	4	A	9	4 x 9 = 36
Course 2	4	A	9	4 x 9 = 36
Course 3	4	B	8	4 x 8 = 32
Course 4	3	O	10	3 x 10 = 30
Course 5	3	B	8	3 x 8 = 24
Course 6	3	D	6	3 x 6 = 18
I Year II Semester				
Course 7	4	B	8	4 x 8 = 32
Course 8	4	O	10	4 x 10 = 40
Course 9	4	A	9	4 x 9 = 36
Course 10	3	D	6	3 x 6 = 18
Course 11	3	C	7	3 x 7 = 21
Course 12	3	A	9	3 x 9 = 27
	Total Credits = 42			Total Credit Points = 350

$$\text{CGPA} = 350/42 = 8.33$$

- 9.10 For merit ranking or comparison purposes or any other listing, **only** the 'rounded off' values of the CGPAs will be used.
- 9.11 For calculations listed in regulations 9.6 to 9.9, performance in failed subjects/ courses (securing 'F' grade) will also be taken into account, and the credits of such subjects/ courses will also be included in the multiplications and summations. After passing the failed subject(s) newly secured letter grades will be taken into account for calculation of SGPA and CGPA. However, mandatory courses will not be taken into consideration.
- 10.0 **Passing standards**
- 10.1 A student shall be declared successful or 'passed' in a semester, if student secures a GP ≥ 6 ('D' grade or above) in every subject/course in that semester (i.e. when student gets an SGPA ≥ 6.00 at the end of that particular semester); and a student shall be declared successful or 'passed' in the entire under graduate programme, only when gets a CGPA ≥ 6.00 for the award of the degree as required.
- 10.2 After the completion of each semester, a grade card or grade sheet (or transcript) shall be issued to all the registered students of that semester, indicating the letter grades and credits earned. It will



show the details of the courses registered (course code, title, no. of credits, and grade earned etc.), credits earned, SGPA, and CGPA.

11.0 Declaration of results

11.1 Computation of SGPA and CGPA are done using the procedure listed in 9.6 to 9.9.

11.2 For final percentage of marks equivalent to the computed final CGPA, the following formula may be used.

$$\% \text{ of Marks} = (\text{final CGPA} - 0.5) \times 10$$

12.0 Award of degree

12.1 A student who registers for all the specified subjects/ courses as listed in the course structure and secures the required number of 209 credits (with CGPA \geq 6.0), within 8 academic years from the date of commencement of the first academic year, shall be declared to have '**qualified**' for the award of the B.Pharm. degree.

12.2 A student who qualifies for the award of the degree as listed in item 12.1 shall be placed in the following classes.

12.3 Students with final CGPA (at the end of the under graduate programme) \geq 7.50, and fulfilling the following conditions -

(i) Should have passed all the subjects/courses in '**first appearance**' within the first 4 academic years (or 8 sequential semesters) from the date of commencement of first year first semester.

(ii) Should not have been detained or prevented from writing the end semester examinations in any semester due to shortage of attendance or any other reason, shall be placed in '**first class with distinction**'.

12.4 Students with final CGPA (at the end of the under graduate programme) \geq 6.00 but $<$ 7.50, shall be placed in '**first class**'.

12.5 Students with final CGPA (at the end of the under graduate programme) \geq 5.00 but $<$ 6.00, shall be placed in '**second class**'.

12.6 A student with final CGPA (at the end of the under graduate programme) $<$ 5.00 will not be eligible for the award of the degree.

12.7 Students fulfilling the conditions listed under item 12.3 alone will be eligible for award of '**university rank**' and '**gold medal**'.

13.0 Withholding of results


13.1 If the student has not paid the fees to the university/ college at any stage, or has dues pending due to any reason whatsoever, or if any case of indiscipline is pending, the result of the student may be withheld, and student will not be allowed to go into the next higher semester. The award or issue of the degree may also be withheld in such cases.

14.0 Transitory regulations

A. For students detained due to shortage of attendance:

1. A Student who has been detained in 1 year of R15/R16/R17 Regulations due to lack of attendance, shall be permitted to join 1 year I Semester of R22 Regulations and he is required to complete the




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study of B. Pharmacy programme within the stipulated period of eight academic years from the date of first admission in I Year.

2. A student who has been detained in any semester of II, III and IV years of R15/R16/R17 regulations for want of attendance, shall be permitted to join the corresponding semester of R22 regulations and is required to complete the study of B. Pharmacy within the stipulated period of eight academic years from the date of first admission in I Year. The R22 Academic Regulations under which a student has been readmitted shall be applicable to that student from that semester.

See rule (C) for further Transitory Regulations.

B. For students detained due to shortage of credits:

3. A student of R15/R16/R17 Regulations who has been detained due to lack of credits, shall be promoted to the next semester of R22 Regulations only after acquiring the required credits as per the corresponding regulations of his/her first admission. The student is required to complete the study of B. Pharmacy within the stipulated period of eight academic years from the year of first admission. The R22 Academic Regulations are applicable to a student from the year of readmission onwards.

See rule (C) for further Transitory Regulations.

C. For readmitted students in R22 Regulations:

4. A student who has failed in any subject under any regulation has to pass those subjects in the same regulations.
5. The maximum credits that a student acquires for the award of degree, shall be the sum of the total number of credits secured in all the regulations of his/her study including R22 Regulations.
6. If a student readmitted to R22 Regulations, has any subject with 80% of syllabus common with his/her previous regulations, that particular subject in R22 Regulations will be substituted by another subject to be suggested by the University.

Note: If a student readmitted to R22 Regulations, has not studied any subjects/topics in his/her earlier regulations of study which is prerequisite for further subjects in R22 Regulations, the College Principals concerned shall conduct remedial classes to cover those subjects/ topics for the benefit of the students.

15.0 Student transfers

15.1 There shall be no transfers from one college to another within the constituent colleges and units of Jawaharlal Nehru Technological University Hyderabad.

15.3 The students seeking transfer to colleges affiliated to JNTUH from various other Universities/institutions have to pass the failed subjects which are equivalent to the subjects of JNTUH, and also pass the subjects of JNTUH which the students have not studied at the earlier institution. Further, though the students have passed some of the subjects at the earlier institutions, if the same subjects are prescribed in different semesters of JNTUH, the students have to study those subjects in JNTUH in spite of the fact that those subjects are repeated.

15.4 The transferred students from other Universities/institutions to JNTUH affiliated colleges who are on rolls to be provide one chance to write the CBT (internal marks) in the **failed subjects and/or subjects not studied** as per the clearance letter issued by the university.

15.5 The autonomous affiliated colleges have to provide one chance to write the internal examinations in the **failed subjects and/or subjects not studied**, to the students transferred from other universities/institutions to JNTUH autonomous affiliated colleges who are on rolls, as per the clearance (equivalence) letter issued by the University.




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16.0 Scope

- 16.1 The academic regulations should be read as a whole, for the purpose of any interpretation.
- 16.2 In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.
- 16.3 The university may change or amend the academic regulations, course structure or syllabi at any time, and the changes or amendments made shall be applicable to all students with effect from the date notified by the university authorities.




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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
(Established by Act No. 30 of 2008)
Kukatpally, Hyderabad, Telangana (India).

Academic Regulations for B.Pharm. (Lateral Entry Scheme) w.e.f the AY 2023-24

1. Eligibility for award of B. Pharm. Degree (LES)

The LES students after securing admission shall pursue a course of study for not less than three academic years and not more than six academic years.

2. The student shall register for 153 credits and secure 153 credits with CGPA ≥ 6.00 from II year to IV year B.Pharm. programme (LES) for the award of B.Pharm. degree.
3. The students, who fail to fulfil the requirement for the award of the degree in six academic years from the year of admission, shall forfeit their seat in B.Pharm.
4. The attendance requirements of B. Pharm. (Regular) shall be applicable to B.Pharm. (LES).

5. Promotion rule

S. No	Promotion	Conditions to be fulfilled
1	Second year to third year	Regular course of study of second year.
2	Third Year to fourth year	(i) Regular course of study of third year. (ii) Must have passed all the subjects/ courses up to II Year II Semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.

6. All the other regulations as applicable to B. Pharm. 4-year degree course (Regular) will hold good for B. Pharm. (Lateral Entry Scheme).

MALPRACTICES RULES

DISCIPLINARY ACTION FOR / IMPROPER CONDUCT IN EXAMINATIONS

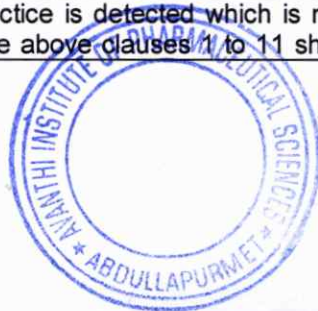
	Nature of Malpractice/Improper conduct	Punishment
	If the student:	
1. (a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which student is appearing but has not made use of (material shall include any marks on the body of the student which can be used as an aid in the subject of the examination)	Expulsion from the examination hall and cancellation of the performance in that subject only.




(b)	Gives assistance or guidance or receives it from any other student orally or by any other body language methods or communicates through cell phones with any student or persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that subject only of all the students involved. In case of an outsider, he will be handed over to the police and a case is registered against him.
2.	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the student is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The hall ticket of the student is to be cancelled and sent to the university.
3.	Impersonates any other student in connection with the examination.	The student who has impersonated shall be expelled from examination hall. The student is also debarred and forfeits the seat. The performance of the original student who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and UG major project) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The student is also debarred for two consecutive semesters from class work and all university examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
4.	Smuggles in the answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred for two consecutive semesters from class work and all university examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat.
5.	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.
6.	Refuses to obey the orders of the chief superintendent/assistant – superintendent / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether	In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the student(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The students also are debarred and forfeit their seats. In case of outsiders, they will be



	by words, either spoken or written or by signs or by visible representation, assaults the officer-in-charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the college campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	handed over to the police and a police case is registered against them.
7.	Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred for two consecutive semesters from class work and all university examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat.
8.	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred and forfeits the seat.
9.	If student of the college, who is not a student for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred and forfeits the seat. Person(s) who do not belong to the college will be handed over to police and, a police case will be registered against them.
10.	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11.	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the student has appeared including practical examinations and UG major project of that semester/year examinations.
12.	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall	





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	be reported to the university for further action to award suitable punishment.	
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Malpractices identified by squad or special invigilators

1. Punishments to the students as per the above guidelines.
2. Punishment for institutions : (if the squad reports that the college is also involved in encouraging malpractices)
 - a. A show cause notice shall be issued to the college.
 - b. Impose a suitable fine on the college.
 - c. Shifting the examination centre from the college to another college for a specific period of not less than one year.




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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

(Established by Act No. 30 of 2008)

Kukatpally, Hyderabad, Telangana (India).

ACADEMIC REGULATIONS OF B.PHARM. (REGULAR/FULL TIME) STUDENTS

WITH EFFECT FROM THE ACADEMIC YEAR 2017-18 (R-17)

1.0 Under-Graduate Degree Programme in Pharmacy

1.1 JNTUH offers a 4-year (8 semesters) **Bachelor of Pharmacy (B.Pharm.)** degree programme, under Choice Based Credit System (CBCS) at its affiliated colleges with effect from the academic year 2017-18.

2.0 Eligibility for admission

2.1 Admission to the under graduate programme shall be made either on the basis of the merit rank obtained by the qualified candidate in entrance test conducted by the Telangana State Government (EAMCET) or the University or on the basis of any other order of merit approved by the University, subject to reservations as prescribed by the government from time to time.

2.2 The medium of instructions for the entire under graduate programme in Pharmacy will be **English** only.

3.0 B.Pharm. Programme structure

3.1 A student after securing admission shall pursue the under graduate programme in B.Pharm. in a minimum period of **four** academic years (8 semesters), and a maximum period of **eight** academic years (16 semesters) starting from the date of commencement of first year first semester, failing which student shall forfeit seat in B.Pharm course.

A student shall register for all subjects for covering 196 credits and each student shall secure 196 credits (with CGPA ≥ 5) required for the completion of the under graduate programme and award of the B.Pharm. degree.

3.2 UGC/ AICTE specified definitions/ descriptions are adopted appropriately for various terms and abbreviations used in these academic regulations/ norms, which are listed below.

3.2.1 Semester scheme

Each under graduate programme is of 4 academic years (8 semesters) with the academic year being divided into two semesters of 22 weeks (≥ 90 instructional days) each, each semester shall have - 'Continuous Internal Evaluation (CIE)' and 'Semester End Examination (SEE)'. Choice Based Credit System (CBCS) and Credit Based Semester



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System (CBSS) as indicated by UGC and curriculum / course structure as suggested by AICTE are followed.

3.2.2 Credit courses

All subjects/ courses are to be registered by the student in a semester to earn credits which shall be assigned to each subject/ course in an L: T: P: C (lecture periods: tutorial periods: practical periods: credits) structure based on the following general pattern.

- One credit for one hour/ week/ semester for theory/ lecture (L) courses.
- One credit for two hours/ week/ semester for laboratory/ practical (P) courses or tutorials (T).


Courses like environmental science, human values and professional ethics, gender sensitization lab and other student activities like NCC/NSO and NSS are identified as mandatory courses. These courses will not carry any credits.

3.2.3 Subject Course Classification

All subjects/ courses offered for the under graduate programme in Pharmacy (B.Pharm. degree programmes) are broadly classified as follows. The university has followed almost all the guidelines issued by AICTE/UGC.

S. No.	Broad Course Classification	Course Group/ Category	Course Description
1	Foundation Courses (FnC)	BS – Basic Sciences	Includes mathematics, physics and chemistry subjects.
2		PS - Pharmaceutical Sciences	Includes fundamental Pharmacy Subjects.
3		HS – Humanities and Social sciences	Includes subjects related to humanities, social sciences and management.
4	Core Courses (CoC)	PC – Professional Core	Includes core subjects related to the parent discipline.
5	Elective Courses (ElC)	OE – Open Electives	Includes elective subjects related to inter-disciplinary areas of Pharmacy or other than Pharmacy
6	Core Courses	Project Work	B.Pharm. project or UG project or UG major project
7		Seminar	Seminar/ Colloquium based on core contents related to parent discipline.
10	Minor courses	-	1 or 2 Credit courses (subset of HS)
11	Mandatory Courses (MC)	-	Mandatory courses (non-credit)




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4.0 Course registration

- 4.1 A 'faculty advisor or counselor' shall be assigned to a group of 15 students, who will advise student about the under graduate programme, its course structure and curriculum, choice/option for subjects/ courses, based on their competence, progress, pre-requisites and interest.
- 4.2 The academic section of the college invites 'registration forms' from students before the beginning of the semester through 'on-line registration', ensuring 'date and time stamping'. The on-line registration requests for any 'current semester' shall be **completed before the commencement of semester end examinations of the 'preceding semester'**.
- 4.3 A student can apply for **on-line** registration, **only after** obtaining the '**written approval**' from faculty advisor/counselor, which should be submitted to the college academic section through the Head of the Department. A copy of it shall be retained with Head of the Department, faculty advisor/ counselor and the student.
- 4.4 If the student submits ambiguous choices or multiple options or erroneous entries during **on-line** registration for the subject(s) / course(s) under a given/ specified course group/ category as listed in the course structure, only the first mentioned subject/ course in that category will be taken into consideration.
- 4.5 Subject/ course options exercised through **on-line** registration are final and **cannot** be changed or inter-changed; further, alternate choices also will not be considered. However, if the subject/ course that has already been listed for registration by the Head of the Department in a semester could not be offered due to any unforeseen or unexpected reasons, then the student shall be allowed to have alternate choice either for a new subject (subject to offering of such a subject), or for another existing subject (subject to availability of seats). Such alternate arrangements will be made by the Head of the Department, with due notification and time-framed schedule, within the **first week** after the commencement of class-work for that semester.
- 4.6 **Open Electives:** Students have to choose one open elective (OE-I) in II year II semester, one (OE-II) in III year I semester, and one (OE-III) in III year II semester and one (OE-IV) in IV year II semester from the list of Open Electives.

5.0 Subjects/ courses to be offered

- 5.1 A typical section (or class) strength for each semester shall be 60.
- 5.2 A subject/ course may be offered to the students, **only if** a minimum of 20 students (1/3 of the section strength) opt for it. The maximum strength of a section is limited to 80 (60 + 1/3 of the section strength).
- 5.3 If more entries for registration of a subject come into picture, then the Head of Department concerned shall decide, whether or not to offer such a subject/ course for **two (or multiple) sections**.



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6.0 Attendance requirements:

- 6.1 Attendance in all classes (Lectures/Laboratories/Project Work) is compulsory. The minimum required attendance in aggregate of all the subjects/ courses including the attendance of mid-term examination / Laboratory etc. is 75%. Two periods of attendance for each theory subject shall be considered, if the student appears for the mid-term examination of that subject. A student shall not be permitted to appear for the Semester End Examinations (SEE), if his attendance is less than 75% (excluding attendance in mandatory courses environmental science, human values and professional ethics, gender sensitization Lab, NCC/NSO, NSS and Industrial Training) for that semester.
- 6.2 Condoning of shortage of attendance (between 65% and 75%) up to a maximum of 10% (considering the days of attendance in sports, games, NCC, NSS activities and Medical grounds) in each semester shall be granted by the College Academic Committee on genuine and valid grounds, based on the student's representation with supporting evidence.
- 6.3 A stipulated fee shall be payable towards condoning of shortage of attendance.
- 6.4 Shortage of attendance below 65% in aggregate shall in **no case be condoned**.
- 6.5 Students whose shortage of attendance is not condoned in any semester are not eligible to take their end examinations of that semester. They get detained and their registration for that semester shall stand cancelled. They will not be promoted to the next semester. They may seek re-registration for all those subjects registered in that semester in which student was detained, by seeking re-admission into that semester as and when offered; in case if there are any open electives, the same may also be re-registered if offered. However, if those electives are not offered in later semesters, then alternate electives may be chosen from the **same** set of elective subjects offered under that category.
- 6.6 A student fulfilling the attendance requirement in the present semester shall not be eligible for readmission into the same class.

7.0 Academic requirements

The following academic requirements have to be satisfied, in addition to the attendance requirements mentioned in item no.6.

- 7.1 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course, if student secures not less than 35% marks (26 out of 75 marks) in the semester end examination, and a minimum of 40% of marks in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of letter grades, this implies securing 'C' grade or above in that subject/ course.

7.2 Promotion Rules

S. No.	Promotion	Conditions to be fulfilled
1	First year first semester to first year second semester	Regular course of study of first year first semester.



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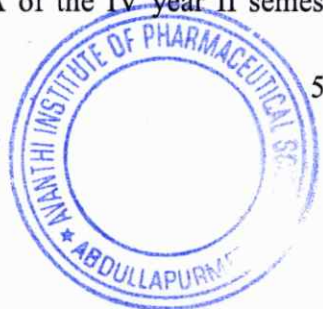
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2	First year second semester to second year first semester	(i) Regular course of study of first year second semester. (ii) Must have secured at least 24 credits out of 48 credits i.e., 50% of credits up to first year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
3.	Second year first semester to second year second semester	Regular course of study of second year first semester.
4	Second year second semester to third year first semester	(i) Regular course of study of second year second semester. (ii) Must have secured at least 58 credits out of 96 credits i.e., 60% of credits up to second year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
5	Third year first semester to third year second semester	Regular course of study of third year first semester.
6	Third year second semester to fourth year first semester	(i) Regular course of study of third year second semester. (ii) Must have secured at least 86 credits out of 144 credits i.e., 60% of credits up to third year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
7	Fourth year first semester to fourth year second semester	Regular course of study of fourth year first semester.

7.3 A student shall register for all subjects covering 196 credits as specified and listed in the course structure, fulfills all the attendance and academic requirements for 196 credits, 'earn all 196 credits' by securing SGPA ≥ 5.0 (in each semester) and CGPA (at the end of each successive semester) ≥ 5.0 to successfully complete the under graduate programme.

7.4 After securing the necessary 196 credits as specified for the successful completion of the entire under graduate programme, the student can avail exemption of two subjects up to 6 credits, that is, two open elective subjects for optional drop out from these 196 credits earned; resulting in 190 credits for under graduate programme performance evaluation, i.e., the performance of the student in these 190 credits shall alone be taken into account for the calculation of 'the final CGPA (at the end of under graduate programme, which takes the SGPA of the IV year II semester into account), and shall be indicated in the





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grade card of IV year II semester. However, the performance of student in the earlier individual semesters, with the corresponding SGPA and CGPA for which grade cards have already been given will not be altered.

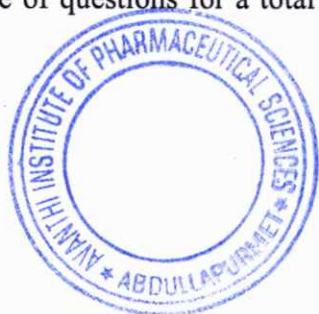
- 7.5 If a student registers for some more 'extra subjects' other than those listed subjects totaling to 196 credits as specified in the course structure, the performances in those 'extra subjects' (although evaluated and graded using the same procedure as that of the required 196 credits) will not be taken into account while calculating the SGPA and CGPA. For such 'extra subjects' registered, % of marks and letter grade alone will be indicated in the grade card as a performance measure, subject to completion of the attendance and academic requirements as stated in regulations 6 and 7.1 – 7.4 above.
- 7.6 A student eligible to appear in the end semester examination for any subject/ course, but absent from it or failed (thereby failing to secure 'C' grade or above) may reappear for that subject/ course in the supplementary examination as and when conducted. In such cases, CIE assessed earlier for that subject/ course will be carried over, and added to the marks to be obtained in the SEE supplementary examination for evaluating performance in that subject.
- 7.7 A student **detained in a semester due to shortage of attendance, may be re-admitted when the same semester is offered in the next academic year for fulfillment of academic requirements.** The academic regulations under which student has been readmitted shall be applicable. However, no grade allotments or SGPA/ CGPA calculations will be done for the entire semester in which student has been detained.
- 7.8 A student **detained due to lack of credits, shall be promoted to the next academic year only after acquiring the required academic credits.** The academic regulations under which student has been readmitted shall be applicable to him.

Note: (1) The SGPA will be computed and printed on the marks memo only if the candidate passes in all the subjects offered and gets minimum B grade in all the subjects.


(2) CGPA is calculated only when the candidate passes in all the subjects offered in all the semesters.

8.0 Evaluation - Distribution and Weightage of marks

- 8.1 The performance of a student in every subject/course (including practicals and UG major project) will be evaluated for 100 marks each, with 25 marks allotted for CIE (Continuous Internal Evaluation) and 75 marks for SEE (Semester End-Examination).
- 8.2 For theory subjects, during a semester, there shall be two mid-term examinations. Each mid-term examination consists of one objective paper, one descriptive paper and one assignment. The objective paper and the essay paper shall be for 10 marks each with a total duration of 1 hour 20 minutes (20 minutes for objective and 60 minutes for essay paper). The objective paper is set with 20 bits of multiple choice, fill-in the blanks and matching type of questions for a total of 10 marks. The essay paper shall contain 4 full



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questions out of which, the student has to answer 2 questions, each carrying 5 marks. While the first mid-term examination shall be conducted on 50% of the syllabus, the second mid-term examination shall be conducted on the remaining 50% of the syllabus. Five marks are allocated for assignments (as specified by the subject teacher concerned). The first assignment should be submitted before the conduct of the first mid-examination, and the second assignment should be submitted before the conduct of the second mid-examination. The total marks secured by the student in each mid-term examination are evaluated for 25 marks, and the average of the two mid-term examinations shall be taken as the final marks secured by each student in internals/sessionals. If any student is absent from any subject of a mid-term examination, an on-line test will be conducted for him by the university. The details of the question paper pattern are as follows,

- The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) **Part- A** for 25 marks, ii) **Part - B** for 50 marks.
- Part-A is compulsory question which consists of ten sub-questions. The first five sub-questions are from each unit and carry 2 marks each. The next five sub-questions are one from each unit and carry 3 marks each.
- Part-B consists of five questions (numbered from 2 to 6) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.


8.3 For practical subjects there shall be a continuous internal evaluation during the semester for 25 sessional marks and 75 semester end examination marks. Out of the 25 marks for internal evaluation, day-to-day work in the laboratory shall be evaluated for 15 marks and internal practical examination shall be evaluated for 10 marks conducted by the laboratory teacher concerned. The semester end examination shall be conducted with an external examiner and the laboratory teacher. The external examiner shall be appointed from the clusters of colleges which are decided by the examination branch of the university.

8.4 There shall be an Industrial Training in IV year I semester. For the Industrial Training, the student shall be required to work for at least 150 hours spread over four weeks in a Pharmaceutical Industry/Hospital. It includes Production unit, Quality Control department, Quality Assurance department, Analytical laboratory, Chemical manufacturing unit, Pharmaceutical R&D, Hospital (Clinical Pharmacy), Clinical Research Organization, Community Pharmacy, etc. After the IV year I semester and before the commencement of IV year II semester, the student shall submit satisfactory report of the work and certificate duly signed by the authority of training organization to the head of the institute.

8.5 Practice School: In the IV year I semester, every candidate shall undergo a practice school for a period of 150 hours evenly distributed throughout the semester. The student



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shall opt any one of the domains for practice school declared by the departmental committee from time to time. At the end of the practice school, every student shall submit a printed report (in triplicate) on the practice school he/she attended (not more than 25 pages). The report shall be submitted to the departmental committee consisting of Head of the Institution, Head of the Department and a senior faculty member. The practice school report shall be evaluated for 100 marks and grade point shall be awarded.

- 8.6 Out of a total of 100 marks for the UG major project, 25 marks shall be allotted for internal evaluation and 75 marks for the end semester examination (viva voce). The end semester examination of the project work shall be conducted by a committee consisting of external examiner, Head of the Department, supervisor of the project and a senior faculty member. The evaluation of UG major project shall be made at the end of IV year II semester. The internal evaluation shall be on the basis of two seminars given by each student on the topic of UG major project.
- 8.7 The laboratory marks and the sessional marks awarded by the college are subject to scrutiny and scaling by the university wherever necessary. In such cases, the sessional and laboratory marks awarded by the college will be referred to a committee. The committee will arrive at a scaling factor and the marks will be scaled accordingly. The recommendations of the committee are final and binding. The laboratory records and internal test papers shall be preserved in the respective institutions as per the university rules and produced before the committees of the university as and when asked for.
- 8.8 For mandatory courses environmental science, human values and professional ethics, gender sensitization lab and Industrial Training a student has to secure 40 marks out of 100 marks (i.e. 40% of the marks allotted) in the continuous internal evaluation for passing the subject/course.
- 8.9 For mandatory courses NCC/ NSO and NSS, a 'satisfactory participation certificate' shall be issued to the student from the authorities concerned, only after securing $\geq 65\%$ attendance in such a course.
- 8.10 No marks or letter grade shall be allotted for all mandatory/non-credit courses.


9.0 Grading procedure

- 9.1 Marks will be awarded to indicate the performance of student in each theory subject, laboratory / practicals and UG major project. Based on the percentage of marks obtained (Continuous Internal Evaluation plus Semester End Examination, both taken together) as specified in item 8 above, a corresponding letter grade shall be given.
- 9.2 As a measure of the performance of student, a 10-point absolute grading system using the following letter grades (as per UGC/AICTE guidelines) and corresponding percentage of marks shall be followed:

% of Marks Secured in a Subject/Course (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
Greater than or equal to 90%	O (Outstanding)	10



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80 and less than 90%	A ⁺ (Excellent)	9
70 and less than 80%	A (Very Good)	8
60 and less than 70%	B ⁺ (Good)	7
50 and less than 60%	B (Average)	6
40 and less than 50%	C (Pass)	5
Below 40%	F (FAIL)	0
Absent	Ab	0

- 9.3 A student obtaining 'F' grade in any subject shall be deemed to have 'failed' and is required to reappear as a 'supplementary student' in the semester end examination, as and when offered. In such cases, internal marks in those subjects will remain the same as those obtained earlier.
- 9.4 A student who has not appeared for examination in any subject, 'Ab' grade will be allocated in that subject, and student shall be considered 'failed'. Student will be required to reappear as a 'supplementary student' in the semester end examination, as and when offered.
- 9.5 A letter grade does not indicate any specific percentage of marks secured by the student, but it indicates only the range of percentage of marks.
- 9.6 A student earns grade point (GP) in each subject/ course, on the basis of the letter grade secured in that subject/ course. The corresponding 'credit points' (CP) are computed by multiplying the grade point with credits for that particular subject/ course.

Credit points (CP) = grade point (GP) x credits For a course

- 9.7 The student passes the subject/ course only when $GP \geq 5$ ('C' grade or above)
- 9.8 The semester grade point average (SGPA) is calculated by dividing the sum of credit points (ΣCP) secured from all subjects/ courses registered in a semester, by the total number of credits registered during that semester. SGPA is rounded off to **two** decimal places. SGPA is thus computed as

$$SGPA = \{ \sum_{i=1}^N C_i G_i \} / \{ \sum_{i=1}^N C_i \} \dots \text{For each semester,}$$

where 'i' is the subject indicator index (takes into account all subjects in a semester), 'N' is the no. of subjects 'registered' for the semester (as specifically required and listed under the course structure of the parent department), C_i is the no. of credits allotted to the i^{th} subject, and G_i represents the grade points (GP) corresponding to the letter grade awarded for that i^{th} subject.

- 9.9 The cumulative grade point average (CGPA) is a measure of the overall cumulative performance of a student in all semesters considered for registration. The CGPA is the ratio of the total credit points secured by a student in **all** registered courses in **all** semesters, and the total number of credits registered in **all** the semesters. CGPA is rounded off to **two** decimal places. CGPA is thus computed from the I year II semester onwards at the end of each semester as per the formula

$$CGPA = \{ \sum_{j=1}^M C_j G_j \} / \{ \sum_{j=1}^M C_j \} \dots \text{for all S semesters registered}$$



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(i.e., up to and inclusive of S semesters, $S \geq 2$),

where 'M' is the total no. of subjects the student has 'registered' i.e., from the 1st semester onwards up to and inclusive of the 8th semester, 'j' is the subject indicator index (takes into account all subjects from 1 to 8 semesters), C_j is the no. of credits allotted to the jth subject, and G_j represents the grade points (GP) corresponding to the letter grade awarded for that jth subject. After registration and completion of first year first semester, the SGPA of that semester itself may be taken as the CGPA, as there are no cumulative effects.

Illustration of calculation of SGPA

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
Course 1	4	A	8	4 x 8 = 32
Course 2	4	O	10	4 x 10 = 40
Course 3	4	C	5	4 x 5 = 20
Course 4	3	B	6	3 x 6 = 18
Course 5	3	A+	9	3 x 9 = 27
Course 6	3	C	5	3 x 5 = 15
	Total Credits = 21			Total Credit Points = 152


$$\text{SGPA} = 152/21 = 7.24$$

Illustration of calculation of CGPA

Course/Subject	Credits	Letter Grade	Grade Points	Credit Points
I Year I Semester				
Course 1	4	A	8	4 x 8 = 32
Course 2	4	A+	9	4 x 9 = 36
Course 3	4	B	6	4 x 6 = 24
Course 4	3	O	10	3 x 10 = 30
Course 5	3	B+	7	3 x 7 = 21
Course 6	3	A	8	3 x 8 = 24
I Year II Semester				
Course 7	4	B+	7	4 x 7 = 28
Course 8	4	O	10	4 x 10 = 40
Course 9	4	A	8	4 x 8 = 32
Course 10	3	B	6	3 x 6 = 18
Course 11	3	C	5	3 x 5 = 15
Course 12	3	A+	9	3 x 9 = 27
	Total Credits = 42			Total Credit Points = 327

$$\text{CGPA} = 327/42 = 7.79$$




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9.10 For merit ranking or comparison purposes or any other listing, **only the 'rounded off'** values of the CGPAs will be used.

9.11 For calculations listed in regulations 9.6 to 9.9, performance in failed subjects/ courses (securing F grade) will also be taken into account, and the credits of such subjects/ courses will also be included in the multiplications and summations. After passing the failed subject(s) newly secured letter grades will be taken into account for calculation of SGPA and CGPA. However, mandatory courses will not be taken into consideration.

10.0 Passing standards

10.1 A student shall be declared successful or 'passed' in a semester, if student secures a $GP \geq 5$ ('C' grade or above) in every subject/course in that semester (i.e. when student gets an $SGPA \geq 5.00$ at the end of that particular semester); and a student shall be declared successful or 'passed' in the entire under graduate programme, only when gets a $CGPA \geq 5.00$ for the award of the degree as required.

10.2 After the completion of each semester, a grade card or grade sheet (or transcript) shall be issued to all the registered students of that semester, indicating the letter grades and credits earned. It will show the details of the courses registered (course code, title, no. of credits, and grade earned etc.), credits earned, SGPA, and CGPA.

11.0 Declaration of results

11.1 Computation of SGPA and CGPA are done using the procedure listed in 9.6 to 9.9.

11.2 For final percentage of marks equivalent to the computed final CGPA, the following formula may be used.

$$\% \text{ of Marks} = (\text{final CGPA} - 0.5) \times 10$$

12.0 Award of degree

12.1 A student who registers for all the specified subjects/ courses as listed in the course structure and secures the required number of 196 credits (with $CGPA \geq 5.0$), within 8 academic years from the date of commencement of the first academic year, shall be declared to have '**qualified**' for the award of the B.Pharm. degree.


12.2 A student who qualifies for the award of the degree as listed in item 12.1 shall be placed in the following classes.

12.3 Students with final CGPA (at the end of the under graduate programme) ≥ 8.00 , and fulfilling the following conditions -

- (i) Should have passed all the subjects/courses in '**first appearance**' within the first 4 academic years (or 8 sequential semesters) from the date of commencement of first year first semester.
- (ii) Should have secured a $CGPA \geq 8.00$, at the end of each of the 8 sequential semesters, starting from first year first semester onwards.

- (iii) Should not have been detained or prevented from writing the end semester examinations in any semester due to shortage of attendance or any other reason, shall be placed in '**first class with distinction**'.
- 12.4 Students with final CGPA (at the end of the under graduate programme) ≥ 6.50 but < 8.00 , shall be placed in '**first class**'.
- 12.5 Students with final CGPA (at the end of the under graduate programme) ≥ 5.50 but < 6.50 , shall be placed in '**second class**'.
- 12.6 All other students who qualify for the award of the degree (as per item 12.1), with final CGPA (at the end of the under graduate programme) ≥ 5.00 but < 5.50 , shall be placed in '**pass class**'.
- 12.7 A student with final CGPA (at the end of the under graduate programme) < 5.00 will not be eligible for the award of the degree.
- 12.8 Students fulfilling the conditions listed under item 12.3 alone will be eligible for award of '**university rank**' and '**gold medal**'.
- 13.0 **Withholding of results**
- 13.1 If the student has not paid the fees to the university/ college at any stage, or has dues pending due to any reason whatsoever, or if any case of indiscipline is pending, the result of the student may be withheld, and student will not be allowed to go into the next higher semester. The award or issue of the degree may also be withheld in such cases.
- 14.0 **Transitory regulations**
- A. **For students detained due to shortage of attendance:**
1. A Student who has been detained in I year of R09/R13/R15/R16 Regulations due to lack of attendance, shall be permitted to join I year I Semester of R17 Regulations and he is required to complete the study of B. Pharmacy programme within the stipulated period of eight academic years from the date of first admission in I Year.
 2. A student who has been detained in any semester of II, III and IV years of R09/R13/R15/R16 regulations for want of attendance, shall be permitted to join the corresponding semester of R17 regulations and is required to complete the study of B. Pharmacy within the stipulated period of eight academic years from the date of first admission in I Year. The R17 Academic Regulations under which a student has been readmitted shall be applicable to that student from that semester.
- See rule (C) for further Transitory Regulations.
- B. **For students detained due to shortage of credits:**
3. A student of R09/R13/R15/R16 Regulations who has been detained due to lack of credits, shall be promoted to the next semester of R17 Regulations only after acquiring the required credits as per the corresponding regulations of his/her first admission. The student is required to complete the study of B. Pharmacy within the stipulated period of




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eight academic years from the year of first admission. The R17 Academic Regulations are applicable to a student from the year of readmission onwards.

See rule (C) for further Transitory Regulations.

C. For readmitted students in R17 Regulations:

4. A student who has failed in any subject under any regulation has to pass those subjects in the same regulations.
5. The maximum credits that a student acquires for the award of degree, shall be the sum of the total number of credits secured in all the regulations of his/her study including R17 Regulations. The performance evaluation of the student will be done after the exemption of two subjects if total credits acquired are ≤ 206 , three subjects if total credits acquired are > 206 (see R17 Regulations for exemption details).
6. If a student readmitted to R17 Regulations, has any subject with 80% of syllabus common with his/her previous regulations, that particular subject in R17 Regulations will be substituted by another subject to be suggested by the University.


Note: If a student readmitted to R17 Regulations, has not studied any subjects/topics in his/her earlier regulations of study which is prerequisite for further subjects in R17 Regulations, the College Principals concerned shall conduct remedial classes to cover those subjects/topics for the benefit of the students.

15.0 Student transfers

- 15.1 There shall be no branch transfers after the completion of admission process.
- 15.2 There shall be no transfers from one college/stream to another within the constituent colleges and units of Jawaharlal Nehru Technological University Hyderabad.
- 15.3 The students seeking transfer to colleges affiliated to JNTUH from various other Universities/institutions have to pass the failed subjects which are equivalent to the subjects of JNTUH, and also pass the subjects of JNTUH which the students have not studied at the earlier institution. Further, though the students have passed some of the subjects at the earlier institutions, if the same subjects are prescribed in different semesters of JNTUH, the students have to study those subjects in JNTUH in spite of the fact that those subjects are repeated.
- 15.4 The transferred students from other Universities/institutions to JNTUH affiliated colleges who are on rolls to be provide one chance to write the CBT (internal marks) in the **failed subjects and/or subjects not studied** as per the clearance letter issued by the university.
- 15.5 The autonomous affiliated colleges have to provide one chance to write the internal examinations in the **failed subjects and/or subjects not studied**, to the students transferred from other universities/institutions to JNTUH autonomous affiliated colleges who are on rolls, as per the clearance (equivalence) letter issued by the University.



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16.0 Scope

- 16.1 The academic regulations should be read as a whole, for the purpose of any interpretation.
- 16.2 In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.
- 16.3 The university may change or amend the academic regulations, course structure or syllabi at any time, and the changes or amendments made shall be applicable to all students with effect from the date notified by the university authorities.



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

(Established by Act No. 30 of 2008)

Kukatpally, Hyderabad, Telangana (India).

Academic Regulations for B.Pharm. (Lateral Entry Scheme) w.e.f the AY 2018-19

1. Eligibility for award of B. Pharm. Degree (LES)


The LES students after securing admission shall pursue a course of study for not less than three academic years and not more than six academic years.

2. The student shall register for 147 credits and secure 147 credits with CGPA ≥ 5 from II year to IV year B.Pharm. programme (LES) for the award of B.Pharm. degree. **Out of the 147 credits secured, the student can avail exemption up to 6 credits**, that is, two open elective subjects resulting in 141 credits for B.Pharm programme performance evaluation.
3. The students, who fail to fulfil the requirement for the award of the degree in six academic years from the year of admission, shall forfeit their seat in B.Pharm.
4. The attendance requirements of B. Pharm. (Regular) shall be applicable to B.Pharm. (LES).

5. Promotion rule

S. No	Promotion	Conditions to be fulfilled
1	Second year first semester to second year second semester	Regular course of study of second year first semester.
2	Second year second semester to third year first semester	(i) Regular course of study of second year second semester. (ii) Must have secured at least 29 credits out of 48 credits i.e., 60% of credits up




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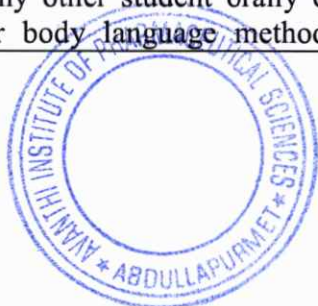
		to second year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
3	Third year first semester to third year second semester	Regular course of study of third year first semester.
4	Third year second semester to fourth year first semester	(i) Regular course of study of third year second semester. (ii) Must have secured at least 58 credits out of 96 credits i.e., 60% of credits up to third year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
5	Fourth year first semester to fourth year second semester	Regular course of study of fourth year first semester.


6. All the other regulations as applicable to B. Pharm. 4-year degree course (Regular) will hold good for B. Pharm. (Lateral Entry Scheme).

MALPRACTICES RULES

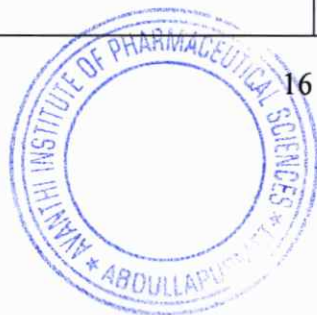
DISCIPLINARY ACTION FOR / IMPROPER CONDUCT IN EXAMINATIONS

	Nature of Malpractice/Improper conduct	Punishment
	If the student:	
1. (a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which student is appearing but has not made use of (material shall include any marks on the body of the student which can be used as an aid in the subject of the examination)	Expulsion from the examination hall and cancellation of the performance in that subject only.
(b)	Gives assistance or guidance or receives it from any other student orally or by any other body language methods or	Expulsion from the examination hall and cancellation of the performance in that subject only of all the students involved. In case of an





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	communicates through cell phones with any student or persons in or outside the exam hall in respect of any matter.	outsider, he will be handed over to the police and a case is registered against him.
2.	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the student is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The hall ticket of the student is to be cancelled and sent to the university.
3.	Impersonates any other student in connection with the examination.	The student who has impersonated shall be expelled from examination hall. The student is also debarred and forfeits the seat. The performance of the original student who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and UG major project) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The student is also debarred for two consecutive semesters from class work and all university examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
4.	Smuggles in the answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred for two consecutive semesters from class work and all university examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat.
5.	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.




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6.	<p>Refuses to obey the orders of the chief superintendent/assistant superintendent / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in-charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the college campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.</p>	<p>In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the student(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The students also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them.</p>
7.	<p>Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.</p>	<p>Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred for two consecutive semesters from class work and all university examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat.</p>
8.	<p>Possess any lethal weapon or firearm in the examination hall.</p>	<p>Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred and forfeits the seat.</p>
9.	<p>If student of the college, who is not a student for the particular examination or</p>	<p>Student of the colleges expulsion from the examination hall and cancellation of the</p>



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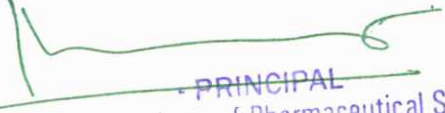

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	any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year. The student is also debarred and forfeits the seat. Person(s) who do not belong to the college will be handed over to police and, a police case will be registered against them.
10.	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and UG major project and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11.	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the student has appeared including practical examinations and UG major project of that semester/year examinations.
12.	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the university for further action to award suitable punishment.	

Malpractices identified by squad or special invigilators

1. Punishments to the students as per the above guidelines.
2. Punishment for institutions : (if the squad reports that the college is also involved in encouraging malpractices)
 - a. A show cause notice shall be issued to the college.
 - b. Impose a suitable fine on the college.
 - c. Shifting the examination centre from the college to another college for a specific period of not less than one year.

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
(Established by Act No.30 of 2008)
Kukatpally, Hyderabad-500085, Telangana State (India)

Academic Regulations of M.Pharm. (Regular/Full Time) Programmes, 2019-20 (R19)
(CBCS)

(Effective for the students admitted into I year from the Academic Year 2019-20 and onwards)

1.0 Post-Graduate Degree Programmes in Pharmacy (PGP in Pharmacy) Jawaharlal Nehru Technological University Hyderabad (JNTUH) offers **Two** Years (**Four** Semesters) full-time Master of Pharmacy (M.Pharm.) Degree programmes, under Choice Based Credit System (CBCS) at its constituent (non-autonomous) and affiliated colleges in different specializations.

2.0 Eligibility for Admissions

2.1 Admission to the PGPs shall be made subject to eligibility, qualification and specializations prescribed by the University from time to time, for each specialization under each M.Pharm. programme.

2.2 Admission to the post graduate programme shall be made on the basis of either the merit rank or Percentile obtained by the qualified student in the relevant qualifying GPAT Examination/ the merit rank obtained by the qualified student in an entrance test conducted by Telangana State Government (PGET) for M.Pharm. programmes / an entrance test conducted by JNTUH/ on the basis of any other exams approved by the University, subject to reservations as laid down by the Govt. from time to time.

2.3 The medium of instructions for all PG Programmes will be **ENGLISH** only.

3.0 M.Pharm. Programme (PGP in Pharmacy) Structure

3.1 The M.Pharm. Programmes in Pharmacy of JNTUH are of Semester pattern, with **Four** Semesters consisting of **Two** academic years, each academic year having **Two** Semesters (First/Odd and Second/Even Semesters). Each Semester shall be of 22 weeks duration (inclusive of Examinations), with a minimum of 90 instructional days per Semester.

3.2 The student shall not take more than four academic years to fulfill all the academic requirements for the award of M.Pharm. degree from the date of commencement of first year first semester, failing which the student shall forfeit the seat in M.Pharm. programme.

3.3 UGC/AICTE specified definitions/descriptions are adopted appropriately for various terms and abbreviations used in these PG academic regulations, as listed below:


3.3.1 Semester Scheme

Each Semester shall have 'Continuous Internal Evaluation (CIE)' and 'Semester End Examination (SEE)'. Choice Based Credit System (CBCS) and Credit Based Semester System (CBSS) are taken as 'references' for the present set of Regulations. The terms 'SUBJECT' and 'COURSE' imply the same meaning here and refer to 'Theory Subject', or 'Lab Course', or 'Design/Drawing Subject', or 'Mini Project with Seminar', or 'Dissertation', as the case may be.

3.3.2 Credit Courses

All subjects/courses are to be registered by the student in a semester to earn credits which shall be assigned to each subject/course in an L: T: P: C (Lecture Periods: Tutorial Periods: Practical Periods: Credits) structure based on the following general pattern:




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- One credit for one hour/week/semester for theory/lecture (L) courses
- One credit for two hours/ week/semester for laboratory/ practical (P) courses or tutorials (T)

Other student activities like study tour, guest lecture, conference/workshop participations, technical paper presentations and mandatory courses (**Audit Courses**) will not carry any credits.

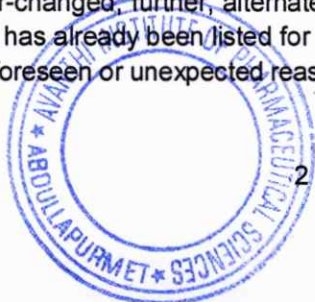
3.3.3 Subject Course Classification

All subjects/courses offered for the Post-Graduate Programme in Pharmacy (M.Pharm. Degree Programme) are broadly classified as follows. The University has followed in general the guidelines issued by AICTE/UGC.

S.No.	Broad Course Classification	Course Group/ Category	Course Description
1	Core Courses (CoC)	PC- Professional Core	Includes subjects related to the Specialization in Pharmacy
		Dissertation	M.Pharm. Project or PG Project or Major Project
		Mini Project with Seminar	Seminar based on core contents related to the Specialization in Pharmacy
2	Elective Courses (EiE)	PE - Professional Electives	Includes elective subjects related to the Specialization in Pharmacy
		OE - Open Electives	Elective subjects which include inter-disciplinary subjects or subjects in an area outside the Specialization in Pharmacy
3	Mandatory Courses	--	Non-Credit Audit Courses

4.0 Course Registration

- 4.1 A 'Faculty Advisor or Counselor' shall be assigned to each specialization, who will advise on the Post Graduate Programme (PGP), its Course Structure and Curriculum, Choice/Option for Subjects/ Courses, based on his competence, progress, pre-requisites and interest.
- 4.2 The Academic Section of the College invites 'Registration Forms' from students within 15 days from the commencement of class work through 'ON-LINE SUBMISSIONS', ensuring 'DATE and TIME Stamping'. The ON-LINE Registration Requests for any 'CURRENT SEMESTER' shall be completed BEFORE the commencement of SEEs (Semester End Examinations) of the 'PRECEDING SEMESTER'.
- 4.3 A Student can apply for ON-LINE Registration, ONLY AFTER obtaining the 'WRITTEN APPROVAL' from his Faculty Advisor, which should be submitted to the College Academic Section through the Head of Department (a copy of it being retained with Head of Department, Faculty Advisor and the Student).
- 4.4 If the Student submits ambiguous choices or multiple options or erroneous entries during ON-LINE Registration for the Subject(s) / Course(s) under a given/ specified Course Group/ Category as listed in the Course Structure, only the first mentioned Subject/ Course in that Category will be taken into consideration.
- 4.5 Subject/ Course Options exercised through ON-LINE Registration are final and CANNOT be changed, nor can they be inter-changed; further, alternate choices also will not be considered. However, if the Subject/ Course that has already been listed for Registration by the University in a Semester could not be offered due to unforeseen or unexpected reasons, then the Student will be allowed to have alternate



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choice either for a new Subject, if it is offered, or for another existing Subject (subject to availability of seats). Such alternate arrangements will be made by the Head of Department, with due notification and time-framed schedule, within the FIRST WEEK from the commencement of Class-work for that Semester.

5.0 Attendance Requirements

The programmes are offered based on a unit system with each subject being considered a unit. Attendance is calculated separately for each subject.

- 5.1 Attendance in all classes (Lectures/Laboratories) is compulsory. The minimum required attendance in each theory subject (**also mandatory(audit) courses**) including the attendance of mid-term examination / Laboratory etc. is 75%. Two periods of attendance for each theory subject shall be considered, if the student appears for the mid-term examination of that subject. ***This attendance should also be included in the fortnightly upload of attendance to the University. The attendance of mandatory(audit) courses should be uploaded separately to the University.*** A student shall not be permitted to appear for the Semester End Examinations (SEE), if his attendance is less than 75%.
- 5.2 A student's Seminar report and presentation on Mini Project shall be eligible for evaluation, only if he ensures a minimum of 75% of his attendance in Seminar presentation classes on Mini Project during that Semester.
- 5.3 **Condoning of shortage of attendance** (between 65% and 75%) up to a maximum of 10% (considering the days of attendance in sports, games, NCC, NSS activities and Medical grounds) in each subject (Theory/Lab/Mini Project with Seminar) of a semester shall be granted by the College Academic Committee on genuine reasons.
- 5.4 A prescribed fee per subject shall be payable for condoning shortage of attendance after getting the approval of College Academic Committee for the same. The College Academic Committee shall maintain relevant documents along with the request from the student.
- 5.5 Shortage of Attendance below 65% in any subject shall in **no case be condoned.**
- 5.6 A Student, whose shortage of attendance is not condoned in any Subject(s) (Theory/Lab/Mini Project with Seminar) in any Semester, is considered as 'Detained in that Subject(s), and is not eligible to write Semester End Examination(s) of such Subject(s), (in case of Mini Project with Seminar, his/her Mini Project with Seminar Report or Presentation are not eligible for evaluation) in that Semester; and he/she has to seek re-registration for those Subject(s) in subsequent Semesters, and attend the same as and when offered.
- 5.7 A student fulfills the attendance requirement in the present semester, shall not be eligible for readmission into the same class.
- 5.8 a) A student shall put in a minimum required attendance in at least **three theory subjects (excluding mandatory(audit) course)** in first Year I semester for promotion to first Year II Semester.
- b) A student shall put in a minimum required attendance in at least **three theory subjects (excluding mandatory(audit) course)** in first Year II semester for promotion to second Year I Semester.

6.0 Academic Requirements

The following academic requirements must be satisfied, in addition to the attendance requirements mentioned in item no. 5. The performance of the candidate in each semester shall be evaluated subject-





wise, with a maximum of 100 marks per subject / course (theory / practical), based on Internal Evaluation and Semester End Examination.

- 6.1 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/course, if he secures not less than 40% of marks (30 out of 75 marks) in the End Semester Examination, and a minimum of 50% of marks in the sum total of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of Letter Grades and this implies securing 'B' Grade or above in a subject.
- 6.2 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to Mini Project with seminar, if student secures not less than 50% marks (i.e. 50 out of 100 allotted marks). The student would be treated as failed, if student (i) does not submit a seminar report on Mini Project or does not make a presentation of the same before the evaluation committee as per schedule or (ii) secures less than 50% marks in Mini Project with seminar evaluation. The failed student shall reappear for the above evaluation when the notification for supplementary examination is issued.
- 6.3 A student shall register for all subjects for total of 68 credits as specified and listed in the course structure for the chosen specialization, put in required the attendance and fulfill the academic requirements for securing 68 credits obtaining a minimum of 'B' Grade or above in each subject, and all 68 credits securing Semester Grade Point Average (SGPA) ≥ 6.0 (in each semester) and final Cumulative Grade Point Average (CGPA) (i.e., CGPA at the end of PGP) ≥ 6.0 , and shall **pass all the mandatory(audit) courses** to complete the PGP successfully.
- Note: (1) The SGPA will be computed and printed on the marks memo only if the candidate passes in all the subjects offered and gets minimum B grade in all the subjects.
- (2) CGPA is calculated only when the candidate passes in all the subjects offered in all the semesters
- 6.4 Marks and Letter Grades obtained in all those subjects covering the above specified 68 credits alone shall be considered for the calculation of final CGPA, which will be indicated in the Grade Card /Marks Memo of second year second semester.
- 6.5 If a student registers for extra subject(s) (in the parent specialization or other specializations of Pharmacy) other than those listed subjects totaling to 68 credits as specified in the course structure, the performance in extra subject(s) (although evaluated and graded using the same procedure as that of the required 68 credits) will not be considered while calculating the SGPA and CGPA. For such extra subject(s) registered, percentage of marks and Letter Grade alone will be indicated in the Grade Card/Marks Memo, as a performance measure, subject to completion of the attendance and academic requirements as stated in items 5 and 6.1 - 6.3.
- 6.6 When a student is detained due to shortage of attendance in any subject(s) in any semester, no Grade allotment will be made for such subject(s). However, he is eligible for re-registration of such subject(s) in the subsequent semester(s), as and when next offered, with the academic regulations of the batch into which he is re-registered, by paying the prescribed fees per subject. In all these re-registration cases, the student shall have to secure a fresh set of internal marks and Semester End Examination marks for performance evaluation in such subject(s), and SGPA/CGPA calculations.
- 6.7 A student eligible to appear for the Semester End Examination in any subject, but absent from it or failed (failing to secure 'B' Grade or above), may reappear for that subject at the supplementary examination as and when conducted. In such cases, his Internal Marks assessed earlier for that subject will be carried over, and added to the marks secured in the supplementary examination, for



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the purpose of evaluating his performance in that subject.

- 6.8 A Student who fails to earn 68 credits as per the specified course structure, and as indicated above, within four academic years from the date of commencement of his first year first semester, shall forfeit his seat in M.Pharm. programme and his admission shall stand cancelled.

7.0 Evaluation - Distribution and Weightage of Marks

The performance of a student in each semester shall be evaluated subject- wise (irrespective of credits assigned) for a maximum of 100 marks.

- 7.1 For the theory subjects 75 marks shall be awarded for the performance in the Semester End Examination and 25 marks shall be awarded for Continuous Internal Evaluation (CIE). The Continuous Internal Evaluation shall be made based on the average of the marks secured in the two Mid-Term Examinations conducted, first Mid-Term examinations in the middle of the Semester and second Mid-Term examinations during the last week of instruction. Each Mid-Term Examination shall be conducted for a total duration of 120 minutes with Part 'A' as compulsory consisting of 5 questions carrying 2 marks each (10 marks), and Part 'B' with 3 questions to be answered out of 5 questions, each question carrying 5 marks (15 marks). The details of the Question Paper pattern for Semester End Examination (Theory) are given below:

- The Semester End Examination will be conducted for 75 marks. It consists of two parts.
i) Part A for 25 marks, ii) Part B for 50 marks.
- Part A is compulsory and consists of 5 questions, one from each unit and carrying 5 marks each.
- Part B consists of 5 questions carrying 10 marks each. There will be two questions from each unit and only one should be answered.

- 7.2 For practical subjects, 75 marks shall be awarded for performance in the Semester End Examinations and 25 marks shall be awarded for day-to-day performance as Internal Marks.

- 7.3 For conducting laboratory end examinations of all PG Programmes, one internal examiner and one external examiner are to be appointed by the Principal of the College and this is to be informed to the Director of Evaluation within two weeks, before commencement of the lab end examinations. The external examiner should be selected from outside the College concerned but within the cluster. No external examiner should be appointed from any other College in the same cluster/any other cluster which is run by the same Management.

- 7.4 There shall be Mini Project with Seminar during I year II semester for internal evaluation of 100 marks. The Departmental Academic Committee (DAC) will review the progress of the mini project during the seminar presentations and evaluate the same for 50 marks. Mini Project Viva Voce will be evaluated by the DAC for another 50 marks before the semester end examinations. Student shall carryout the mini project in consultation with the mini project supervisor which may include critically reviewing the literature, project implementation and submit it to the department in the form of a report and shall make an oral presentation before the DAC consisting of Head of the Department, Mini Project supervisor and two other senior faculty members of the department. The student has to secure a minimum of 50% of marks in i) seminar presentation and ii) mini project viva voce, to be declared successful. If he fails to obtain the minimum marks, he has to reappear for the same as and when scheduled.

- 7.5 Every candidate shall be required to submit a dissertation on a topic approved by the Dissertation Review Committee.

- 7.6 A Dissertation Review Committee (DRC) shall be constituted with the Head of the Department as



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Chairperson, Dissertation Supervisor and one senior faculty member of the Department offering the M.Pharm. programme.

- 7.7 Registration of Dissertation Work: A candidate is permitted to register for the Dissertation Work after satisfying the attendance requirement in all the subjects, both theory and laboratory.
- 7.8 After satisfying 7.7, a candidate must present in Dissertation Work Review - I, in consultation with his Dissertation Supervisor, the title, objective and plan of action of his Dissertation work to the Dissertation Review Committee (DRC) for approval within four weeks from the commencement of Second year First Semester. Only after obtaining the approval of the DRC can the student initiate the Dissertation work.
- 7.9 If a candidate wishes to change his supervisor or topic of the Dissertation, he can do so with the approval of the DRC. However, the DRC shall examine whether or not the change of topic/supervisor leads to a major change of his initial plans of Dissertation proposal. If yes, his date of registration for the project work starts from the date of change of Supervisor or topic as the case may be.
- 7.10 A candidate shall submit his Dissertation progress report in two stages at least with a gap of three months between them.
- 7.11 The work on the Dissertation shall be initiated at the beginning of the II year and the duration of the Dissertation is two semesters. A candidate is permitted to submit Dissertation Thesis only after successful completion of all theory and practical courses with the approval of DRC not earlier than 40 weeks from the date of approval of the Dissertation work. For the approval of DRC the candidate shall submit the draft copy of thesis to the Head of the Department and make an oral presentation before the DRC.
- 7.12 The Dissertation Work Review - II in II Year I Sem. carries internal marks of 100. Evaluation should be done by the DRC for 50 marks and the Supervisor will evaluate the work for the other 50 marks. The Supervisor and DRC will examine the Problem Definition, Objectives, Scope of Work, Literature Survey in the same domain and progress of the Dissertation Work. A candidate has to secure a minimum of 50% of marks to be declared successful in Dissertation Work Review - II. If he fails to obtain the minimum required marks, he has to reappear for Dissertation Work Review - II as and when conducted.
- 7.13 The Dissertation Work Review - III in II Year II Sem. carries 100 internal marks. Evaluation should be done by the DRC for 50 marks and the Supervisor will evaluate it for the other 50 marks. The DRC will examine the overall progress of the Dissertation Work and decide whether or not the Dissertation is eligible for final submission. A candidate has to secure a minimum of 50% of marks to be declared successful in Dissertation Work Review - III. If he fails to obtain the required minimum marks, he has to reappear for Dissertation Work Review - III as and when conducted. For Dissertation Evaluation (Viva Voce) in II Year II Sem. there are external marks of 100 and it is evaluated by the external examiner. The candidate has to secure a minimum of 50% marks in Dissertation Evaluation (Viva-Voce) examination.
- 7.14 Dissertation Work Reviews - II and III shall be conducted in phase I (Regular) and Phase II (Supplementary). Phase II will be conducted only for unsuccessful students in Phase I. The unsuccessful students in Dissertation Work Review - II (Phase II) shall reappear for it at the time of Dissertation Work Review - III (Phase I). These students shall reappear for Dissertation Work Review - III in the next academic year at the time of Dissertation Work Review - II only after completion of Dissertation Work Review - II, and then Dissertation Work Review - III follows. The unsuccessful students in Dissertation Work Review - III (Phase II) shall reappear for Dissertation Work Review - III in the next academic year only at the time of Dissertation Work Review - II (Phase I).





- 7.15 After approval from the DRC, a soft copy of the thesis should be submitted for **ANTI-PLAGIARISM** check and the plagiarism report should be submitted to the University and be included in the final thesis. The Thesis will be accepted for submission, if the similarity index is less than **30%**. If the similarity index has more than the required percentage, the student is advised to modify accordingly and re-submit the soft copy of the thesis after one month. The maximum number of re-submissions of thesis after plagiarism check is limited to **TWO**. The candidate has to register for the Dissertation work and work for two semesters. After three attempts, the admission is liable to be cancelled. The college authorities are advised to make plagiarism check of every soft copy of theses before submissions.
- 7.16 Three copies of the Dissertation Thesis certified by the supervisor shall be submitted to the College/School/Institute, after submission of a research paper related to the Dissertation work in a UGC approved journal. A copy of the submitted research paper shall be attached to thesis.
- 7.17 The thesis shall be adjudicated by an external examiner selected by the University. For this, the Principal of the College/School/Institute shall submit a panel of **three** examiners from among the list of experts in the relevant specialization as submitted by the supervisor concerned and Head of the Department.
- 7.18 If the report of the external examiner is unsatisfactory, the candidate shall revise and resubmit the Thesis. If the report of the examiner is unsatisfactory again, the thesis shall be summarily rejected. Subsequent actions for such dissertations may be considered, only on the specific recommendations of the external examiner and /or Dissertation Review Committee. No further correspondence in this matter will be entertained, if there is no specific recommendation for resubmission.
- 7.19 If the report of the examiner is satisfactory, the Head of the Department shall coordinate and make arrangements for the conduct of Dissertation Viva-Voce examination. The Dissertation Viva-Voce examination shall be conducted by a board consisting of the Supervisor, Head of the Department and the external examiner who adjudicated the Thesis. The candidate has to secure a minimum of 50% of marks in Dissertation Evaluation (Viva-Voce) examination.
- 7.20 If he fails to fulfill the requirements as specified in 7.19, he will reappear for the Dissertation Viva-Voce examination only after three months. In the reappeared examination also, if he fails to fulfill the requirements, he will not be eligible for the award of the degree, unless he is asked to revise and resubmit his Dissertation Work by the board within a specified time period (within **four** years from the date of commencement of his first year first semester).
- 7.21 The Dissertation Viva-Voce External examination marks must be submitted to the University on the day of the examination.
- 7.22 ***For mandatory(audit) courses, a student has to secure 40 marks out of 100 marks (i.e. 40% of the marks allotted) in the continuous internal evaluation for passing the subject/course. These marks should also be uploaded along with the internal marks of other subjects.***
- 7.23 ***No marks or letter grades shall be allotted for mandatory(audit) courses. Only Pass/Fail shall be indicated in Grade Card.***
- 8.0 **Re-Admission/Re-Registration**
- 8.1 **Re-Admission for Discontinued Student**

A student, who has discontinued the M.Pharm. degree programme due to any reason whatsoever, may be considered for 'readmission' into the same degree programme (with the same specialization) with the academic regulations of the batch into which he gets readmitted, with prior permission from the authorities concerned, subject to item 6.6.





- 8.2 If a student is detained in a subject (s) due to shortage of attendance in any semester, he may be permitted to **re-register** for the same subject(s) in the same category (core or elective group) or equivalent subject, if the same subject is not available, as suggested by the Board of Studies of that department, as and when offered in the subsequent semester(s), with the academic regulations of the batch into which he seeks re-registration, with prior permission from the authorities concerned, subject to item 3.2
- 8.3 A candidate shall be given one chance to re-register and attend the classes for a maximum of two subjects, if the internal marks secured by a candidate are less than 50% and failed in those subjects but fulfilled the attendance requirement. A candidate must re-register for failed subjects within four weeks of commencement of the class work and secure the required minimum attendance. In the event of the student taking this chance, his Continuous Internal Evaluation (internal) marks and Semester End Examination marks obtained in the previous attempt stand cancelled.

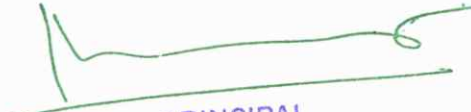
9.0 Examinations and Assessment - The Grading System

- 9.1 Grades will be awarded to indicate the performance of each student in each Theory Subject, or Lab/Practicals, or Mini Project with Seminar, Dissertation, etc., based on the percentage of marks obtained in CIE + SEE (Continuous Internal Evaluation + Semester End Examination, both taken together) as specified in Item 7 above, and a corresponding Letter Grade shall be given.
- 9.2 As a measure of the student's performance, a 10-point Absolute Grading System using the following Letter Grades (UGC Guidelines) and corresponding percentage of marks shall be followed:

% of Marks Secured in a subject/Course (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
90% and above ($\geq 90\%$, $\leq 100\%$)	O (Outstanding)	10
Below 90% but not less than 80% ($\geq 80\%$, $< 90\%$)	A ⁺ (Excellent)	9
Below 80% but not less than 70% ($\geq 70\%$, $< 80\%$)	A (Very Good)	8
Below 70% but not less than 60% ($\geq 60\%$, $< 70\%$)	B ⁺ (Good)	7
Below 60% but not less than 50% ($\geq 50\%$, $< 60\%$)	B (above Average)	6
Below 50% ($< 50\%$)	F (FAIL)	0
Absent	Ab	0

- 9.3 A student obtaining F Grade in any Subject is deemed to have 'failed' and is required to reappear as 'Supplementary Candidate' for the Semester End Examination (SEE), as and when conducted. In such cases, his Internal Marks (CIE Marks) in those subjects will remain as obtained earlier.
- 9.4 If a student has not appeared for the examinations, 'Ab' Grade will be allocated to him for any subject and shall be considered 'failed' and will be required to reappear as 'Supplementary Candidate' for the Semester End Examination (SEE), as and when conducted.
- 9.5 A Letter Grade does not imply any specific marks percentage; it is only the range of percentage of marks.
- 9.6 In general, a student shall not be permitted to repeat any Subject/ Course (s) only for the sake of 'Grade Improvement' or 'SGPA/CGPA Improvement'.




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- 9.7 A student earns Grade Point (GP) in each Subject/ Course, on the basis of the Letter Grade obtained by him in that Subject/ Course. The corresponding 'Credit Points' (CP) are computed by multiplying the Grade Point with Credits for that particular Subject/ Course.

$$\text{Credit Points (CP)} = \text{Grade Point (GP)} \times \text{Credits} \dots \text{For a Course}$$

- 9.8 The student passes the Subject/ Course only when he gets $GP \geq 6$ (B Grade or above).
- 9.9 The Semester Grade Point Average (SGPA) is calculated by dividing the Sum of Credit Points (ΣCP) secured from ALL Subjects/ Courses registered in a Semester, by the Total Number of Credits registered during that Semester. SGPA is rounded off to TWO Decimal Places. SGPA is thus computed as

$$\text{SGPA} = \left\{ \sum_{i=1}^N C_i G_i \right\} / \left\{ \sum_{i=1}^N C_i \right\} \dots \text{For each Semester,}$$

where 'i' is the Subject indicator index (taking into account all Subjects in a Semester), 'N' is the no. of Subjects 'REGISTERED' for the Semester (as specifically required and listed under the Course Structure of the parent Department), C_i is the no. of Credits allotted to the i^{th} Subject, and G_i represents the Grade Points (GP) corresponding to the Letter Grade awarded for that i^{th} Subject.

- 9.10 The Cumulative Grade Point Average (CGPA) is a measure of the overall cumulative performance of a student over all Semesters considered for registration. The CGPA is the ratio of the Total Credit Points secured by a student in ALL registered Courses in ALL Semesters, and the Total Number of Credits registered in ALL the Semesters. CGPA is rounded off to TWO Decimal Places. CGPA is thus computed from the I Year Second Semester onwards, at the end of each Semester, as per the formula

$$\text{CGPA} = \left\{ \sum_{i=1}^M C_i G_i \right\} / \left\{ \sum_{i=1}^M C_i \right\} \dots \text{for all S Semesters registered}$$

(ie., upto and inclusive of S Semesters, $S \geq 2$),

where 'M' is the TOTAL no. of Subjects (as specifically required and listed under the Course Structure of the parent Department) the Student has 'REGISTERED' for from the 1st Semester onwards upto and inclusive of the Semester S (obviously $M > N$), 'j' is the Subject indicator index (taking into account all Subjects from 1 to S Semesters), C_j is the no. of Credits allotted to the j^{th} Subject, and G_j represents the Grade Points (GP) corresponding to the Letter Grade awarded for that j^{th} Subject. After registration and completion of I Year I Semester however, the SGPA of that Semester itself may be taken as the CGPA, as there are no cumulative effects.

Illustration of calculation of SGPA

Course/Subject	Credits	Letter Grade	Grade points	Credit Points
Course 1	4	A	8	4*8 = 32
Course 2	4	O	10	4*10 = 40
Course 3	4	B	6	4*6 = 24
Course 4	3	B	6	3*6 = 18
Course 5	3	A+	9	3*9 = 27
Course 6	3	B	6	3*6 = 18
	21			159





$$\text{SGPA} = 159/21 = 7.57$$

Illustration of calculation of CGPA

Semester	Credits	SGPA	Credits * SGPA
Semester I	24	7	24*7 = 168
Semester II	24	6	24*6 = 144
Semester III	24	6.5	24*6.5 = 156
Semester IV	24	6	24*6 = 144
	96		612

$$\text{CGPA} = 612/96 = 6.37$$

10.0 Award of Degree and Class

10.1 If a student who registers for all the specified Subjects/ Courses as listed in the Course Structure, satisfies all the Course Requirements, and passes the examinations prescribed in the entire PG Programme (PGP), and secures the required number of **68 Credits** (with $\text{CGPA} \geq 6.0$), shall be declared to have 'QUALIFIED' for the award of the M.Pharm. Degree in the chosen specialization of Pharmacy that he was admitted into.

10.2 Award of Class

After a student has earned the requirements prescribed for the completion of the programme and is eligible for the award of M.Pharm. Degree, he shall be placed in one of the following three classes based on the CGPA:

Class Awarded	CGPA
First Class with Distinction	≥ 7.75
First Class	$6.75 \leq \text{CGPA} < 7.75$
Second Class	$6.00 \leq \text{CGPA} < 6.75$

A student with final CGPA (at the end of the PGP) < 6.00 shall not be eligible for the Award of Degree.

11.0 Withholding of Results

If the student has not paid the dues, if any, to the University or if any case of indiscipline is pending against him, the result and degree of the student will be withheld and he will not be allowed into the next semester.

12.0 General

12.1 Credit: A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.

12.2 Credit Point: It is the product of grade point and number of credits for a course.

12.3 Wherever the words "he", "him", "his", occur in the regulations, they shall include "she", "her".

12.4 The academic regulation should be read as a whole for the purpose of any interpretation.



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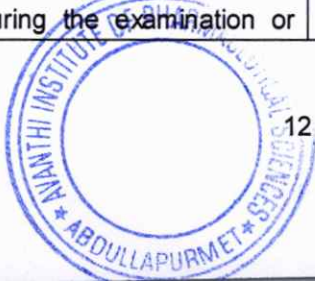
- 12.5 In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the University is final.
- 12.6 The University may change or amend the academic regulations or syllabi at any time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the University.



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**MALPRACTICES RULES****DISCIPLINARY ACTION FOR IMPROPER CONDUCT IN EXAMINATIONS**

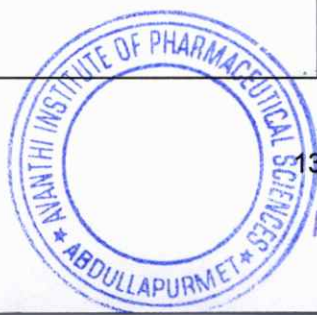
S.No	Nature of Malpractices/Improper conduct	Punishment
	If the candidate:	
1.(a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers or any other form of material concerned with or related to the subject to the examination (theory or practical) in which he is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the subject of the examination).	Expulsion from the examination hall and cancellation of the performance in that subject only.
(b)	Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell phones with any candidate or persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him.
2.	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject to the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the subjects of that Semester/year. The Hall Ticket of the candidate is to be cancelled and sent to the University.
3.	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate, who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.
4.	Smuggles in the Answer book or additional sheet or takes out or arranges to send out the question paper during the examination or	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already



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	answer book or additional sheet, during or after the examination.	appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
5.	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.
6.	Refuses to obey the orders of the Chief Superintendent/Assistant – Superintendent/ any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in- charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	Incase of students of the college, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The candidates also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them.
7.	Leaves the exam hall taking away answer script or intentionally tears of the script or any part there of inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
8.	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the



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		remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat.
9.	If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the colleges expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat. Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.
10.	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year.
11.	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester/year examinations.
12.	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the University for further action to award suitable punishment.	

Malpractices identified by squad or special invigilators

1. Punishments to the candidates as per the above guidelines.
2. Punishment for institutions: (if the squad reports that the college is also involved in encouraging malpractices)
 - (i) A show cause notice shall be issued to the college.
 - (ii) Impose a suitable fine on the college.
 - (iii) Shifting the examination centre from the college to another college for a specific period of not less than one year




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भारत का राजपत्र The Gazette of India

साप्ताहिक/WEEKLY

प्राधिकार से प्रकाशित
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इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके।
(Separate paging is given to this Part in order that it may be filed as a separate compilation)

भाग III—खण्ड 4

[PART III—SECTION 4]

[सांविधिक निकायों द्वारा जारी की गई विविध अधिसूचनाएं जिसमें कि आदेश, विज्ञापन और सूचनाएं सम्मिलित हैं]
[Miscellaneous Notifications including Notifications, Orders, Advertisements and Notices issued by
Statutory Bodies]

भारतीय रिज़र्व बैंक

मुंबई-400001, दिनांक 9 अप्रैल 2008

संदर्भ : बैंपविवि. सं. आईबीडी.-14241/23.13.048/2007-08--भारतीय रिज़र्व बैंक अधिनियम, 1934 (1934 का 2) की धारा 42 की उप-धारा (6) के खण्ड (ग) के अनुसरण में भारतीय रिज़र्व बैंक इसके द्वारा निदेश देता है कि उक्त अधिनियम की दूसरी अनुसूची में निम्नलिखित परिवर्तन किये जाएं :--

“अरब बांगलादेश बैंक लिमिटेड” शब्दों के स्थान पर “एबी बैंक लिमिटेड” शब्द होंगे।

आनन्द सिन्हा
कार्यपालक निदेशक

[PUBLISHED IN THE GAZETTE OF INDIA, No.19, PART III, SECTION 4]

Ministry of Health and Family Welfare
(Pharmacy Council of India)

New Delhi, 10th May, 2008.

Pharm.D. Regulations 2008

Regulations framed under section 10 of the Pharmacy Act, 1948 (8 of 1948).

(As approved by the Government of India, Ministry of Health vide, letter No.V.13013/1/2007-PMS, dated the 13th March, 2008 and notified by the Pharmacy Council of India).

No.14-126/2007-PCI.— In exercise of the powers conferred by section 10 of the Pharmacy Act, 1948 (8 of 1948), the Pharmacy Council of India, with the approval of the Central Government, hereby makes the following regulations, namely:-

CHAPTER-I

1. Short title and commencement. – (1) These regulations may be called the Pharm.D. Regulations 2008.
(2) They shall come into force from the date of their publication in the official Gazette.
2. Pharm.D. shall consist of a certificate, having passed the course of study and examination as prescribed in these regulations, for the purpose of registration as a pharmacist to practice the profession under the Pharmacy Act, 1948.

CHAPTER-II

3. Duration of the course. –

- a) Pharm.D: The duration of the course shall be six academic years (five years of study and one year of internship or residency) full time with each academic year spread over a period of not less than two hundred working days. The period of six years duration is divided into two phases –

Phase I – consisting of First, Second, Third, Fourth and Fifth academic year.

Phase II – consisting of internship or residency training during sixth year involving posting in speciality units. It is a phase of training wherein a student is exposed to actual pharmacy practice or clinical pharmacy services and acquires skill under supervision so that he or she may become capable of functioning independently.

- b) Pharm.D. (Post Baccalaureate): The duration of the course shall be for three academic years (two years of study and one year internship or residency) full time with each academic year spread over a period of not less than two hundred working days. The period of three years duration is divided into two phases –

Phase I – consisting of First and Second academic year.

Phase II – consisting of Internship or residency training during third year involving posting in speciality units. It is a phase of training wherein a student is exposed to actual pharmacy practice or clinical pharmacy services, and acquires skill under supervision so that he or she may become capable of functioning independently.

4. Minimum qualification for admission to. –

- a) Pharm.D. Part-I Course – A pass in any of the following examinations -

(1) 10+2 examination with Physics and Chemistry as compulsory subjects along with one of the following subjects:

Mathematics or Biology.

(2) A pass in D.Pharm course from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act.

(3) Any other qualification approved by the Pharmacy Council of India as equivalent to any of the above examinations.

Provided that a student should complete the age of 17 years on or before 31st December of the year of admission to the course.

Provided that there shall be reservation of seats for the students belonging to the Scheduled Castes, Scheduled Tribes and other Backward Classes in accordance with the instructions issued by the Central Government/State Government/Union Territory Administration as the case may be from time to time.

b) Pharm.D. (Post Bacculaureate) Course -

A pass in B.Pharm from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act:

Provided that there shall be reservation of seats for the students belonging to the Scheduled Castes, Scheduled Tribes and other Backward Classes in accordance with the instructions issued by the Central Government/State Government/Union Territory Administration as the case may be from time to time.

5. Number of admissions in the above said programmes shall be as prescribed by the Pharmacy Council of India from time to time and presently be restricted as below –
 - i) Pharm.D. Programme – 30 students.
 - ii) Pharm.D. (Post Bacculaureate) Programme – 10 students.
6. Institutions running B.Pharm programme approved under section 12 of the Pharmacy Act, will only be permitted to run Pharm.D. programme. Pharm.D. (Post Bacculaureate) programme will be permitted only in those institutions which are permitted to run Pharm.D. programme.
7. Course of study. – The course of study for Pharm.D. shall include the subjects as given in the Tables below. The number of hours in a week, devoted to each subject for its teaching in theory, practical and tutorial shall not be less than that noted against it in columns (3), (4) and (5) below.

T A B L E S

First Year :

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
1.1	Human Anatomy and Physiology	3	3	1
1.2	Pharmaceutics	2	3	1
1.3	Medicinal Biochemistry	3	3	1
1.4	Pharmaceutical Organic Chemistry	3	3	1
1.5	Pharmaceutical Inorganic Chemistry	2	3	1
1.6	Remedial Mathematics/ Biology	3	3*	1
	Total hours	16	18	6 = (40)

* For Biology

Second Year:

S.No	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
2.1	Pathophysiology	3	-	1
2.2	Pharmaceutical Microbiology	3	3	1
2.3	Pharmacognosy & Phytopharmaceuticals	3	3	1
2.4	Pharmacology-I	3	-	1
2.5	Community Pharmacy	2	-	1
2.6	Pharmacotherapeutics-I	3	3	1
	Total Hours	17	9	6 = 32

Third Year:

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
3.1	Pharmacology-II	3	3	1
3.2	Pharmaceutical Analysis	3	3	1
3.3	Pharmacotherapeutics-II	3	3	1
3.4	Pharmaceutical Jurisprudence	2	-	-
3.5	Medicinal Chemistry	3	3	1
3.6	Pharmaceutical Formulations	2	3	1
	Total hours	16	15	5 = 36

Fourth Year:

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical/ Hospital Posting	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
4.1	Pharmacotherapeutics-III	3	3	1
4.2	Hospital Pharmacy	2	3	1
4.3	Clinical Pharmacy	3	3	1
4.4	Biostatistics & Research Methodology	2	-	1
4.5	Biopharmaceutics & Pharmacokinetics	3	3	1
4.6	Clinical Toxicology	2	-	1
	Total hours	15	12	6 = 33

Fifth Year:

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Hospital posting*	No. of hours of Seminar
(1)	(2)	(3)	(4)	(5)
5.1	Clinical Research	3	-	1
5.2	Pharmacoepidemiology and Pharmacoconomics	3	-	1
5.3	Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	2	-	1
5.4	Clerkship *	-	-	1
5.5	Project work (Six Months)	-	20	-
	Total hours	8	20	4 = 32

* Attending ward rounds on daily basis.

Sixth Year:

Internship or residency training including postings in speciality units. Student should independently provide the clinical pharmacy services to the allotted wards.

- (i) Six months in General Medicine department, and
- (ii) Two months each in three other speciality departments

8. Syllabus. – The syllabus for each subject of study in the said Tables shall be as specified in Appendix -A to these regulations.
9. Approval of the authority conducting the course of study. – (1) No person, institution, society or university shall start and conduct Pharm.D or Pharm.D. (Post Baccalaureate) programme without the prior approval of the Pharmacy Council of India.
- (2) Any person or pharmacy college for the purpose of obtaining permission under sub-section (1) of section 12 of the Pharmacy Act, shall submit a scheme as prescribed by the Pharmacy Council of India.
- (3) The scheme referred to in sub-regulation (2) above, shall be in such form and contain such particulars and be preferred in such manner and be accompanied with such fee as may be prescribed:
- Provided that the Pharmacy Council of India shall not approve any institution under these regulations unless it provides adequate arrangements for teaching in regard to building, accommodation, labs., equipments, teaching staff, non-teaching staff, etc., as specified in Appendix-B to these regulations.
10. Examination. – (1) Every year there shall be an examination to examine the students.
- (2) Each examination may be held twice every year. The first examination in a year shall be the annual examination and the second examination shall be supplementary examination.
- (3) The examinations shall be of written and practical (including oral nature) carrying maximum marks for each part of a subject as indicated in Tables below :

T A B L E S**First Year examination :**

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
1.1	Human Anatomy and Physiology	70	30	100	70	30	100
1.2	Pharmaceutics	70	30	100	70	30	100
1.3	Medicinal Biochemistry	70	30	100	70	30	100
1.4	Pharmaceutical Organic Chemistry	70	30	100	70	30	100
1.5	Pharmaceutical Inorganic Chemistry	70	30	100	70	30	100
1.6	Remedial Mathematics/Biology	70	30	100	70*	30*	100*
				600			600 = 1200

* for Biology.

Second Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
2.1	Pathophysiology	70	30	100	-	-	-
2.2	Pharmaceutical Microbiology	70	30	100	70	30	100
2.3	Pharmacognosy & Phytopharmaceuticals	70	30	100	70	30	100
2.4	Pharmacology-I	70	30	100	-	-	-
2.5	Community Pharmacy	70	30	100	-	-	-
2.6	Pharmacotherapeutics-I	70	30	100	70	30	100
				600			300 = 900

Third Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
3.1	Pharmacology-II	70	30	100	70	30	100
3.2	Pharmaceutical Analysis	70	30	100	70	30	100
3.3	Pharmacotherapeutics-II	70	30	100	70	30	100
3.4	Pharmaceutical Jurisprudence	70	30	100	-	-	-
3.5	Medicinal Chemistry	70	30	100	70	30	100
3.6	Pharmaceutical Formulations	70	30	100	70	30	100
				600			500 = 1100

Fourth Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
4.1	Pharmacotherapeutics-III	70	30	100	70	30	100
4.2	Hospital Pharmacy	70	30	100	70	30	100
4.3	Clinical Pharmacy	70	30	100	70	30	100
4.4	Biostatistics & Research Methodology	70	30	100	-	-	-
4.5	Biopharmaceutics & Pharmacokinetics	70	30	100	70	30	100
4.6	Clinical Toxicology	70	30	100	-	-	-
				600			400 = 1000

Fifth Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
5.1	Clinical Research	70	30	100	-	-	-
5.2	Pharmacoepidemiology and Pharmacoeconomics	70	30	100	-	-	-
5.3	Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	70	30	100	-	-	-
5.4	Clerkship *	-	-	-	70	30	100
5.5	Project work (Six Months)	-	-	-	100**	-	100
				300			200 = 500

* Attending ward rounds on daily basis.

** 30 marks – viva-voce (oral)

70 marks – Thesis work

11. Eligibility for appearing Examination.— Only such students who produce certificate from the Head of the Institution in which he or she has undergone the Pharm.D. or as the case may be, the Pharm.D. (Post Baccalaureate) course, in proof of his or her having regularly and satisfactorily undergone the course of study by attending not less than 80% of the classes held both in theory and in practical separately in each subject shall be eligible for appearing at examination.

12. Mode of examinations.— (1) Theory examination shall be of three hours and practical examination shall be of four hours duration.

(2) A Student who fails in theory or practical examination of a subject shall re-appear both in theory and practical of the same subject.

(3) Practical examination shall also consist of a viva –voce (Oral) examination.

(4) Clerkship examination – Oral examination shall be conducted after the completion of clerkship of students. An external and an internal examiner will evaluate the student. Students may be asked to present the allotted medical cases followed by discussion. Students' capabilities in delivering clinical pharmacy services, pharmaceutical care planning and knowledge of therapeutics shall be assessed.

13. Award of sessional marks and maintenance of records.— (1) A regular record of both theory and practical class work and examinations conducted in an institution imparting training for Pharm.D. or as the case may be, Pharm.D. (Post Baccalaureate) course, shall be maintained for each student in the institution and 30 marks for each theory and 30 marks for each practical subject shall be allotted as sessional.

(2) There shall be at least two periodic sessional examinations during each academic year and the highest aggregate of any two performances shall form the basis of calculating sessional marks.

(3) The sessional marks in practicals shall be allotted on the following basis:-

(i) Actual performance in the sessional examination (20 marks);

(ii) Day to day assessment in the practical class work, promptness, viva-voce record maintenance, etc. (10 marks).

14. Minimum marks for passing examination.— A student shall not be declared to have passed examination unless he or she secures at least 50% marks in each of the subjects separately in the theory examinations, including sessional marks and at least 50% marks in each of the practical examinations including sessional marks. The students securing 60% marks or above in aggregate in all subjects in a single attempt at the Pharm.D. or as the case may be, Pharm. D. (Post Baccalaureate) course examination shall be declared to have passed in first class. Students securing 75% marks or above in any subject or subjects shall be declared to have passed with distinction in the subject or those subjects provided he or she passes in all the subjects in a single attempt.
15. Eligibility for promotion to next year.— All students who have appeared for all the subjects and passed the first year annual examination are eligible for promotion to the second year and, so on. However, failure in more than two subjects shall debar him or her from promotion to the next year classes.
16. Internship.— (1) Internship is a phase of training wherein a student is expected to conduct actual practice of pharmacy and health care and acquires skills under the supervision so that he or she may become capable of functioning independently.
(2) Every student has to undergo one year internship as per Appendix-C to these regulations.
17. Approval of examinations.— Examinations mentioned in regulations 10 to 12 and 14 shall be held by the examining authority hereinafter referred to as the university, which shall be approved by the Pharmacy Council of India under sub-section (2) of section 12 of the Pharmacy Act, 1948. Such approval shall be granted only if the examining authority concerned fulfills the conditions as specified in Appendix-D to these regulations.
18. Certificate of passing examination.— Every student who has passed the examinations for the Pharm.D. (Doctor of Pharmacy) or Pharm.D. (Post Baccalaureate) (Doctor of Pharmacy) as the case may be, shall be granted a certificate by the examining authority.

CHAPTER-III
Practical training

19. Hospital posting.— Every student shall be posted in constituent hospital for a period of not less than fifty hours to be covered in not less than 200 working days in each of second, third & fourth year course. Each student shall submit report duly certified by the preceptor and duly attested by the Head of the Department or Institution as prescribed. In the fifth year, every student shall spend half a day in the morning hours attending ward rounds on daily basis as a part of clerkship. Theory teaching may be scheduled in the afternoon.
20. Project work.— (1) To allow the student to develop data collection and reporting skills in the area of community, hospital and clinical pharmacy, a project work shall be carried out under the supervision of a teacher. The project topic must be approved by the Head of the Department or Head of the Institution. The same shall be announced to students within one month of commencement of the fifth year classes. Project work shall be presented in a written report and as a seminar at the end of the year. External and the internal examiners shall do the assessment of the project work.
- (2) Project work shall comprise of objectives of the work, methodology, results, discussions and conclusions.
21. Objectives of project work.— The main objectives of the project work is to—
- (i) show the evidence of having made accurate description of published work of others and of having recorded the findings in an impartial manner; and
 - (ii) develop the students in data collection, analysis and reporting and interpretation skills.
22. Methodology.— To complete the project work following methodology shall be adopted, namely:—
- (i) students shall work in groups of not less than *two* and not more than *four* under an authorised teacher;
 - (ii) project topic shall be approved by the Head of the Department or Head of the Institution;
 - (iii) project work chosen shall be related to the pharmacy practice in community, hospital and clinical setup. It shall be patient and treatment (Medicine) oriented, like drug utilisation reviews, pharmacoepidemiology, pharmacovigilance or pharmacoconomics;
 - (iv) project work shall be approved by the institutional ethics committee;
 - (v) student shall present at least three seminars, one in the beginning, one at middle and one at the end of the project work; and
 - (vi) two-page write-up of the project indicating title, objectives, methodology anticipated benefits and references shall be submitted to the Head of the Department or Head of the Institution.

23. Reporting .— (1) Student working on the project shall submit jointly to the Head of the Department or Head of the Institution a project report of about 40-50 pages. Project report should include a certificate issued by the authorised teacher, Head of the Department as well as by the Head of the Institution
- (2) Project report shall be computer typed in double space using Times Roman font on A4 paper. The title shall be in bold with font size 18, sub-titles in bold with font size 14 and the text with font size 12. The cover page of the project report shall contain details about the name of the student and the name of the authorised teacher with font size 14.
- (3) Submission of the project report shall be done at least one month prior to the commencement of annual or supplementary examination.

24. Evaluation.— The following methodology shall be adopted for evaluating the project work—

- (i) Project work shall be evaluated by internal and external examiners.
- (ii) Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of four students).
- (iii) Three seminars presented by students shall be evaluated for twenty marks each and the average of best two shall be forwarded to the university with marks of other subjects.

(iv) Evaluation shall be done on the following items:	Marks
a) Write up of the seminar	(7.5)
b) Presentation of work	(7.5)
c) Communication skills	(7.5)
d) Question and answer skills	(7.5)
Total	(30 marks)

(v) Final evaluation of project work shall be done on the following items:	Marks
a) Write up of the seminar	(17.5)
b) Presentation of work	(17.5)
c) Communication skills	(17.5)
d) Question and answer skills	(17.5)
Total	(70 marks)

Explanation.— For the purposes of differentiation in the evaluation in case of topic being the same for the group of students, the same shall be done based on item numbers b, c and d mentioned above.

2020-21-23

AVANTHI GROUP INSTITUTIONS											
FACULTY MONTHLY PERFORMANCE REPORT											
Name of the Faculty : <u>Gr. Swapna</u>							Month : <u>Dec 2021</u>				
Department: <u>Pharmaceutical chemistry</u>											
College: <u>Avanthi Institute of Pharmaceutical Sciences</u>											
S.No	Subject Name	Year/ Semester	Classes Held in this month	Syllabus Details			No. of Classes required to complete the Syllabus	No. of Tests Conducted in this month	No. of Student Phone calls made	No. of parents visited in this month	
				Pervious month Syllabus/ Units completed	Syllabus / Units completed in this month	Syllabus / Units completed from the beginning of the semester to till this month					
1	<u>Pharmaceutical Organic chemistry - I</u>	<u>II/I</u>	<u>12</u>	<u>2 units</u>	<u>1.5 unit</u>	<u>3.5 units</u>	<u>20</u>	<u>-</u>	<u>-</u>	<u>-</u>	
2											
3	<u>Medicinal chemistry - II</u>	<u>III/I</u>	<u>20</u>	<u>2 units</u>	<u>2.5</u>	<u>4.5 units</u>	<u>5</u>	<u>-</u>	<u>-</u>	<u>-</u>	
4											
5											
6											
Class Incharge Details:		Class :			Last Semester Subjects taught and results						
		Strength :			S No	Name of the subject			Pass %		
		No. of irregular Students:			1						
		Action Taken :			2						
					3						
			4								
Students Attendance Registers Checked by Principal Yes / No :											

G. Swapna
Faculty

HOD

[Signature]
Principal

Director

- PRINCIPAL
Avanthi's Institute of Pharmaceutical Sciences
Gunthapally (V), Hayath Nagar (M),
Ranga Reddy Dist.

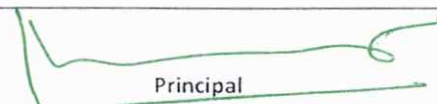


AVANTHI GROUP INSTITUTIONS											
FACULTY MONTHLY PERFORMANCE REPORT											
Name of the Faculty : <u>N. Saritha</u>							Month : <u>February</u>				
Department: <u>Analysis</u>											
College: <u>Avanthi Institute of pharmaceutical sciences</u>											
S.No	Subject Name	Year/ Semister	Classes Held in this month	Syllabus Details			No. of Classes required to complete the Syllabus	No. of Tests Conducted in this month	No. of Student Phone calls made	No. of parents visited in this month	
				Pervious month Syllabus/ Units completed	Syllabus / Units completed in this month	Syllabus / Units completed from the beginning of the semester to till this month					
1	<u>Industrial-pharmacy-I</u>	<u>III-I</u>	<u>13</u>	<u>3.5</u>	<u>01</u>	<u>4.5</u>	<u>7</u>	<u>-</u>	<u>-</u>	<u>-</u>	
2	<u>Quality control/standardization of herbs</u>	<u>IV-I</u>	<u>15</u>	<u>3.5</u>	<u>01</u>	<u>4.5</u>	<u>10</u>	<u>-</u>	<u>-</u>	<u>-</u>	
3											
4											
5											
6											
Class Incharge Details:		Class :		Last Semester Subjects taught and results							
		Strength :		S No	Name of the subject		Pass %				
		No. of irregular Students:		1							
				2							
		Action Taken :		3							
		4									
Sudents Attendance Registers Checked by Principal Yes / No :											


Faculty

HOD




Principal

Director

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21-22

AVANTHI GROUP INSTITUTIONS										
FACULTY MONTHLY PERFORMANCE REPORT										
Name of the Faculty: <u>Anil Kumar</u>							Month: <u>January</u>			
Department: <u>Pharm. Chemistry</u>										
College: <u>Avanthi Institute of Pharmaceutical Sciences</u>										
S.No	Subject Name	Year/ Semister	Classes Held in this month	Syllabus Details			No. of Classes required to complete the Syllabus	No. of Tests Conducted in this month	No. of Student Phone calls made	No. of parents visited in this month
				Pervious month Syllabus/ Units completed	Syllabus / Units completed in this month	Syllabus / Units completed from the beginning of the semester to till this month				
1	pharmaceutical organic chemistry	II-I	16	03	01	04	17	-	-	-
2	medicinal chemistry	III-II	18	04	0.5	4.5	9	-	-	-
3										
4										
5										
6										
Class Incharge Details:				Last Semester Subjects taught and results						
				Class :	S No	Name of the subject		Pass %		
				Strength :	1					
				No. of irregular Students:	2					
				Action Taken :	3					
				4						
Sudents Attendance Registers Checked by Principal Yes / No :										

Anil Kumar
Faculty

HOD



[Signature]
Principal

Director

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Ranga Reddy Dist.

AVANTHI GROUP INSTITUTIONS										
FACULTY MONTHLY PERFORMANCE REPORT										
Name of the Faculty: <u>P. Nagaraju</u>							Month :			
Department: <u>Pharmacology</u>										
College: <u>Avanthi Institute of pharmaceutical sciences</u>										
S.No	Subject Name	Year/ Semister	Classes Held in this month	Syllabus Details			No. of Classes required to complete the Syllabus	No. of Tests Conducted in this month	No. of Student Phone calls made	No. of parents visited in this month
				Pervious month Syllabus/ Units completed	Syllabus / Units completed in this month	Syllabus / Units completed from the beginning of the semester to till this month				
1	pharmacology-II	III-I	13	04	0.5	4.5	10	-	-	-
2	pharmacology-I	II-II	15	03	01	04	18	-	-	-
3										
4										
5										
6										
Class Incharge Details:		Class :		Last Semester Subjects taught and results						
		Strength :		S No	Name of the subject		Pass %			
		No. of irregular Students:		1						
		Action Taken :		2						
				3						
		4								
Sudents Attendance Registers Checked by Principal Yes / No :										

P. Nagaraju
Faculty

HOD



[Signature]
Principal

Director

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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by PCI, AICTE & Affiliated to JNTUH)

Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.




COURSE FILE

SUBJECT: MEDICINAL CHEMISTRY
ACADEMIC YEAR: 2021-2022

NAME OF THE FACULTY: U. RISHIKA
DESIGNATION: ASSISTANT PROFESSOR
DEPARTMENT: PHARMACEUTICAL CHEMISTRY
BRANCH: PHARM.D
YEAR: III YEAR





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Course File Index

S. No.	ITEM DESCRIPTION
1	VISION AND MISSION
2	COURSE OUTCOMES
3	COURSE SYLLABUS
4	LESSON PLAN
5	ACADEMIC CALENDER
6	TIME TABLE
7	LECTURE NOTES
8	UNIVERSITY QUESTION PAPER
9	INTERNAL QUESTION PAPER
10	INTERNAL QUESTION PAPER WITH ANSWER KEY
11	ASSIGNMENT QUESTION PAPER
12	STUDENT ASSIGNMENT
13	RESULT
14	ATTAINMENT




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COURSE FILE

COURSE DESCRIPTION/COURSE INFORMATION SHEET

NAME OF THE DEPARTMENT: PHARM.D

COURSE TITLE	MEDINAL CHEMISTRY			
COURSE CODE	PH305			
REGULATION	R8		YEAR	III
COURSE STRUCTURE	LECTURES	TUTORIALS	PRACTICALS	CREDITS
	3	1	3	-
COURSE TEACHER	U. RISHIKA			
NO.OF HOURS ALLOTTED PER WEEK	LECTURES	TUTORIALS	PRACTICALS	
	3	1	3	



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1.VISION & MISSION OF THE INSTITUTION

VISION	TO DEVELOP HIGHLY SKILLED PROFESSIONALS WITH ETHICS AND HUMAN VALUES
MISSION	WE ARE COMMITTED TO PROVIDE A POSITIVE AND PROFESSIONAL LEARNING ENVIRONMENT WHERE ALL STUDENTS ARE INSPIRED TO STRIVE FOR EXCELLENCE IN ORDER TO ACHIEVE THEIR POTENTIAL AS DIGNIFIED AND COMPETENT PHARMACISTS, TECHNOLOGY INNOVATORS, MANAGERS AND LEADERS IN GLOBAL SOCIETY THROUGH A COHESIVE NETWORK THE PARENTS, STUDENTS, COLLEGE STAFF AND INDUSTRY.

COURSE HANDOUT

- PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs) & (PSOs)
- COURSE OUTCOMES(COs)
- DETAILED SYLABUS

Program Outcomes (POs) and (PSOs)


PO 1 Pharmacy Knowledge: Provide high quality, evidence-based, patient-centered care in cooperation with patients, prescribers and members of the inter professional health care team

PO 2 Practical Skill: Demonstrate mastery and application of core knowledge and skills in relation to the evolving biomedical, clinical, epidemiological and social-behavioral sciences.

PO 3 Professional Identity: Evaluate practice and care, and promote continuous improvement in one's own patient care and pharmacy services

PO 4 Problem Solving: Demonstrate self-calibration skills and a commitment to the lifelong learning needed to provide high quality care




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PO 5 Communication: Effectively utilize information, informatics and technology to optimize learning and patient care

PO 6 Planning Ability: Demonstrate effective interpersonal written and verbal skills, adapt to socioeconomic and cultural factors as well as situational applications

PO 7 Leadership Skills & Team Work : Demonstrate exemplary professional, ethical and legal behaviors, complying with all federal, state and local laws and regulations related to pharmacy practice

PO 8 Life Long Learning: Demonstrate awareness and responsiveness to the system of health care, effectively utilizing systems of care to provide cost-effective, optimal care

PO9 Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social context. Demonstrate behavior that recognizes cultural and personal variability in values, communication and life styles.

PO10 Pharmacist and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the profession.

PO11 Environment and Society: Understand the impact of professional pharmacy solutions in societal and environmental context and demonstrate the knowledge of, and need for sustainable development.

PSO1: Able to apply the knowledge gained during the course of the program in drug discovery and development, their safety and efficacy and current technologies in Pharmaceutical industry

PSO 2: Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team.

PSO3: Able to do multidisciplinary jobs in the pharmaceutical industries and would be able to write effective project reports in multidisciplinary environment in the context of changing technologies.



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DETAILED SYLLABUS

S. No.	Topic
01	Modern concept of rational drug design: Modern concept of rational drug design: Introduction Quantitative Structure Activity Relationship (QSAR) Prodrug Combinatorial chemistry Computer aided drug design (CADD) Concept of antisense molecules.
02	Anti-infective agents a) Local anti-infective agents b) Preservatives c) Antifungal agents d) Urinary tract anti-infectives e) Antitubercular agents f) Antiviral agents and Anti AIDS agents g) Antiprotozoal agents h) Anthelmintics i) Antiscabies and Antipedicular agents
03	Sulphonamides and Sulphones
04	Antimalarials
05	Antibiotics
06	Antineoplastic agents
07	Cardiovascular agents a) Antihypertensive agents b) Antianginal agents and vasodilators c) Antiarrhythmic agents d) Antihyperlipidemic agents e) Coagulants and Anticoagulants f) Endocrine

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08	Hypoglycemic agents
09	Thyroid and Antithyroid agents
10	Diuretics
11	Diagnostic agents
12	Steroidal Hormones and Adrenocorticoids
REFERENCES	<p>a. Wilson and Gisvold's Text book of Organic, Medicinal and Pharmaceutical Chemistry, Lippincott-Raven Publishers-New York, Philadelphia.</p> <p>b. William.O.Foye, Principles of Medicinal Chemistry, B.I. Waverly Pvt. Ltd., New Delhi.</p> <p>c. Burgers, Medicinal Chemistry, M.E., Welly Med.Chemistry M.E. Walffed Johnwilley and Sons, Wiley-interscience Publication, New York, Toranto.</p> <p>d. A Text Book of Medicinal Chemistry Vol. I and II by Surendra N. Pandeya, S.G. Publisher, 6, Dildayal Nagar, Varanasi -10.</p> <p>e. Indian Pharmacopoeia 1985 and 1996. The Controller of Publications, Civil Lines, Delhi - 54.</p> <p>f. Current Index of Medical Specialities (CIMS) and MIMS India, MIMS, A.E. Morgan Publications (I) Pvt. Ltd, New Delhi-19.</p> <p>g. Organic Drug Synthesis-Ledniser Mitzsher Vol. I and II. h. Pharmaceutical Chemistry drug Synthesis Vol. I and II by H. J. Roth and A. Kleemann.</p> <p>i. The Science and Practice of Pharmacy Vol. 1 and 2, Remington, MACK Publishing Company, Easton, Pennsylvania.</p>



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LECTURE PLAN

S. No.	Topic	No of Lecture Hours	Teaching Learning Process
TOPIC-1			
01	Modern concept of rational drug design:	06	
	Modern concept of rational drug design: Introduction	01	Chalk & Board
	Quantitative Structure Activity Relationship (QSAR)	01	Power Point Presentation
	Prodrug	01	Chalk & Board
	Combinatorial chemistry	01	Power Point Presentation
	Computer aided drug design (CADD)	01	Power Point Presentation
	Concept of antisense molecules.	01	Chalk & Board
TOPIC-2			
02	Anti-infective agents	29	
	a) Local anti-infective agents	03	Power Point Presentation
	b) Preservatives	03	Chalk & Board
	c) Antifungal agents	03	Power Point Presentation
	d) Urinary tract anti-infectives	03	Power Point Presentation
	e) Antitubercular agents	03	Power Point Presentation
	f) Antiviral agents and Anti AIDS agents	05	Chalk & Board
	g) Antiprotozoal agents	03	Power Point Presentation
	h) Anthelmintics	03	Chalk & Board
	i) Antiscabies and Antipedicular agents	03	Power Point Presentation
TOPIC-3			
03	Sulphonamides and Sulphones	03	Power Point Presentation
TOPIC-4			





04	Antimalarials	03	Power Point Presentation
TOPIC-5			
05	Antibiotics	03	Power Point Presentation
TOPIC-6			
06	Antineoplastic agents	03	Chalk & Board
TOPIC-7			
07	Cardiovascular agents	26	
	a) Antihypertensive agents	05	Power Point Presentation
	b) Antianginal agents and vasodilators	04	Chalk & Board
	c) Antiarrhythmic agents	05	Power Point Presentation
	d) Antihyperlipidemic agents	04	Chalk & Board
	e) Coagulants and Anticoagulants	04	Power Point Presentation
	f) Endocrine	04	Power Point Presentation
TOPIC-8			
08	Hypoglycemic agents	06	Power Point Presentation
TOPIC-9			
09	Thyroid and Antithyroid agents	08	Chalk & Board
TOPIC-10			
10	Diuretics	06	Chalk & Board
TOPIC-11			
11	Diagnostic agents	04	Power Point Presentation
TOPIC-12			





12	Steroidal Hormones and Adrenocorticoids	04	Power Point Presentation
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

Academic Calendar 2021-22

Pharm. D (Regular) III, IV, V, VI Years and Pharm.D (PB) III Year

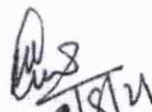

Pharm. D (Regular) III, IV, V Years

S. No	Description	Duration	
		From	To
1	Commencement of classwork	09.08.2021	
2	1 st Spell of Instructions (including Dussehra Recess)	09.08.2021	06.11.2021 (12 Weeks)
3	Dussehra Recess	11.10.2021	16.10.2021
4	First Mid Term Examinations	08.11.2021	13.11.2021 (1 Week)
5	2 nd Spell of Instructions	15.11.2021	12.02.2022 (13 Weeks)
6	Submission of First Mid Term Exam Marks to the University on or before	20.11.2021	
7	Supplementary Examinations	22.11.2021	27.11.2021
8	Second Mid Term Examinations	14.02.2022	19.02.2022 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	26.02.2022	
10	3 rd Spell of Instructions	21.02.2022	07.05.2022 (11 Weeks)
11	Third Mid Term Examinations	09.05.2022	14.05.2022 (1 Week)
12	Preparation Holidays and Practical Examinations	16.05.2022	28.05.2022 (2 Weeks)
13	Submission of Third Mid Term Exam Marks to the University on or before	21.05.2022	
14	End / Supplementary Examinations	30.05.2022	11.06.2022 (2 Weeks)
15	Summer vacation	13.06.2022	18.06.2022 (1 Week)

Pharm. D (Regular) VI Year and Pharm.D (PB) III Year

S. No	Description	Duration	
		From	To
1	Commencement of internship in General ward	09.08.2021	05.02.2022 (6 Months)
2	Report submission of internship in General ward	07.02.2022	
3	Commencement of internship in Specialty ward-1	08.02.2022	07.04.2022 (2 Months)
4	Report submission of internship in Specialty ward-1	09.04.2022	
5	Commencement of internship in Specialty ward-2	11.04.2022	10.06.2022 (2 Months)
6	Report submission of internship in Specialty ward-2	11.06.2022	
7	Commencement of internship in Specialty ward-3	13.06.2022	12.08.2022 (2 Months)
8	Report submission of internship in Specialty ward-3	13.08.2022	
9	Final viva of internship	17.08.2022	




REGISTRAR

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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by PCI, AICTE & Affiliated to JNTUH)

Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.



DEPARTMENT OF PHARMACY PRACTICE

A.Y 2021-22 TIME TABLE

PHARM.D III YEAR

W.E.F: 09/08/2021

COLLEGE TIMINGS:9:30AM-3:50PM

DAYS	9.30AM-10.20AM	10.20AM-11.10AM	11.10AM-12.00PM	12.00AM-12.50PM	12.50PM-1.20PM	1.20P.M-2.10PM	2.10PM-3.00PM	3.00PM-3.50PM
MON	P.A LAB		P.A		L U N C H	M.C	P.J	SEMINARS
TUE	M.C LAB		P.THER.-II			P.F (T)	P.THER.-II	P.COL-II
WED	P.F LAB		P.THER.-II			M.C (T)	P.COL-II	P.A
THU	P.A	P.F	P. THER.-II LAB (HOSPITALVIST)			P.THER.-II LAB(HOSPITALVISIT)		
FRI	P.COL-II LAB		M.C			P.J	P.THER.II (T)	P.COL-II (T)
SAT	P.F	P.J	LIBRARY/SPORTS			M.C	P.COL-II	P.A(T)

SUBJECTNAME	FACULTYNAME	DESIGNATION
Pharmacology-II	Dr. K. Leema	Assistant Professor
Pharmaceutical Analysis	Dr. V. Anudeep	Assistant Professor
Pharmacotherapeutics-II	Dr. Evangileen	Assistant Professor
Pharmaceutical Jurisprudence	Dr. Ravinayak	Assistant Professor
Medicinal Chemistry	U. Rishika	Assistant Professor
Pharmaceutical Formulations	I. Swathi/ P.V Pavan Kumar	Assistant Professor/ AssistantProfessor
Pharmaceutical Analysis-Lab	Dr. V. Anudeep	Assistant Professor
Pharmacotherapeutics-II-Lab	Dr. Evangileen	Assistant Professor
Medicinal Chemistry-Lab	U. Rishika	Assistant Professor
Pharmaceutical Formulations-Lab	I. Swathi/ P.V Pavan Kumar	Assistant Professor

HOD

DEPARTMENT OF PHARMACY PRACTICE

PRINCIPAL

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Committed to Excellence in Technical Education



urinary tract anti-infective agents:-

→ The infection occurs to UT (urinary tract) is called (UTI)

mainly women are more prone to UTI → 35%.

→ mainly kidney, ureters, bladder, urethra effected.

* Microorganisms cause (UTI):-

1) E. coli

2) Pseudomonas aeruginosa

3) streptococcus faecalis

4) staphylococcus epidermidis

5) proteus mirabilis.

→ Normal bacterial count in urine is → (1000/ml)

If it rises to 1 lakh then it is considered as → UTI.

* classification of UTI:

① Quinolones

a) non-fluorinated quinolone

Ex: nalidixic acid

b) Fluorinated quinolone

Ex: ciprofloxacin

ofloxacin

sparfloxacin

gatifloxacin

pefloxacin

levofloxacin

③ sulfonamide:

sulfamethoxazole

④ pyrimidine derivatives

Trimethoprim

⑤ Miscellaneous:

methenamine

nitrofurantoin.

② Antibiotic:-

cephalosporin

Ampicillin

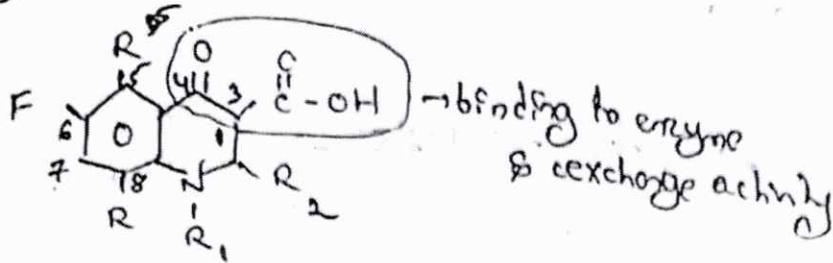
carbenicillin.



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SAR of quinolones:



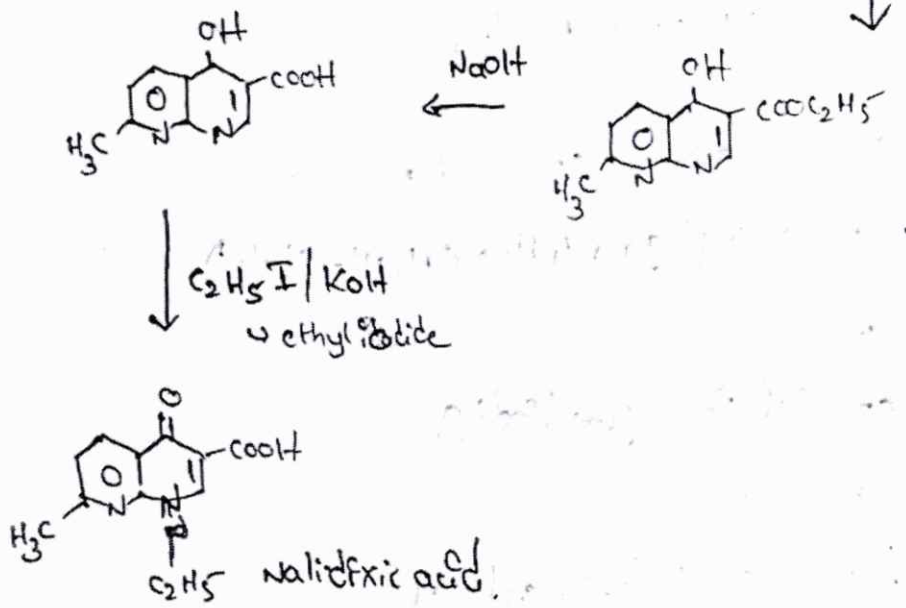
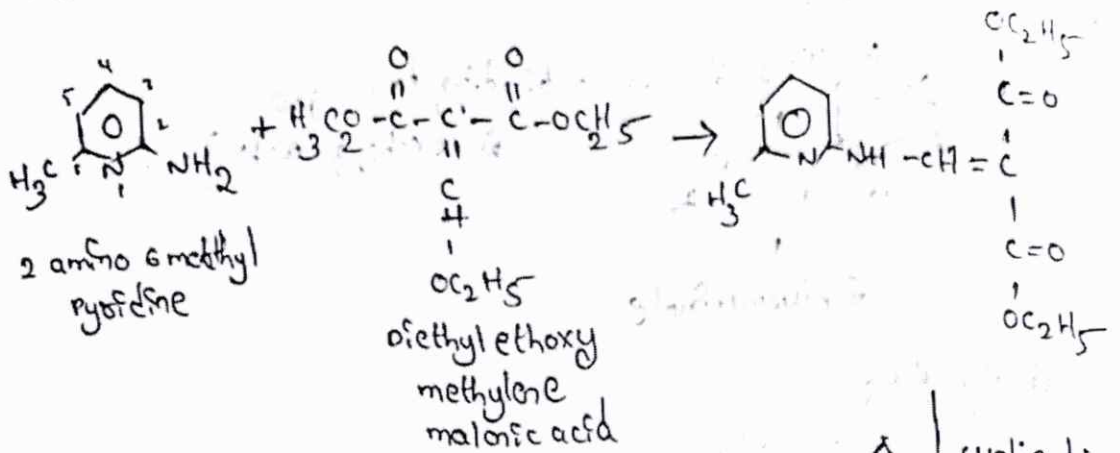
6 Fluoroquinolone

- ① R₁ & R₈
 - enhance activity
 - influence pharmacokinetics
- ② R₂
 - close to gyrase (bacterial enzyme)
 - If lower alkyl group better (CH₃, C₂H₅)
- ③ oxygen
 - crucial for enzyme binding
- ④ Fluorine:
 - enhance antibacterial activity
- ⑤ R₇, R₅
 - Enhance activity




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Nalidixic acid



MoA:-

- Primarily it is effective against gram (+ve) bacteria.
- Lower concentration it acts as → bacteriostatic (that inhibit growth and production of microorganisms)
- At ↑ conc it acts as bacteriocidal (kill the microbes).

Properties:

- Cream colour
- Insoluble in water
- But soluble in solution of carbonates ($\text{Ca}^{2+}, \text{Mg}^{2+}, \text{K}^{+}$)



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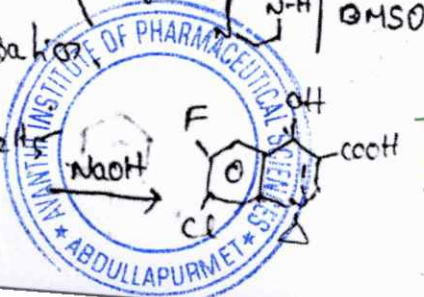
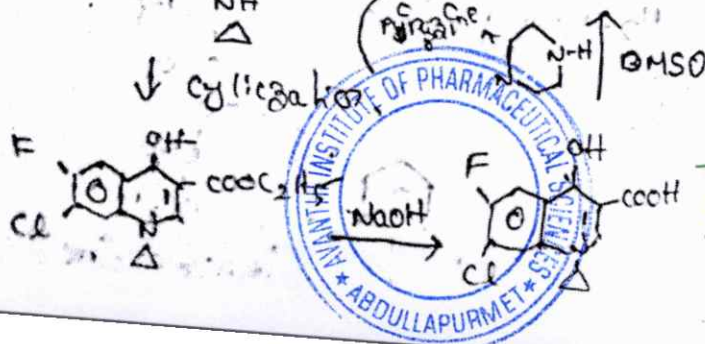
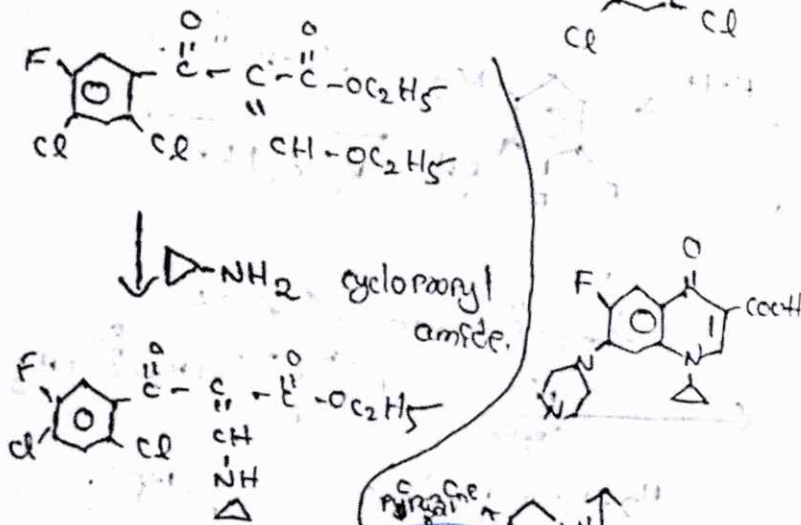
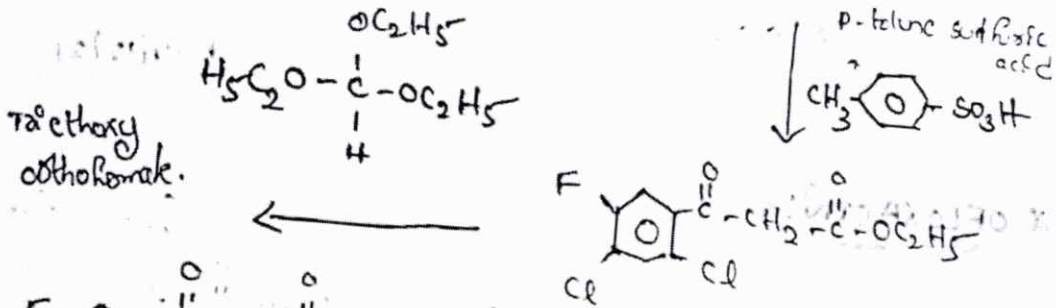
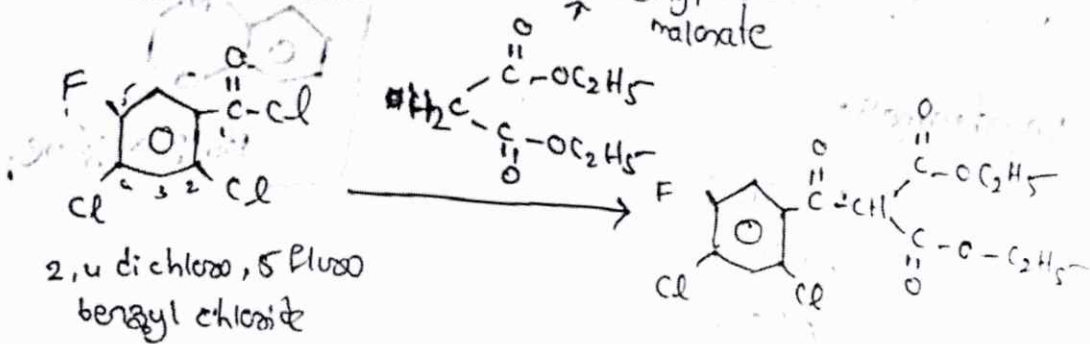
side effects:

- 1) Hives
- 2) rashes
- 3) Intense itching

Brand name:

ULIX-P
UREX
DIX
GRAMOGEN

2) Ciprofloxacin:



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MOA:

→ It works by inhibiting topoisomerase II (gyrase) and topoisomerase-IV which are responsible for bacterial strand separation, leading to inhibition of cell division.

Properties:-

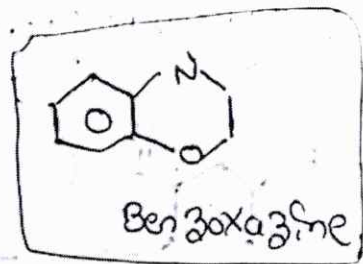
- light yellow in color
- insoluble in water, ethanol
- practically soluble in 0.1 N of NaOH

side effects

vomiting, diarrhea, skin rash

Brand names:

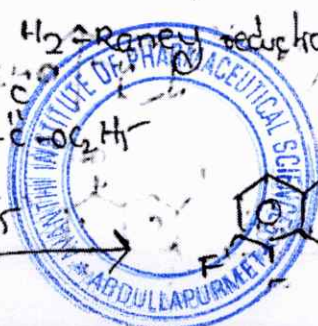
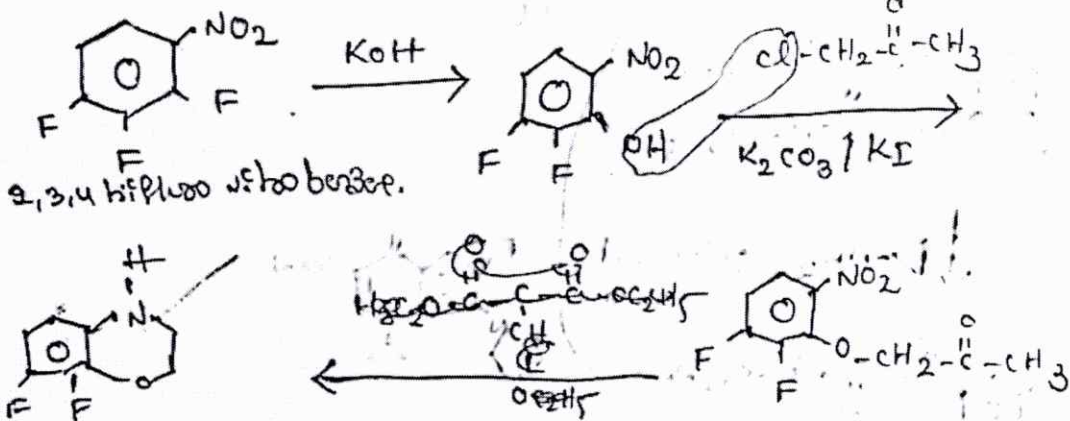
- Adiflox
- Aviflox
- Alcip
- Alcipso



dt: 14/12/21

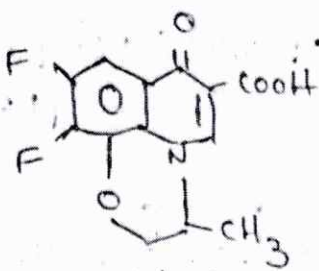
* OFLOXACIN:

(Chloroacetic)



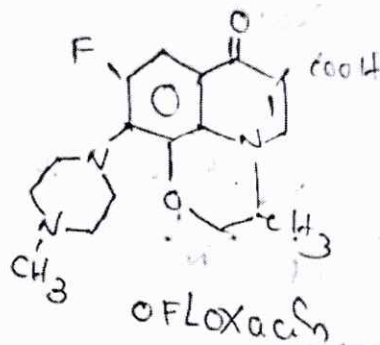
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PPA (piperazine) + ethanoic acid



piperidine-benzoxazine

N-methyl piperazine



OFLOXacin

MOA:

- It is a broad spectrum act against both gram (+ve) (-ve) bacteria.
- It works by inhibiting topoisomerase II (DNA gyrase) topoisomerase IV, thereby inhibition of cell division of bacteria.

Properties:

- off white to pale yellow crystalline
- soluble in aq solutions at pH 2-5
- strongly soluble in aqueous solution at pH 7.
- freely soluble in aq soln at pH 9-12 (pKa > 9)

side effects:

nausea, vomiting, diarrhea.

Brand name:

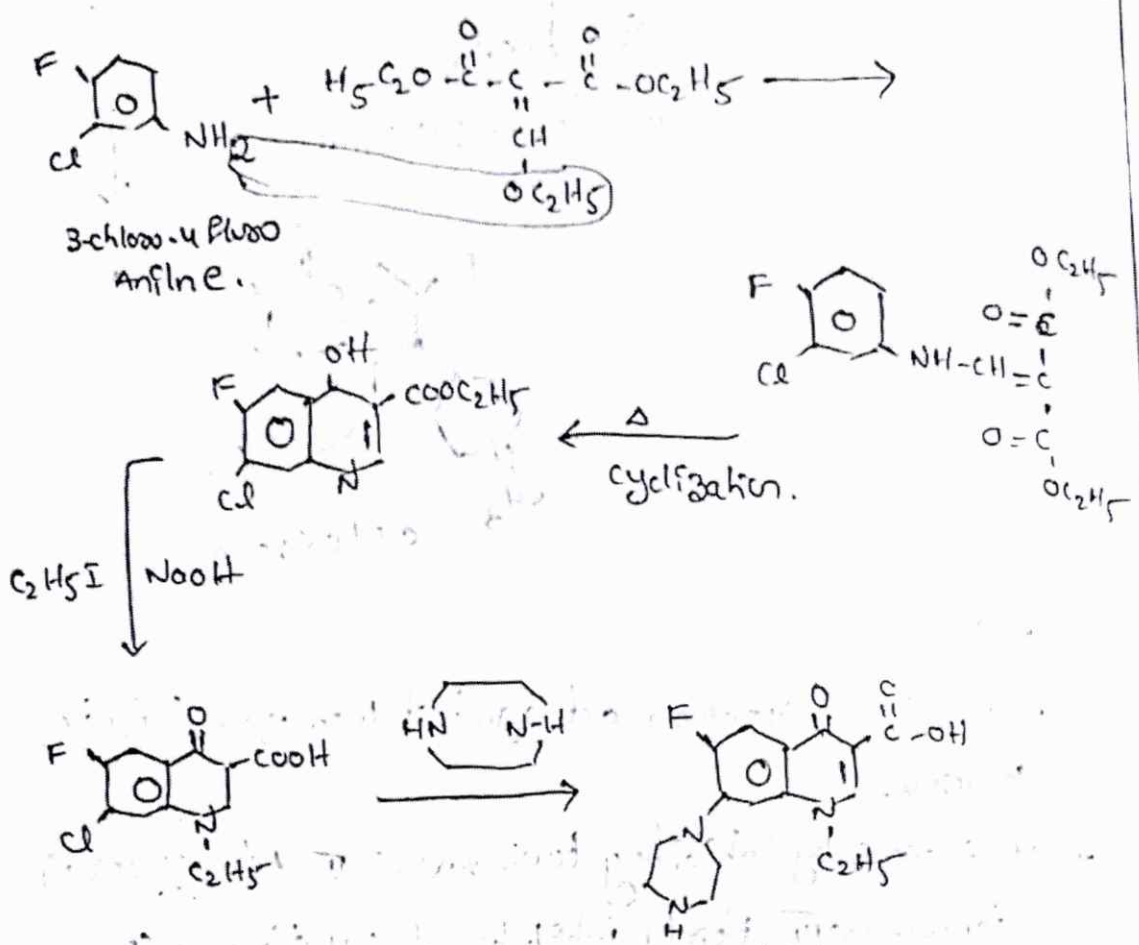
(ZENFLOZ) (Z) ZENFLOXANOL
 ANOFLOX
 OTOX
 OMLIFLOX



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X NOR FLOXACIN: (Included in list of essential medicines/drugs) dt. 16/12/22

LEH10



MOA:

→ It is a broad spectrum antibiotic, effects on both gram +ve & -ve

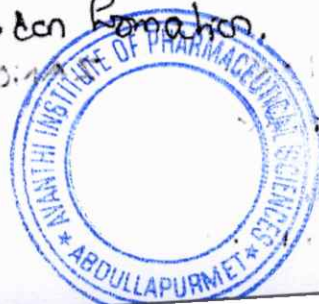
Normally it works by inhibiting DNA gyrase, topoisomerase II & IV, thereby inhibit cell division.

→ Norfloxacin doesn't bind to DNA gyrase, but it does binding to topoisomerase II & IV

* 2001 research said that norfloxacin works by 2 ways

- ① Irreversible complex formation of DNA gyrase (Type-II or IV) → quinolone norfloxacin

② Miscellaneous formation



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properties:-

- 1) white to light yellow colour
- 2) Insoluble in water, soluble in chloroform, glycerol

side effects:

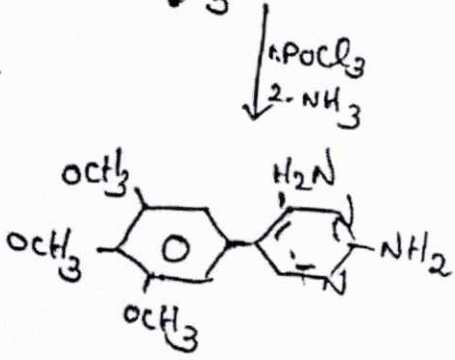
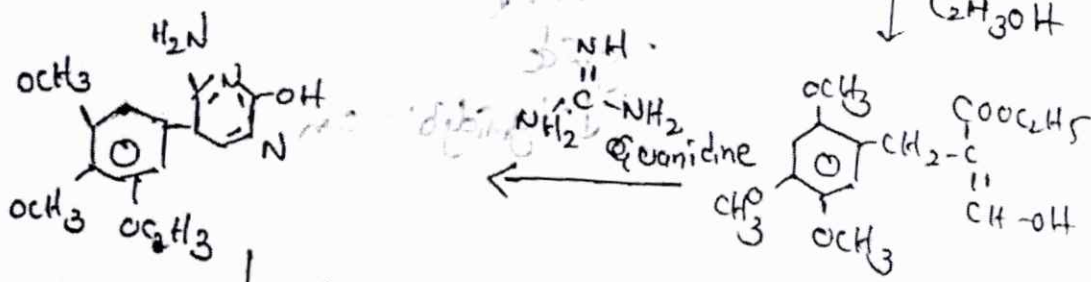
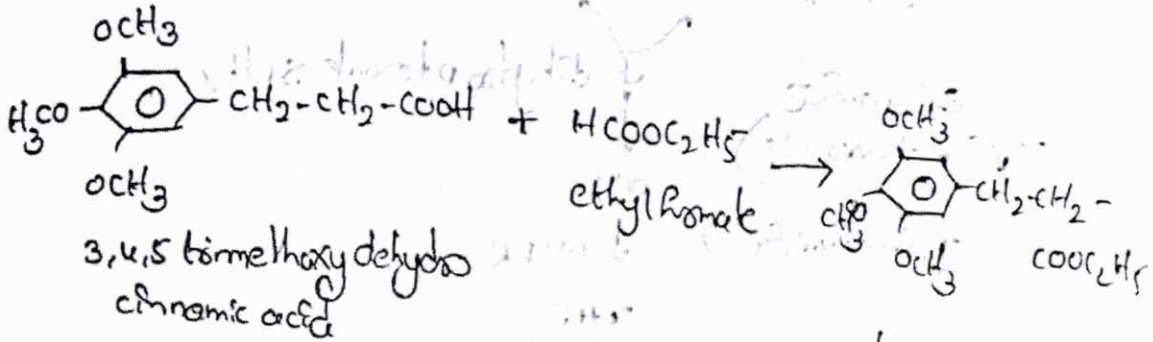
nausea, vomiting, diarrhoea, headache, insomnia etc.

Brand names:-

- NoxPlox
- ZePlox
- UroPlox
- UroPlox

xx

Toximetoposin:-



OCH₃ = methoxy

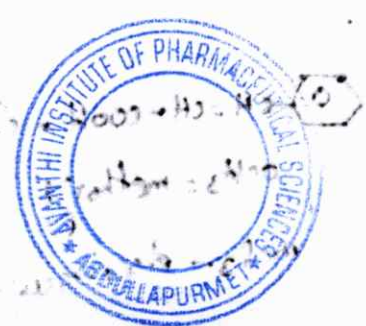
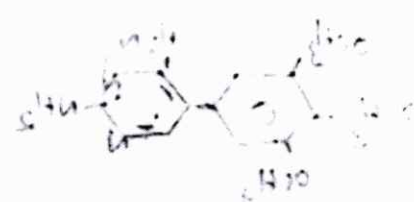
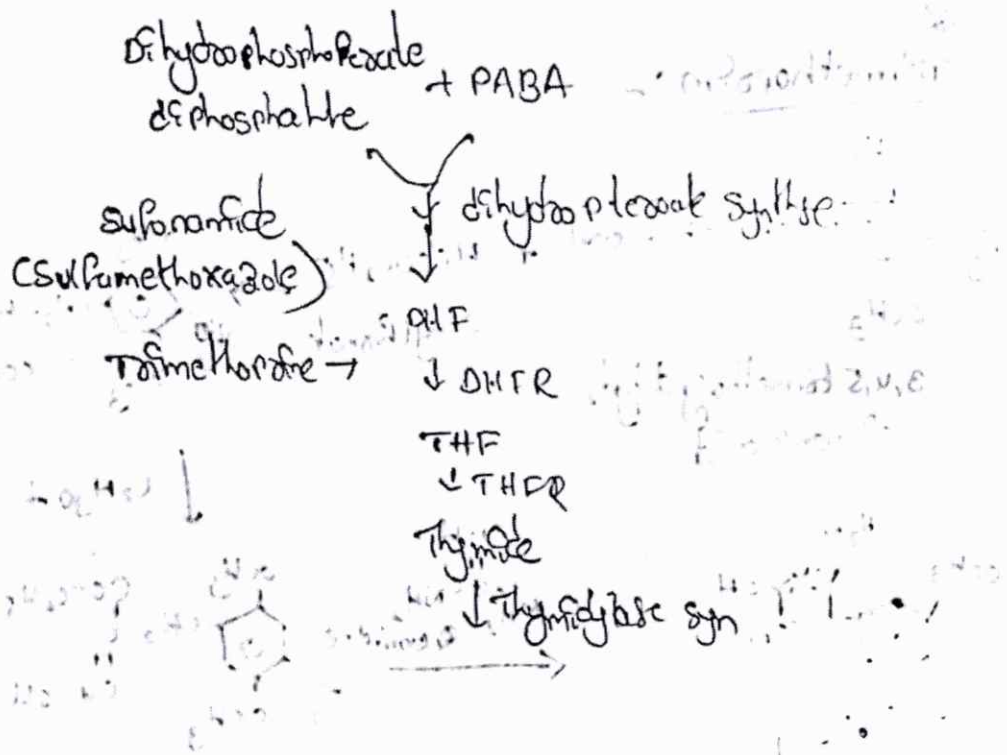
POCl₃ → phosphoryl chloride



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MOA

- It inhibits (dihydrofolate reductase enzyme) found in bacteria. It prevents reduction of DHF to THF (tetrahydrofolate).
- This is reverse of synthetic pathway of the thymidine this interference inhibits the cell division.
- Dihydrophosphate di-phosphate & PABA (para-aminobenzoic acid) combined because of dihydrophosphate synthase give DHF (dihydrofolic acid).
- DHFR act on DHF to convert to THF (tetrahydrofolic acid)



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Anti-tubercular agents:

dt: 30/12/22

→ TB is a disease caused by *Mycobacterium tuberculosis*

→ cell wall is made up of phospholipids

→ by spreading

symptoms: unproductive cough
fever
night sweat
loss of appetite

classification

① based on efficacy & safety clinical utility

① First line drugs

RIPES

(those drugs high efficacy & less toxicity)

F → Field defect drug → (ETHAMBUTOL) ETMB

I → Isoniazid (INH/I)

R → Rifampicin (RMP/R)

S → streptomycin (STR/S)

T → 2 times per day → Pyrazinamide (PZA/P)

→ All above drugs except PZA are taken → "OD" (once a day)

② second line drugs

→ bcoz of less efficacy than 1st line drugs.

→ more toxic than 1st line drugs.

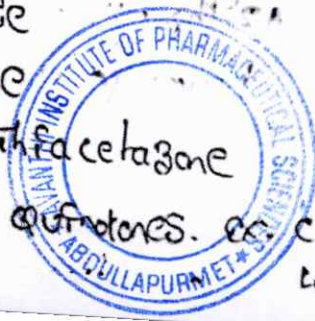
S → salicylate (para amino salicylic acid) PAS

E → Ethionamide

C → cycloserine

O → older drug rifacelazone

N → newer drugs



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levofloxacin

D+ drugs rarely used

Ex: - Kanamycin
Aminoglycoside

③ Third line drugs:

→ The drugs included beca of its availability and therapeutic effect

① Linezolid (giving therapeutic effect)

↓
effect not proven

so not listed in WHO

② Rifabutin (1992 USA government accepted but not listed in WHO)

Chemical classification :-

① Salicylic acid derivatives :- P.A.S

② Pyridine derivatives :- Ethionamide, INH

③ Ethylene amino butane derivatives :- Ethambutol

④ Pyrazine derivatives :- Pyrazinamide

⑤ Antibiotics :- Streptomycin, Rifampicin

⑥ Miscellaneous: Quinolones

Fluoroquinolones: Ciprofloxacin

Levofloxacin

⑦ Macrolides

Erythromycin

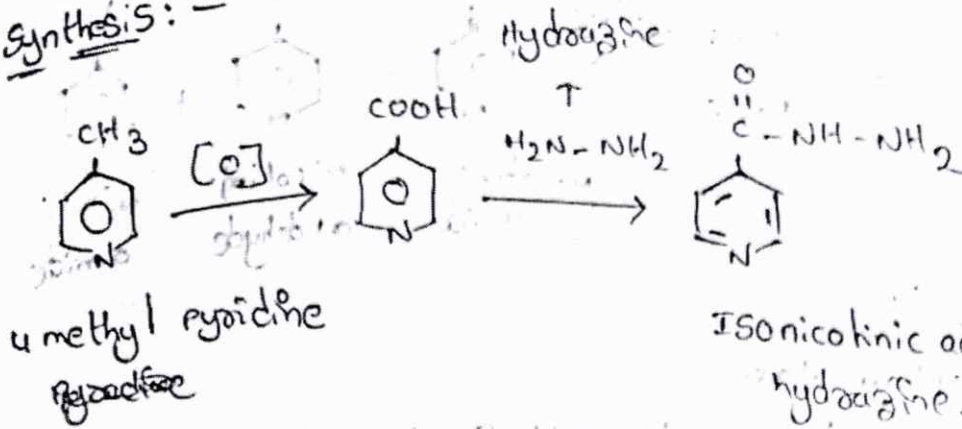
Kanamycin



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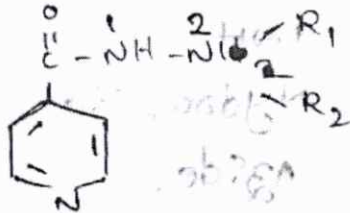
Imp:
 * Isoniazid (INH, isonicotinic acid hydrazine)

Synthesis: -



mainly in combination with rifampicin + isoniazid given.

S.A.R:



1 -> N' should be unsubstituted.

2 -> pyridine ring replaced by any other hetero ring and less activity

3 -> Active substitution by primary activity atoms. (isoniazid)

MOA:

⇒ cell wall is made of mycolic acid. It is responsible for synthesis of mycolic mycobacterium cell wall.

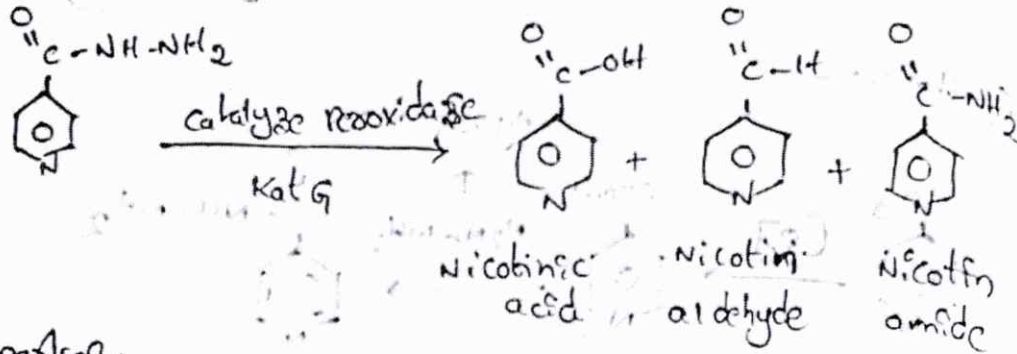
⇒ Isoniazid inhibits the synthesis of mycolic acid it will inhibit the synthesis of mycobacterium cell wall

⇒ INH basically acts as prodrug, by the enzyme catalase peroxidase (Kat G)

→ INH INH converts that prodrug into



1. INH converts to NAD^+ (Nicotinamide Adenine Dinucleotide) form



properties:-

- > light yellow color
- > Insoluble in water, slightly soluble in chloroform, ether.

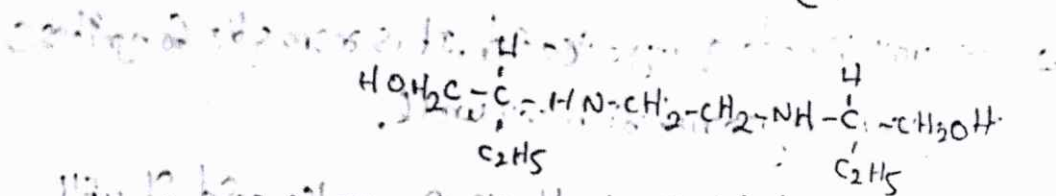
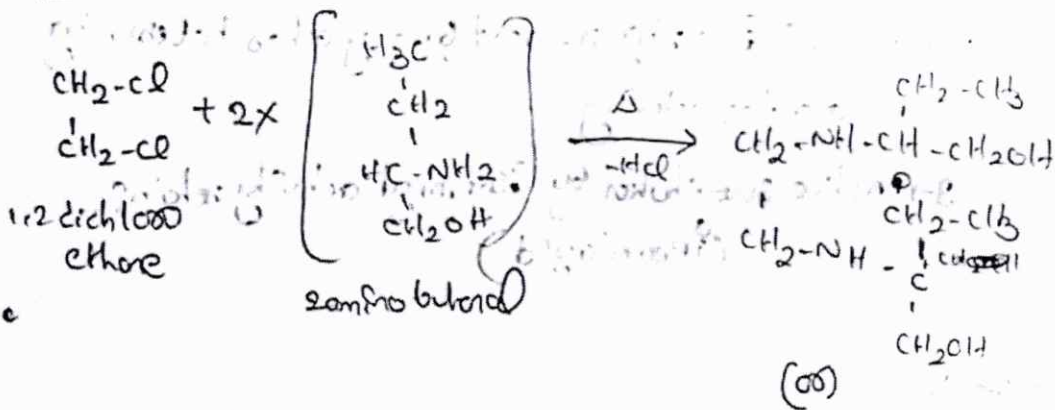
side effects:-

- 1) Nausea, vomiting
- 2) skin rash
- 3) dizziness

Brand names

- INH
- Nydrazide
- Azide

Ethambutol:- Imp



How is this structure of ethambutol

MOA

It is bacteriostatic and generally the bacteria (mycobacteria) form a complex mycolyl - arabinogalactan peroxidase

-> when mycolic acid attach to arabinos.



→ Ethambutol inhibits arabinogalactase synthase enzyme those by inhibition of the complex leading to increase in permeability
 → It works by obstruction of cell wall of mycobacterium

properties:

colorless
 odorless
 bitter taste
 soluble in ethanol, H₂O

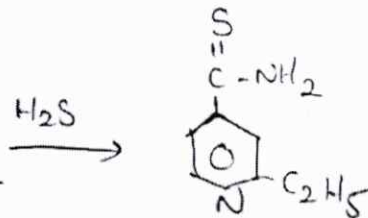
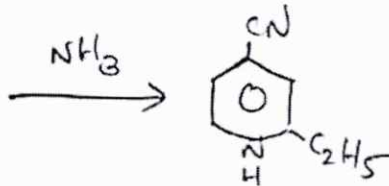
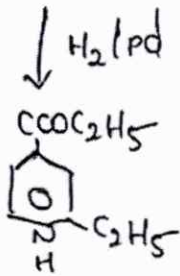
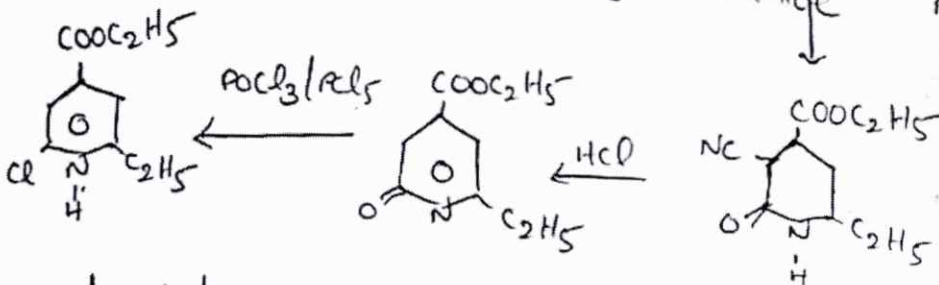
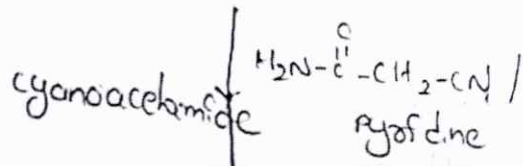
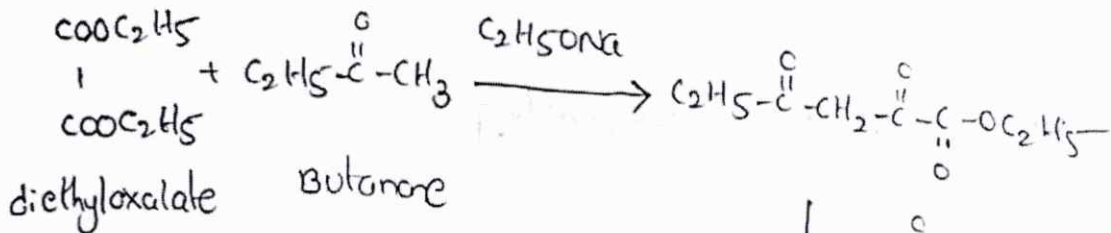
side effects

nausea
 rashes
 fever.

Brand name:

ambutol
 mycobutol
 zyltham.

* Ethionamide:



Ethionamide.



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MOA:

- It thought to work's by inhibition of cell wall synthesis
- It activated by mono oxidase enzyme, then binds to NAOT (Nucleoside amfrodiamine)

Properties:

- yellow color
- Freely soluble in - pyridine
- Soluble in dichloroethane
- Insoluble in H₂O, alcohol


Side effects:

Diarrhoea, Nausea, Rashes, vomiting.

* Brand names:

- ① Ethamid
- ② Ethide
- ③ Myobid
- ④ Ethokok



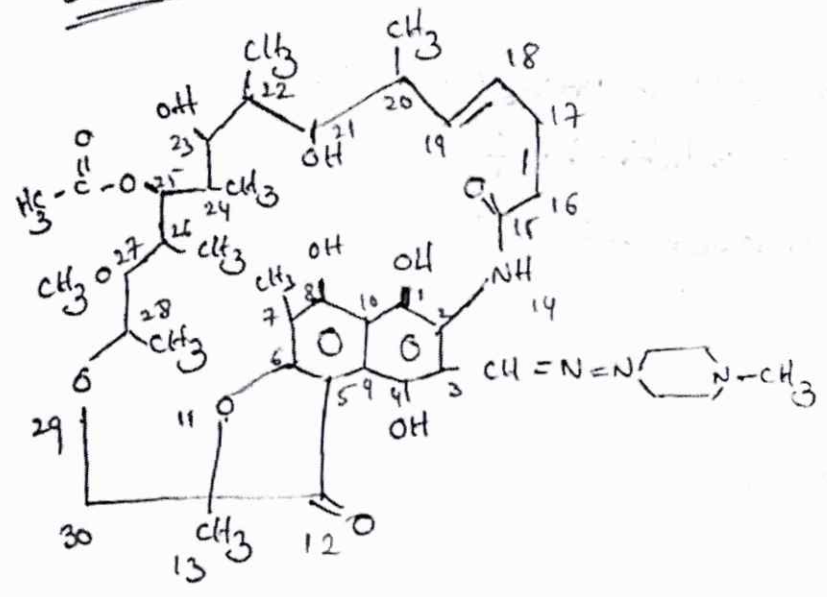

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Rifampicin / Rifamycin

dt. 28/01/23

- rifamycin is one group of antibiotics produced from the streptomyces mediterranei.
- rifamycin is 7 types { A, B, C, D, E, S, SV }
- rifamycin B is having more sensitive. and they are 1st commercial antibiotics
- rifampicin is a derivative of 'rifamycin B'

Structure:



SAR (C, 17, 18)

- The double bond present essential for reduction of with des H activity
- ② C, 1, 3, 21, 23
↓
The presence of hydroxyl OH group is essential
- ③ Any alteration of C 21, C 23 of OH diminishes activity.
- ④ AS a substituent give better activity.

Mech ⑤

bcas as it helps in binding to DDPP

CONA degrades RNA polymerase



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MOR

It noncovalently bind to DNA dependent RNA polymerase (DNA) resulting inhibition of mRNA synthesis. without affecting host.

+ DDRP becoz (it binds to peptide chain which is not found in eukaryotic).

side effects:

- vomiting
- loss of appetite
- sweat, tears → turns to orange to red colour

properties:

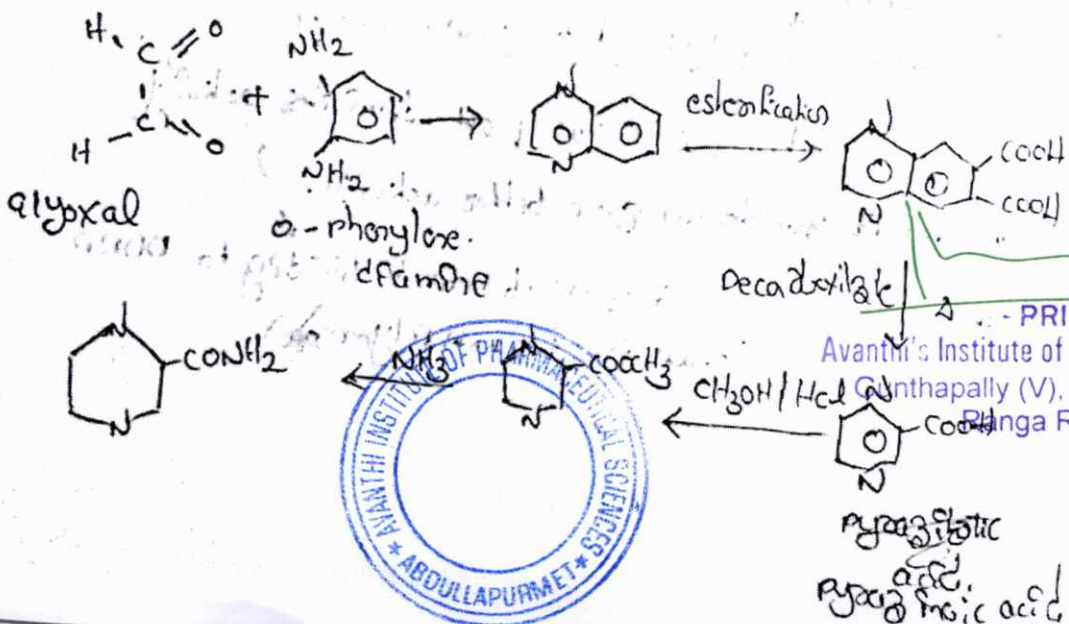
- Red brown colour soluble in DMSO (dimethyl sulphoxide)
- methylene chloride, carbon tetrachloride
- sparingly soluble in water and alcohol

Brand name -

- RCIN
- HACOX
- AKT-2
- FORECOX

② pyrazinamide (IMP)

Synthesis:



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MOA:

It was thought pyrazinamide (PZA) converts to pyrazinonic acid, which inhibits FAS-I (Fatty acid synthase - I).
→ The enzyme responsible for metabolizing of fatty acids in mycobacterium.

side effects:

- vomiting
- diarrhoea
- loss of appetite

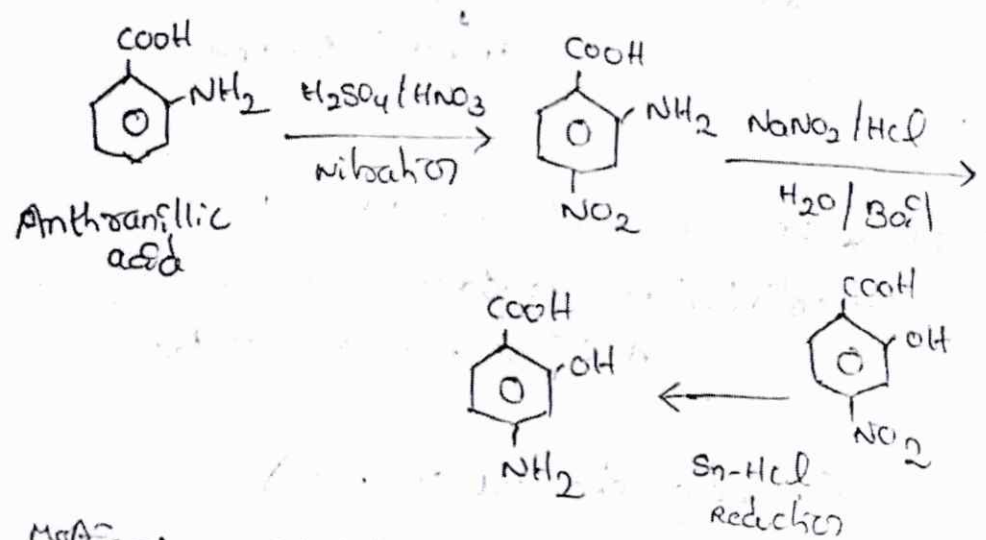
Brand name:

- PZaciba
- pyoazima
- Fozecox (anti-tubercular, pyrazinamide rifampin)

properties:

white ~~cryst~~ crystals, slightly soluble in water, ether
but soluble in sodium hydroxide

MOA: para-aminosalicylic acid (PAS): -



MOA:

It is a inhibitor of bacterial plate metabolism

properties:

- white crystalline powder
- sparingly soluble in water
- soluble in NaOH / KOH

Brand names:

- Q-PAS
- Myco-PAS
- Macropas

side effects:

- nausea
- vomiting



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ANTI VIRAL AND ANTI AIDS

nt 31/01/23

* viruses:

- obligate intracellular parasite
- It is smallest of all self replicating organisms.
- It can move through the filter that retain bacteria
- It can invade the host cell.
- virus having either DNA or RNA.
They form capsid → then they form capsomere (protein)

steps:

- I) → Adsorption / Attachment
 - II) Penetration
 - III) uncoating → capsid breakdown } Life cycle of viruses
 - IV) Transcription → enters into cytoplasm (host)
 - V) Translation → use the nucleic acid of host cell
 - VI) Assembly
 - VII) Release
- It will form mRNA

→ This all above steps combined to cause → viral infection.
To treat that viral infection drugs used are called Antiviral and Anti AIDS drugs.

Classification: (based on chemical structure)

① Admantane derivatives ② Nucleoside derivatives

Ex: - Amantadine

Rimantadine

Somantadine

Tromantadine

Acyclovir

Ganciclovir

Valacyclovir

Penciclovir

Valacyclovir



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③ pyrimidine derivatives:-
Idoxuridine
Tofluridine

④ Phosphorus derivatives:-
Foscarnet

class. based on treatment protocol:-

① Treatment of respiratory viral infection.

a) Adamantane derivatives
ex: Amantadine
Rimantadine

② Treatment of Herpes cytomegalo viral infection.

a) purine derivatives.
ex: Acyclovir
Ganciclovir

b) pyrimidine derivatives
Idoxuridine
Tofluridine.

c) phosphorus derivatives:- ex: Foscarnet.

③ Treatment of HIV (human immunodeficiency virus):

steps a) reverse transcriptase inhibition

1) purine derivatives:- didanosine

2) pyrimidine derivatives:- zidovudine
stavudine

3) non nucleoside derivatives:- Nevirapine
Delavirdine

b) protease inhibition:

Saquinavir, Ritonavir } used during chronic
Zidovudine } situation.

c) Integrase inhibition

Zintevir

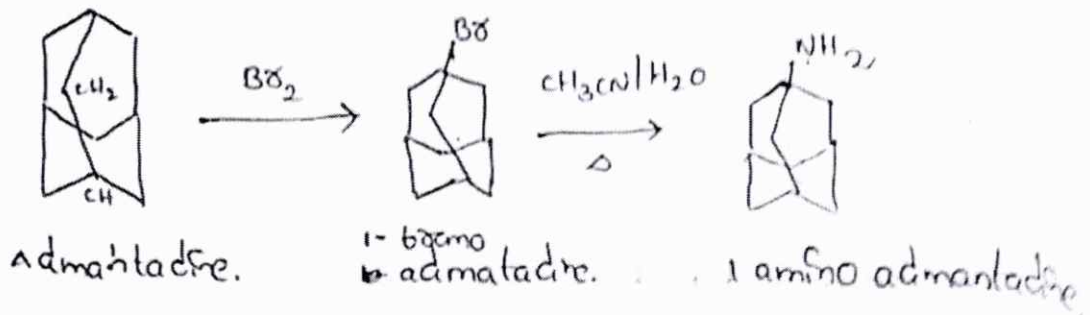



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Amantadine

DL-01102123 7



MOA: It is a inhibitor of uncoating of virus of its genome in the host cytoplasm, so that they stops the transcription process (mRNA synthesis).

properties

- white chr powder
- freely soluble in water

side effects

- 1) drowsiness
- 2) light headedness
- 3) dizziness
- 4) confusion

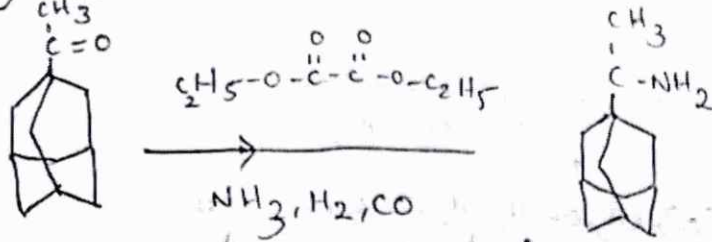
brand names

- ① NEAMAN
- ② Amantol
- ③ comantol



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Rimantadine! -



Rimantadine.

MOA: It is believed to be like amantadine it is a substrate of uncoupling of virus.

- It is used for prophylaxis & treatment of influenza-A.
- It directly inhibits the protein, which act as ion channel.

properties:

white, crystalline

insoluble in H_2O

soluble in most alkalis, CH_2Cl_2

side effects:

- 1) light headache
- 2) dizziness
- 3) confusion
- 4) drowsiness

Brand names:

① Flumadine

② Rimantadine

* Rimantadine less scientific than Amantadine.



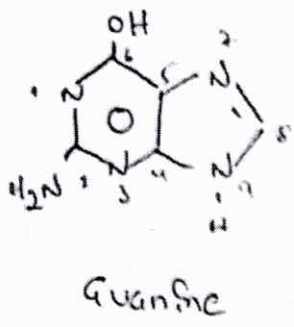
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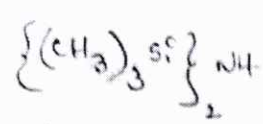
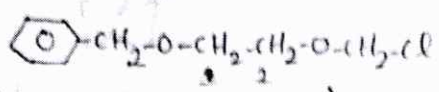
* Acyclovir: (Time)

OL: 03/02/23

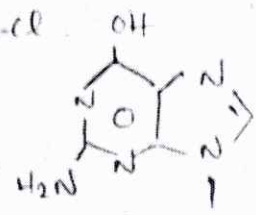
Synthesis:



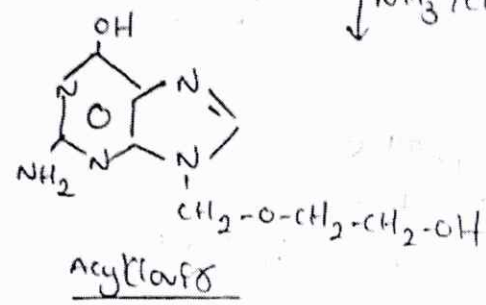
(1 benzoyloxy 2 hexamethoxy ethane)



(Hexamethyl di-silazane)



\downarrow $\text{NH}_3 / \text{CH}_3\text{OH}$



MOA:-

- It will convert to into acyclovir monophosphate by viral thymidine kinase. Then it converts to acyclovir triphosphate by host cell kinase. And this acyclovir triphosphate will inhibit the DNA polymerase, present in inhibition of DNA structures synthesis.

properties:

- white crystals soluble in diluent acids.
- insoluble / slightly soluble in water, alcohol

side effects:

- nausea, vomiting
- sometimes renal problems.

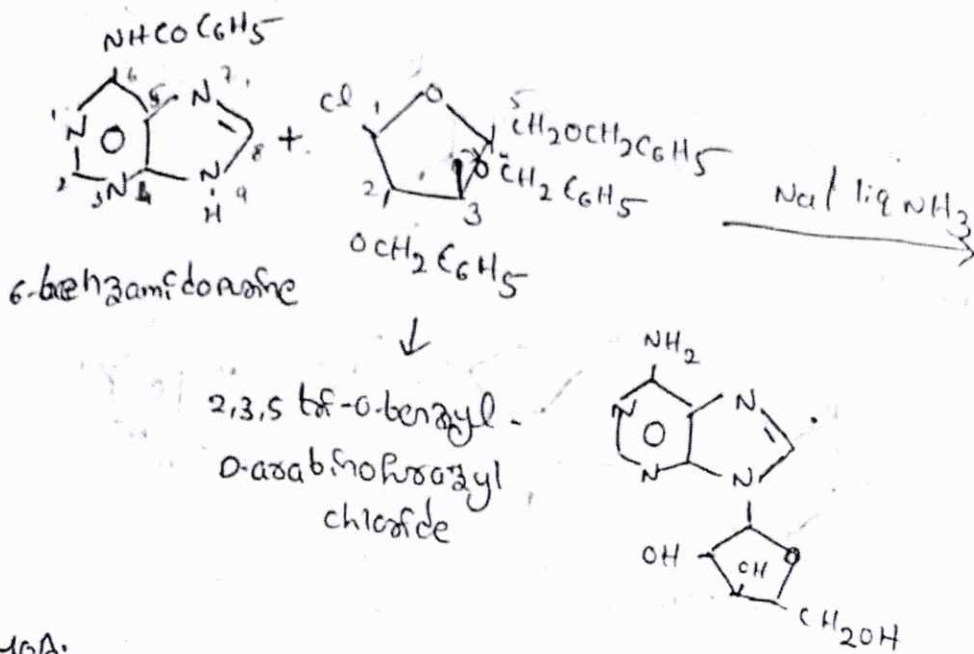
Brand names

- Zovirax Zovirax
- Viraax
- Viroclo
- Acyclovir
- Aclovir



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vidarabine: (vidaravine) (imc)



MOA:

- ① It works by inhibiting viral RNA synthesis, resulting in reduction of viral replication.
- ② It converts to ara-ATP by thymidine kinase, which fraction inhibits the viral dATP resulting false ~~which will~~ nucleic acid synthesis.

properties:

- white crystalline insoluble in acetone
- slightly soluble in water and alcohol

side effects

itching, rash

brand name:

ARASEN-V

ARA-V

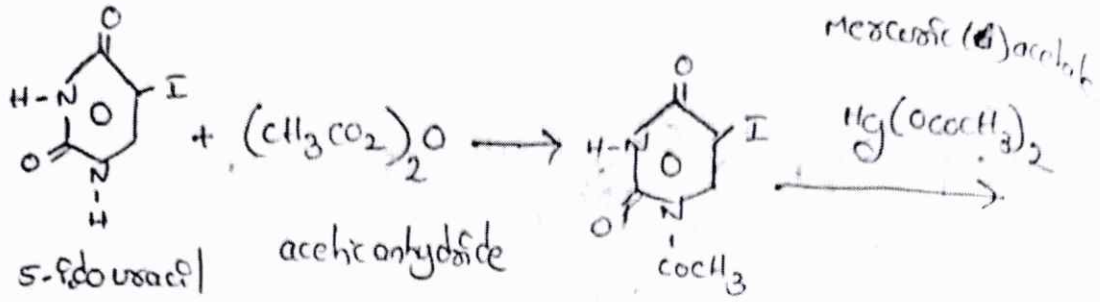


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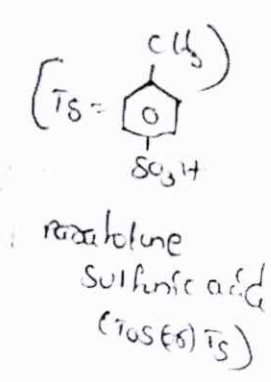
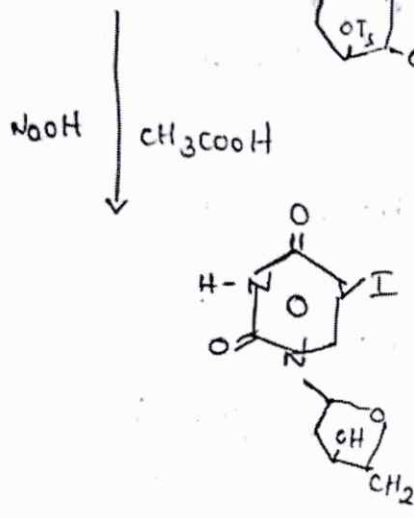
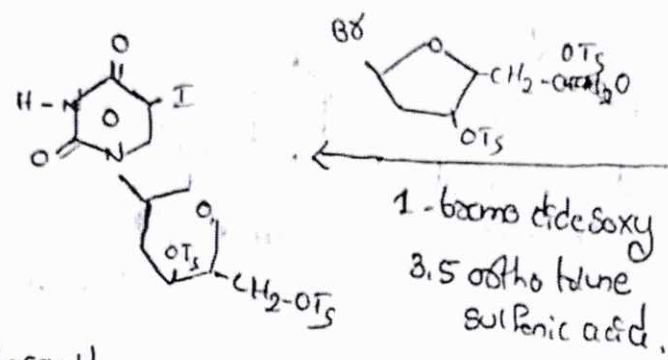
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SYNTHESIS:



mercuric (II) acetate
 $Hg(O_2CCH_3)_2$



MoA:

It converts to di, tri, form of phosphate which incorporate into viral DNA & disrupt the viral replication.

properties:

- white crystalline
- soluble in 2N HCl & 2N NaOH
- slightly soluble in water, chloroform, ethanol

side effects:

blurred vision, photophobia

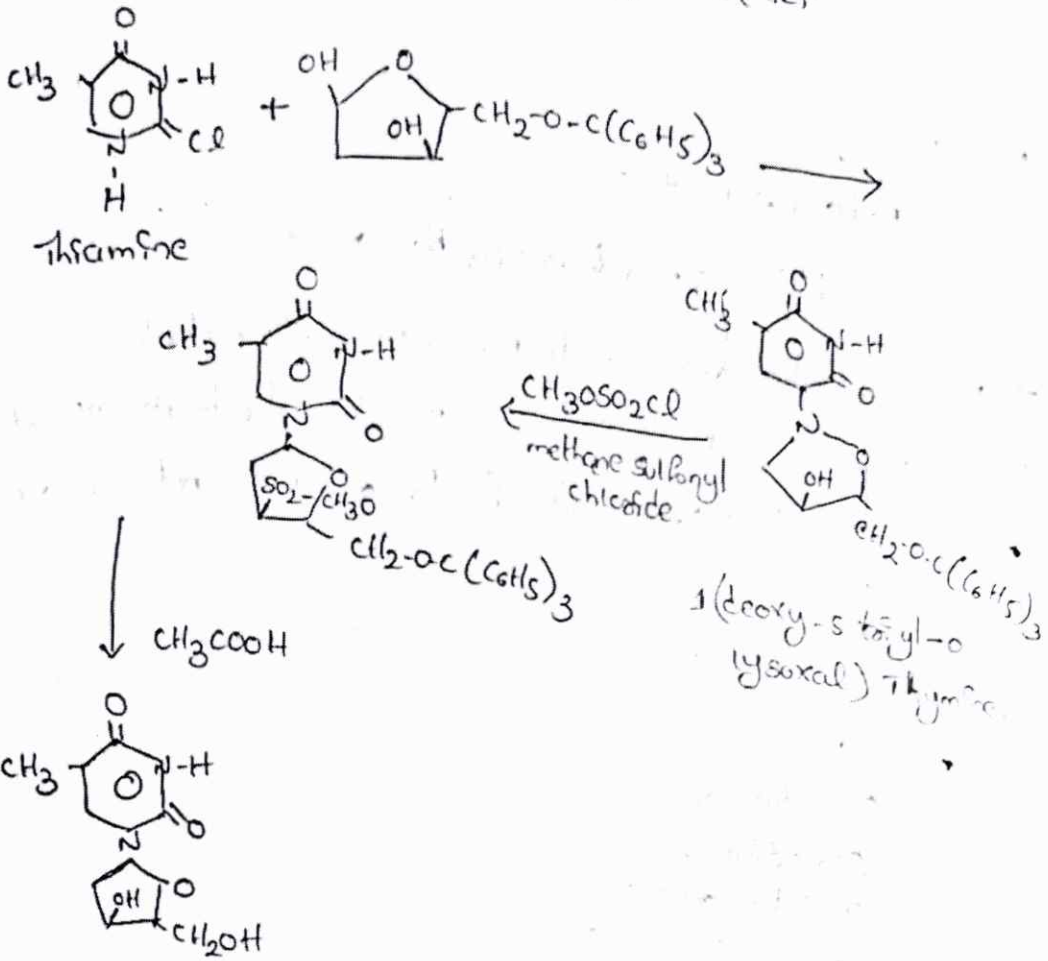
Brand names:

- Iduofin eye
- Xuofme
- Toxfl
- Ridiflox
- Imfel-M



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zidovudine : (XX) (or) Azidothymidine (AZT)



MOA:

It works by selectively inhibit^{viral} reverse transcriptase enzyme, which is responsible for making a copy DNA copy of its RNA. It is also necessary for viral replication.

Properties:

- white to beige color
- slightly soluble in water, chloroform, ethanol

side effects:

- acid flux (indigestion)
- loss of appetite.

Brand name:

- Retovir
- Zidovir
- Zidme
- Zidovir



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ANTI - PROTOZOAL AGENTS

Protozoal infections:

Protozoa → unicellular

unicellular infections more dangerous than bacterial infections

- metabolic functions more close to human metabolic function
- it is not easy to attack protozoal infection due to its metabolism
- so that they have more side effects, and also not safe used in pregnancy.

Protozoal infections:

- ex: malaria
- Amoebiasis
- Giardiasis
- Toxichomoniasis
- Trypanosomiasis.

① Amoebiasis / Amebiasis: -

The protozoa responsible for this "Entamoeba histolytica".
Around 48 million people was infected by amoebiasis.



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clinical classification: -

- ① systemic
- ② luminal
- ③ mixed (both systemic & luminal)

① systemic:

chloroquine
emetine
dehydroemetine

② Luminal

Iodoquinol
paramomycine
ofloxanide proate

③ mixed (systemic & luminal)

metronidazole
tinidazole.

chemical classification: -

1) nitro derivatives: -

metronidazole
ornidazole
tinidazole
secnidazole

① Amide derivatives:

ofloxanide proate
Eto. famide
cefamide

② Emetine derivatives: -

emetine
dehydroemetine

③ Hydroxyquinoline derivatives: -

Iodoquinol
chloroquinol

④ Antibiotic: paramomy.

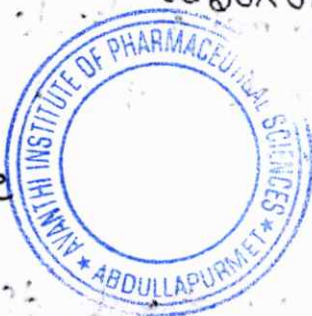
paramomycine

⑤ o-amino-quinoline: - chloroquine

⑥ nitrothiazole derivative: - nitazoxedine

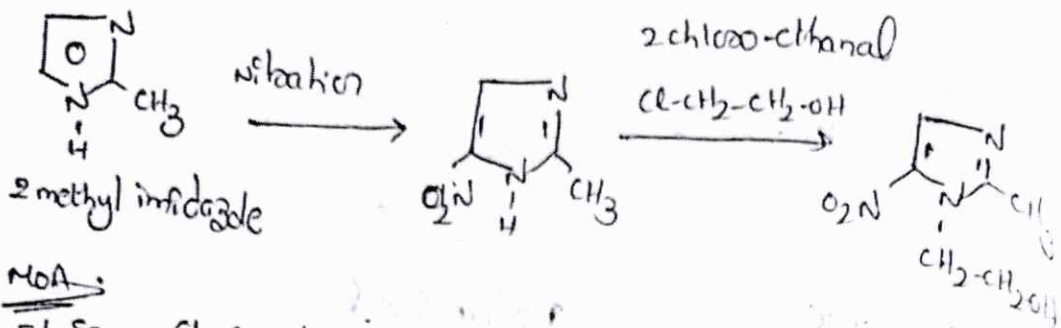
⑦ organic arsenical

acetarsol
carbarsone



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metronidazole :- Imp



MOA :

It is a nitroimidazole derivative it inhibits nucleic acid by forming nitroso acid base (R=N-O) there by disrupt DNA synthesis of parasite.

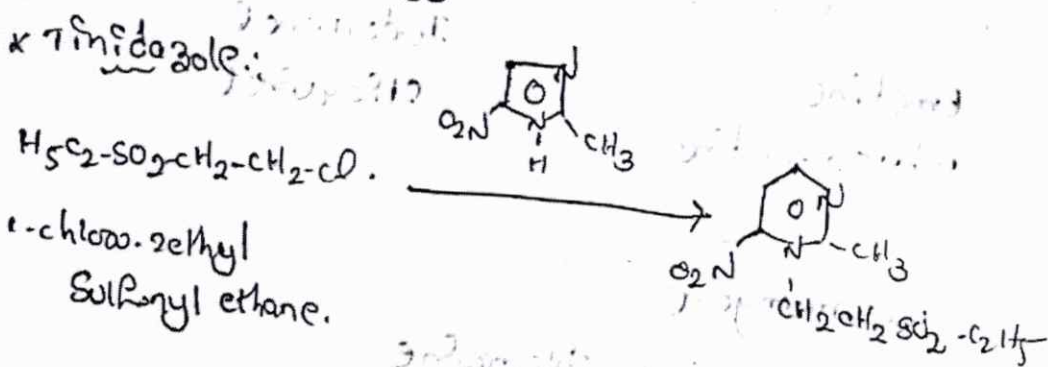
- It has less sensitive to mammalian nucleic acid
- By using ferredoxine enzyme

properties :

- white crystalline soluble in dil. saline
- sparingly soluble in di-methyl formamide.

side effect : Nausea, vomiting, dizziness, Abdominal pain.

Brand name : Axiology
 Flagyl
 metrogyl
 metron
 Aldegyl



MOA : It converts to metronidazole
 (Same of metronidazole)

properties :

- white powder.
- slightly soluble in ethanol, di-methyl formamide.

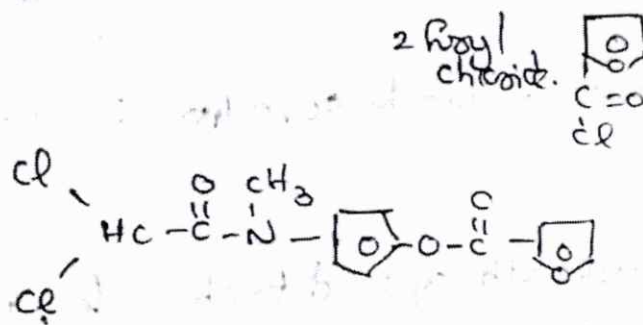
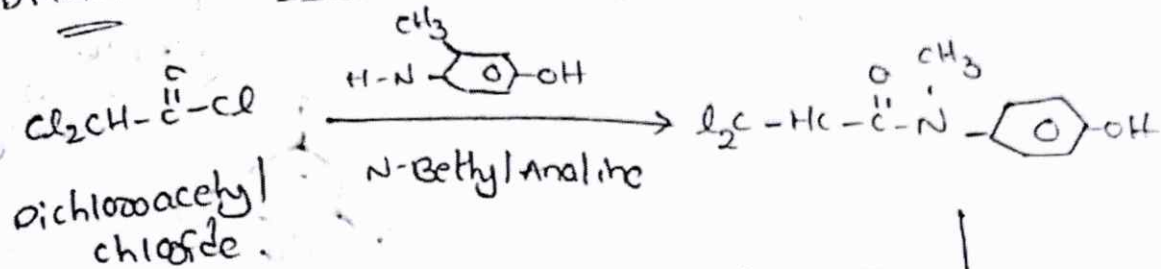


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side effect: vomiting, flatulence

brand name: Tina
Enfidazole
Amebogam

Diloxamide Furoate (Emp)



MOA: Amoebicidal
It acts on GI lumen.

properties: white solid, insoluble in water, ethanol, acetone

side effects: nausea, vomiting, dyspepsia

Brand name

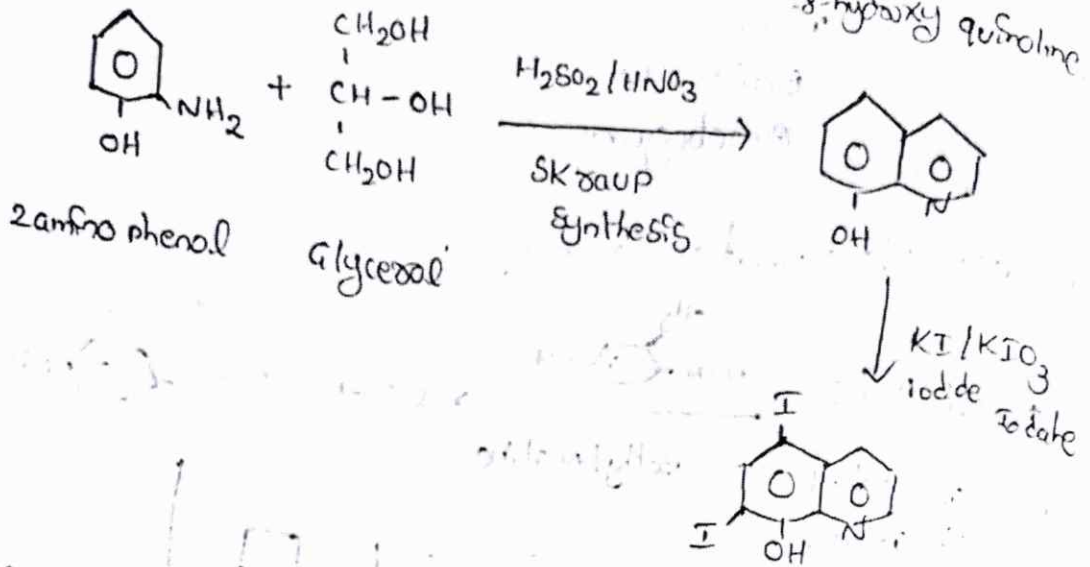
Asistogyl-F
metax-OF
oxyade.



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* Todoquinol

dt: 10/02/23



* Any amino group converting to quinoline is called Skraup synthesis.

MOA:

It active against both cystic and trophozoite, it works for a symptomatic as well as moderate amebiasis.

properties:

light yellow to tan
insoluble in water, ethanol, aceline
soluble in pyridine, but dioxane

side effects :- Aggravation, chills, fever, nausea

brand names :- vyltone
zodonix



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GIARDIASIS

→ It is restricted to intestine and no other part of g.i.t.
infections in

Giardia intestinalis

↓ changes name to

Giardia lamblia.

cyst & trophozoite → causing the infections

→ They are not spread through blood stream, passes through fecal matters.

→ possibility of spreading of this bacterial less through food, but contamination through water is more.

mainly spreads through → water, fecal matters, clothes.

Kids are more prone to giardiasis

⇒ This is asymptomatic.

symptoms appears after (1-2 weeks)

↓ greasy stool

Abdominal cramp

Abdominal pain

chills, fever, flatulence

diarrhea, nausea, loss of appetite

weight loss.

drugs used of treatment of giardiasis

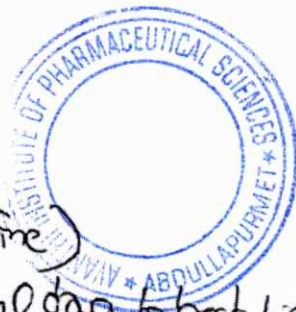
metronidazole

tinidazole

furazolidone

some times (mepracone)

antimalarial drug to treat high fever.

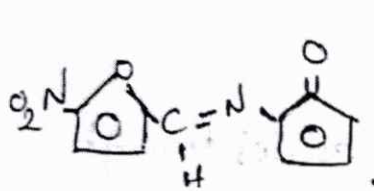
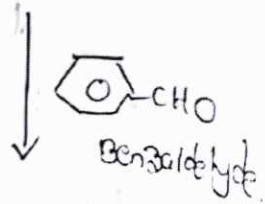
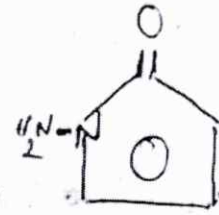
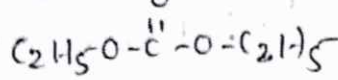
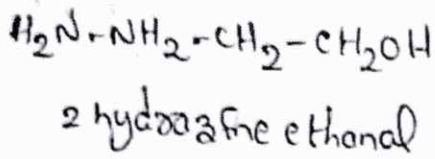


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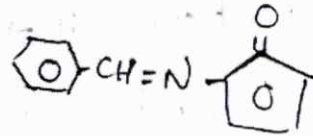
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Fuzaricidone: (Imp)

(diethyl oxalose)



5 Nitro Fuzaric acid



MOA

It is believed to work by DNA crosslinking

properties

Yellow crystals

insoluble in water

side effects:

nausea, vomiting, abdominal pain, diarrhoea

Brand name:

Fuzosone

Fulo

Fuozyl

Fuzachlor



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Imp

Anti-helminthics

dt: 11/02/23

- Small microorganisms which cause disease called as helminthiasis.
- Rarely fatal, but majorly causes ill health
- depriving you from food
- weakness
- 2 billion people of world affected from this
- drugs which kill helminths are known as vermicide
↓
expelled from body → called as "vermifuge".

Both vermicide & vermifuge are known as Anti-helminthics.

Classification: -

Chemical classification.

① Piperazine derivatives

diethyl carbamazine (DEC)
citrate

piperazine citrate

② Azole derivatives :-

Albendazole

Mebendazole

Thiabendazole

③ Natural product

Ivermectin

Avermectin

④ Vinyl pyrimidine

Oxantel

Pyrantel

⑤ Heterocyclic

Oxamiquinone

Prasiquantel

⑥ Amide :-

Niclosamide


⑦ Nitro derivative

Nitrofurantoin

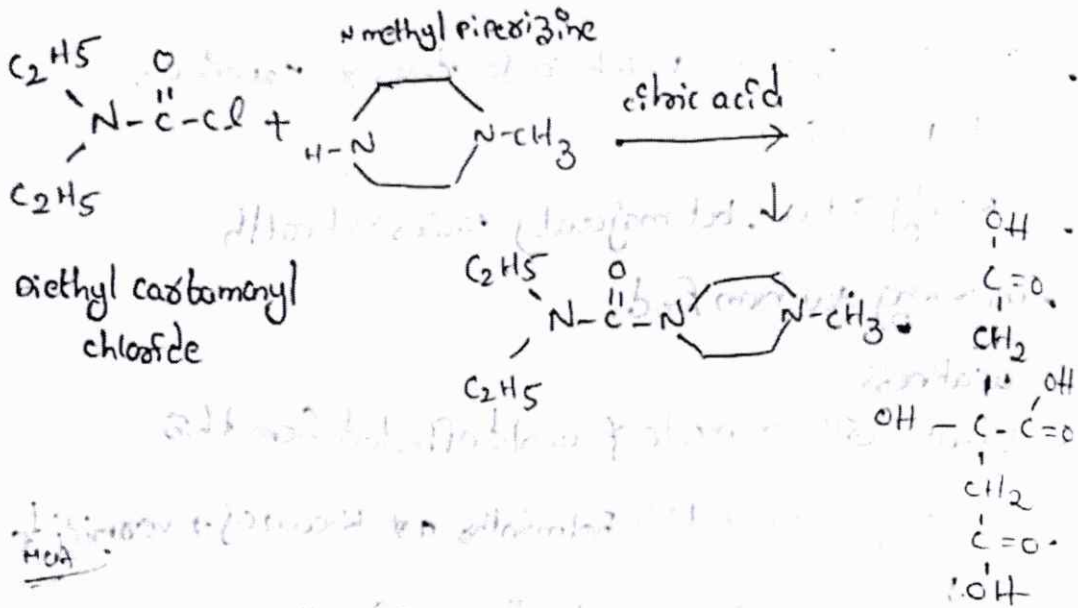
⑧ Imidazole derivative

Levamisole.




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Q. Diethyl carbamoyl chloride (O.C.C.)



- It inhibits Arachidonic acid metabolism.
- This makes more susceptible to innate immunity by macrophages but does not kill parasite.

properties

- white crystalline
- odor less or slightly odor.
- Soluble in hot alcohol
- Insoluble in acetone, ether, chloroform

side effect

nausea, dizziness diarrhoea

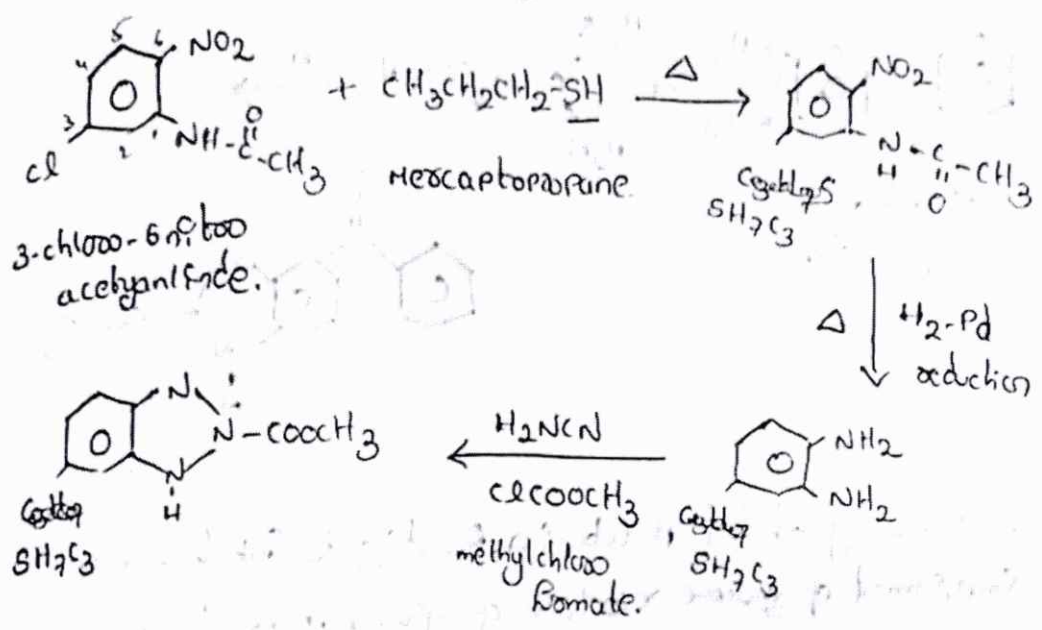
brand name

- He loagan-50
- Acetox.
- carbamal.
- Diocin-50



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Albendazole: Alb



MOA:

① It is act as vermicide. It works by degenerative alteration of intestinal cells of helminths by selectively bind to calcium sensitive β -tubulin. Inhibiting the polymerization of $\alpha\beta$ assembly into microtubules.

- ② It will stop the heavy uptake of glucose
- \rightarrow It leads to impaired uptake of glucose by larval & adult helminths
 - \rightarrow It will inhibit formation of spindle fibre necessary for cell division
 - \rightarrow It disrupts cell motility and also inhibits metabolic maintenance of pathway by inhibiting the fumarate reductase & malate dehydrogenase.

properties

- \rightarrow colorless crystals
- \rightarrow insoluble in alcohol
- \rightarrow acine ether

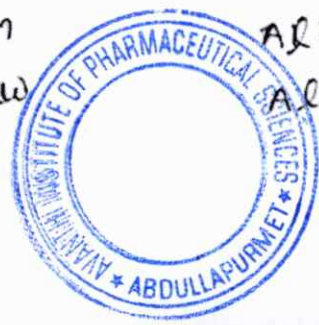
side effects


Nausea, abdominal pain

In some cases bone marrow suppression.

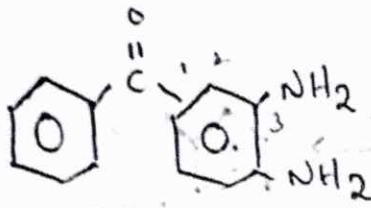
Brand names:

- Benzol \rightarrow Syar
- combentoin-A
- Albesan
- Al bezole

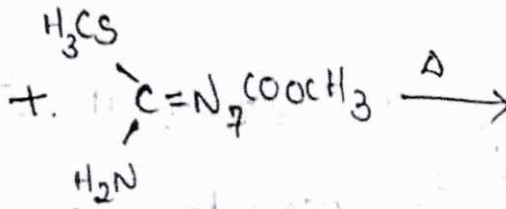



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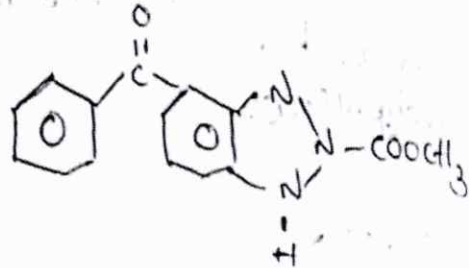
mebendazole:



N-methyl carbonyl-
-5methyl thiourea



3,4 diamino
benzophenone



MDA:

It selectively inhibits β -tubulin leading to inhibition of
transport of glucose & uptake of glucose, nutrients etc.

Parasite

- white of stool
- Soluble in formic acid (HCOOH)
- Soluble in water, xylene, ether

side effects

Nausea, abdominal pain, diarrhoea

Brand name:

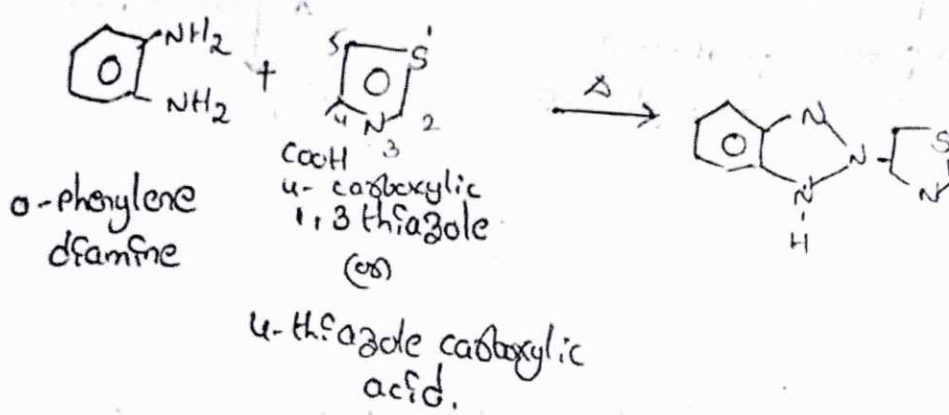
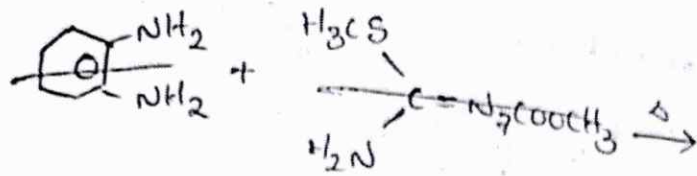
Mebox
Elmin
wormin
Kil-Kat



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* Thiabendazole :-



MOA :-

It works by inhibiting selectively mitochondrial helminth specific enzyme \rightarrow isomerase reductase enzyme.

properties

- \rightarrow colorless
- \rightarrow Insoluble in water, ether

Side effects

nausea, abdominal pain, diarrhoea
sometimes low platelet count.

Brand name :-

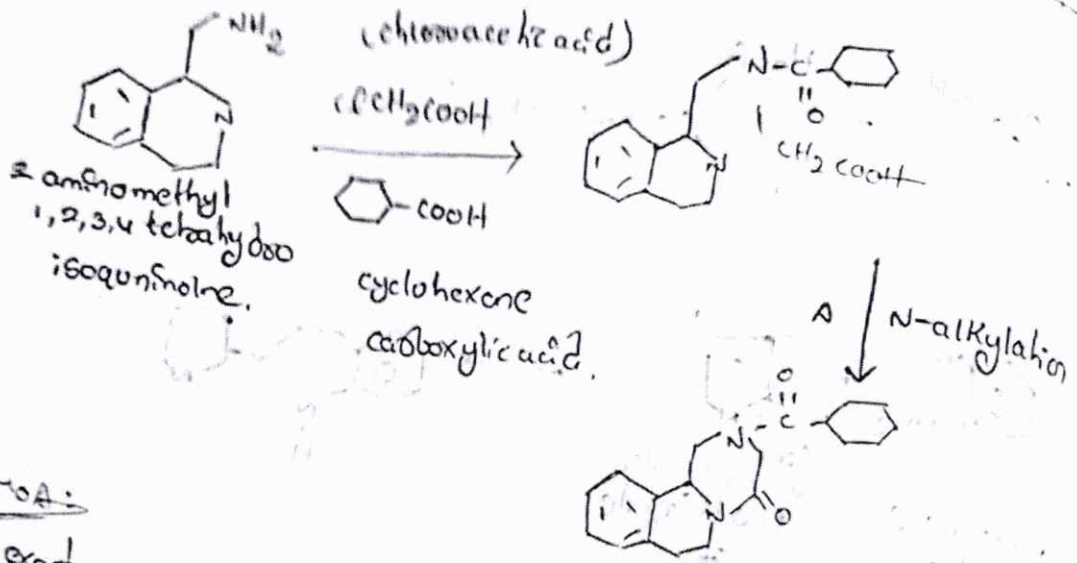
mintezol
Albectan
mebectan



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Parasquintol

Q: 15/03/21



MOA:

- exact MOA is unknown
- but experimental investigation reveals that parasquintol induces the permeability of cell membrane to cations leading to muscle contraction, resulting paralysis of parasite.

properties

→ white crystalline insoluble in water, methanol, acetone

side effects

Nausea, Malaise, somnolence (Drowsiness), abdominal pain

Brand name:

cest
cestocide
Poggin
Helminthex

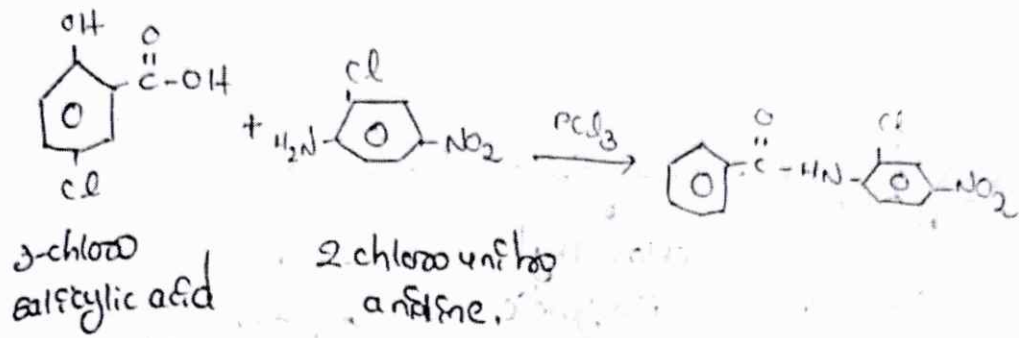


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Niclosamide :-



MOA :

It inhibits glucose uptake and oxidative phosphorylation

properties

- yellowish creamy powder
- insoluble in water
- soluble in alcohol

side effects :

dizziness, nausea, diarrhoea

Brand names :

Niclesone
Niclesan
Nicleside

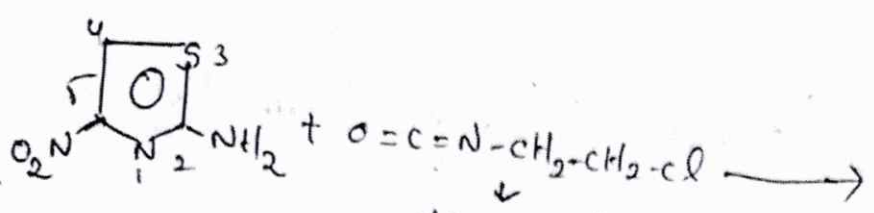


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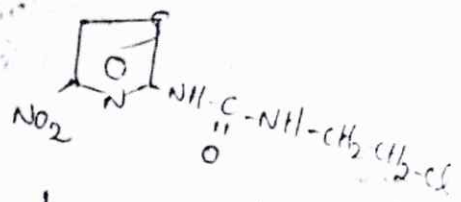
x Nitridazole:

06.11.2023

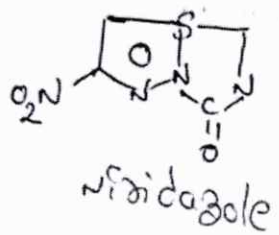


2-amino-5-nitrothiazole

chloroethyl isocyanide



N-alkylation cyclization



MOA: It will inhibit oogenesis and spermatogenesis of helminths.

→ It also inhibits phosphofructokinase enzyme leading to depletion of glycogen.

Properties

- Yellow crystals
- Insoluble in almost all organic solvents
- Soluble in dimethyl formamide.

side effects

nausea, vomiting, hallucinations

Brand name:

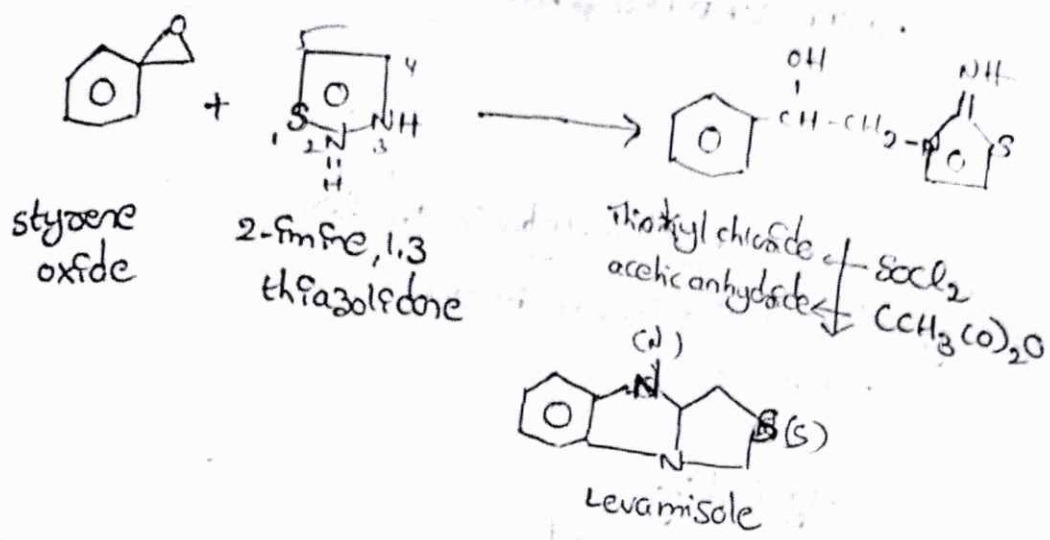
Nitridazole

Ambilhar



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Levamisole



MOA:

- It works by administering with fluorouracil
- It works by activating immunosystem / immunity by formation of antigen-antibody, enhances T-cell
- Engulfing of macrophages and enhances phagocytosis

properties

- white crystalline
- insoluble in water
- soluble in propylene glycol


side effects

Nausea, vomiting, diarrhoea

Brand names:

- Ofcarol
- De wormis
- Levamol




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06:21/02/23

ANTI SCABIES & ANTI PEDICULAR AGENTS

① Scabies:

- Itchy skinny
- mainly caused by "Sarcoptes scabiei" (mite)^{tiny}
- That tiny mites makes a burrow in skin.
- Scabies is contagious.

Symptoms:

mainly itching
more worsen in night

inside wrist
inner elbow
sole of feet
knee
arm pit
around waist

The body areas where
scabies mainly attacks.

kids
palm
Hand
Sole of feet

Drugs/agents → used for kill/control of scabies are known as
scabicide / Antiscabies.

② Pediculosis (Blood feeding ectoparasite insects)

Bud in head hairs

→ Infestation of lice

Lice or styres →
 Pediculosis capitis (Head pediculosis) ^{also called}
 Pediculosis corporis (Body lice)
 Pediculosis pubis (Pubic hairs)

→ mainly attacks on → Hair

Drugs/agents - used to kill/control pediculosis are known as
pediculicide / anti pedicular agents.



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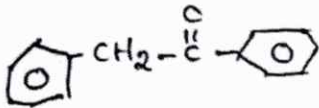
Drugs :-

Benzyl benzoate
crotamiton
Lindane
permethrin.

used for both scabies & pediculosis.

dt: 22/02/23

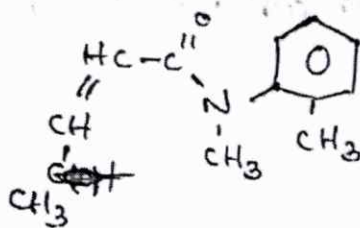
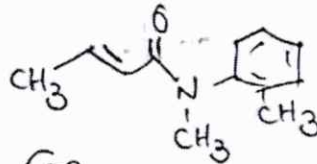
1) Benzyl benzoate.



→ It is resin from Peru balsam

→ colorless oily
→ used topically.

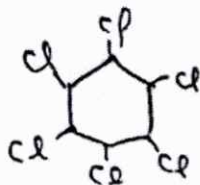
2) crotamiton



→ It is a oily, colorless
→ mostly insoluble in water
soluble in almost all
organic solvents.

→ presence of alkyl group more active resistently act against mites
fleas, lice.

3) Lindane :



1, 2, 3, 4, 5, 6 hexachlorocyclohexane

Lindane

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→ mostly synthesized as racemic mixture (α,β,γ,δ,ε)
out of 5 γ (10-12%) extracted / chromatography
except eyes all over body used topically.
(face)
used after dampened the body parts.

→ synthesized from benzene by chlorination
process.

→ Effects on racemic as similar as
DDT (dichloro diphenyl methane
ethane)

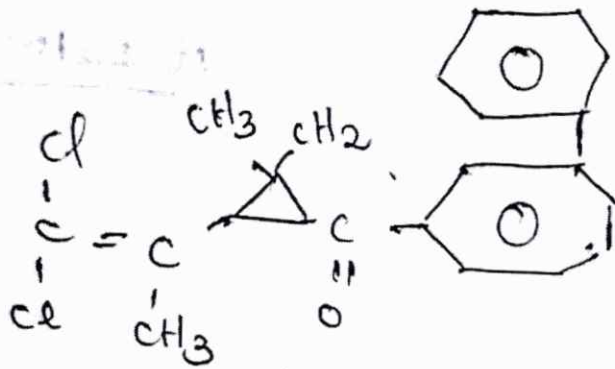
but giving less side effects or adverse
effects if ingested.

side effects like: diarrhea, abdominal pain, vomiting



- colour buff to tan
- Insoluble in water
- Soluble in almost all organic solvents

α Permethrine:



* It is semi-synthetic.

- Pale yellowish colour
- Insoluble in H₂O
- Soluble in almost all organic solvents
- 1% of suspension kill 99%.

Imp question:

① Briefly explain m/s scabies and anti pediculosis ?




PRINCIPAL

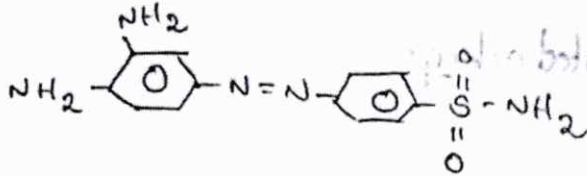
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SULPHONAMIDE & SULPHONES

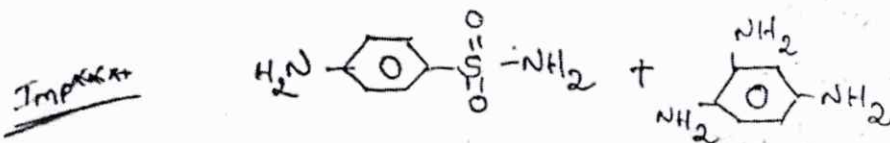
dt: 28/02/23

- G. Domagk → German pathologist (by profession)
- He found protosil (tryc) → md requested to treat his daughter.
- streptococcus hemolyticus → killed by protosil.
- in 1935 → he got nobel prize.

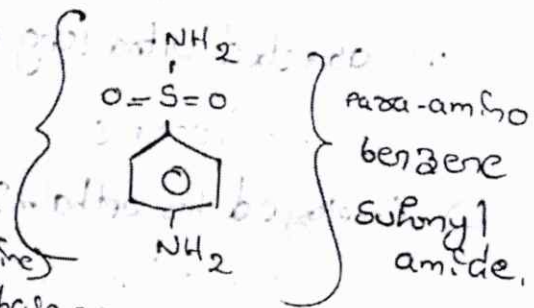
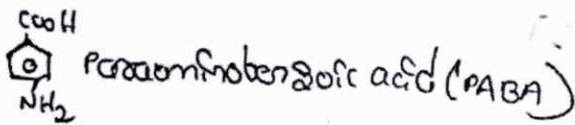
Protosil: -



In vivo administered into body ↓ Protosil dissociates into



MOA of Sulphonamide:



→ PABA + Pteridine + glutamic acid (Gutamine) → ↓ in presence of dihydropterotic synthase enzyme.

dihydropterotic acid

↓ dihydrofollic synthase

DHF (dihydrofollic acid)

↓ dihydrofollic reductase

THF (Tetrahydrofollic acid)

↓ Thymidine + amino acids + purines } DNA or RNA



classification:-

1) well absorbed but short acting

Sulfadiazine

Sulfamethiazole

Sulfasoxazole

Sulfisoxazole

Sulfadimidine

Sulfisoxadine

8) Folate reductase inhibitor

Trimethoprim

9) Sulfone:-

Parosone

2) well absorbed intermediate acting:-

Sulfaphenazole

Sulfamethoxazole

3) well absorbed long acting:-

Sulfamethoxine

Sulfadimethoxine

Sulfamethoxydiazine

Sulfamethoxypyrazine

4) well absorbed ultra long acting:-

Sulfadoxine

5) Employed for ophthalmic

Sulfacetamide

Sulfisoxazole

6) Employed for burn treatment:-

mefenide

silver sulfadiazine

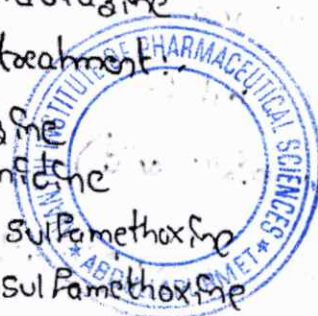
7) Employed for GIT treatment

Sulfasalazine

Sulfaguanidine

Succinyl sulfamethoxine

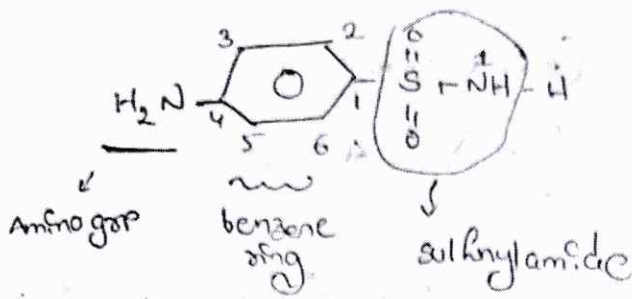
phthalyl sulfamethoxine



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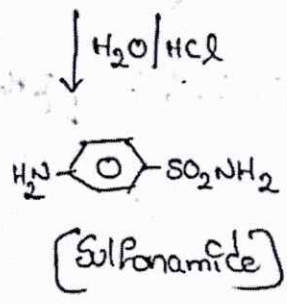
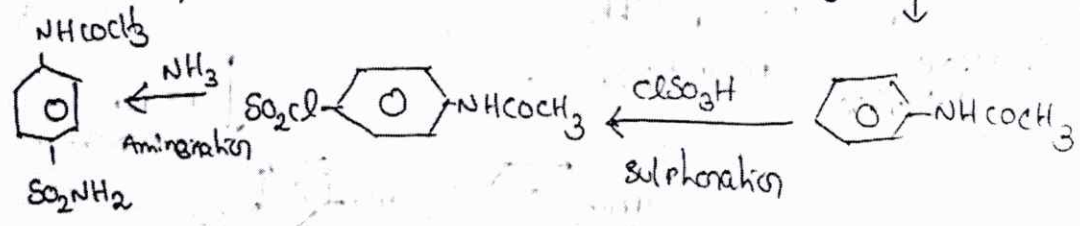
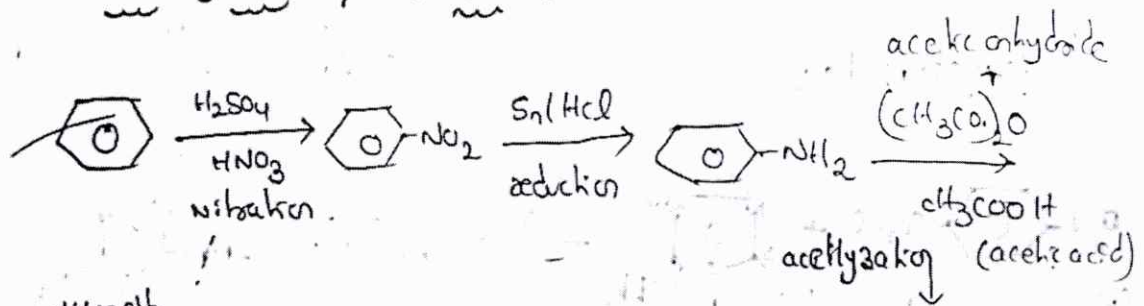
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S.A.R:



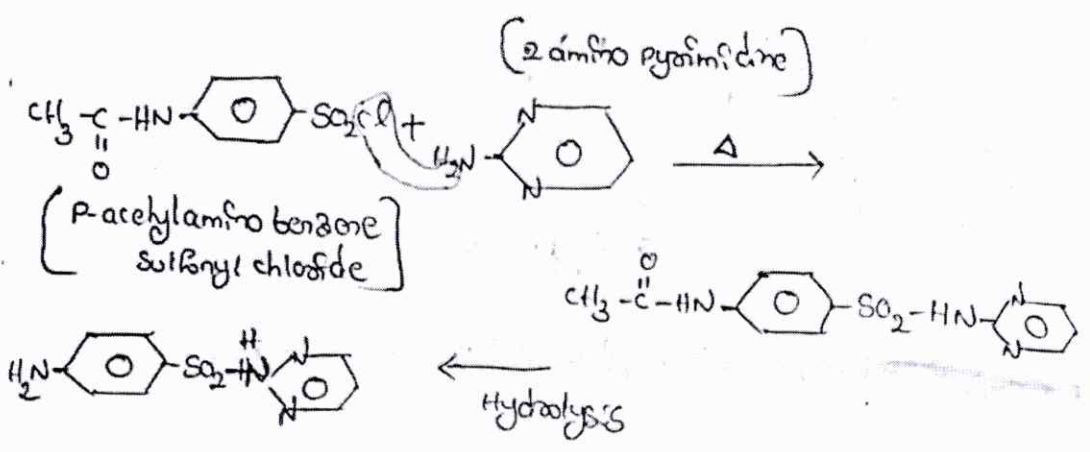
- 1) ~~Amino group~~ and SO_2NH_2 (sulfonamide) group should be 1,4 position and NH_2 (amino group)
- 2) $\text{N}_1 \rightarrow$ mono substitution of heterocyclic compounds (heteroaromatic compound) give potent drug
- 3) Any substitution on benzene ring reduce activity.
- 4) Replacement of SO_2NH_2 by CONH reduces activity.

General synthesis of sulfonamide:



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① Sulfadiazine: 2*



MOA:

It works by inhibiting dihydropterotic synthesis, resulting inhibition of synthesis of DHF

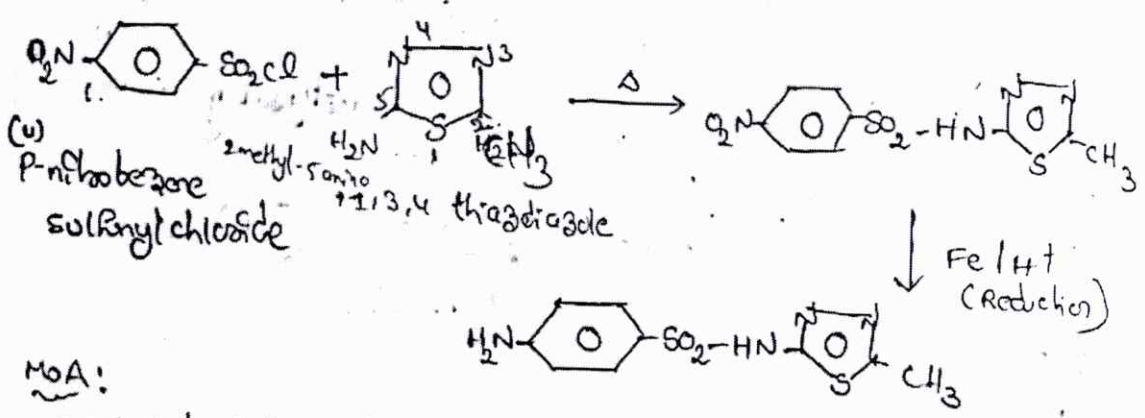
properties:

- colorless, powder (white)
- slightly soluble in water, acetone

side effects: - Nausea, loss of appetite, diarrhoea.

brand name: Lantazol, Neotiazine, Sullose, Sulphonamide complex, Sulfa-tazole-2

② Sulfamethazole:



MOA:

→ It inhibits dihydropterotic acid synthesis resulting in inhibition of synthesis of precursors of folic acid that is DHF.

properties:

- colorless, powder
- insoluble in water, ether
- sol: soluble in hot water

brand names:

Sulfons, Sulfamethazol, p-sulfa.

side effects

no nausea, diarrhoea

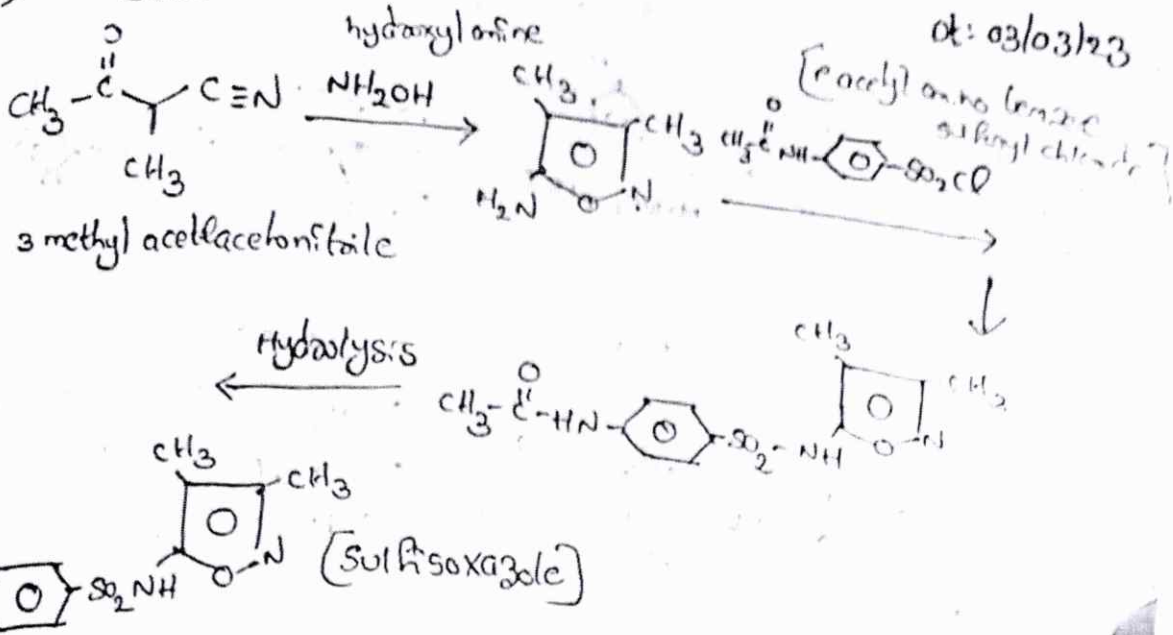


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3) sulfisoxazole:

dt: 03/03/23



MOA:-

Inhibits dihydropteroic synthase, resulting inhibition of synthesis of DHF.

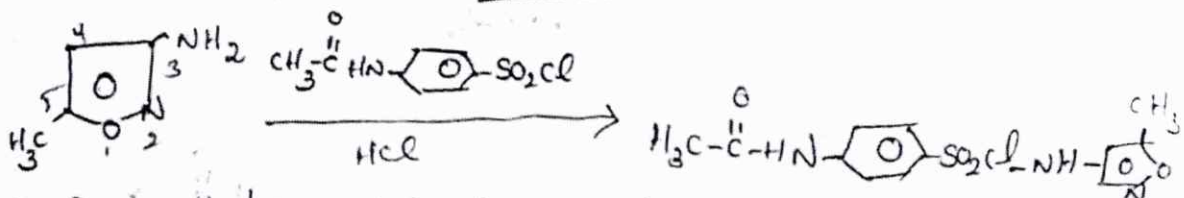
properties:

- white to light yellow c/b
- soluble in diethyl ether

side effects: - N, V, diaz, rns

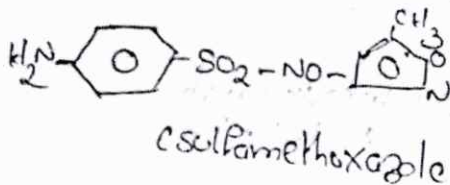
Brand names: - sulfamycin
Eryzole
Azogantoin.

4) Sulfamethoxazole :- (Imp)



3-amino-5-methyl
isoxazole.

Hydrolysis



MOA:-

It inhibits dihydropteroic synthase.

properties:

- Yellowish in color
- soluble in diethyl ether, chloroform, H₂O

side effects

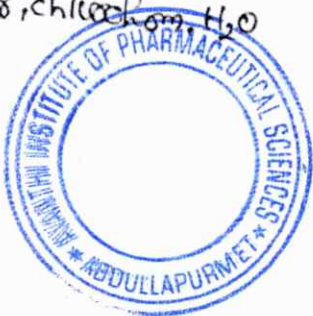
N, V, Anorexia.

Brand names:

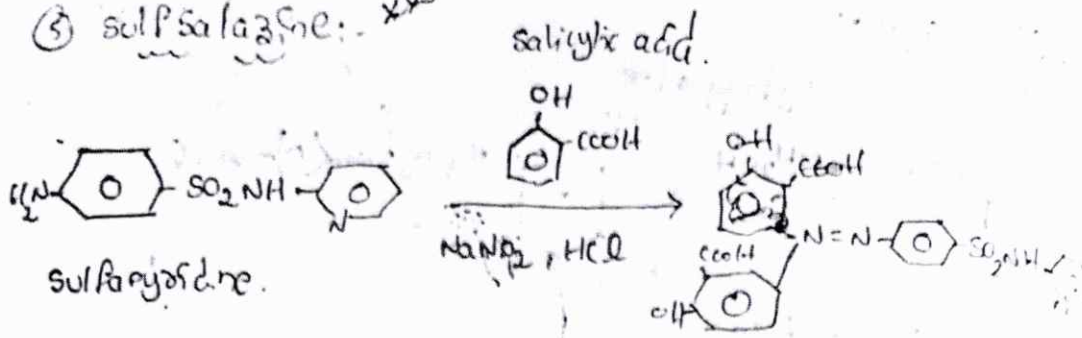
- Antism
- Bactrim
- Bactrim DS
- Scpsis

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⑤ sulfasalazine: **



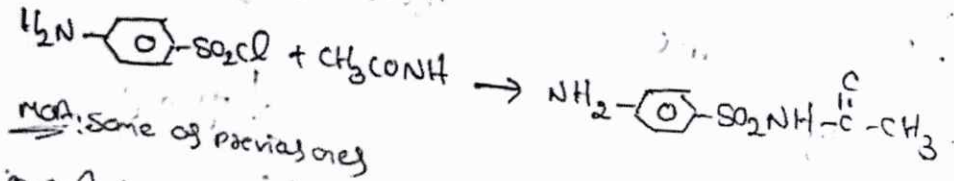
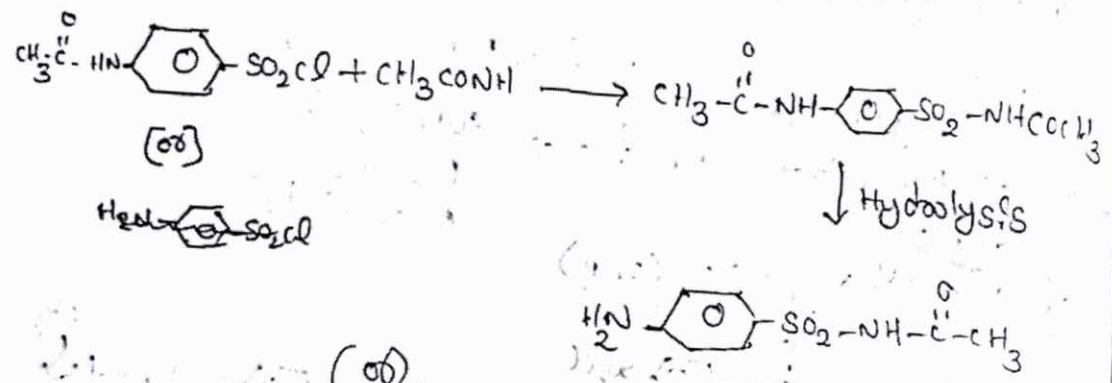
MOA: Inhibits dihydropteroic synthesis.

properties: yellow color
 Insoluble in H₂O, diethyl ether
 soluble in alkyl hydroxyl
 (NaOH, KOH).

side effects:
 N&V, proflaxin

brand names
 Saaaz
 Zemosal
 Salzaab

⑥ Sulfacetamide (Imp):



MOA: same as previous ones

properties: light yellow to yellowish
 Insoluble in diethyl ether.

side effects:
 N, V, rash

brand names
 optisol
 opti cid
 Lubo cid



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Anti malarial agents

dt: 04/03/23

→ causative organisms.

- 1) Plasmodium vivax
- 2) " ovale
- 3) " falciparum
- 4) " malariae
- 5) " knowlesi

causes malaria. It can be controlled and delayed, but they may stay in body at dormant condition into days to months.

This condition is called hypnozoite condition (hypnozoite)

Reoccurrence possible. To stop reoccurrence we need to complete the total dose. (complete dose)

① Plasmodium Falciparum

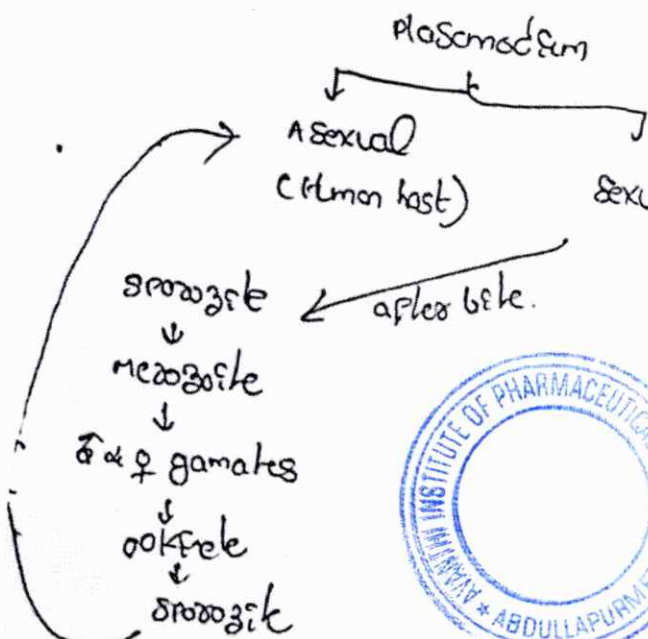
most threatening malaria disease leads to ~~coma~~ fever, convulsions finally coma.

② Plasmodium malariae

③ " knowlesi

They are also causing malarial fever in Gulf countries and African countries

→ vector → mosquito. (♀ anopheles mosquito)



enters human after bite.



[Signature]

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* drugs / agents used to control release and to store
malabsorption is known as anti-malarial agents / drugs

classification: (imp)

* chemical classification:

- ① 4-amino quinoline
chloroquine
Amodiaquine
Piperaquine
- ② Cinchona Alkaloids:-
Quinine
Quinidine
- 3) Methanalaquinoline
mefloquine
- 8) Biguanides:-
proguanil
chloroquinil
- 9) Naphthoquinone:-
↓
Atovaquone.
- 10) Sesquiterpene lactone
derivatives:-
Artesunate
Artemether
Artemiside.
- 11) Amfiro alcohol
Halofantane
Lumenfantane

④ 8-amino quinoline:-

Primaquine
Pamaquine

⑤ Sulfonamides:-

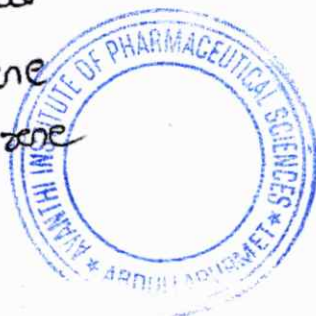
sulfadoxine
co-trimoxazole


⑥ Derivatives of hydroxyamide:-

pyramethamine

⑦ Antibiotic:-

tetracycline
clindamycin

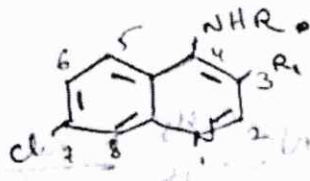



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SAR

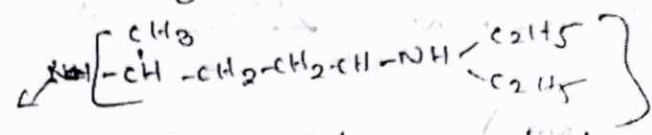
Jmr

1



R_1 substituted by side chain (diethyl amine group)

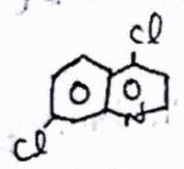
1 methyl amine butene diethyl amine



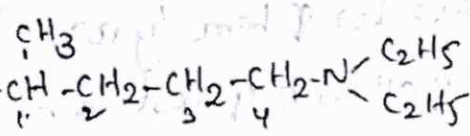
if this is present then drugs will be more potent.

cl → 7 position should not be disturbed.

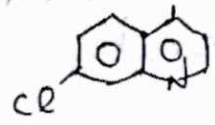
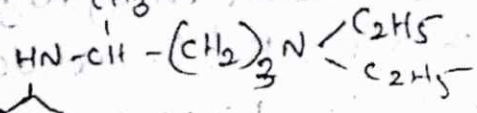
CHLOROQUINE :-



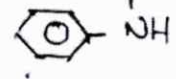
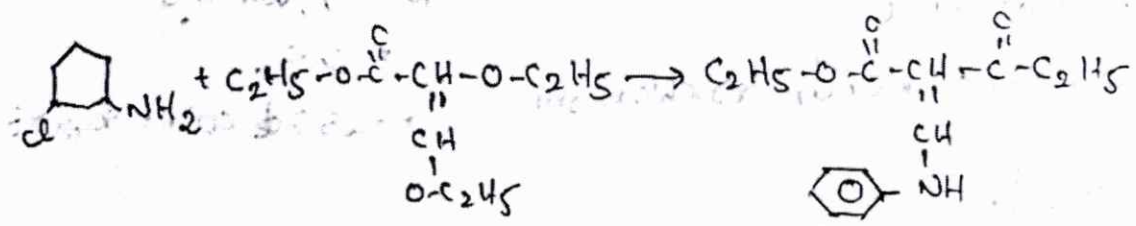
4,7 dichloro quinoline (Coca)



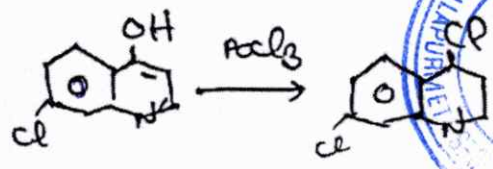
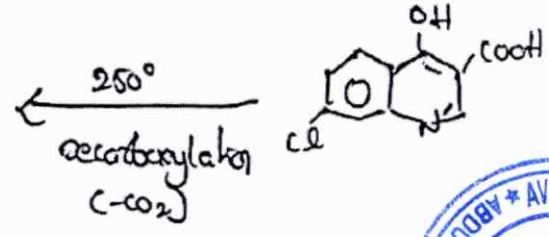
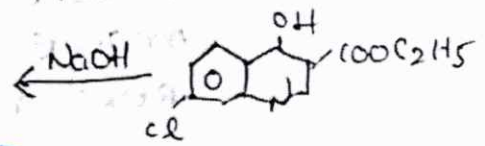
4-diethylamine + methyl butyl amine



step 1:- synthesis of coca

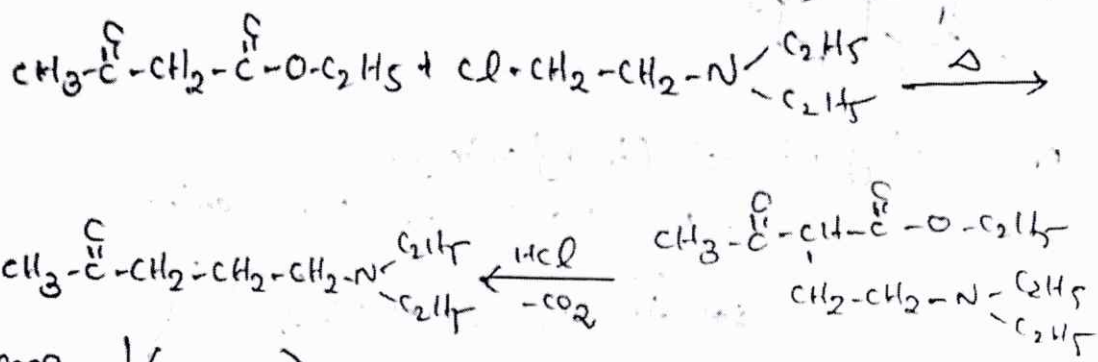


Δ cyclisation

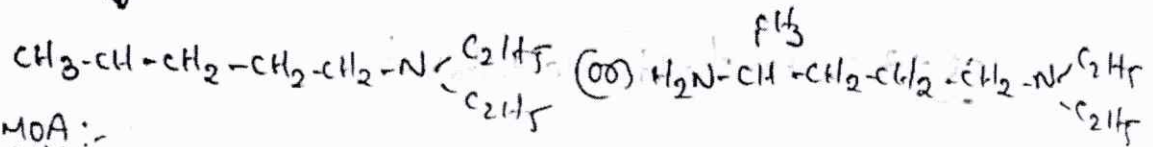


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Step 2: synthesis of side chain & diethyl amino 1-methyl butylamine: (2)



Ring
992
↓ (H₂-NH₃)



MOA:-

- It works by inhibiting DNA & RNA polymerase thereby interfering in metabolism & utilization of heme by parasite.
- parasite use / take all heme of host haemoglobin for synthesis of amino acid.
- The mammal heme is toxic for parasite, so parasite make those heme into insoluble ppt by polymerization.
- chloroquine bind to insoluble heme and making more toxic heme resulting in self auto killing of parasite.

Properties:-

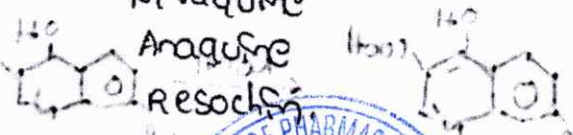
- white to light yellow
- insoluble in H₂O
- soluble in dilute acid, ether, chloroform.

side effects:

- Nausea, vomiting
- Rashes
- serious side effect: seizures.

Brand names:

- Larfiago
- Nivaquine
- Anaquine
- Resochin

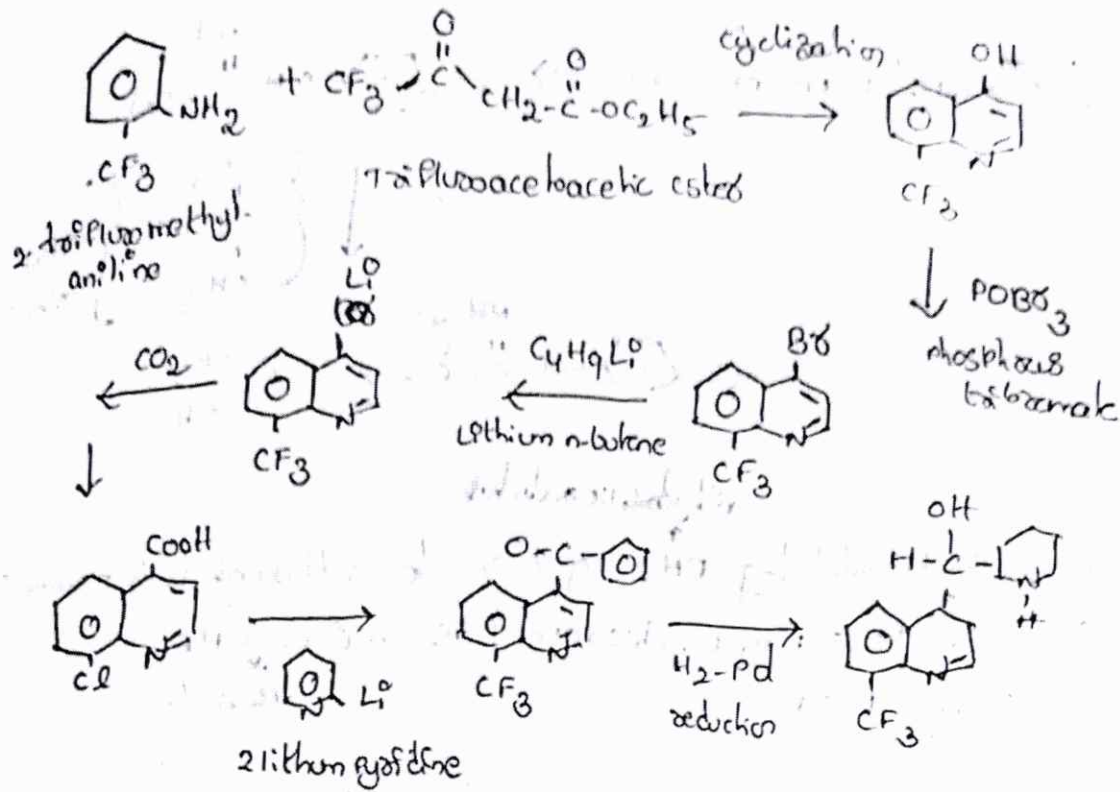


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Mefloquine

dt: 28/03/22



MOA:

It preferentially accumulate into lysosome of the parasite, thereby inhibit lysosomal functions.

properties:-

- \rightarrow white colorless
- \rightarrow bitter in taste
- \rightarrow Insoluble in water

side effects:- N&V, sleep disorders, headache

serious side effects: include Hallucinations.

Brand name

Alfimef

Asmate-MF

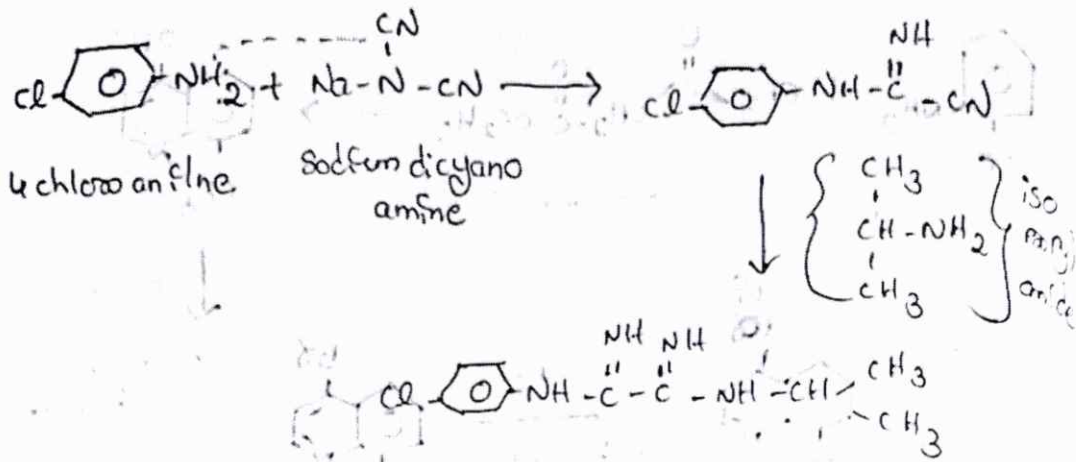
Facital

Lasimef



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Praguani / chloroquine: (XK)



MOA:

It works by inhibiting DHFR of parasite although both mammal & parasite have DHFR, chloroquine is specific DHFR inhibitor, parasite.

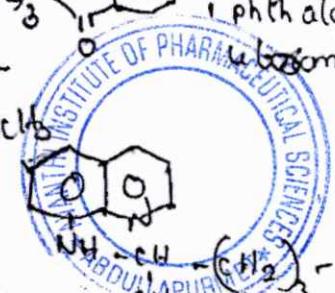
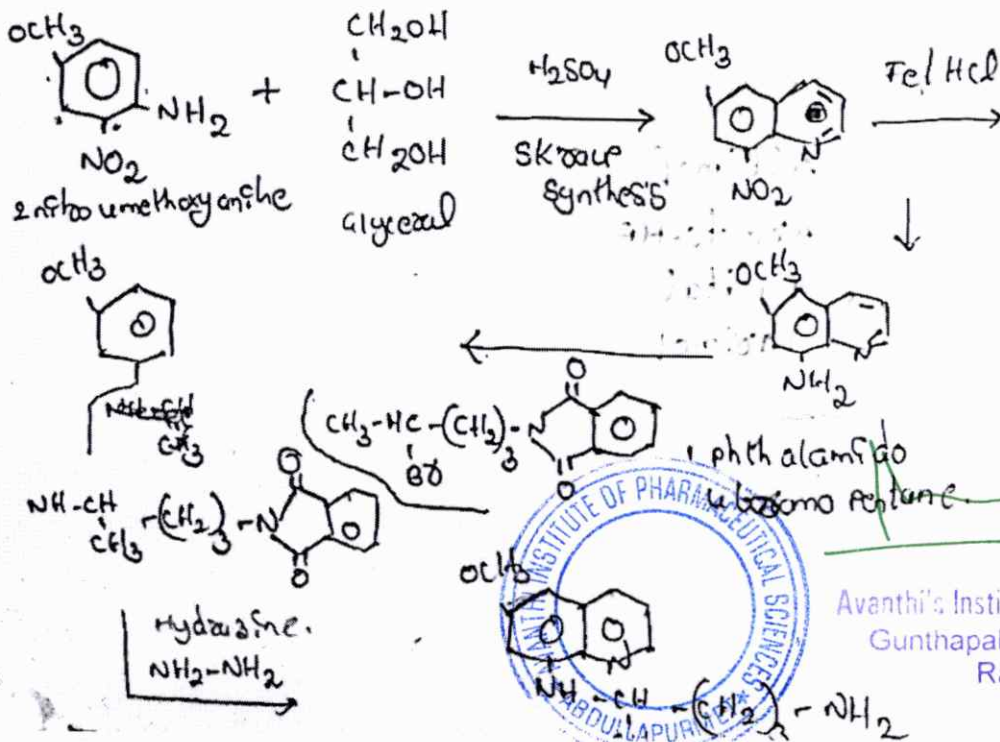
Parasites:

side effects

- white, colorless
- insoluble in ether, chloroform
- N & V, fever

Brand name: Laveran
Praguanal

PRIMAQUINE



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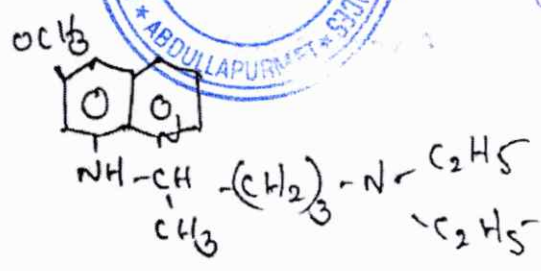
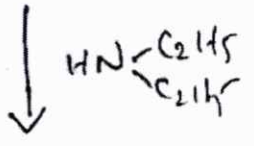
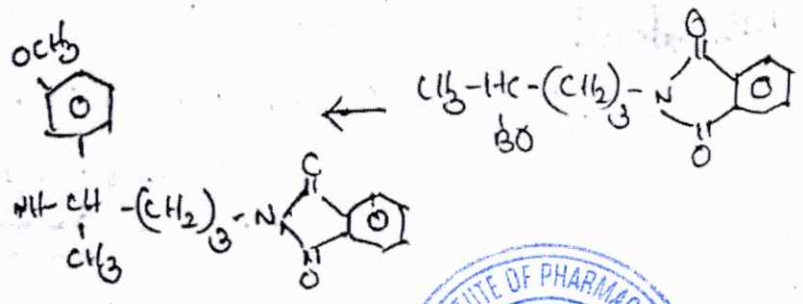
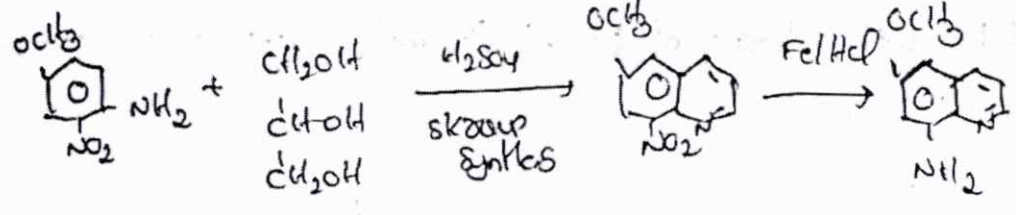
MOA:
 → It is lethal to both plasmodium vivax & ovale at liver stage and P. ovale at blood stage, through its ability of oxidative damage to cell.

properties
 → white, bitter taste
 → soluble in chloroform, water & ether

side effects
 N&V, skin rash, fever

Brand names:
 Leopamine
 Leopamine forte
 Malfid
 malfid DS
 malfid DT

Parmaquine:-



MOA of Parmaquine



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dt: 27/03/20

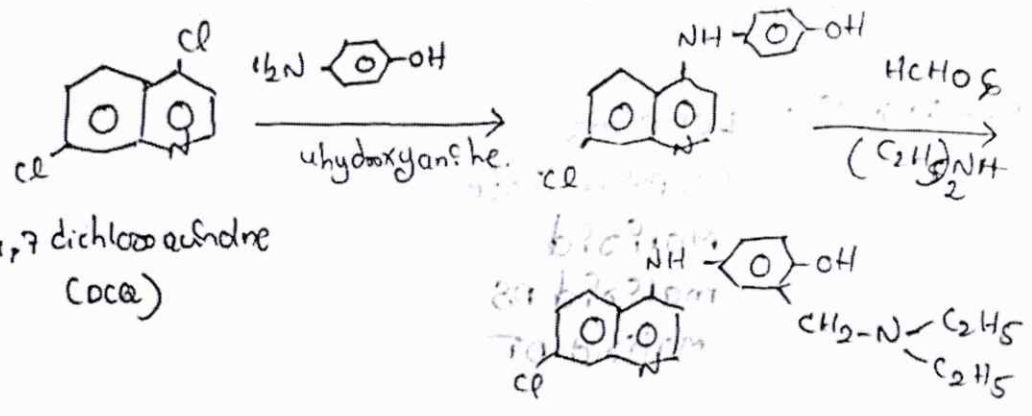
Parmaquine more toxic than primaquine.

band name: primaquine
Parmaquine only one drug not available.

band name is Reschline

Imp

AMODIAQUINE (xxx)



MOA: same as chloroquine.

it has both antimicrobial & anti-inflammatory action like chloroquine but less toxic.

properties:

white white color, bitter taste
Soluble in water, ether, chloroform

side effects:

NSV, abdominal cramp
serious side effects rarely
ulcers. ← observed

Brand names

- eriquine
- Basoquine
- Amodiaquine.



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ANTI-BIOTICS

29/03/20

produced from microorganisms

- They suppress the growth of the microorganisms.
- Kill's

Classification :- based on

- chemical classification
- MOA
- Action at the organism.
- based on spectrum.

* chemical classification :-

① sulfonamide related derivatives

- sulfadiazine
- sulfadarsone

② quinolone derivatives

- norfloxacin
- ofloxacin
- levofloxacin

③ tetracycline

- oxytetracycline
- doxycycline

④ Azole derivatives

- clotrimazole
- fluconazole
- ketocazole

⑤ nitrobenzene derivatives

- chloramphenicol

⑥ dihydroopyrimidine derivatives

- Pyrimethamine
- Tamethoprim

⑦ Lincosamide derivatives

- clindamycin
- Lincosamide

⑧ Aminoglycoside derivatives

- Streptomycin
- Gentamicin

⑨ B-lactam antibiotics

- penicillin
- cephalosporins
- monobactam

⑩ Macrolide:

- Erythromycin
- Erythromycin
- clarithromycin

⑪ Nitroimidazole derivatives

- Nitroimidazole

⑫ Nicotinic acid derivatives

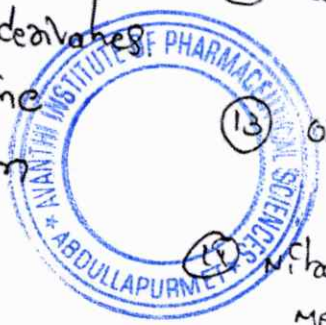
- isoniazid

⑬ Oxazole derivatives

- Linezolid

⑭ Nitroimidazole derivatives

- metronidazole
- Tinidazole



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(15) polyene derivatives

nystatin
amphotericin-B

(16) peptide derivatives:-

polymyxin-B
bacitracin

(17) glycopeptide derivatives:-

vancomycin.

(16)

(18) miscellaneous lot

rifampin
thiarnazole
zidovudine.

* Penicillin :-

obtained from *Penicillium notatum* species.

In 1928 Alexander Fleming

doing work on *S. aureus* he accidentally found that

Florey → separate penicillin from *Penicillium notatum* by chromatography

1945

1948 A. Fleming, Florey obtained Nobel prize.

Classification :- based on source.

dt: 31/03/23

(1) Natural :- penicillin-G, penicillin-V

(2) Biosynthetic :- penicillin G, penicillin V, X, F, K

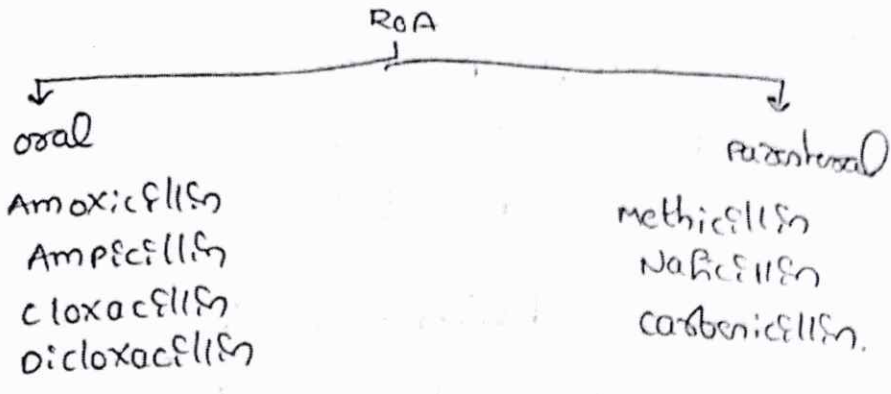
(3) Synthetic :- amoxicillin, ampicillin, methicillin,
cloxacillin, dicloxacillin, cefaclor,
nafcillin, ticarcillin.



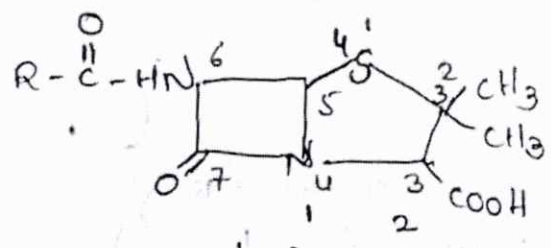

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Based on RoA :-



Structure :-

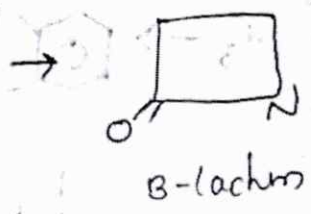


① AS per CAS (chemical abstract system)

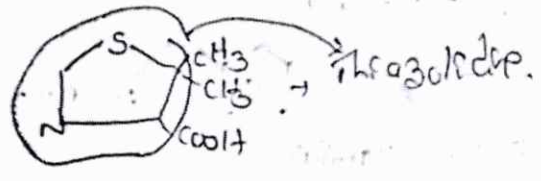
priority 1 to S
4 to N

② AS per USP (United States of Pharmacopoeia)

priority 1 to N
4 to S



→ R-C(=O)-NH → acylamino



β-lactam & thiazolidine → used along with acylamino
attached to β-lactam



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SAR: Imp

(8)

- ① → sulphur is essential at -① position
 - converting to sulfoxide / sulfoxide.
 - yield acid stable but less potent drug
- ② In 2nd position no substitution acceptable
 - 3rd → Replacement of carboxylic acid with ^{ester} acetone or amide reduces activity

- 4 → Nitrogen essential
- 5 → No substitution
- 6 → Substitution in side chain (R)
- 7 → Carbonyl essential

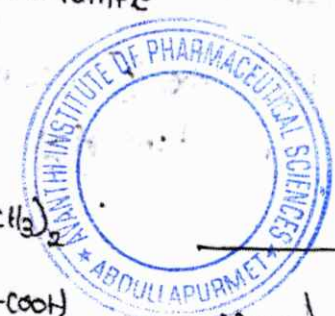
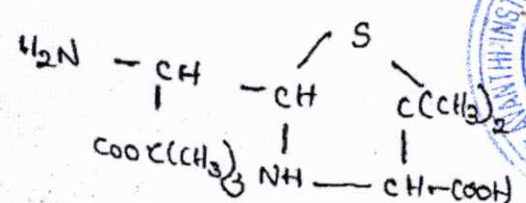
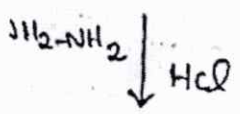
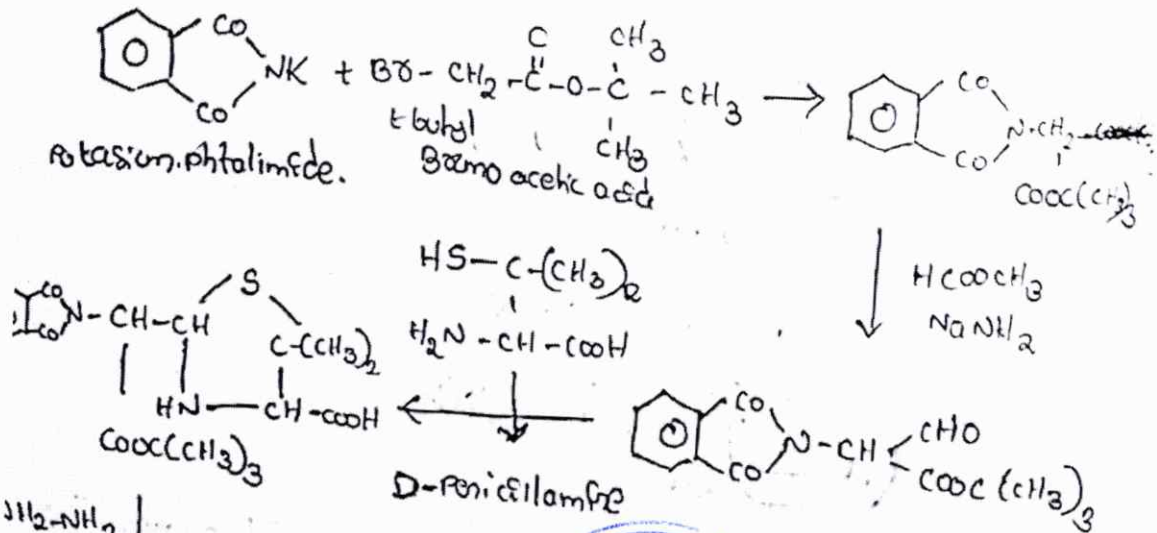
β-lactam ring

bulky alkyl group gives potent drug
 bcoz of steric hindrance.

* Penicillin-G (Benzyl penicillin)

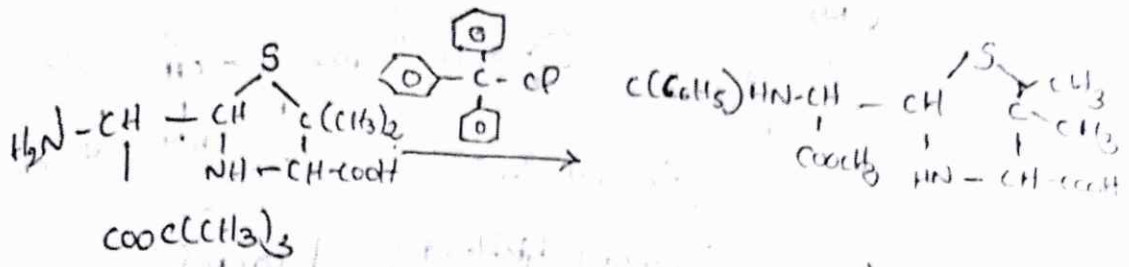
dt: 01/04/23

Synthesis

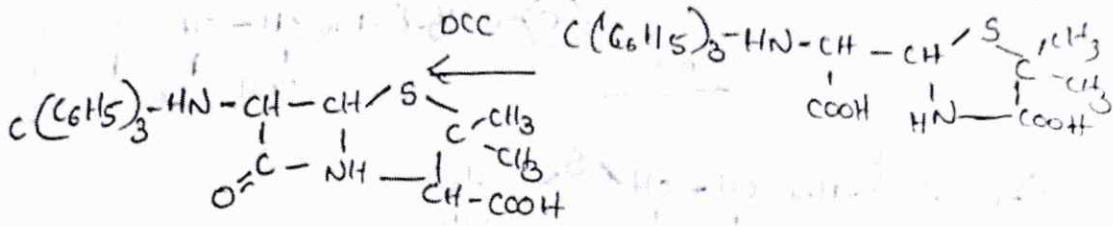


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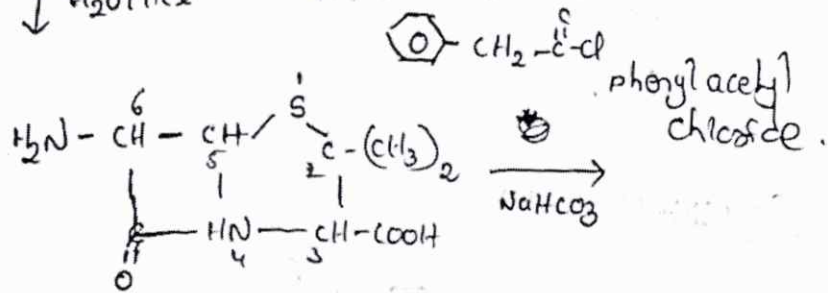
continued next page



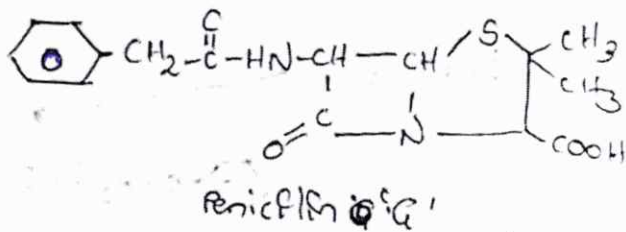
↓ oxy HCl
pyridine




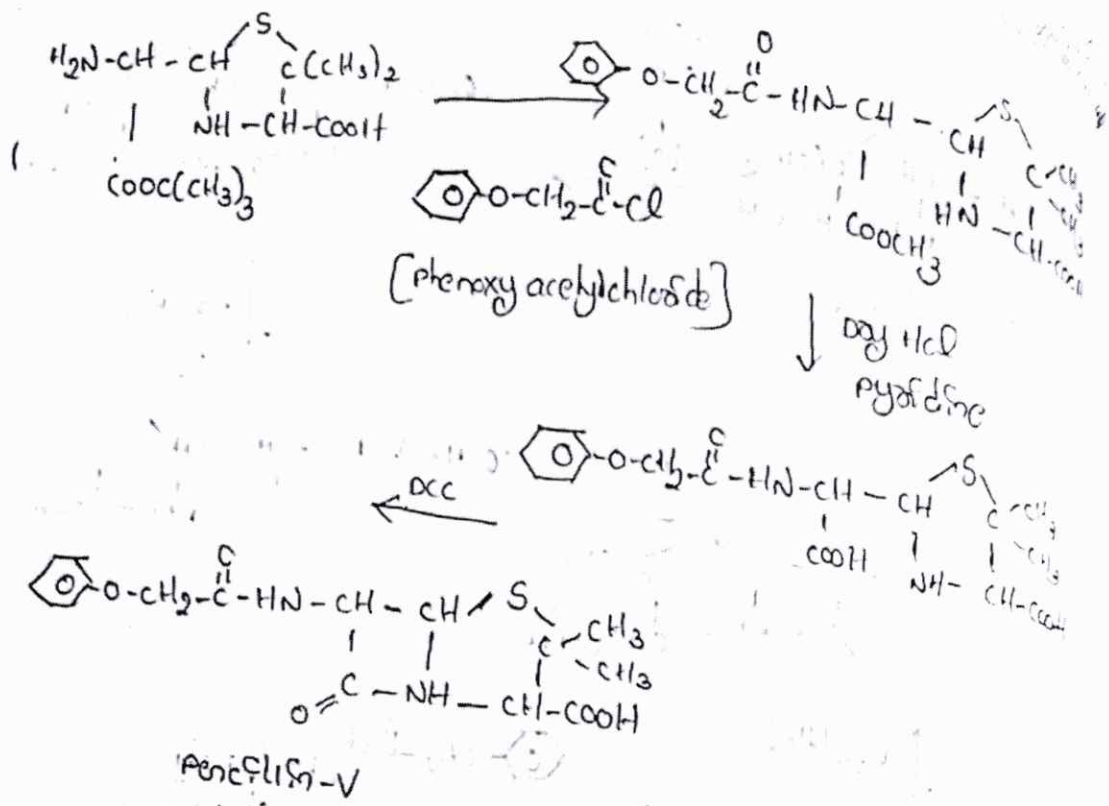
↓ H₂O/HCl



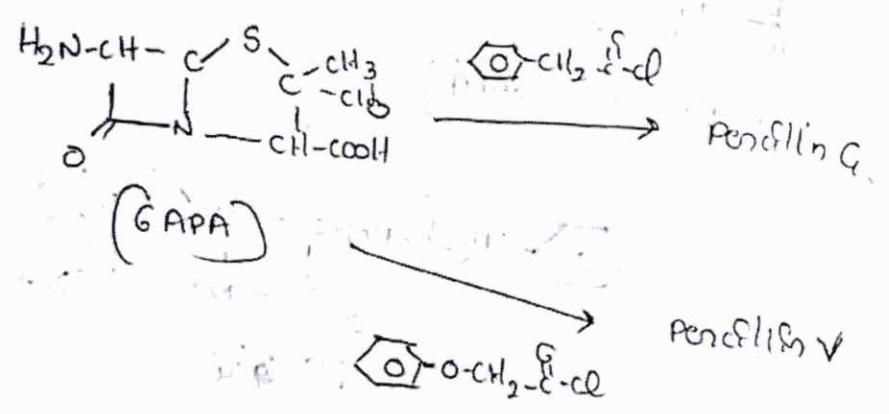
6-amino penicilloic acid (GAPA)




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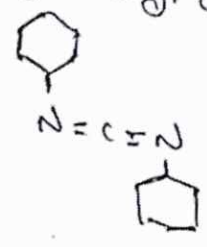


For Penicillin G, V (Short cut)



* DCC :-

N,N'-dicyclohexyl carbodiimide.



(Signature)

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MOA: - It binds to and inactivates PBP (penicillin binding proteins) to inhibit cell wall synthesis. by cross linking of peptidoglycan, which reduces its rigidity & strength of bacteria cell.

properties:

penicillin G is white powder amorphous.

is insoluble in water
soluble in ethanol, methanol, ether
acetone, chloroform.

properties:

penicillin V it is white crystalline
slightly soluble in water
soluble in almost all organic solvents

brand names:
Bifopen-UK
Kaypen
Penveek

side effects

Fever, joint pain


brand name:

pencom
penidose
Bifopen
penids-400

side effects

rashes, urticaria

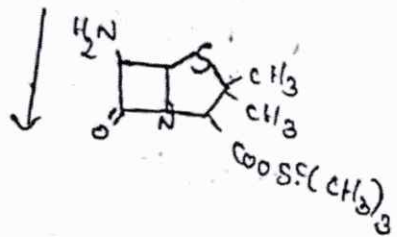
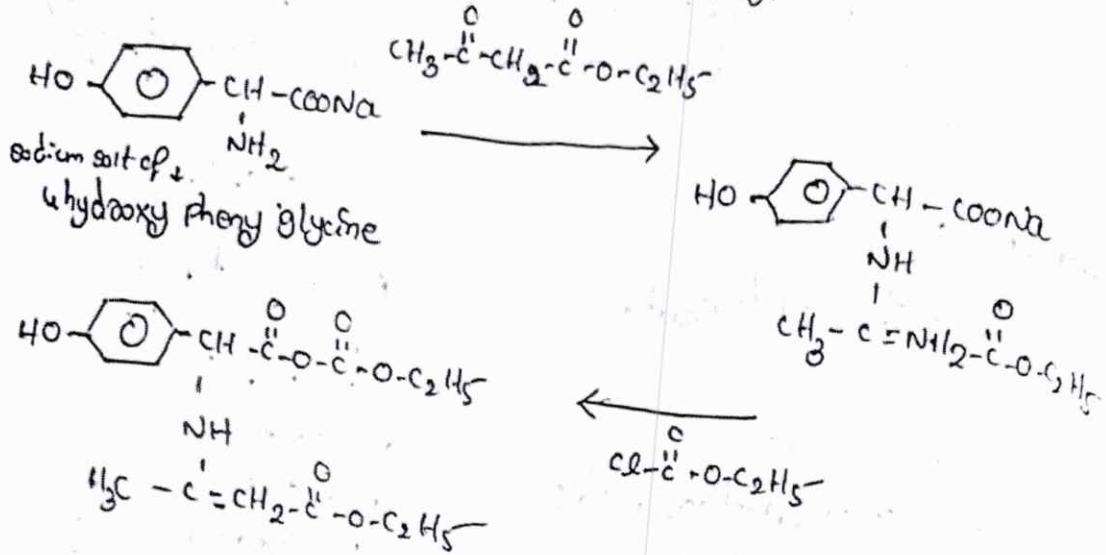



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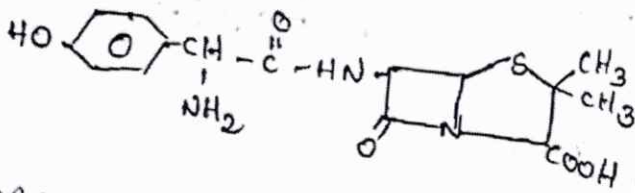
* Amoxicillin: (X)

at: - out 01/23

Acetoacetic ester

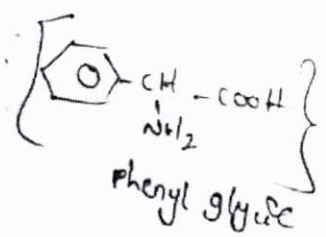


(GAPAS silyl trimethyl)



MGA:

It works by inhibiting PBP's interfering in cell wall synthesis of bacteria. PBP's responsible for peptidoglycan synthesis.



- white fine powder
- soluble in water

side effects

rashes, nausea

Brand names:-

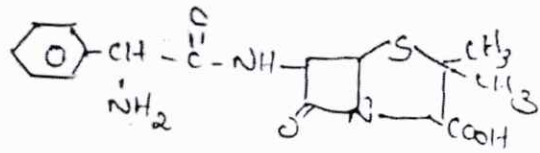
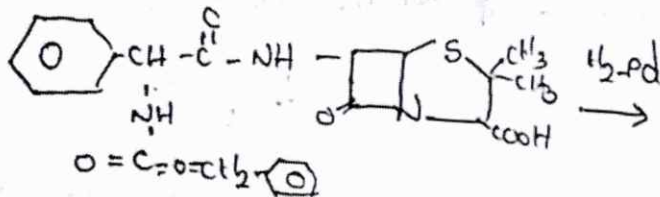
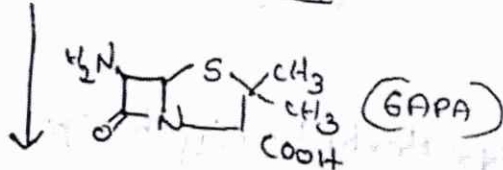
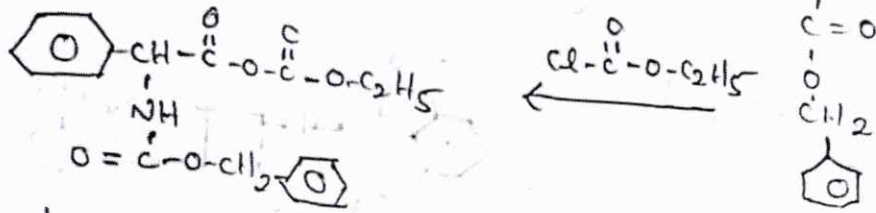
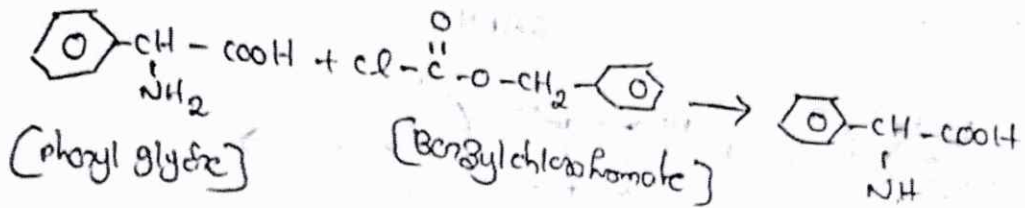
- clpmax
- Flemiclav
- NOVOMOX



[Signature]

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* Ampicillin :- (x_{21})



MOA:

It completely binds and inhibits transpeptidase enzyme resulting in inhibition of cell wall synthesis.

properties:

White crystalline
soluble in chloroform and ether

side effects:

nausea, vomiting, skin rash

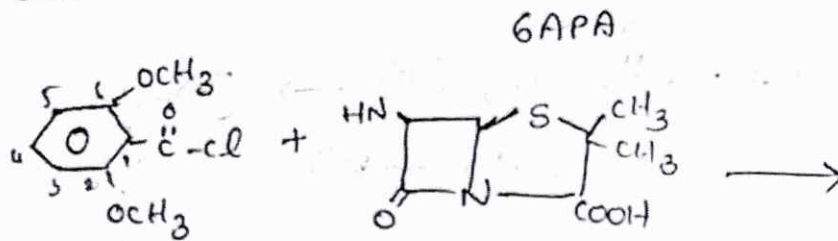
Brand name:

- ampicillin
- Amoxicillin
- Zycofillin
- Roscofillin

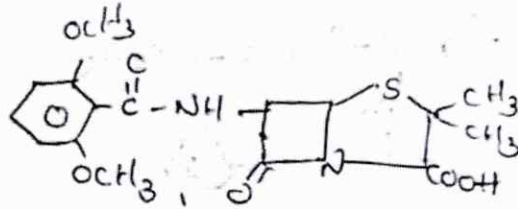


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Methicillin:-



2,6-dimethoxy benzoyl chloride.



MOA:-

It binds to transpeptidase enzyme thereby blocking the synthesis of peptidoglycan; leads to inhibition of cell wall synthesis.

properties:-

- white, fine solid.
- soluble in acetone, ether, chloroform, propylene glycol.

side effects:-

Skin rash, nausea, vomiting.


Brand names:-

metlin
methicillin.

importance:-

- ① Structure and nomenclature of penicillin, SAR ?
- ② Amoxicillin, Ampicillin synthesis?




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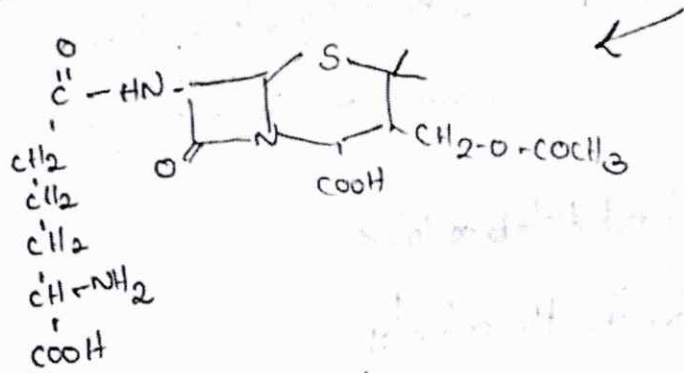
CEPHALOSPORIN

→ In 1945 Paulin Newton Abraham } They extracted cephalosporin from the
bacterial species:-

Cephalosporium acremonium

later it is known as "Acremonium chrysogenum"

→ 1st cephalosporin was synthesized for → "cephalosporin-C"




Why cephalosporin used?

→ Bcoz it is

- Broad spectrum
- very safety
- day to day or regular use.
- probability of less toxic effects.
- Cephalosporins are structurally and rationally closely related to penicillins.
- GAPA is present ⁱⁿ ~~is~~ penicillin.
- cephalosporin → 7ACA is present.

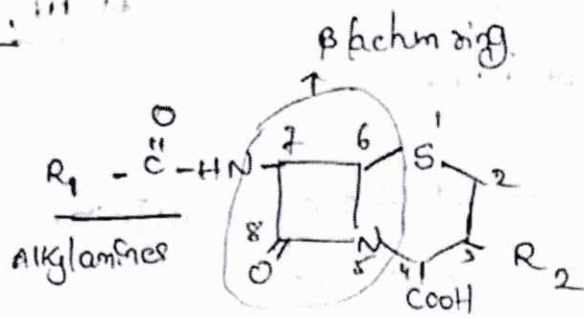




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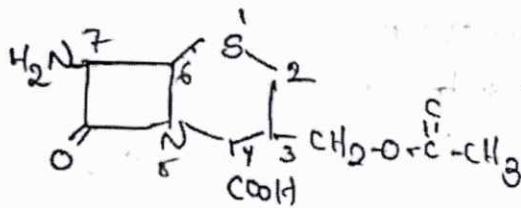
S.A.R. 111



should

- ① essential (no change with sulfone or sulfoxide)
 - ② dihydrothiazine ring essential
 - ③ essential for pharmacokinetic & binding site of drug
 - ④ carboxylic acid essential, replacement results in decreases in activity.
- β -lactam ring should not disturb as later.
- (R₁) → Alkyl group decides the activity.

7-amino cephalosporanic acid (7 ACA) :-



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Classification:

① 1st generation:

cephalothin
cephazolin
cephalexin
cefadroxil
cephradin

② 2nd generation:

② 2nd generation.

cefuroxime
cefaclor
cefprozil
cefmetazole

③ 3rd generation:

ceftioaxane
cefotaxime
ceftazidime
ceftizoxime

④ 4th generation:

cefepime
cefpodoxime

⑤ 5th generation:

ceftolozane
ceftazidime

⑥ others:

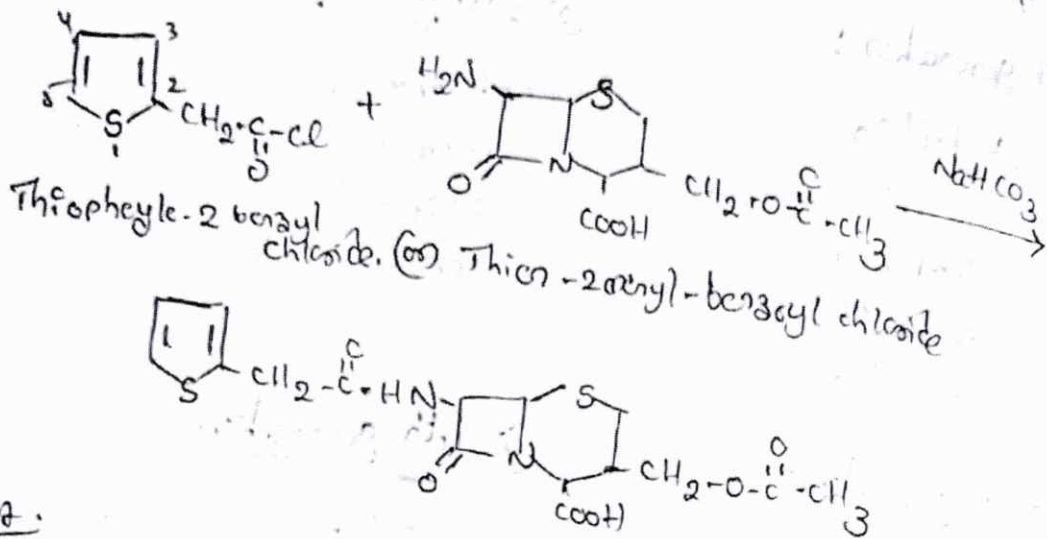
cefmetilen
cefarazole



A handwritten signature in green ink, consisting of a stylized name followed by a horizontal line.

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1) cefalothin / cefalotin :



Mech.

It binds to and inhibits PBP (penicillin binding proteins) resulting in interference in cross-linkage of peptidoglycan leading to inhibition of cell wall synthesis.

Properties:

white, slightly soluble (or) insoluble in chloroform, ether and acetone.

side effects:

rashes, fever, and serious side effect rarely cardiac arrest.

Brand names:

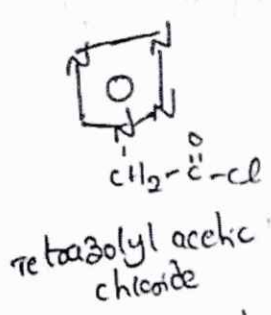
Cefalotin
Keflin
Keflex.



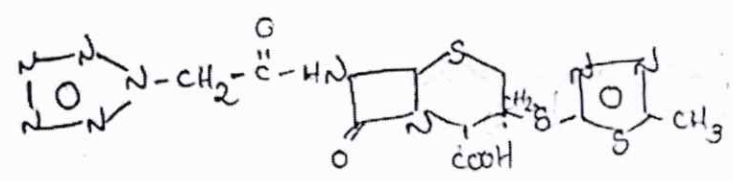
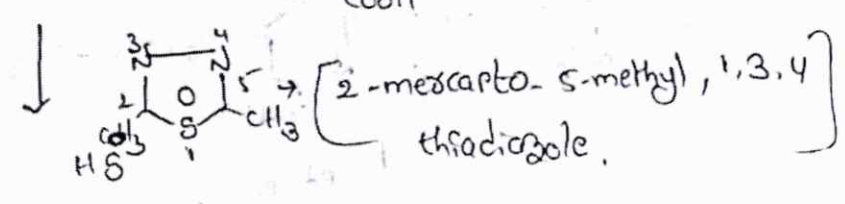
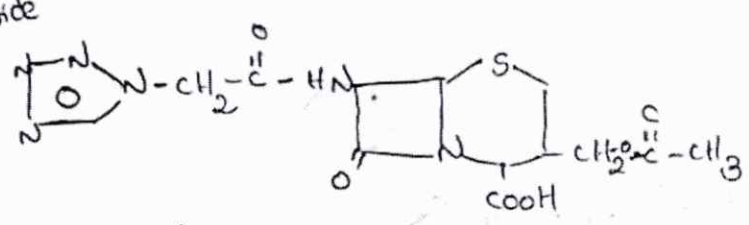
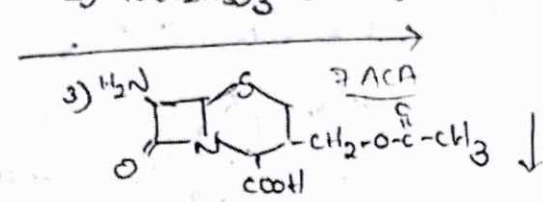
[Handwritten signature]

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9) cefazolin:



- 1) $(CH_3)_3C-CO-Cl$ (Pivalic (or) trimethyl acetyl chloride)
- 2) $N(C_2H_5)_3$ (Triethylamine (TEA))



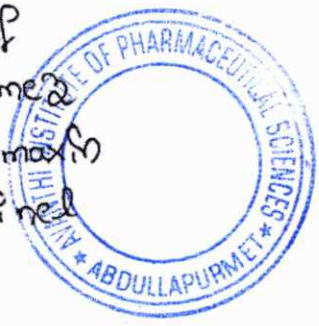
MOA: cell wall synthesis
 It inhibits by binding to PBP
 same as cefalothin

properties:
 soluble in DMF (dimethyl formamide)
 acetone.

but insoluble in chloroform, ether

Brand names -

- Ancef
- Cefamez
- GRamoxin
- Faxinel

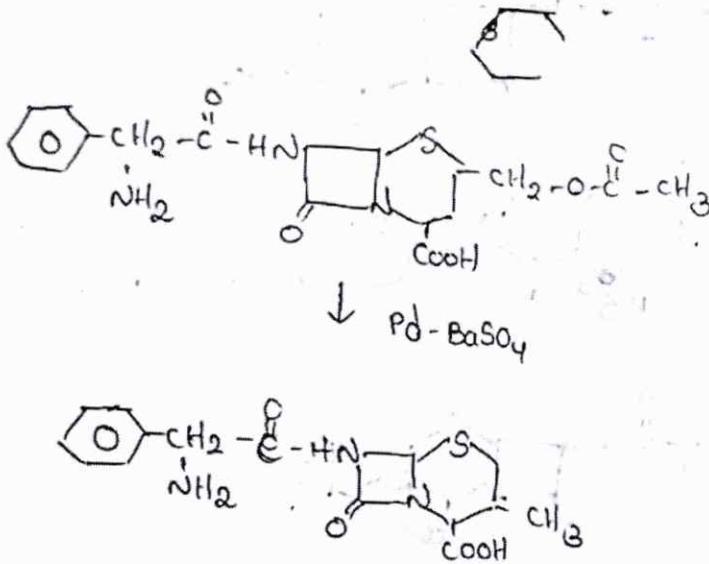
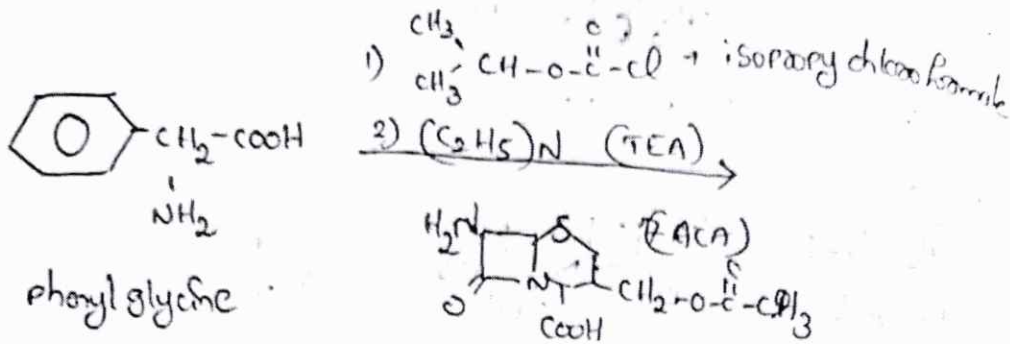


side effect
 Allergy, N, V
 rash

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③ Cephalexin



MOA:

It works by inhibiting the peptidoglycan cross linkage thereby inhibition of cell wall synthesis.

Properties

white crystalline powder
 Insoluble in water
 Soluble in methanol.

side effects
 vomiting, stomach upset

Brand names:

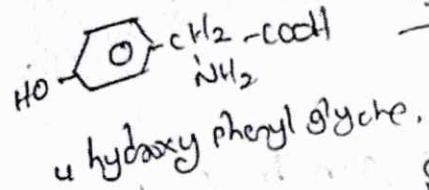
- Keflex
- AceX
- Ceporex
- Cephalex



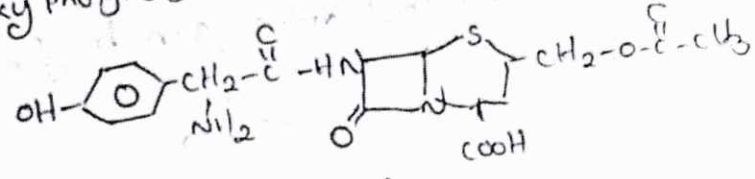
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Cefadroxil:

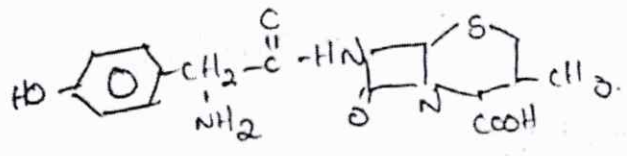
- 1) $\text{CH}_3\text{-O-C(=O)-Cl}$ ethyl chloroformate.
- 2) $(\text{C}_2\text{H}_5)_3\text{N (TEA)}$



7ACA



↓ AD-Bosay



MOA:
It binds to PBP and inhibit bacterial cell wall synthesis.

properties:

- white
- insoluble in water
- slightly soluble chloroform solution

side effect
vomiting, stomach upset

Brand names:

- Durocef
- Bicef-OT
- odoxil-500



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IMP ~~xxx~~ MACROLIDES

dt: 18/04/23

- + This antibiotics contains macrolide lactone ring with deoxy sugar
- 1 to 2 sugar linked to lactone.
- one of sugar containing dimethyl amino group to give basicity
- > Macrolides are less stable in acidic condition.
- > Paroic acid.
- > stable in aqueous solution at / below room temp.
- > water insoluble
- > unstable at acidic condition

MOA:

It binds to 50S sub unit r-RNA of microorganism
 ↓
 Inhibit polypeptide elongation & peptide formation.
 So inhibit protein synthesis
 ↓
 Results in inhibition of growth & reproduction.

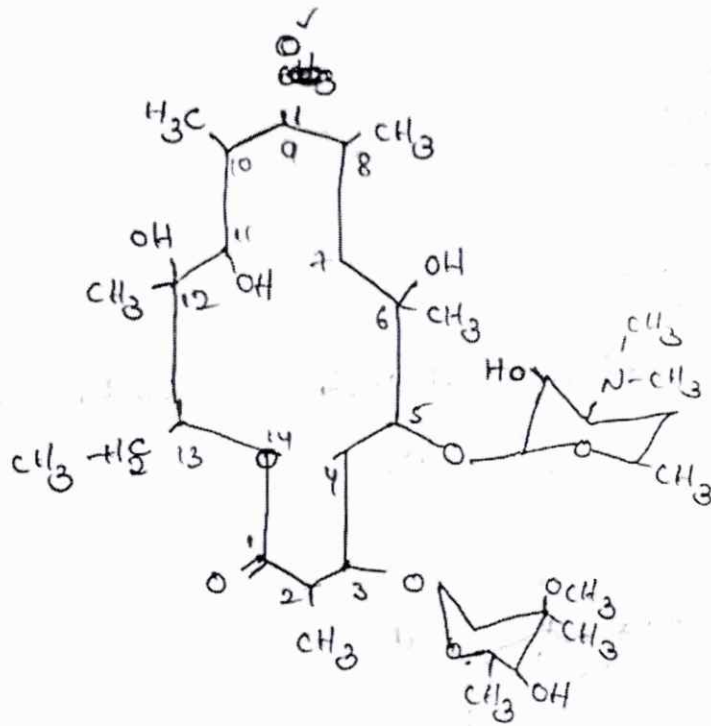
- ① Erythromycin
 - ② Clarithromycin
 - ③ Azithromycin
 - ④ Roxithromycin.
- } macrolides.



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① Erythromycin:

It is synthesized from *Streptomyces erythraeus*.



SAR

① It is less acid-stable
 the ketone group is with position → replaced by hydroxyl
 amine to form oxime.

ex: - Roxithromycin.

② Introduction of hydrogen to expand from 14 to 15-membered
 to give better spectrum.

eg: Azithromycin

③ The presence of diethyl amine in one sugar, give it's basicity
 and forms salt.

MOA:

It binds to 50S subunit of bacteria and stop elongation of
 polypeptide chain, resulting protein synthesis inhibition.

Properties

- Yellow crystals
- Insoluble in water
- Soluble in DMSO (dimethyl sulfoxide), ether and alcohol



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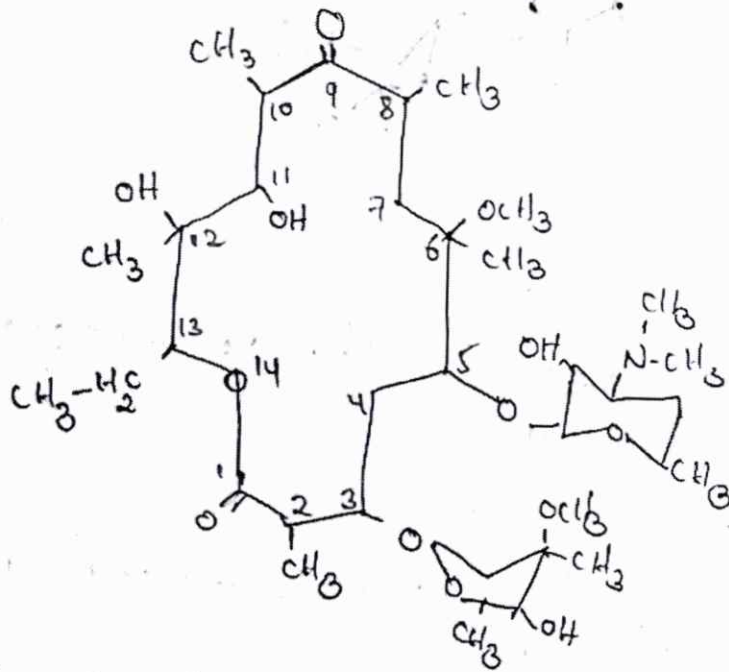
side effects
nausea, allergy, abdominal pain

brand names:

Althaxon
oxythaxon
esomyxin
calthox

② clarithromycin:

It is derived from erythromycin at C6-OH, replaced by -OCH₃,
replacing some of erythromycin,



MCA:

Same as erythromycin

It inhibits protein synthesis by binding to 50S subunit of 80S ribosome resulting
inhibition of growth and replication of bacteria

properties:

- white, solid
- Insoluble in water
- Soluble in DMSO

side effects

nausea, vomiting, abdominal pain, diarrhoea

brand names:

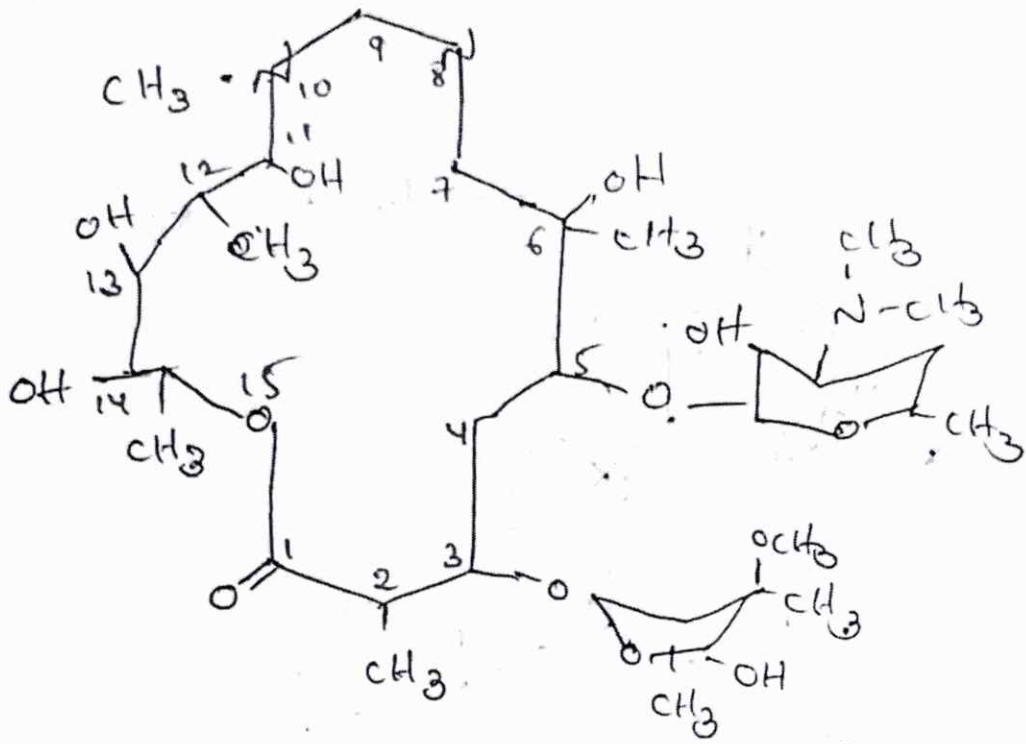
maclax
synclax
clarifan
clarivid



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(ii) Azithromycin.



Band name:

- Azith
- Azcc
- Azfast
- Azobact




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ANTI cancer Agents

dt: 20/04/23

Def: It is characterized by uncontrollable, progressive, independent, autonomous, relatively unlimited and abnormal cell growth of tissue.

commonly caused cancer $\left\{ \begin{array}{l} \text{in men} \rightarrow \text{Lung cancer} \\ \text{women} \rightarrow \text{Breast cancer} \end{array} \right.$
worldwide 5 billion people affect.

causes:

1) physical agents: UV rays
X-rays
Gamma rays
Beta rays

2) chemical agents: - Aniline, benzene, alkylating agent, Acetylation agents.

3) biological agents:-

some Bacteria cases $\left\{ \begin{array}{l} \text{peptic ulcers} \\ \text{cancers} \end{array} \right\} \xrightarrow{\text{untreated/ignored}} \text{causes cancer.}$

Some Fungi \rightarrow Aspergillus Flaus
Aspergillus Parasites $\left\{ \begin{array}{l} \text{found in some food materials} \\ \text{like peanuts, cotton seed} \\ \text{tree nut} \end{array} \right.$
 \downarrow releases aflatoxin chemical \downarrow causes cancer.

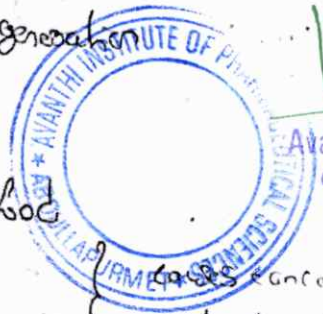
4) Genetic effect:

one generation \rightarrow Pan cancer \rightarrow other generation

5) Social:

people taking rich fat
low fibre } food
Alcohol
Smoking
gutka, Pan masala

causes cancer
and chances of recovery
is very low 2%.



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6) Hormonal :
Steroids also can cause cancer.

* classification :

* chemical classification :-

① Alkylating agents :-

i) Nitrosoureas :- carmustine, Lomustine

ii) Nitrogen mustard :- cyclophosphamide, Ifosfamide, melphalan, chlormambucil, mechlorethamine.

iii) Ethyleneimine :-

Thiotepa

iv) Alkyl Sulfonate :- Busulfan

v) Triazine :- procarbazine; ofacarbazine.

② Antimetabolites :

1) Pyrimidine derivatives :- 5 Fluorouracil, cytarabine, capecitabine, gemcitabine

2) Purine derivatives :- 6 mercaptopurine, 6 Thioguanine, azithiothine

3) Folic acid :

Methotrexate

③ platinum coordinated - cisplatin

cisplatin

carboplatin

④ Antibiotics

actinomycin-D

bleomycin

mflomycin-C



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(b) Plant products:

- vincristine
- vinorelbine
- etoposide
- paclitaxel

(c) Protein kinase inhibitors:

- imatinib
- dasatinib
- gefitinib

(d) Miscellaneous agents:

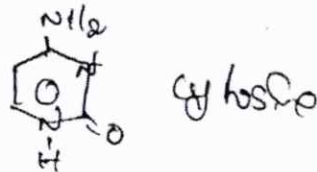
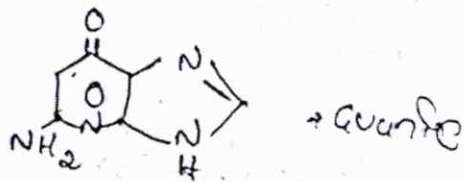
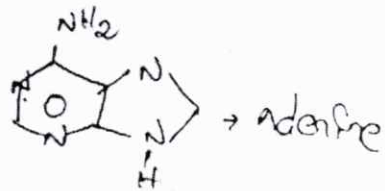
- L-Asparaginase
- Arsenic trioxide

* MOA of alkylating agents:

→ Alkylating agents are bind to

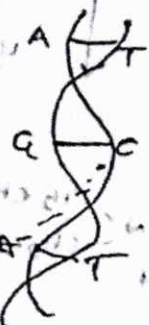
- ① Adenine at N₁, N₃, N₇ positions
- ② Guanine at N₂, N₃, N₁₂ positions
- ③ Cytosine at N₃ position

Thiamine,
uracil } at all positions



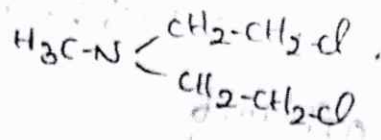
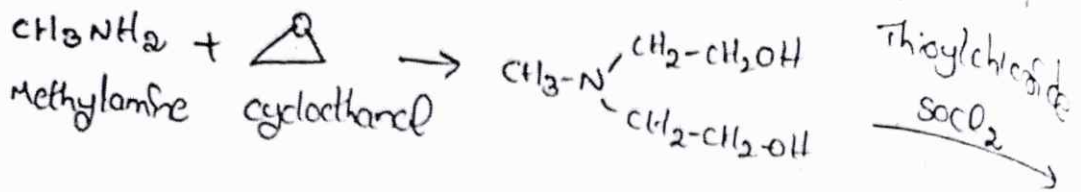
→ Altering the base pairs (A-T/G-C) to A-G/T-C b/w strands is called interstrand alteration.

→ Altering the base pairs within strand is called intrastrand



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α-Mechloroethamine



MOA:

It binds to acanine at 7 resulting cross linkage of DNA.

Properties:

- Light yellow colour
- slightly soluble in water
- miscible in DMF, chloroform (CHCl_3), carbon tetrachloride (CCl_4)

side effects

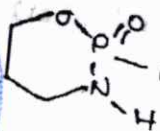
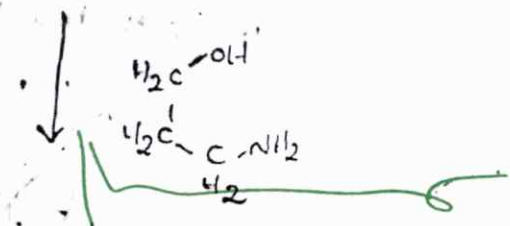
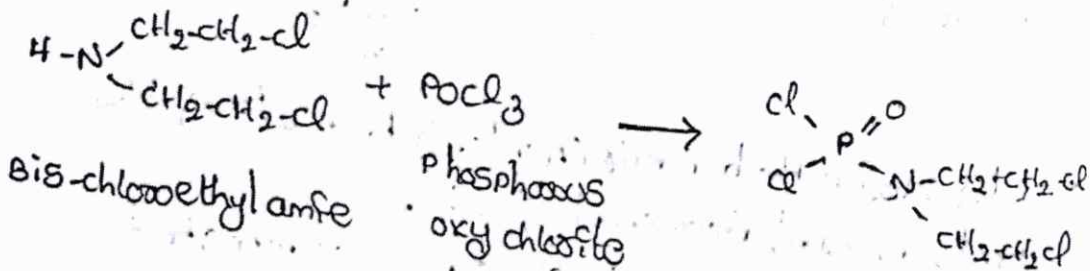
→ Highly toxic

contraindication: -
 in pregnancy not
 prescribed.

Brand names:

mustaxgelin
 valchlor

3) cyclophosphamide



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MOA:

It binds to guanine at 7 both inter strand & intra strand (in base pair within strand) respectively). These by result in cross linkage of DNA and formation of miscodons leading to cell apoptosis

Properties:

- white solid
- Insoluble in H₂O
- Slightly soluble in CCl₄, acetone, CHCl₃

side effects:

- Low WBC
- Infectivity.

Brand names:

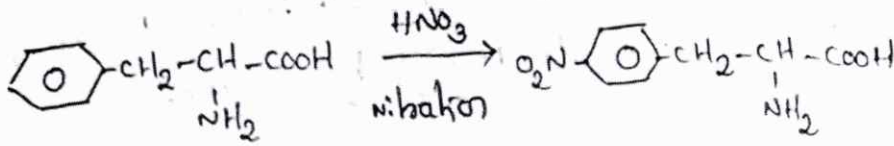
- oncoxon
- doxon
- cycloyan
- eldamide.



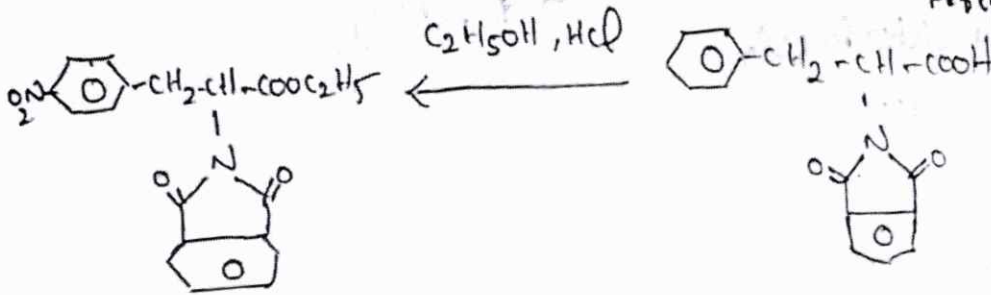
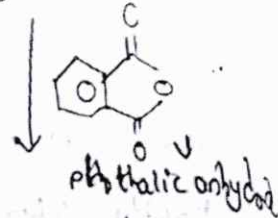
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dt: 27/04/23

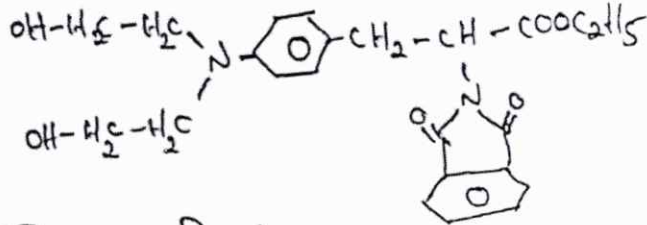
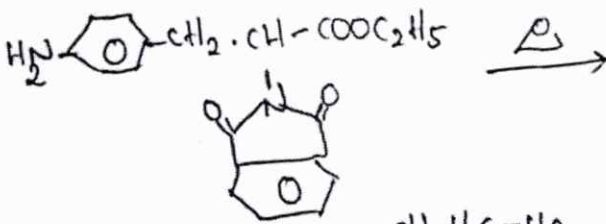
* Melphalan :-



phenyl alanine

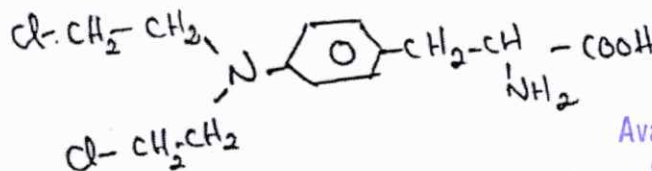


↓ H₂-Pd



↓

- 1) NaOH
- 2) SOCl₂
- 3) HCl



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MOA: It attaches to nucleotide base thereby alter the base pair present in reading inhibition of DNA & RNA synthesis. necessary for survival of cell.



properties: white color
 → It is freely soluble in water
 → soluble in propylene glycol and dilute mineral acids.
 → Insoluble in chloroform, ether, ethanal.

side effects:

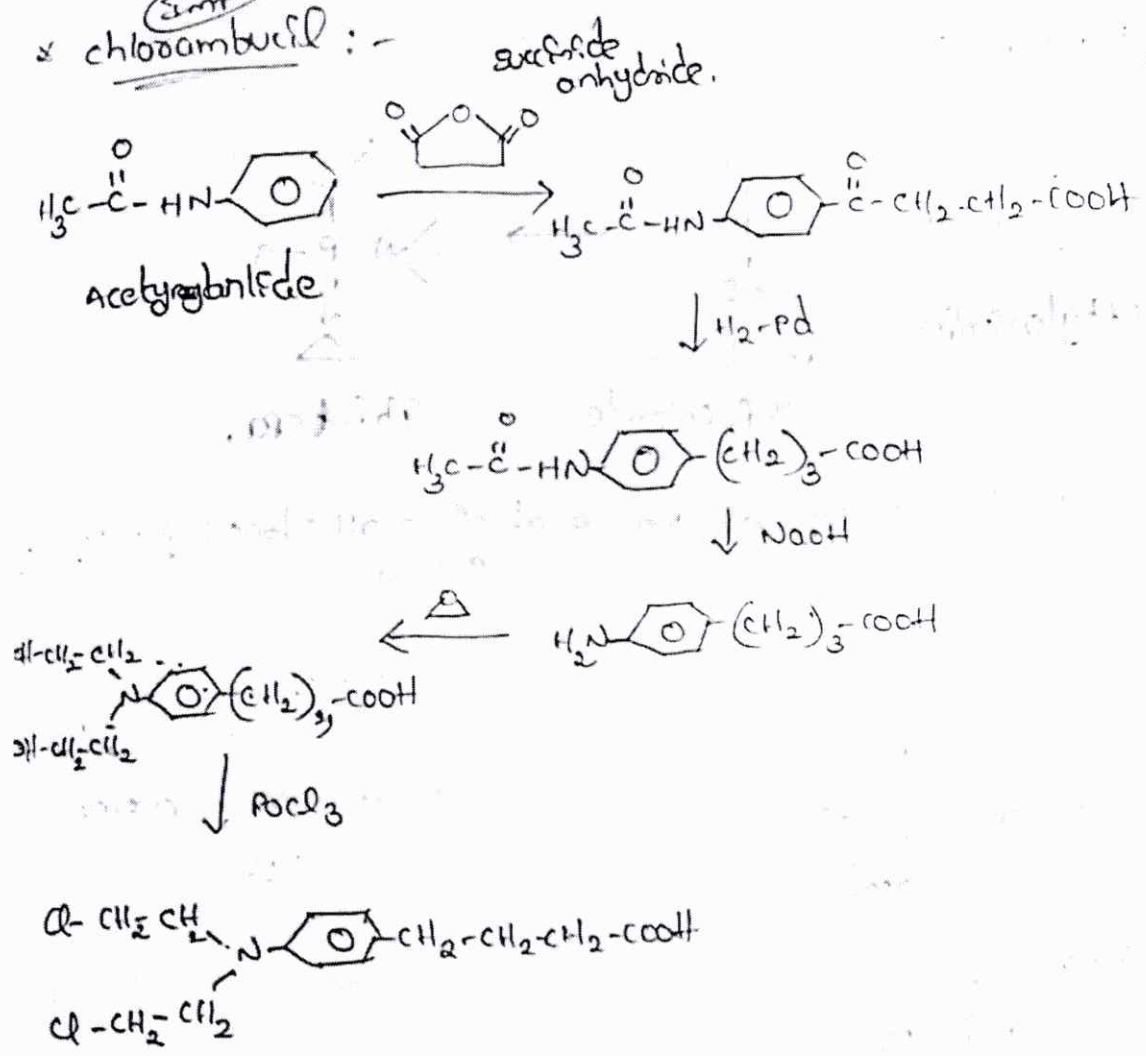
→ Bone marrow suppression

brand names:

- Melfan
- melfalan
- Alkeraan.

→ used in treatment of cancers like breast cancer, neck and lung cancers

* chlorambucil :-



MOA: It works in 3 steps as follow

- ① Attachment to base and alkylating it being deformed by the parasite enzyme.
- ② Inhibition of DNA & RNA synthesis
- ③ Formation of false codon.



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properties

- white crystalline
- insoluble in water
- * Salt of sodium of chlorambucil
- soluble in ethereal acetone, $CHCl_3$

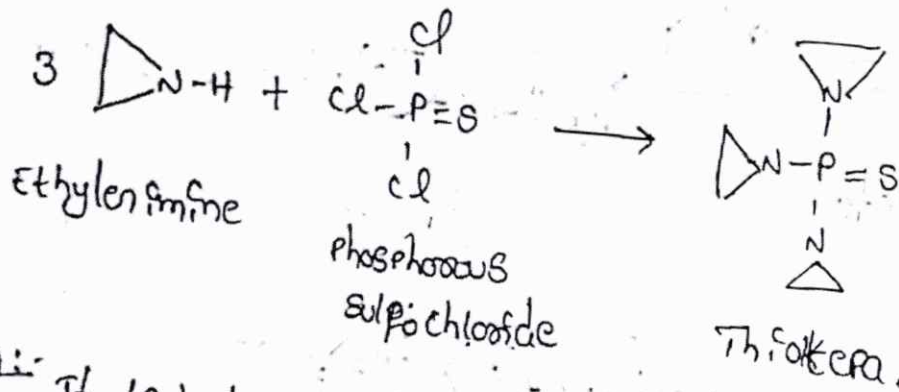
side effects

- Bone marrow suppression
- aneuploidy.

Brand names :-

- Leukoran - 2mg
- chloramax - 2mg
- Leu Katan - 5mg
- chloramax - 5mg

* Thiotepa :-



MOA:- It binds to the base guanine at 7th in all stages of cell cycle thereby inhibit DNA synthesis.

properties

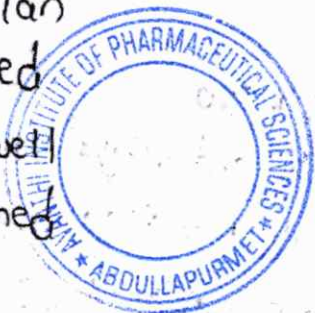
- white crystalline.
- soluble in water, $CHCl_3$
- * ethereal, ether, acetone

side effects :-

- Bone marrow suppression
- low WBC

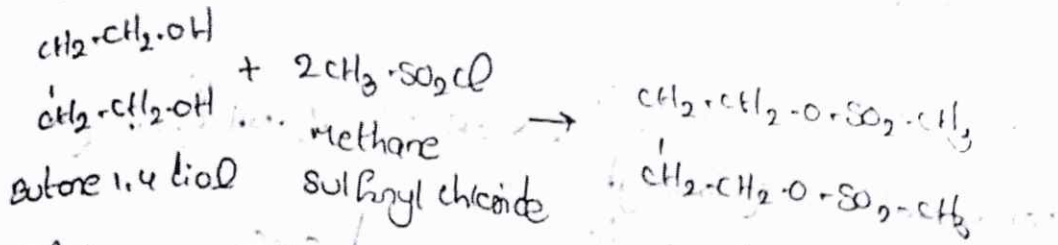
Brand names :-

- Thioplan
- Thimed
- Tepawel
- Tepamed



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Busulfan:



MOA:

It works by forming interstrand cross link b/w guanine & adenine or b/w guanine & guanine which prevent DNA replication.
 → The guanine attach to the carbon next to mesylate.

properties:

- solid
- not soluble in H₂O
- soluble in acetone

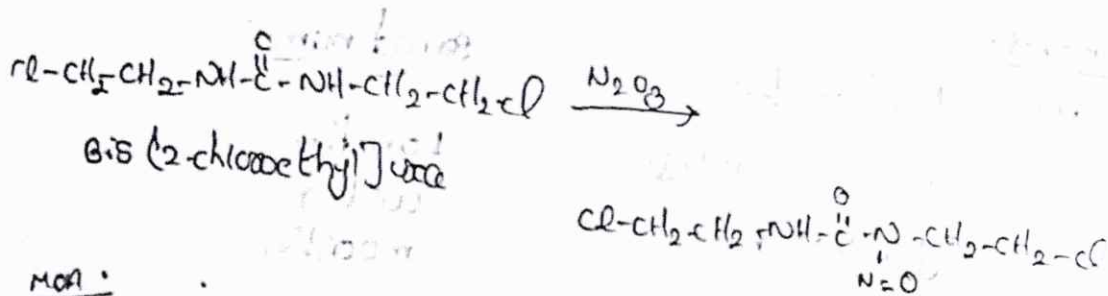
side effects:

seizures, emesis, thrombocytopenia

Brand names

mylexon, mysoal
Busulfex-IV, Bueclon.

caromustine:



MOA:

It forms interstrand cross link b/w guanine & adenine or guanine & guanine

properties:

- light yellow
- poorly soluble in water
- soluble in alcohol/acetone

Brand names

BicNU
caom-PV
caomustine

side effects

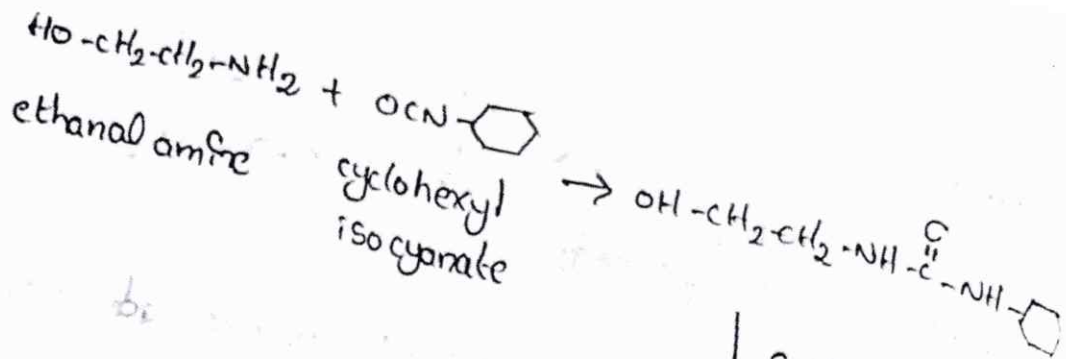
nausea, loss of appetite
flushing, eye redness



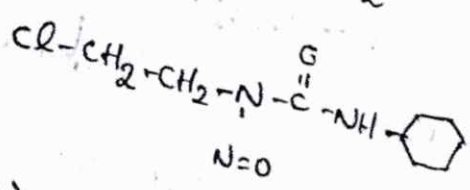
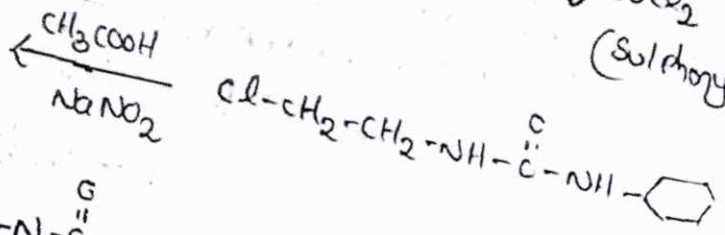
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Lomustine:



$\downarrow \text{SOCl}_2$
 (Sulphonyl chloride)



MOA:
 It is alkylate nucleotide base & inhibit own synthesis

Properties:
 Yellow colored crystals
 Soluble in acetone, alcohol
 Slightly soluble in H₂O

Brand names:
 Lom h_n
 Lus h_n
 moosh_n

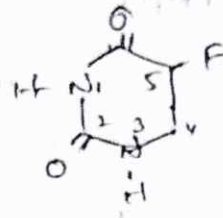
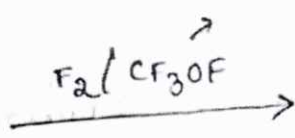
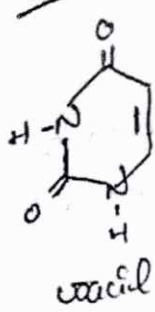
Side effects:
 + Nausea
 + Loss of appetite
 + Diarrhoea
 + Lip tasy sore

→ mainly used to treat lung cancer, throat cancer, larynx cancer,



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Floxacin (5-FU):



MOP:
 principally it inhibit thymidylate synthase enzyme there by prevent the synthesis of pyrimidine thymidilate is a base for DNA.

Properties:

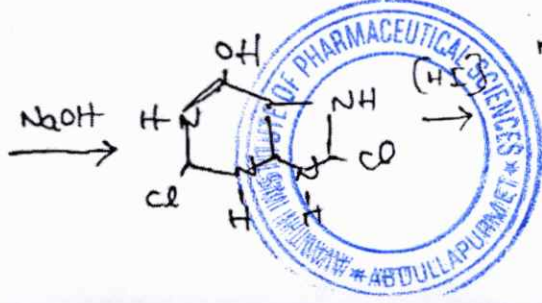
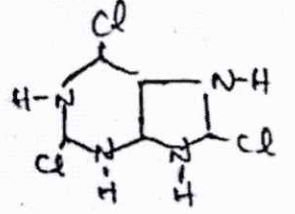
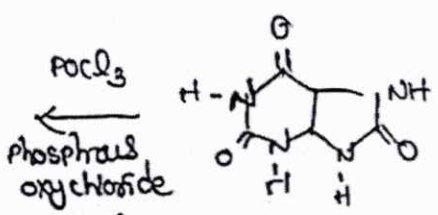
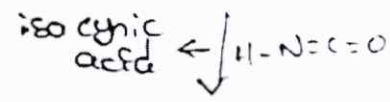
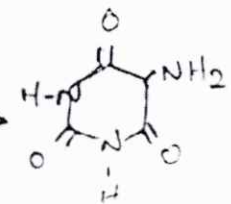
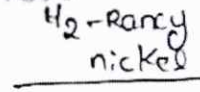
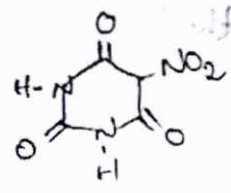
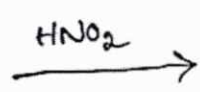
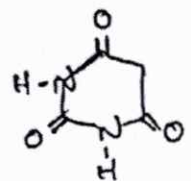
- white crystalline
- insoluble in water
- slightly soluble in ether, acetone, chloroform.

Brand name:

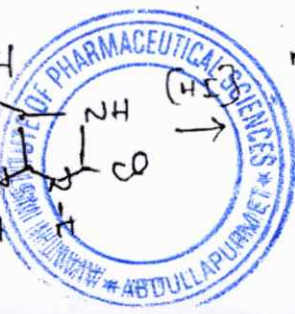
- Floxax
- Flocil
- Flonida
- Floflu.

Side effects: low platelet count
 loss of appetite.
 dysphagia.

Imp
6-Mercaptopurine (6MP):



Phosphorus oxychloride
 cyclization
 isocyanic acid
 Phosphorus pentoxide
 (H₂)
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MOA:

- ① It bind to xanthine & guanine then itself convert into thioic acid monophosphate (TIMP)
 - TIMP inhibits the conversion of IMP (inosine monophosphate) to XMP (xanthine monophosphate) also IMP to AMP (adenine monophosphate)
 - XMP & AMP are the base for DNA replication.
- ② The methyl derivative of GMP (6-methylthioinosine monophosphate)
 - MTIMP inhibit glutamate 5-phosphoribosyl pyrophosphate amino transferase.

Properties

- Yellow color
- practically insoluble in water
- Soluble in alkaline soln
- Soluble in hot ethanol
- Insoluble in chloroform and acetone.

Brand names:

- Empurine
- Purmethal
- mercapto
- meocapthol

side effect

- Loss of appetite
- Infections in mouth
- SKIN, infections
- diarrhoea.

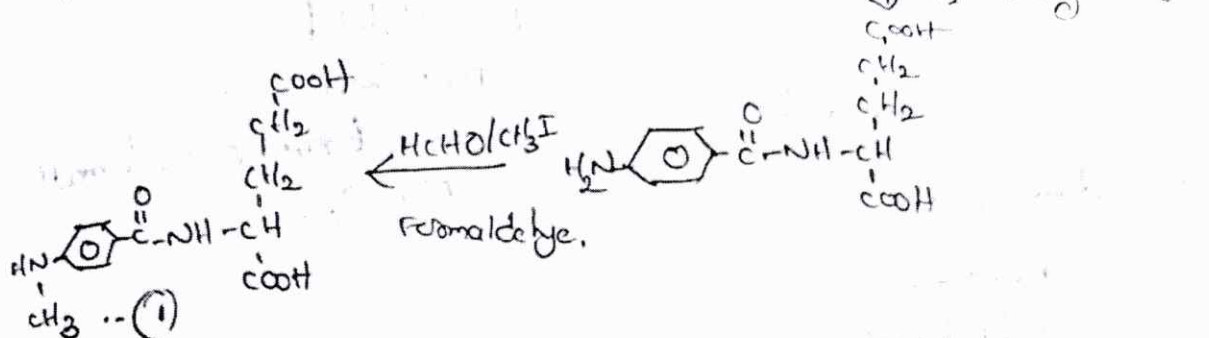
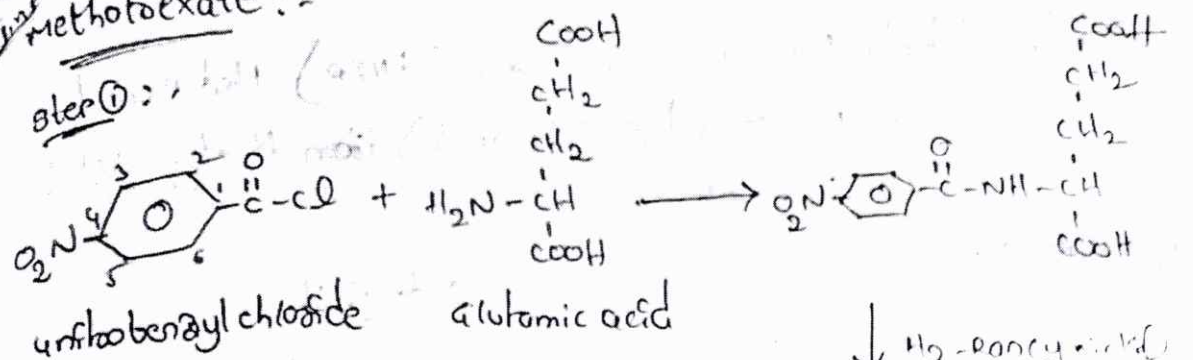


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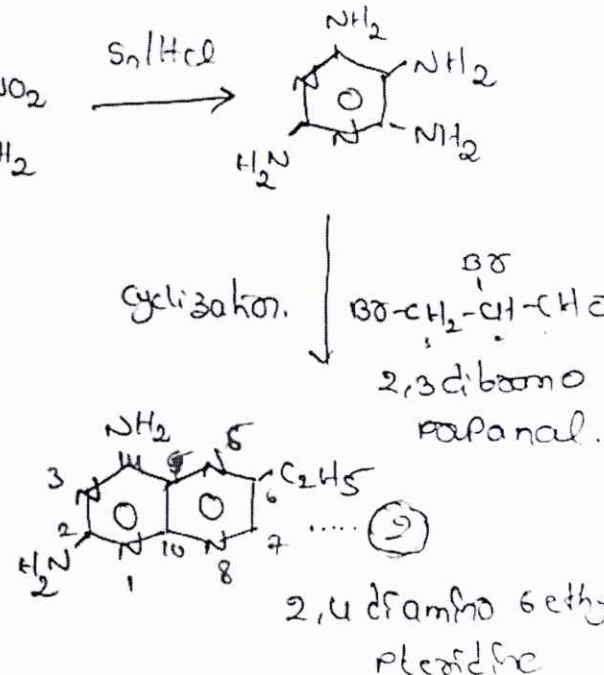
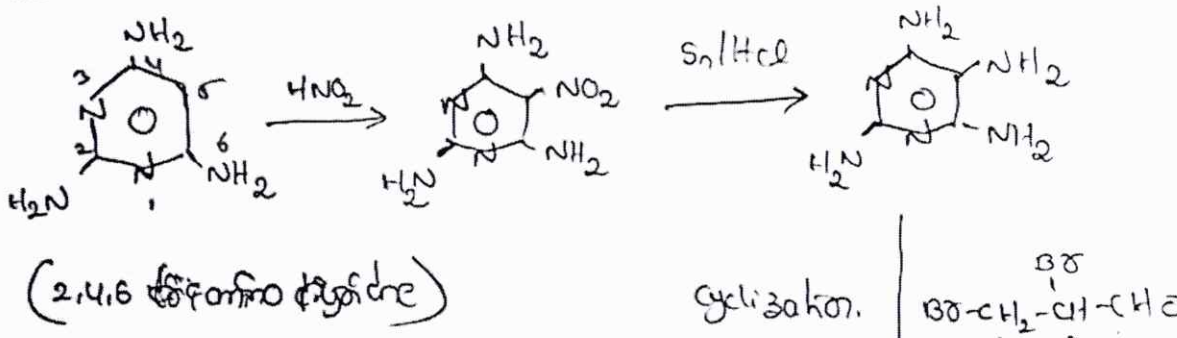
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Step 1 Methoexale :-

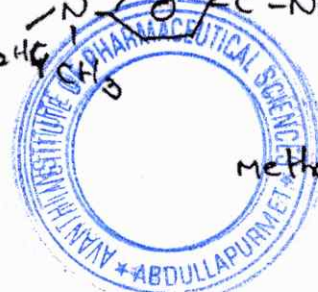
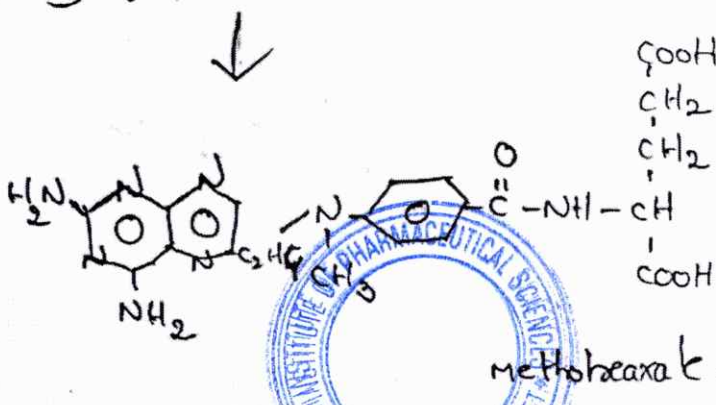
step 0: synthesis of N-(4-methylaminobenzoyl) glutamic acid



step 2 :-



① + ② gives



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NOA:
It inhibits dihydrofolate reductase enzyme (DHFR) that prevents synthesis of THF (tetrahydrofolic acid) from thereby inhibiting the amino acid, proteins etc

- properties:
- Bright orange color
 - Insoluble in water
 - Soluble in alkaline solution

side effects:

- Low platelet
- Diarrhea
- Skin breakage
- Insider mal
- Allergy.

Brand names:

- Imutaex
- Fd1ftoax
- Remtoex
- neobate.



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5mg

Antihypertensive agents

d: 09/05/23

hypertension

It is a physiological condition ^{caused} by increase in blood pressure (arterial) to normal bp (120/80).

Systolic	Diastolic	
120	80	→ Normal
121-139	81-89	→ prehypertension
140-159	90-99	→ stage I mild
160-179	100-109	→ stage II moderate
180-209	110-119	→ stage III severe
≥ 210	≥ 120	→ stage IV very severe

Classification:

1) ACE inhibitors:-

- captopril, enalapril, Ramipril, Lisinopril, perindopril.

2) Angiotensin receptor blockers (ARBs):-

- Losartan
- Candesartan
- Tosartan

3) β -blockers:

- Atenolol, metoprolol
- Esmolol, propranolol

4) Diuretics:-

- chlorothiazide
- hydrochlorothiazide
- Furosemide
- Torsemide
- Spironolactone

5) selective α blockers:-

- Terazosin
- Prazosin

6) Both α and β blockers:

- Carvedilol
- Labetalol

7) centrally acting sympatholytic

- methyl dopa
- clonidine

8) Ca²⁺ channel blockers:

- diltiazem, verapamil
- nifedipine, amlodipine



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Imp

Antihypertensive agents

d: 09/05/23

hypertension

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≥ 210	≥ 120	→ stage IV very severe

Classification:

1) ACE inhibitors:-

- lisinopril, enalapril, ramipril, lisinopril, perindopril.

2) Angiotensin receptor blockers (ARBs):-

- losartan
- candesartan
- irbesartan

3) Diuretics:-

- chlorothiazide
- hydrochlorothiazide
- Furosemide
- torsemide
- spironolactone

5) β -blockers:

- atenolol, metoprolol
- esmolol, propranolol

6) selective α blockers:-

- terazosin
- prazosin

7) Both α and β blockers:

- carvedilol
- labetalol

4) centrally acting sympatholytic

- methyl dopa
- clonidine

8) Ca²⁺ channel blockers:

- Amlodipine, verapamil
- nifedipine, diltiazem



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9) Ganglionic blockers :-
 Pento/infum, clonidine.

10) Neuronal blockers :-
 Adrenergic
 Reserpine
 Guanethidine

11) Vasodilators.
 Minoxidil
 Sodium nitroprusside
 Hydralazine

MOA:

Anti hypertensive drugs → Inactivate the renin-angiotensin-aldosterone system (RAAS), which converts renin-angiotensin I to renin-angiotensin II, thereby lowers the arterial resistance, increases the venous capacity & there is decrease cardiac output, stroke work, volume → RT-II is less, there is less aldosterone secretion, eventually body K⁺ increases, this enhances natriuresis (excretion of Na⁺ along with obligate water) bcoz of low resistance blood vessel in kidney and retain potassium, which leads to blood resistance as a result it lowers the blood pressure.

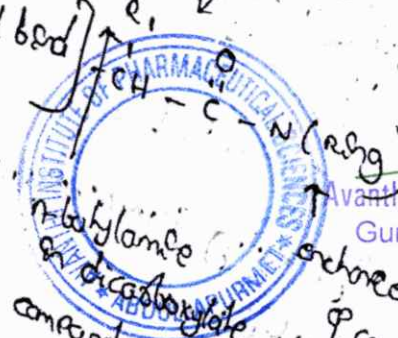
SAR of ACEI

sulphydryl group
 leads to shock duration
 ↓
 of action

methyl group resembles charge of
 alanine

R [groups that bind to Zn²⁺

essential for stabilisation

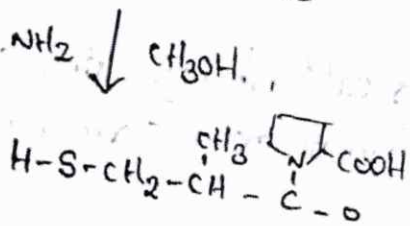
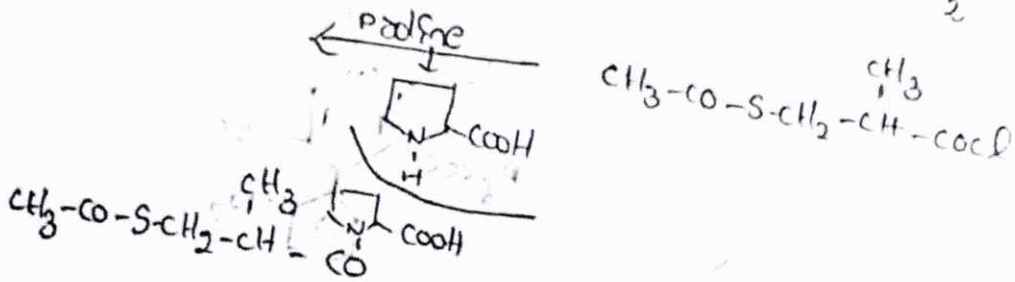
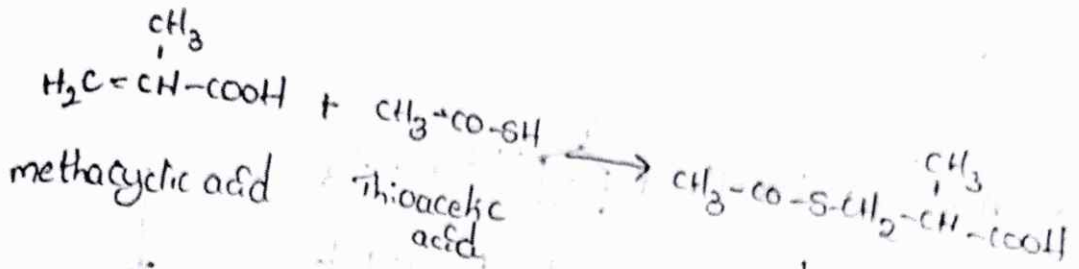


enhances the potency of compound
 covering locally active compound

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captopril :-



MOA:- It blocks the conversion of angiotensin-I to angiotensin-II, so it prevent the degradation of prostaglandin thereby, inhibit vaso constriction promote vasodilation.

properties:-

- white crystalline
- free soluble in ethanol
- chloroform, methyl alcohol.

side effects:-

- chest pain
- headache
- dyspnea

serious side effect: low BP
heart failure.

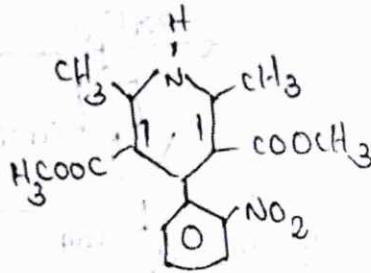
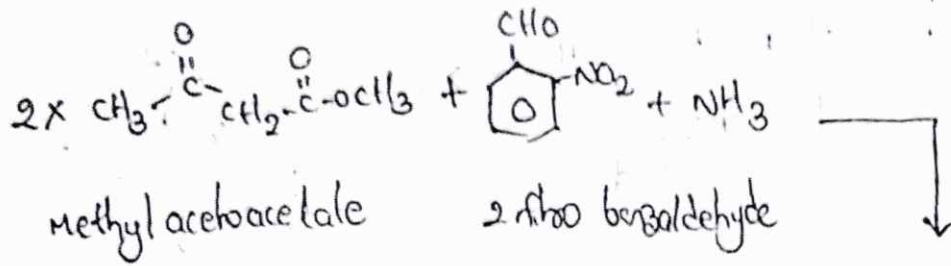
Brand names:-

- Capoten
- Aceten
- Angiopril
- Angiopril-DTU



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Nifedipine :^(xxx)



MOA:

It inhibits transmembrane extracellular Ca^{++} into myocardial and vascular smooth muscle, thereby promote main coronary vasodilation & reduce myocardial contraction.

Properties:

Yellow color
insoluble in H_2O , CHCl_3 , ethanol

Side effects:

Light headness
Headache
Low B.P

Brand name:

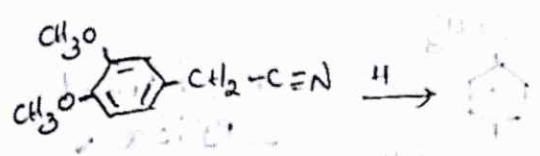
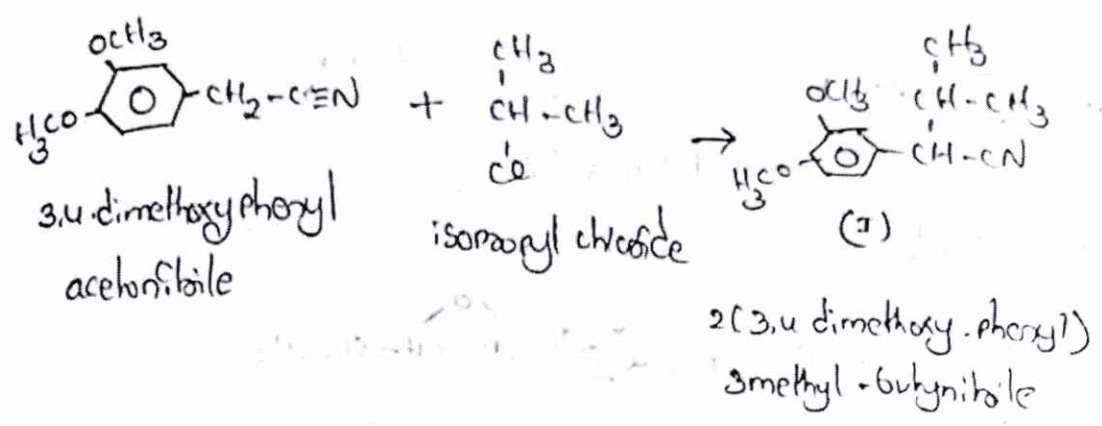
Adalat
Depin
Nifedipin
Nifedipin-RCD



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vedapamil :-



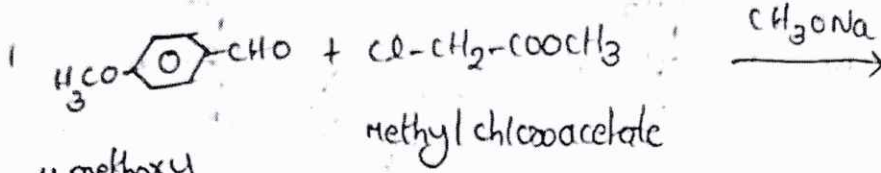
The compound is a piperidine derivative with a benzene ring fused to it. It is a bicyclic compound.



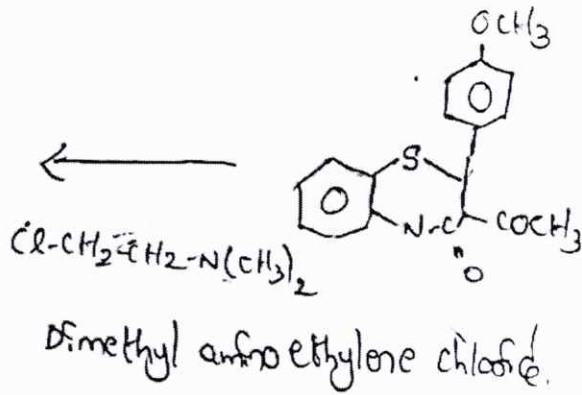
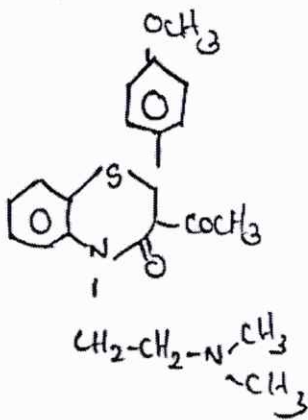
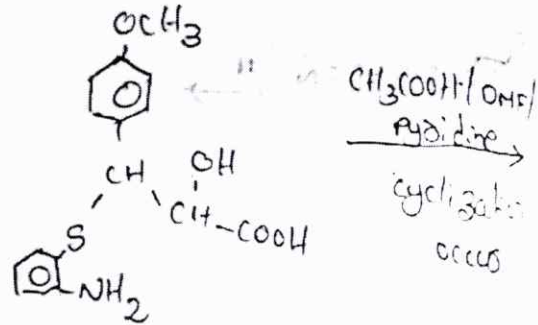
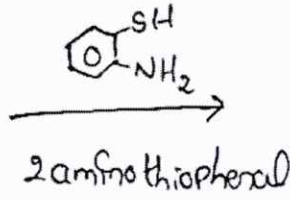
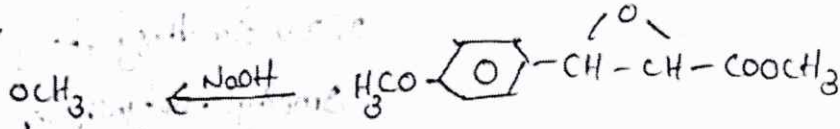
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of triazem:-

(sodium methoxide)



4-methoxy benzaldehyde



MOA:-

- It blocks voltage sensitive Ca²⁺ channel by inhibiting -for gated mechanism, there by decrease Ca²⁺ level in all.
- like verapamil it also belived to inhibit extracellular Ca²⁺ into myocardial & vascular smooth muscle there by decrease & vasoconstriction & nes coronary vasodilation



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properties:

- white crystalline
- insoluble in H₂O
- soluble in CHCl₃, methanol, ethanol

side effects:

- Headache
- dizziness

brand names:

Angigen

of time

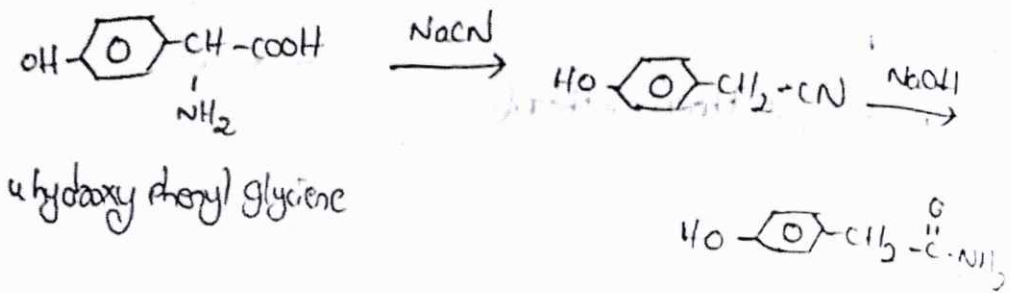
of cordia

cordigen

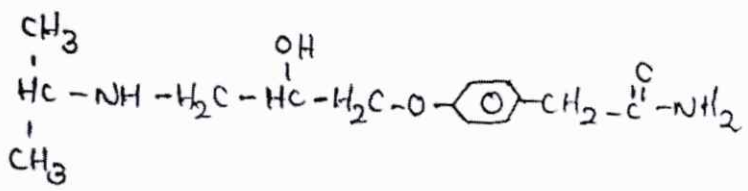
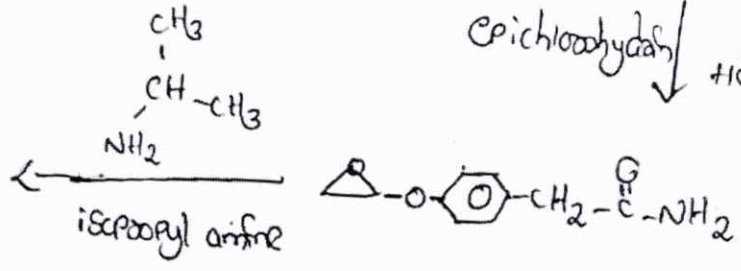
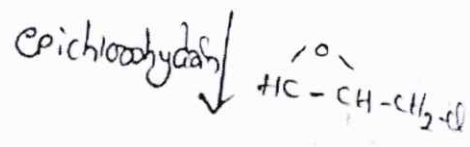


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tenolol ^(xxv)



4 hydroxy phenyl glycine



MOA:

- It blocks β -adrenergic receptors specifically to β_1 adrenergic receptors.
- It reduces the exercise heart rate to reduce cardiovascular conductance there by decrease overall oxygen requirement.

Properties:

- white crystalline
- soluble in methanol, ethanol
- insoluble in CHCl3

side effects

dizziness, depression, feely haced.

Brand names:

- Atekind
- Atelol
- Catenol
- Tenolol

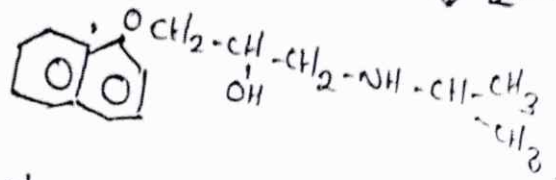
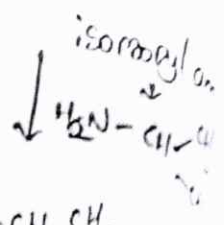
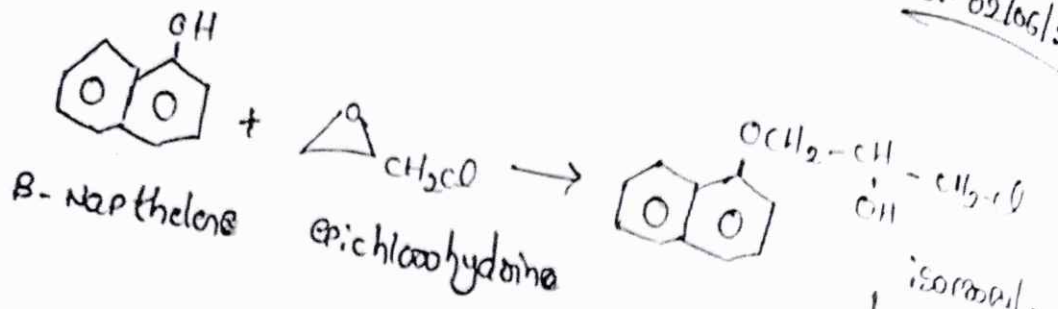


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Propranolol :-

dt: 02/06/23



MOA:

It competes with sympathetic neurotransmitters to bind to receptors, so neurotransmitter stimulating stimulation decrease in adeny cyclase activation inhibited. Thereby inhibition of cAMP synthesis. As a result protein kinase A reduces the influx of Ca^{++} into myocardial and vascular smooth muscle, resulting decrease in arterial pressure.

properties:

- white, crystalline
- soluble in water, chloroform, methanol


side effects:

- feeling tired
- difficult to sleep
- abdominal pain.
- contraindicated in endokros :- patient having slow heart rate.

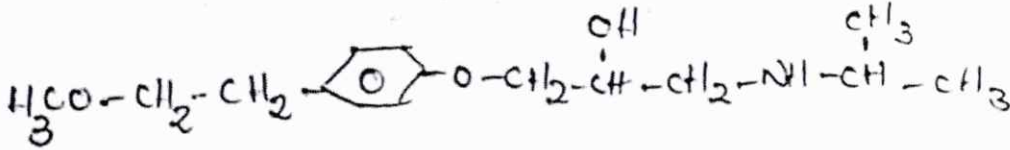
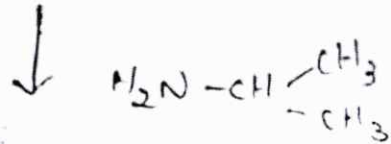
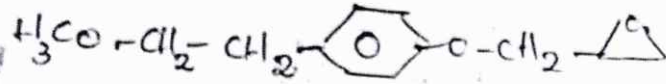
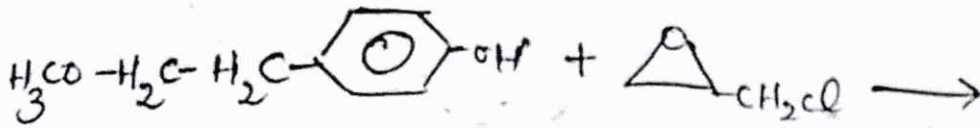
brand names:

- Betabloc
- Cipradol
- Betagem
- Betacap




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Metoprolol :



MOA: ~~same as propranolol~~

works by blocking β_1 adrenergic receptors. It reduces uptake of Na^+ , slows down the K^+ release, thereby decrease sarcoplasmic reticulum Ca^{+2} .

properties:

white crystalline
slightly soluble in water
etheral, chloroform

side effects

nausea, dizziness
abdominal discomfort

Brand names:

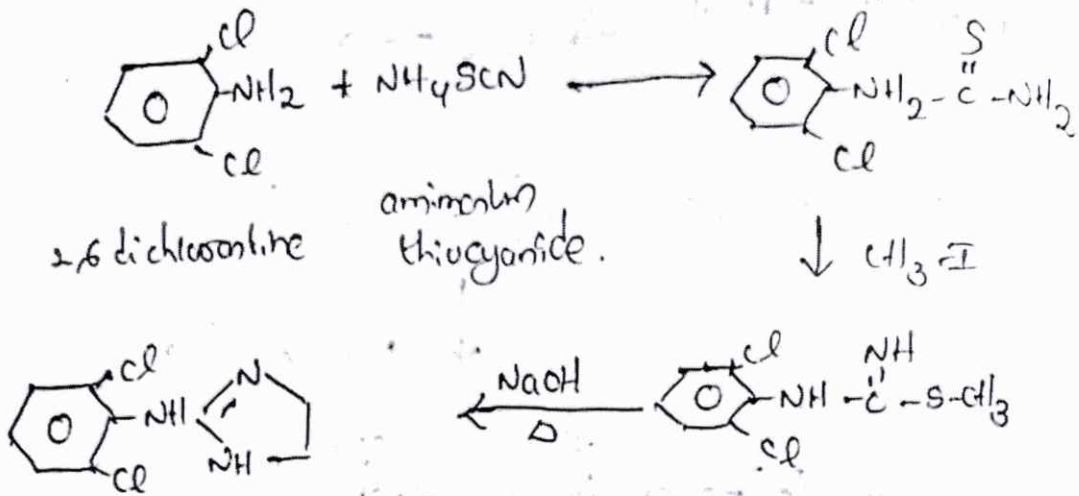
Betaloc
metocard-AM
metocard-XL



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clonidine :-



MOA:

It binds to and inhibits centrally sympathetic adrenergic receptors which reduce the noradrenaline (NA) release as a result \downarrow in peripheral resistance, heart rate, arterial pressure

Properties:

white crystalline

soluble in water

not soluble in dilute alkali

side effects:

\rightarrow Headache

\rightarrow Orthostatic hypotension

Brand names:

Askam-H

clothalston

cataplin-DIU



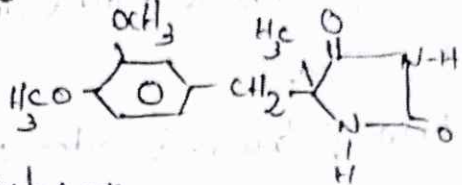
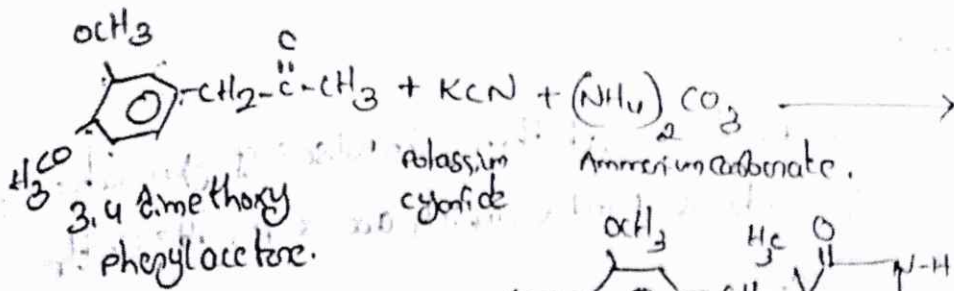
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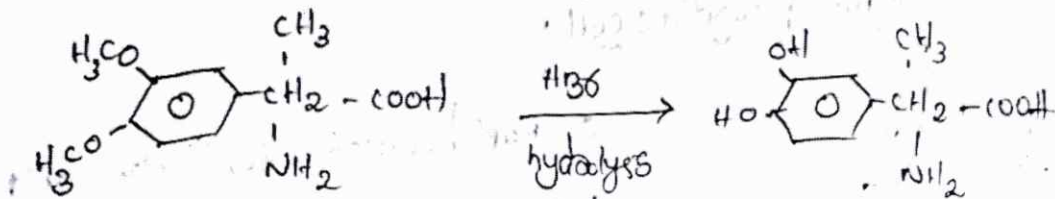
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Methyl dopa = 12

01/06/23



↓ Hydrolysis.



MOA

It works seems to be attributed by its conversion into methyl-norepinephrine, thereby decrease it binds to and stimulate β-adrenergic receptors. As a result there is ves in sympathetic pressure and a total pressure.

Properties

- Yellowish white color
- Soluble in water, chloroform
- isoproporal

Brand name :

- Dopagyl
- Aldomet
- emcopa
- Aldopa

Side effects

- Allergy, liver problem
- RBC breakdown.



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dt: 06/06/23

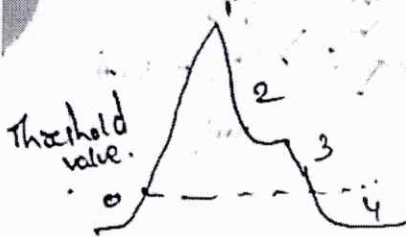
Anti-arrhythmic agents

Arrhythmias:

def: disturbance in heart rate, rhythm, impulses of generation, conduction of electrical impulse, which are responsible for the derolozation.

→ disturbances of above one's alters overall cardiac function.

Action of potential of cardiac cell:



0 - Rapid derolozation (inflow of Na^+)
 1 - Slow derolozation (outflow of K^+ current, Na^+ block)

2 - Plateau (K^+ flow, Na^+ loss)

3 - Repolozation (Ca^+ , Na^+ flow stop, K^+ flow ↑)

4 - Pacemaker potential (slow Na^+ inflow, K^+)

Classification: (Vaughan William's classification)

Class-I

Ia - Prolong derolozation

- quinidine
- procainamide
- disopyramide

Ib - shorten derolozation

- Lignocaine
- metoprolol
- Phenytoin

Ic - little or less derolozation

- encainide
- flecainide
- propafenone



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class II:

β -adrenergic blockers

- propranolol
- acebutalol
- esmolol

class III:

K⁺ channel blockers

- Amiodarone
- Bretylium
- sotalolol

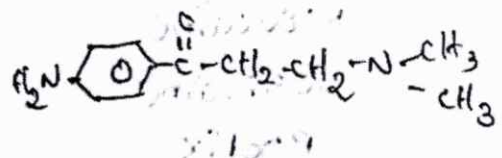
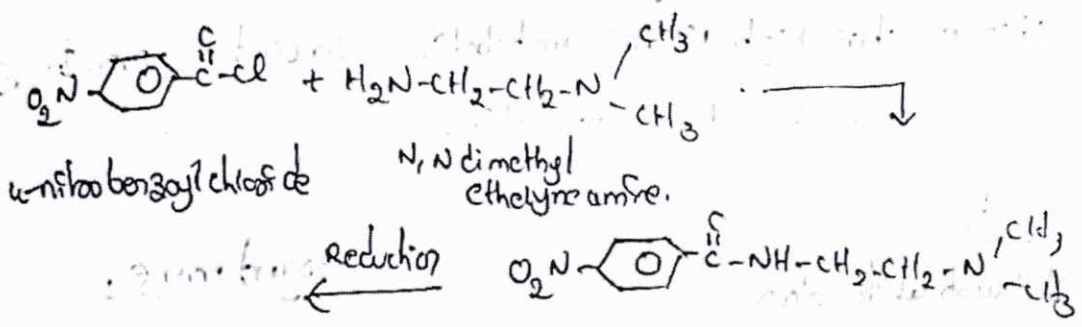
class IV: Ca²⁺ channel blockers

- verapamil
- diltiazem

digitalis glycosides

- digoxin
- Mg²⁺, adenosine
- digoxin

① propranolamide:



MOA: It act on Na⁺ channel of heart muscle thereby blocks ion-gated closures (intracellular or extracellular closures)
 Na⁺ channels gets close

- properties:
- white-tan color
 - soluble in glycerol
 - insoluble in water
 - chloroform.


Brand name:

- propranolol tab
- propranolol inj

side effects:

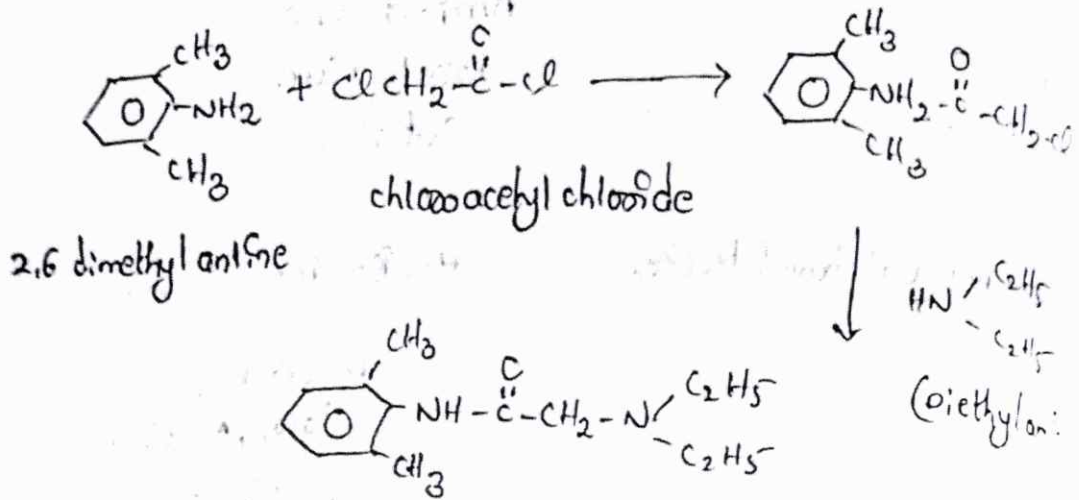
hypotension, shock




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Resocaine / Lidocaine:

dt: 02/06/23



MOA: It raises threshold of action potential, so there is an increase in automaticity.

→ Lidocaine has high 1st pass metabolism, so used as parenteral. It is also used as local anesthetic.

Properties:-

- Yellowish white color
- Insoluble in CHCl3, H2O, etheral

Brand name:

- Resocaine
- GeSicaine
- Poolix

side effects :-

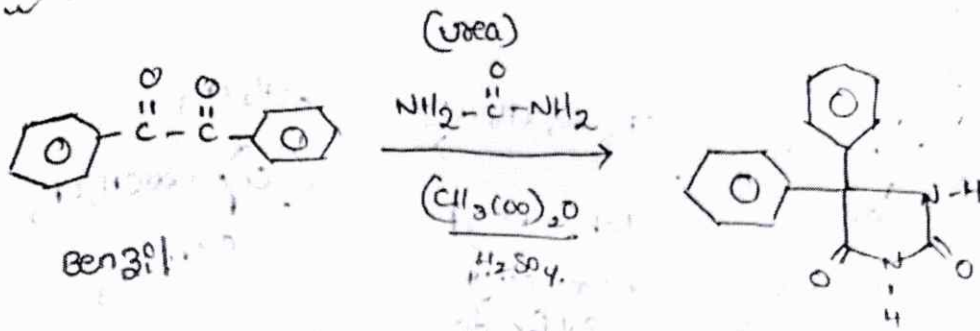
- Trouble in vision
- numbness
- Tingling



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phenytoin:-



MOA:-

It protects seizures by causing voltage dependent block to voltage gated Na⁺ channel, thereby slowing the upstroke of

properties:

- white crystalline
- soluble in chloroform, ethanol

side effects:

- feeling tired
- dizziness
- confusion

brand names:

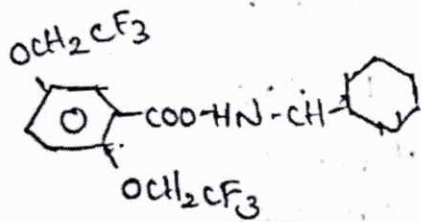
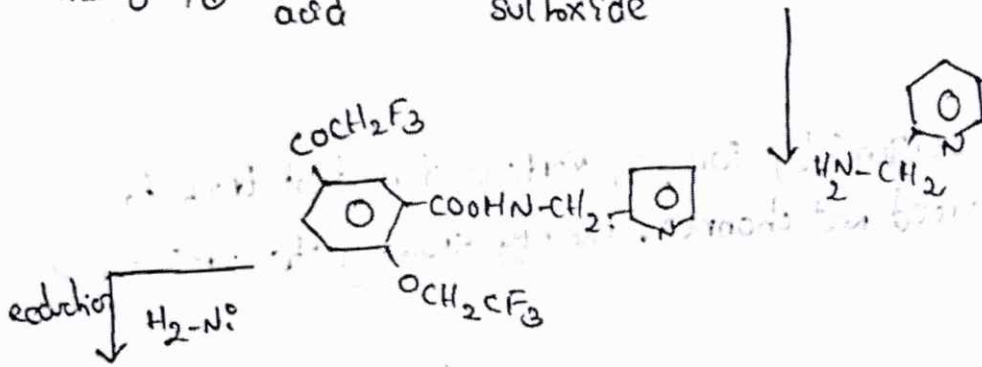
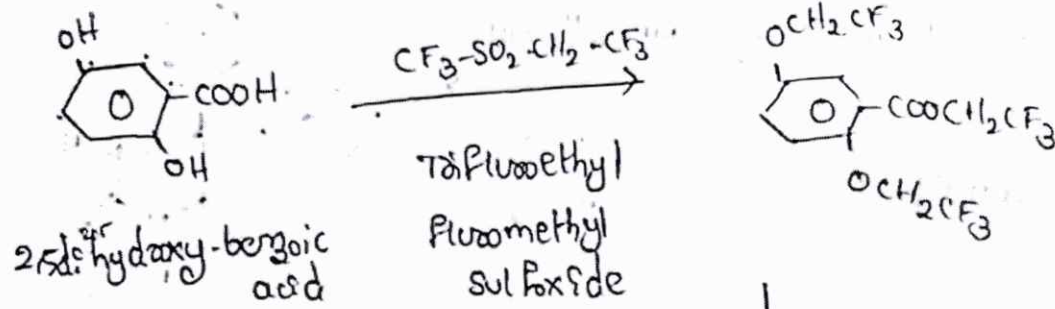
- celetoin
- o-lanta
- Epinal
- phenytal



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Flecainide :-



MOA: it blocks Na^+ channel, so slow down the upstroke of the cardiac potential and also decreases cardiac contractility.

properties :-

white crystalline powder
slightly soluble in H_2O , ether.

side effects :-

trouble in seeing
dizziness
tiredness

Brand names :-

Flecainide
Tocam Tombocon



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at 08/06/23

Antianginal & vasodilation

Angina-chest pain.

stable }
unstable }
variant }
 } angina.

Angina pectoris is characterized by sudden, temporary, substernal pain that often radiates to the left shoulder or neck.

→ Nitrate & Nitrites in this days used to treat angina.

Classification:

1) Nitrates:-

- Nitroglycerol
- Isosorbide dinitrate

2) Nitrite →

- Sodium nitrite
- Amyl nitrite

3) β -Blockers:

- propranolol
- atenolol

4) 1,4 dihydropyridine:

- nifedipine

5) Ca^{2+} channel blockers:-

- verapamil
- diltiazem


6) glycoside:- digoxin, digitoxin.


7) Miscellaneous:- Aspirin

nicoflog

8) vasodilators:- minoxidil

hydralazine


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MOA (Nitrate/nitro) nitates

↓ [Aldehyde dehydrogenase]
They are converted to nitric oxide (NO)

↓ [cyclic guanylate synthase]
cyclic guanylate

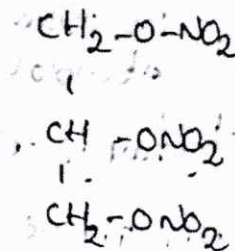
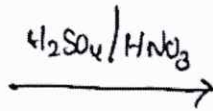
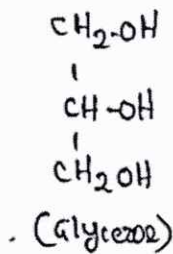
Guanylate + phosphate (GTP) + cGMP (cyclic guanylate phosphate)
↓ [dephosphorylation occurs]

light myosin chain pair → light myosin chain
↓

relaxation and contraction. (decrease interaction b/w actin & myosin fibres) also ↑ in relaxation.

→ organic nitrates or nitrites converts to NO by above mechanism.

① Nitroglycerol:-



properties:-

- Liquid, light yellow color
- immiscible in water, benzene

brand names:

Nitrol
Nitroglycerol

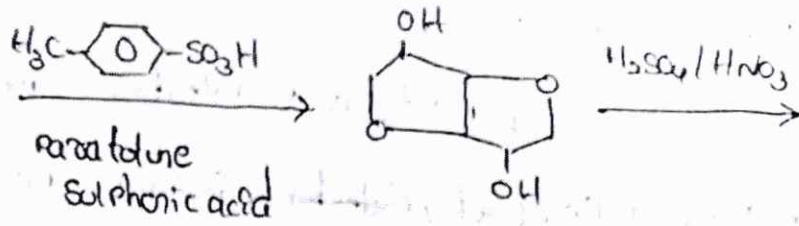
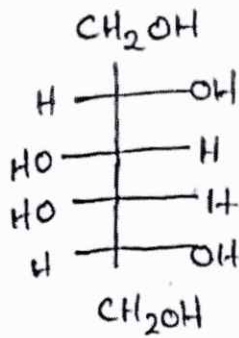
side effects:

- lightheadness
- blurred vision
- dizziness

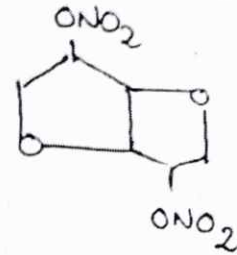


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isosorbide dinitrate:-



L-D-glucose



properties:-

- white, crystalline
- Insoluble in water, acetone

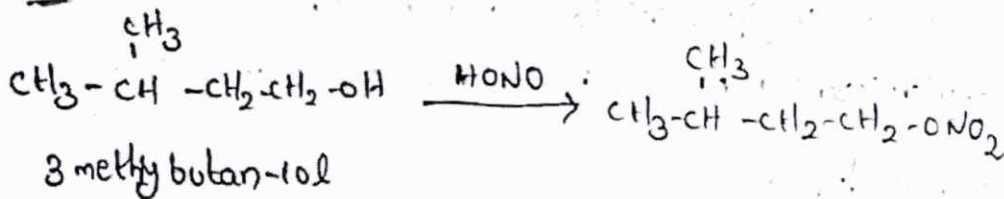
side effects:-

lightheadness, blurred vision

brand names:-

- isolarzine
- sorbisate
- isordil

③ Amyl nitrate:-



properties:-

- pale yellow, liquid
- immiscible in benzene, water

side effects

Lightheadness
blurred vision

brand names

Amyl-CH



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ANTI HYPERLIPIDEMIC AGENTS

Hyperlipidemia :-

- The levels of lipid, fat & cholesterol increases.
- generally lipid & fat, cholesterol in form of lipoproteins.
- low levels of lipoproteins + cholesterol → hyperlipidemia
- The drugs used to reduce the level of lipid hyperlipidemia are known as anti hyperlipidemic agents.

HDL → high density lipoproteins

LDL → low " "

VLDL → very low " "

chylomicrons (U LDL) → ultra low density lipoproteins.

HDL → collecting lipids and proteins from diff body tissues to liver.

LDL → endogenous lipids from liver to tissues.

VLDL → triglycerides to adipose tissue.

chylomicrons → dietary triglycerides to adipose tissue.

Classification :-

1) HMG Co A reductase inhibitors

- lovastatin
- Atorvastatin
- mevastatin
- rosuvastatin
- pitavastatin
- rosuvastatin
- simvastatin

2) Fibrates

- clofibrate
- fenofibrate
- gemfibrozil
- bezafibrate
- gemfibrozil



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3) bile acid sequestrants:-

cholestyrene
colestipol

6) cholesterol absorption
inhibitors.

Ezetimibe

4) LDL oxidation inhibitors

probucol

7) Miscellaneous:

dextropropoxyline

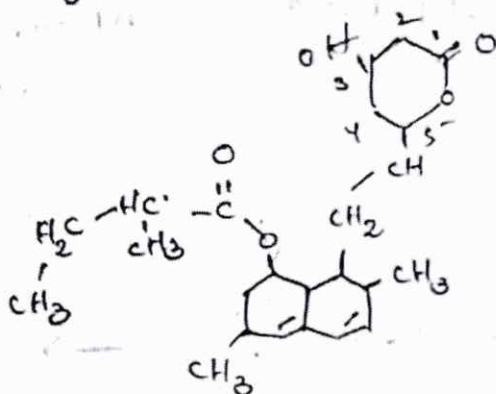
p-sinisteral

5) pyridine derivative

nicotinamide, nicobnic acid

① Lovastatin:-

synthesized
from
bacteria
* *Aspergillus terreus* →



→ Lovastatin.

MOA: It inhibits 3-hydroxy-3-methyl-glutaryl acid CoA (HMG CoA) reductase, which is responsible for conversion of HMG CoA to mevalonic acid.

properties:-

white crystalline powder

soluble in DMSO, ethanol
chloroform.

side effects:

vomiting, diarrhoea

* liver problem.

brand names:-

Mevacor

Altocor

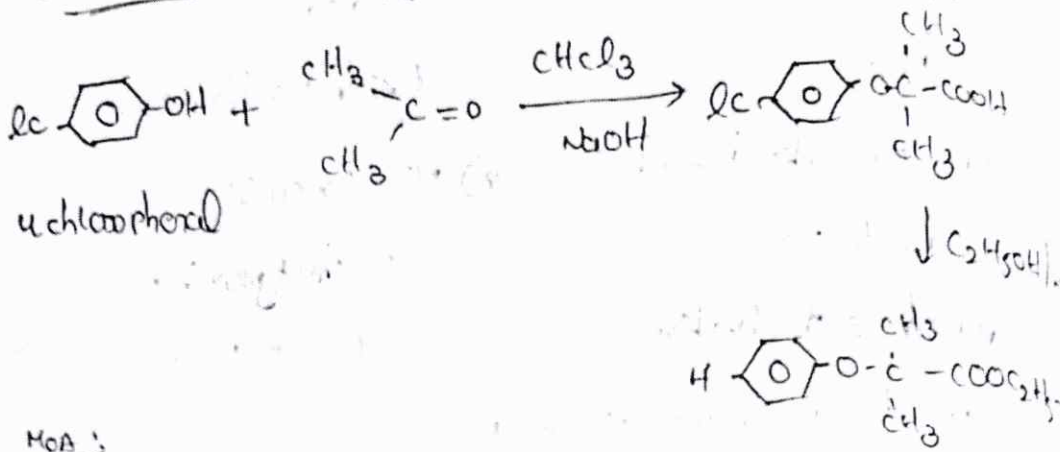
Advicor



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clofibrate :



MOA :

It stimulates the lipoprotein lipase activity to promote conversion of VLDL

40L

properties :

- yellowish
- Insoluble in water.
- miscible in oil.

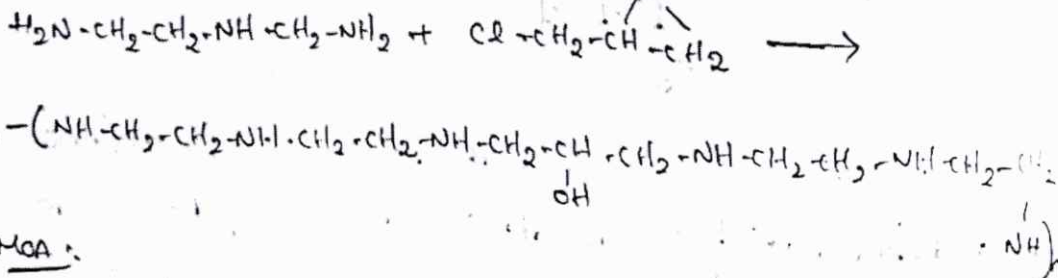
side effects

- swelling of lip, face
- tongue
- constipation

Brand names

- Atromid-S
- clofibrate

colestipol :



MOA :

It prevents the absorption of bile acid, so the reabsorption of bile acid stopped that leads to synthesis of new bile acid from cholesterol, resulting ↓ in cholesterol level in liver.

properties :

- polymer
- insoluble in H₂O

Brand names

- colestid
- colestibyl

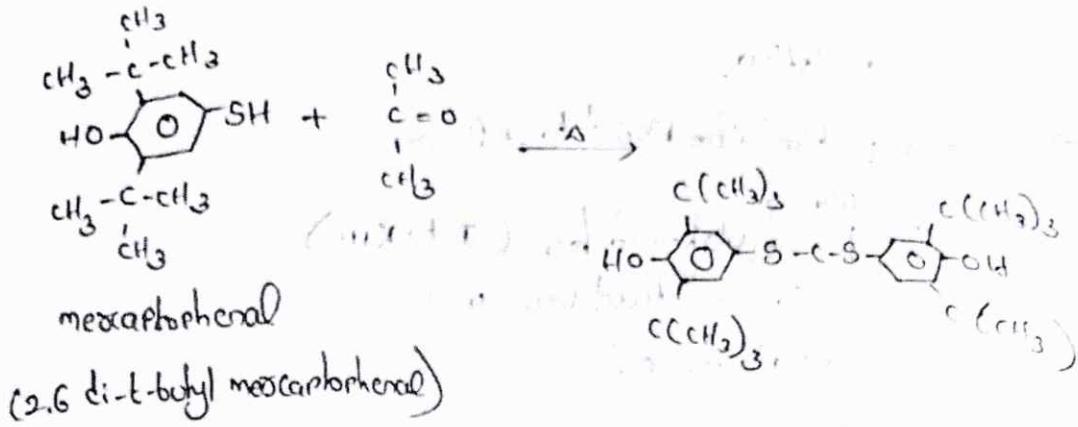
side effects

- constipation
- acroparesthesia



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⑧ Propranolol :



MOA :

It inhibits LDL oxidation, thereby decreasing cholesterol level also LDL level in blood stream.

properties :

colorless
insoluble in water

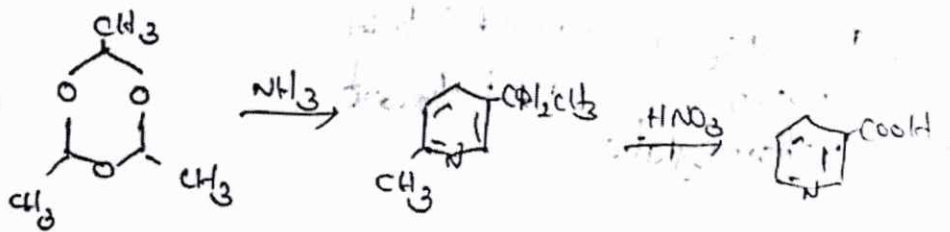
side effect :

diarrhoea (mild to severe)
liver pain

brand name

Coartem
propranolol

⑨ Nicotinic acid :



amino acid formed of
acetaldehyde.



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coagulant & Anti coagulant

at 10/10/2021

→ coagulation → clotting.

→ conversion of blood from liquid to gel form.

→ interaction of ^{blw @} coagulation factors (I to XIII)

② injured blood vessel wall.

③ phospholipid.

coagulant → enhance coagulation

classification: -

① vit K (natural. plant)
→ phytonadione

② vit K (synthetic)

a) Fat soluble -

Menadione

Acetomenaphthone

b) water soluble: -

Menadione sodium bisulphate.

③ Miscellaneous :-

adsorption vessel. ← Fibrinogen → present in body

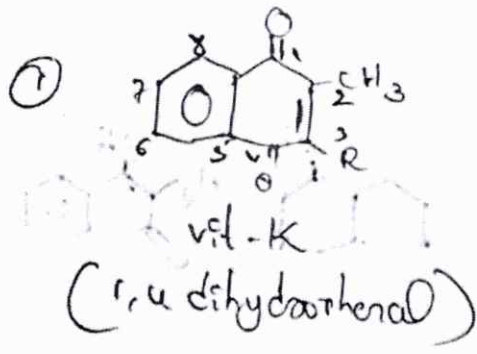
↳ Rutilin → plant glycoside

act -
capillary

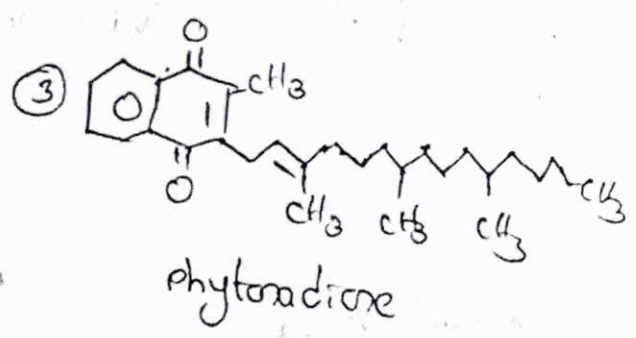
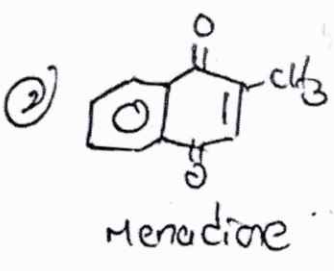



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2nd position → methyl is mandatory.



Anticoagulants:

Agents stop prevent coagulation is known as → anticoagulants, also known as blood thinners.

Classification:

① parenteral

a) Indirect thrombin inhibitors

heparin

Low molecular heparin

paraprod

b) Direct thrombin inhibitors

Lepirudin

Bivalirudin

② oral

a) Indirect thrombin inhibitors

ac coumarin

warfarin

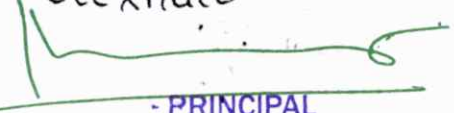
Acetaminophen

c) Indandione derivatives

phenindione

b) Direct thrombin inhibitors

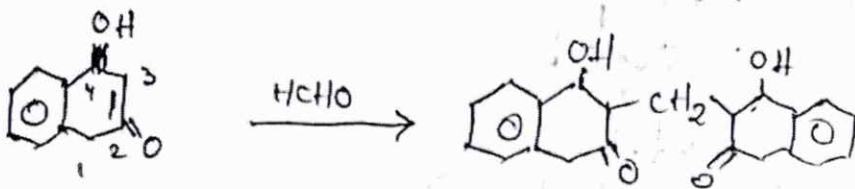
Etexilate



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① Di coumarol :-



4 hydroxy coumarin

MOA :-

It will inhibit the action of vit-K and vit-K dependent coagulation factors.

properties :-

white,

insoluble in water, $CHCl_3$

soluble in CCl_4 & alkalis.

Brand names :-

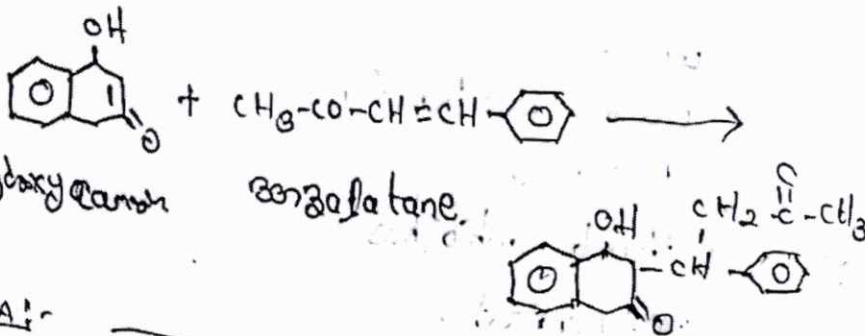
Di coumarol

Di coumarol

side effects :-

HIVS, hot rash

② warfarin :-



4 hydroxy coumarin

benzoflavanone

MOA :-

Warfarin

A landmark

research

kindergarten of USA

Warfarin

It works by inhibiting vit K and coagulation factors III, VII, IX, X, along with protein C, S.

properties :-

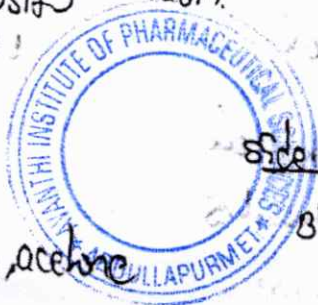
colorless

crystals

insoluble in $CHCl_3$, acetone

side effects :-

bleeding



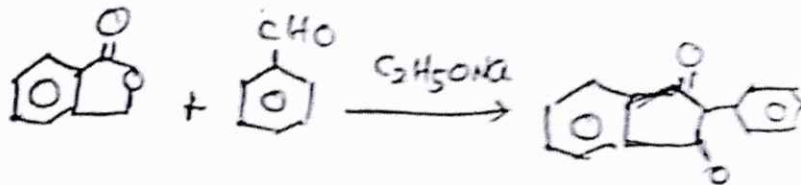
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Brand names:

- ① warf - 1
- ② warf - 2
- ③ warf - 5
- ④ Sofiron
- ⑤ coumadin

③ Phenindione:-



MOA: Same as warfarin.

But more side effect than warfarin

Appearance:
Yellowish crystals

Soluble in $CHCl_3$, acetone

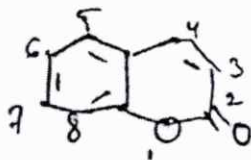
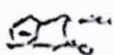
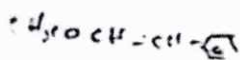
side effects:

nausea, vomiting, fever, diarrhoea

Brand name: -

Dindavin
Fenindione

SAR of coumadin derivatives



- ① coumadin ring system has an easy acceptability in biological system compared to its isomeric form
- ② nature of substituent at position 3 affects the direction of action & activity spectrum
- ③ increase in mol wt increases the anticoagulant activity
- ④ ⑤ - ϕ substitution is allowed at 5, 6, should remain constant

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Code No: PH305

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
Pharm.D III Year Regular/Supplementary Examinations, June/July - 2022
MEDICINAL CHEMISTRY

Time: 3 Hours


Max.Marks:70

Answer any five questions
All questions carry equal marks

- 1.a) Write about importance of Hansch analysis, Taft constant and Hammett constant.
b) Write prodrug approaches to improve solubility. [7+7]
- 2.a) What are preservatives? Give classification.
b) What are anthelmintics? Classify. Write synthesis of albendazole. [5+9]
- 3.a) Write a note on antimalarials. Classify them with structures.
b) Write the synthesis of chloroquine. [5+9]
- 4.a) What are anti-neoplastic agents? Write Mechanism of Action.
b) Write the synthesis of methotrexate. [7+7]
- 5.a) Write a note on diagnostic agents.
b) Give a note on Adrenocorticoids. [7+7]
6. Write the classification, MOA with structure of hypoglycemic agents. [14]
- 7.a) Write the classification of Diuretics with structures.
b) Explain synthesis and MOA of Furosemide. [5+9]
- 8.a) Write the classification of anti tubercular drugs.
b) Write the synthesis of Ethambutol. [5+9]

---ooOoo---




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Code No: PH305

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

Pharm.D III Year Regular/Supplementary Examinations, July/August - 2021

MEDICINAL CHEMISTRY

Time: 3 hours

Max.Marks:70

Answer any five questions
All questions carry equal marks

- 1.a) Explain Lipophilicity, Electronic parameters in relation to QSAR studies.
b) What are prodrugs? Explain different types of prodrugs with suitable examples. [7+7]
2. Write the structure, mechanism of action and therapeutic uses of
a) Clotrimazole b) Ciprofloxacin c) Isoniazid d) Metronidazole [14]
- 3.a) Classify antimalarial agents with suitable examples.
b) Give the synthesis, mechanism of action and adverse effects of:
i) Chloroquin ii) Proguanil. [4+10]
- 4.a) Write the mechanism of action, SAR and uses of Cephalosporins.
b) Explain the plant products used in cancer treatment. [7+7]
- 5.a) Classify antihypertensive agents with examples.
b) Write a note on HMGCoA reductase inhibitors.
c) Give the synthesis, mechanism of action and uses of Amlodipine. [4+5+5]
- 6.a) Write briefly on platelet aggregation and inhibitors.
b) Write the SAR, mechanism of action and uses of sulphonyl ureas. [7+7]
- 7.a) Explain briefly on thyroid hormones.
b) Write the functions of pituitary hormones. [7+7]
- 8.a) Write the synthesis, mechanism of action and uses of:
i) Hydrochlorthiazide ii) Acetazolamide
b) Write notes on sex hormones. [8+6]

---ooOoo---

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Gunthapally (V), Abudllapurmet(M) ,R.R.Dist

III RD YEAR –MID I INTERNAL EXAMINATIONS

Subject: MEDICINAL CHEMISTRY


TIME: 2 hr

Marks:30

MID-1

1. Write the SAR mechanism of action brand names of anti-neoplastic agents.
2. Write the SAR chemical nomenclature of anti hypertensive agents.
3. Write the synthesis, mechanism of Action chemical nomenclature of anti arthymic agents.
4. Write the SAR of anti anginal agents vasodilations.
5. Write mechanism of action and synthesis of hypoglycemic Agents.
6. Write synthesis chemical nomenclature, brand names of anti- malarial drugs.
7. Classification of Anti-Fungal agents
- 8 write about the ketonosol synthesis and mechanism of action.




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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Gunthapally (V), Abudllapurmet(M) ,R.R.Dist

III- YEAR II – Mid internal Examination

Subject: MEDICINAL CHEMISTRY

TIME: 2 hr

marks: 30

MID-2

1. Write About QSAR And CADD.
2. Write the synthesis of anti viral drugs (any 3).
3. Explain in brief about anti infective agents .
4. 4. Write a brief about sulphanomides and sulphones.
5. Write the SAR of snit-malarial drugs and its mechanism of action.
6. Write the synthesis of any 2 anti- biotic Drugs.
7. Write about ciprofloxin synthesis ,mechanism of action,and its adverse effects.
8. 8.Classification of Anti-Anginal Agents and synthesi of any one of the drug and mechanism of action



A handwritten signature in green ink, consisting of a stylized, elongated shape with a loop at the end.

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INTERNAL DISCRIPTIVE EXAM



NAME: M. KAVYA

DATE: 18/02/22

ROLL NO: 19.GNIT0006

Subject: M.C

CLASS: Pharm - D III year SEM: Mid - 2

SIGNATURE OF THE INVIGILATOR'S:

SIGNATURE OF THE STUDENT:

TOTAL MARKS

28/30

1) a)

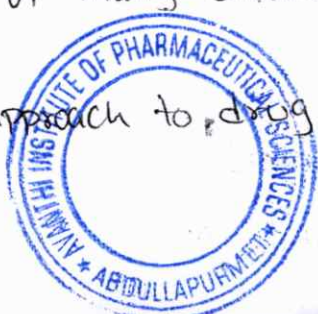
QSAR -

- Quantitative structure-activity relationships (QSAR) have been applied for decades in the development of relationships between physicochemical properties of chemical substances & their biological activities.
- It obtain a reliable statistical model for prediction of the activities of new chemical entities.
- These methods include Best multiple linear Regression (BMLR), Heuristic method (HM)
- QSAR is important for drug discovery, but it comes with many constraints, which can overcome by ensemble-based ML methods

b)

CADD -

- It is computer-aided Drug Design has emerged as an efficient means of developing candidate drugs for the treatment of many drugs for the treatment of many disease types.
- Application of CADD approach to drug discovery are progressing day by day.



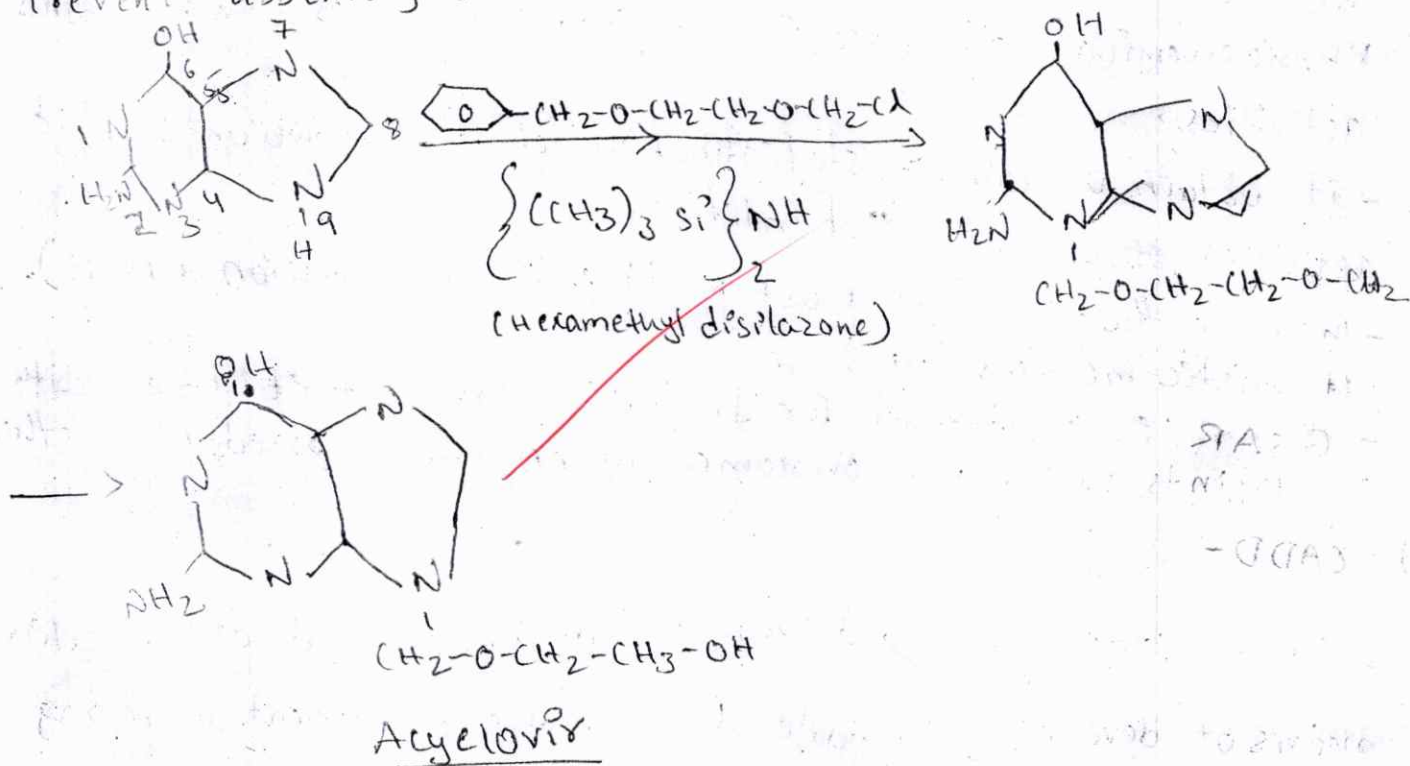
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Antivirals are medications that help your body fight off certain viruses that can cause disease. Antiviral drugs are also preventive. They can protect you from getting viral infection or spreading a virus to others.

These are classified ~~into~~ according to their chemical nature

Ex - Small molecules, peptides, biologics

- Inactive extracellular virus particles.
- Prevent viral attachment and/or entry.
- Prevent replication of the viral genome.
- Prevent synthesis of specific viral proteins.
- Prevent assembly or release of new infectious.



Sulfone

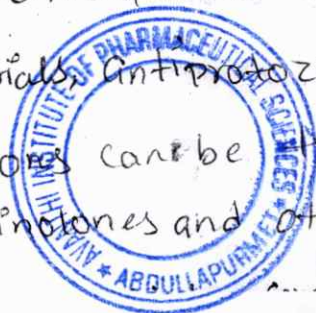
Sulfone is an organic compound containing a sulfonyl functional group attached to two carbon atoms.

- Oxidation of thioesters and sulfoxides.
- Important to extract valuable aromatic compounds from Petroleum in the manufacture of Polymer materials in Pharmacology, etc...

Sulfoxide

- Sulfoxides are organic compounds containing a central sulfur atom attached to two carbon atoms and an oxygen atom.
- central sulfur atom attached to two single-bonded carbon atoms and a double-bonded oxygen atom.
- oxidation state of sulphur is +4.
- oxidation of sulfides in the presence of oxidants such as hydrogen peroxide.
- using as solvent, used in the production of some drugs such as esomeprazole, as catalysts etc.

- 3) Anti-infectives are medicines that work to prevent or treat infections; they include antibacterials, antivirals, antifungals and antiparasitic medications.
- Anti-infectives is a general term used to describe any medicine that is capable of inhibiting the spread of an infectious organism or by killing the infectious organism outright. This term encompasses antibiotics, antifungals, anthelmintics, antimalarials, antiprotozoals, antituberculosis agents.
 - Urinary tract infections can be treated with many drugs like sulfoamides, quinolones and other agents.



- Anti-infective are drugs that can either kill an infectious agents or inhibit it from spreading.

- Anti-infectives include

- antibiotics and antibacterial.

- antifungal

- antiviral

- antiprotozoals

- Anthelmintics

5) The quinoline-containing antimalarial drugs, chloroquine, quinine and mefloquine, are a vital part of our chemotherapeutic armory against malaria. These drugs are thought to act by interfering with the digestion of haemoglobin in the blood stage of the malaria life cycle.

- Artemisinin is believed to act via a two-step mechanism.

- Artemisinin is first activated by intraparasitic heme-iron which catalyzes the cleavage of this endoperoxide.

- A resulting free radical intermediate may then kill the parasite by alkylating and poisoning one or more essential malarial proteins.

- chloroquine is the preferred treatment for any parasite that is sensitive to the drug.

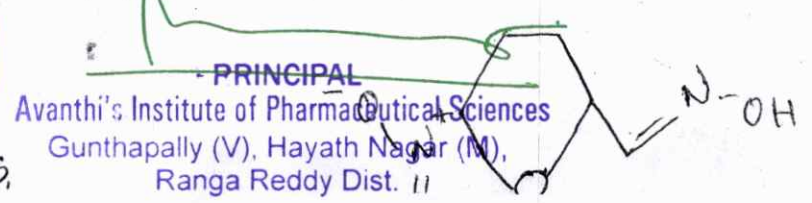
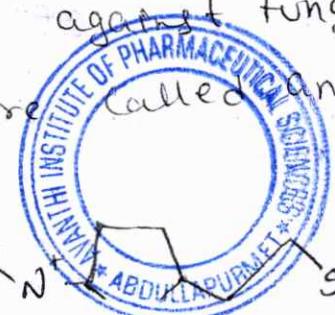
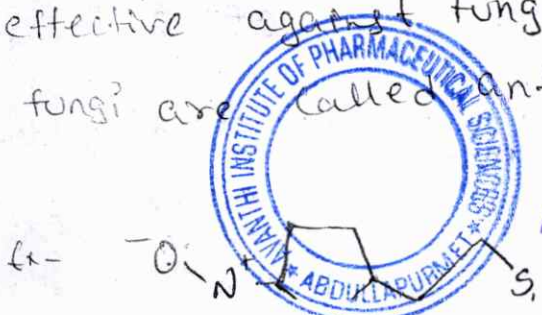
- Thus, chloroquine and related drugs may act as anti-malarial agents by shunting FP away from natural haem binders and into toxic drug-FP complexes.

- Antimalarial drugs work by killing the parasite present in the

6) The first total syntheses of a variety of antibiotics have been accomplished by using carbohydrates as a chiral source. The key target molecules were members of the 'Big Four' classes of antibiotic (macrolides, aminoglycosides, β -lactams and tetracyclines), naphthoquinone antibiotics and their related antibiotics.

- synthetic agents include: sulphoramides, cotrimoxazole, avinonness, anti-virals, anti-fungals, anti-cancer drugs, anti-malarials, anti-tuberculosis drugs, anti-leprotics and anti-Protozoals.

- An antibiotic is a type of antimicrobial substance active against bacteria. It is the most important types of antibacterial agent for fighting bacterial infections, and antibiotic medications are widely used in the treatment and prevention of such infections. They may either kill or inhibit the growth of bacteria. A limited number of bacteria antibiotics also possess anti-Protozoal activity. Antibiotics are not effective against such as the ones which cause the common cold or influenza drugs which inhibit growth of viruses are termed antiviral drugs or antivirals rather than antibiotics. They are also not effective against fungi drugs which inhibit growth of fungi are called antifungal drugs.



Antibiotic

- Antibiotic also referred as antibacterial is a type of antimicrobial drugs used in the treatment and prevention of bacterial infections. They have the ability to kill bacteria or inhibit the growth of bacteria. Some antibiotics also harbor antiprotozoal activity. Medicine was revolutionized by antibiotics in the 20th century.
- However, the features of being quite effective and easy to obtain lead to overuse and prompted bacterial resistance to all kinds of antibiotics, which has also caused widespread health problems such as prolonged illnesses and more deaths. World

Health organization classify anti-microbial

resistance as a serious threat is no longer a prediction for the future, it is happening

right now in every region of the world and

has the potential to affect anyone, of any age in any country. In addition the number of

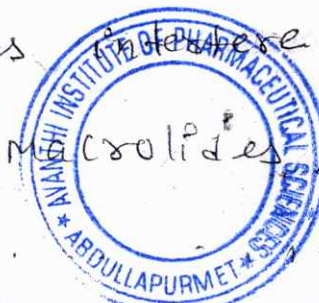
novel antibiotics or therapeutic modalities under

Therefore it is urgent to explore available methods and drugs with potent bactericidal activity but does not deteriorate bacterial resistance. Thus a novel therapeutic modality with the potential to treat bacterial infections has emerged that consist of an AAC, which combines the key attributes of both antibody and antibiotic in a single molecule.

Classification

- These antibiotics are generally classified based on their chemical structure, mechanism of action, or spectrum of activity.

- Most of the antibiotics target bacterial growth processes or functions. In detail, Penicillin and Cephalosporin target the bacterial cell wall, Polymyxins aims at the cell membrane, Rifamycins, liposmycins, quinolones, and sulfanomides target with critical enzymes bacteria. Macrolides, lincosamides, and tetracyclines



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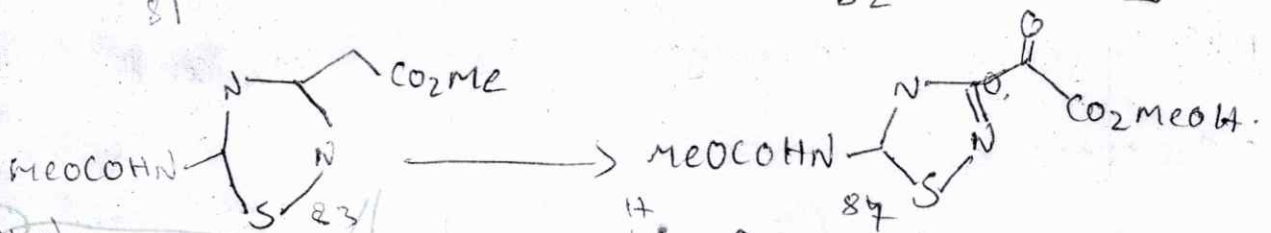
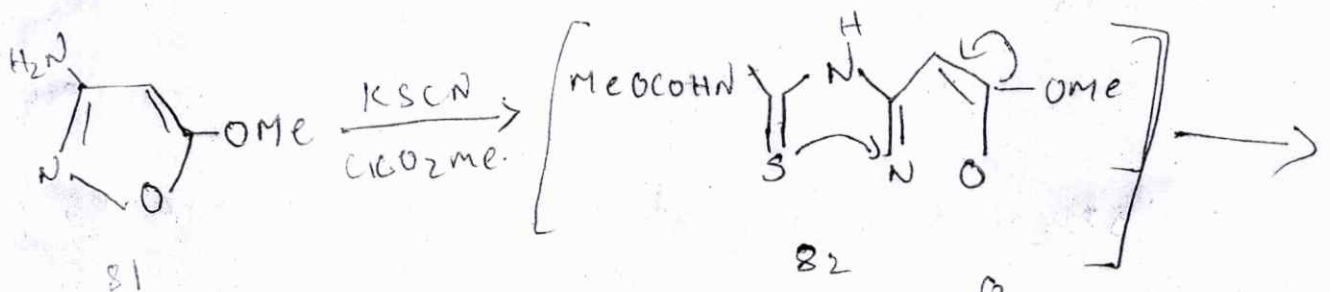
Further categorization is based on their target specificity. narrow-spectrum antibiotics target

particular types of bacteria (Gram-negative and Gram positive) whereas broad spectrum antibiotics affect a majority bacteria.

Currently, four new classes of antibiotics have been brought into clinical use: cyclic lipopeptides.

- (such as daptomycin) - lipopeptides.
- (such as tigecycline) - glycylcyclines.
- (such as linezolid) - oxazolidinones.
- (such as fidaxomicin) - lipiarmycins.

Examples





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INTERNAL DISSCRIPTIVE EXAM



NAME: M. Akhila

DATE: 12/11/21

ROLL No.: 19GNIT0008

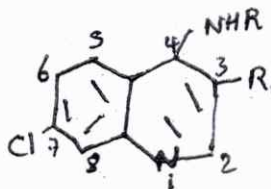
Subject: M.C

CLASS: Pharm-D III Year SEM: mid-I

SIGNATURE OF THE INVIGILATOR'S:

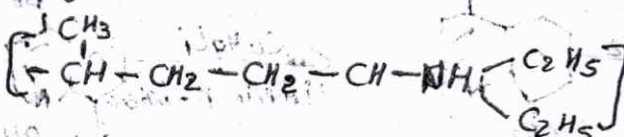
SIGNATURE OF THE STUDENT:

TOTAL MARKS: 29/30



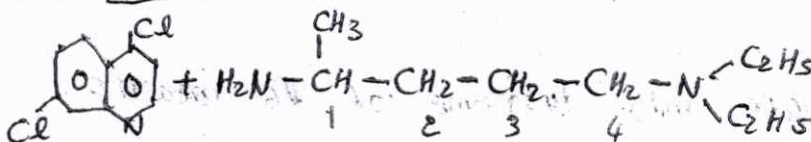
R₁ substituted by side chain (diethyl amino group)

1-methyl amino butyl (diethyl amine)



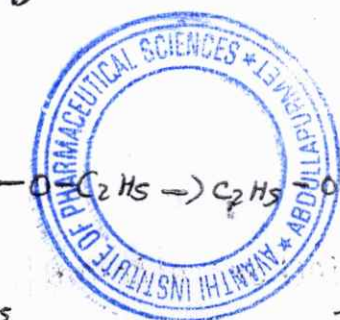
If this is present then drugs will be more potent
Cl-7 position should not be displaced

Chloroquine:

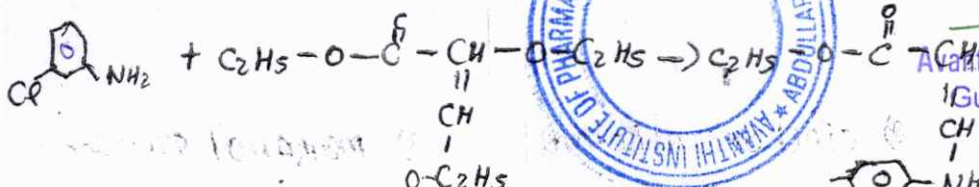


4,7 dichloro quinoline (DCA)

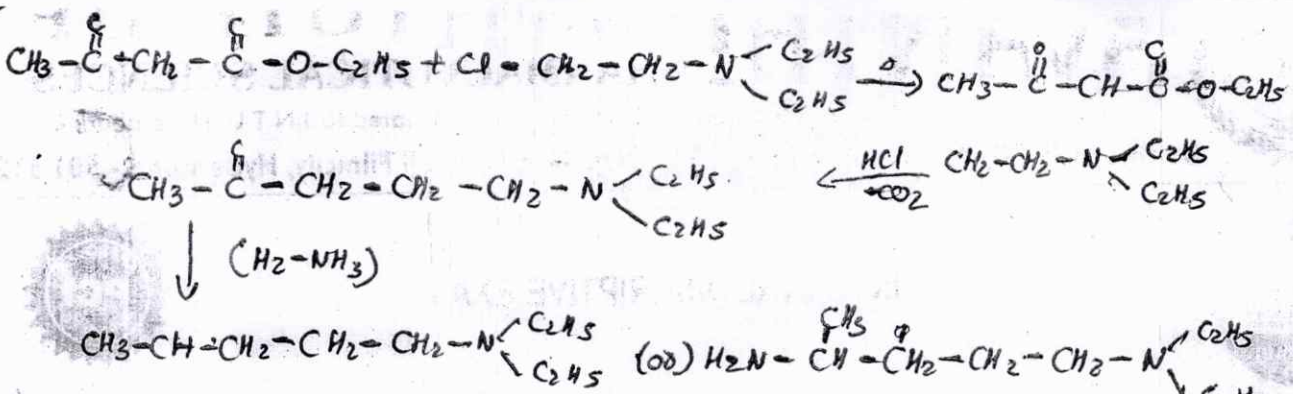
4-diethylamine 1-methyl



Step-1: synthesis of DCA



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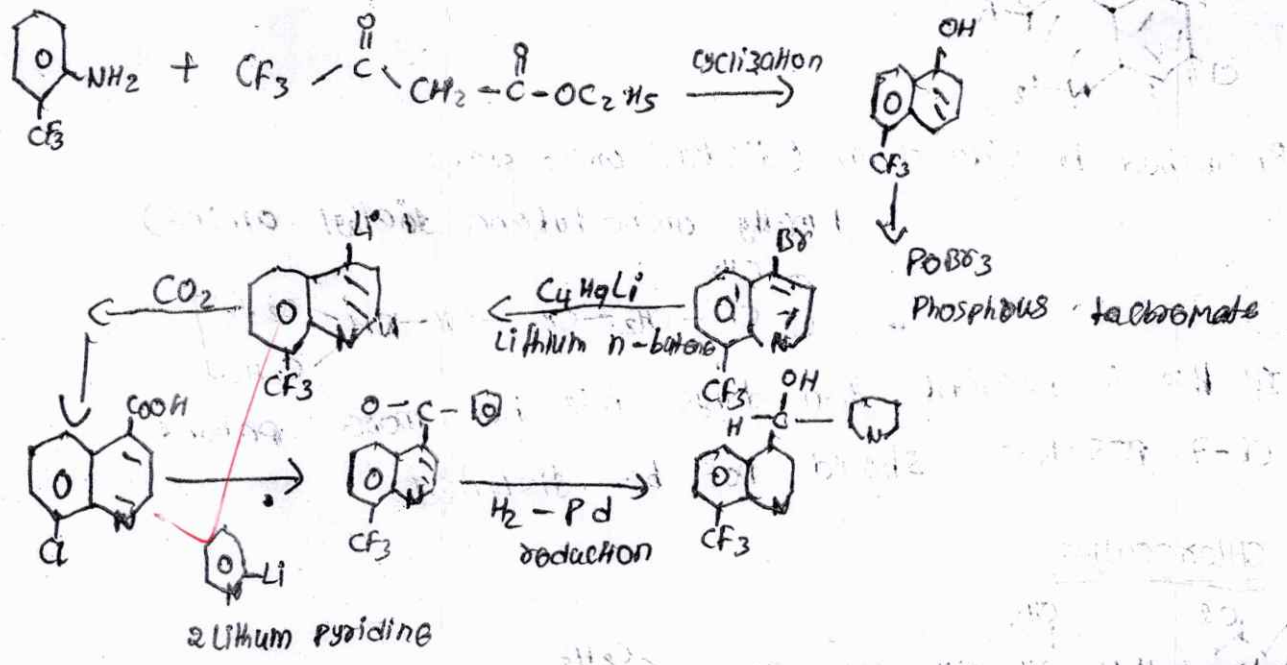
MOA: III / 21

It works by inhibiting DNA & RNA polymerase those by interfere in metabolism of heme by parasite.

→ parasite use/take all heme up host haemoglobin synthesis of amino acid

→ The mammal heme is toxic for parasite, so parasite make those heme into insoluble ppt by polymerization.

→ chloramphenicol insoluble heme ppt making more heme resulting in self lysis killing of parasite.



MOA: It preferentially accumulate into lysosome of the parasite. Hence inhibit lysosomal functions.

Classification:

Chemical classification:

- 1) 4-aminoquinoline chloroquine
- 2) cinchona alkaloids quinine
- 3) methanol quinoline mefloquine

④ 8-amino quinoline

primaquine

primaquine

⑤ sulfonamides

sulfadoxine

dapsone

⑥ dihydropyrimidine

pydamethamine

⑦ Antibiotic

tetracycline

clindamycin

⑧ ~~Etacoz~~ biguanides

proguanil

chloroquanyl

⑨ naphthoquinone

atovaquone

⑩ sesquiterpene

derivatives

artesunate

artemether

artether

⑪ amino alcohol

halofantrone

lumefantrone

Brand Names :

Lariago

nivaquine

Anaquine

Resochin

LAVOPAR

PROGUANIL

LEOPRIME

LEOPRIME PTE

malivid

malivid DS

malivid DT

2)

It is a physical condition increase in blood pressure (arterial) to normal bp (120/80)

Classification :

1) ACE inhibitor :

captopril, enalapril, ramipril, lisinopril, perindopril

e) Angiotensin Receptor blockers (ARBs) :

Losartan



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b) SELECTIVE α & BLOCKERS:

Terazosin

Prazosin

7) Both α and β blockers:

Carvedilol

Labetalol

8) Ca^{2+} channel blockers

Amlodipine, Verapamil

Nifedipine

9) Ganglionic blockers:

Pentaminum, Clonidium

10) Neurological blockers:

Adrenergic, Reserpine

Guanethidine

11) Vasodilators:

minoxidal

Sodium nitroprusside

Hydralazine

MOA:

Anti hypertensive drugs sabotage the renin-angiotensin-aldosterone system (RAAS) which consists angiotensin I to renin-angiotensin II, thereby lower the arterial resistance increases the previous capacity. so there is decrease cardiac output index, stroke work volume.

-> RT-II is less there is less in aldosterone secretion, eventually bradykinin increases this enhances natriuresis (excretion of Na^+ along with obligate water) bcoz of low resistance blood vessel as a result it lowers the blood pressure.

SAR of ACEI

sulphydryl group

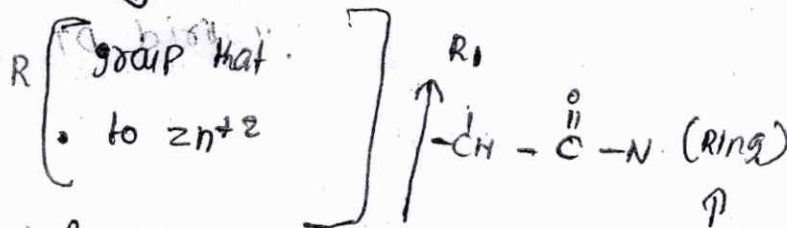
leads shorter $t_{1/2}$ & action

methyl group

26 females

charged

alanine



essential for stabilization

n-butylamine

In dicarboxylate

containing compound

only active

enhances the potency and compound.

Captopril:



methacrylic acid

Thioacetic acid

$SOCl_2$

ACEI - It blocks the conversion of angiotensin-I to angiotensin-II so prevent the degradation of prostaglandin thereby inhibit constriction of arteries & promote vasodilation.

Properties

white crystalline
free soluble in ethanol
chloroform, methylchloroform

side effects:

Chest pain
Headache
Dizziness
serious side effect low BP
heart failure.

Brand names

Capoten
Acoten
Angiopril
Angiopril - DZU

3)

Hyperlipidemia:

The levels of lipid fat & cholesterol increases

→ generally lipids & fat in form of lipoprotein gives levels of lipoprotein + cholesterol → hyperlipidemia.

→ The drugs used to level of hyperlipidemia are known as antihyperlipidemic agents.

HDL → high density lipoprotein

LDL → low " "

VLDL → very low density lipoprotein

chylomicrons (CM) → ultra low density lipoprotein

Classification:

- 1) HMG Co A reductase inhibitors
Lovastatin



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2) Fibrates

Clofibrate

cholestyrene

colestipol

ezetimibe

> pyridine derivative

6) cholesterol absorption

> miscellaneous

nicotinamide, nicotinic acid

ezetimibe

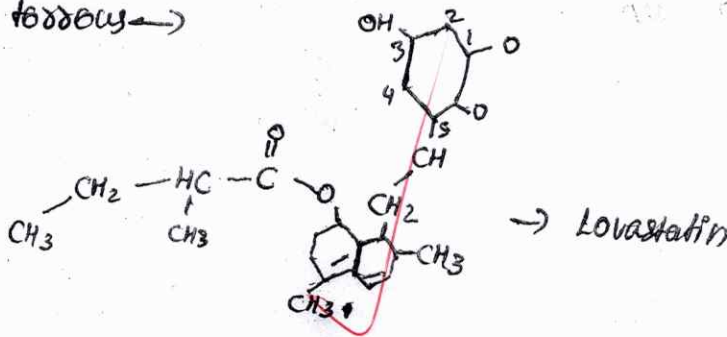
dextropropranolol

β -sitosterol

1) Lovastatin

synthesized from bacteria

Aspergillus terreus \rightarrow



MOA: It inhibits 3-hydroxy-3-methyl-glutaryl acyl CoA (HMG CoA) reductase, which is responsible for conversion of HMG CoA to mevalonic acid

properties:

side effects

brand names:

It is crystalline powder

vomiting diarrhoea

Mevacor

soluble in DMF, ethanol

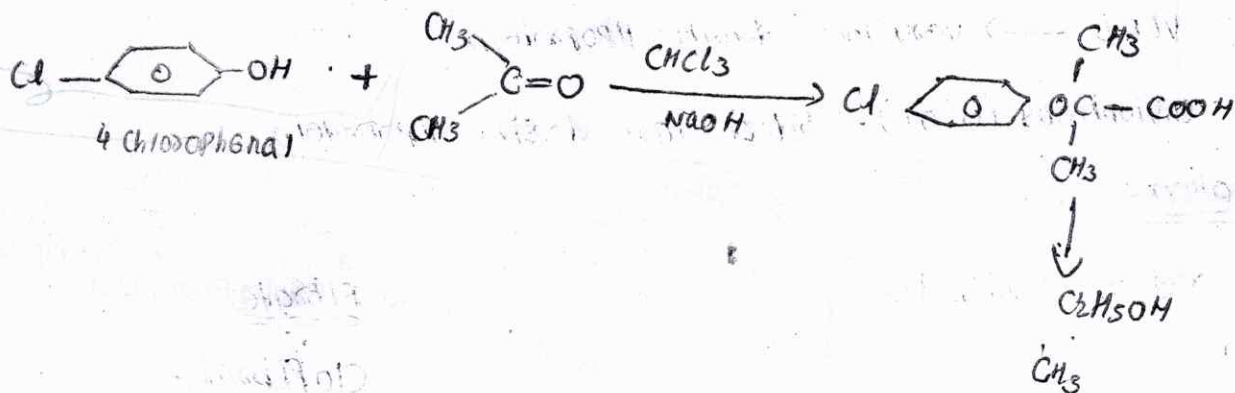
pele's problem

Altacor

chloroform

Advicor

Clopidogrel



properties

- > yellowish
- > insoluble water
- > miscible in acetone

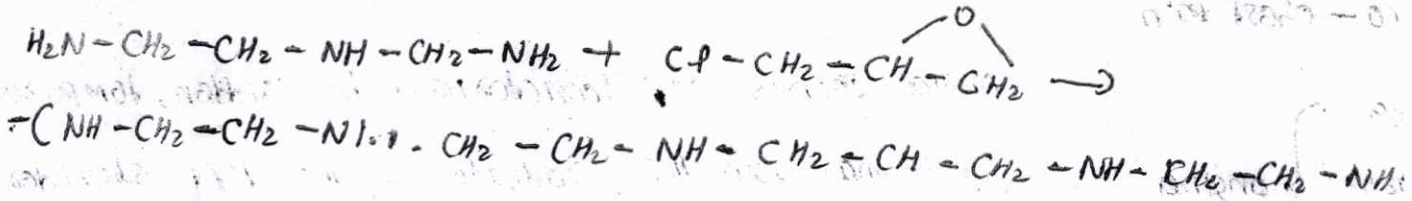
side effects

- swelling of lip face
- tongue
- > constipation

brand names

- ALDOMIN-S
- Clofibrate

COLESTIPOL:



MOA:

It prevents the absorption and bile acid so the reabsorption of bile acid stopped that leads to synthesis of new bile acid from cholesterol resulting in cholesterol level in

properties:

- Polymer
- Insoluble in H₂O

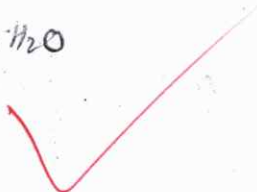
side effects

- constipation
- liver problem

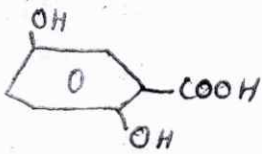
Brand names

- Colstid
- Colstably

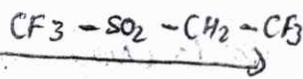
4)



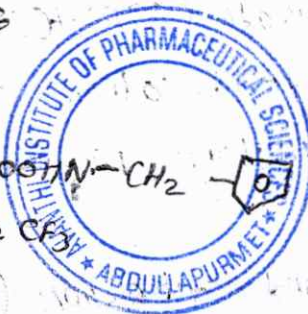
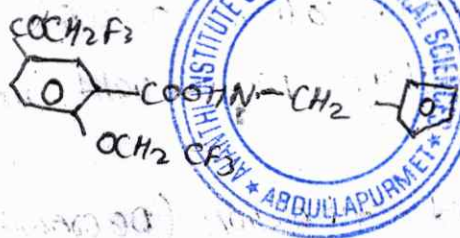
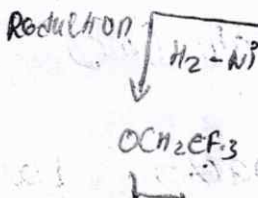
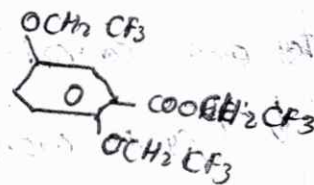
Floccainide:



2 side hydroxy benzoic acid



Tripseudoethyl
Pseudoethyl
Sulfoxide



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properties:

white crystalline powder
slightly soluble in H₂O

side effects:

Trouble in seeing
Dizziness
Tiredness

Brand names:

Plasmin
Tombacor

Antianginal & vasodilation

Angina - chest pain

stable
unstable
variant } Angina

Angina pectoris is characterized by sudden, temporary substernal pain that radiates to the left shoulder neck.

→ Nitrate & Nitrite → this drugs used to treat Angina.

Classification:

1) Nitrates:

Nitroglycerol
Isosorbide dinitrate

2) Nitrite:

Sodium nitrite
Amyl nitrite

3) B-blockers:

Propafenone
Atenolol

4) 1,4-dihydro...

Nifedipine

5) Ca²⁺ channel blockers:

Verapamil
Diltiazem

6) Glycoside:

Digoxin
Orgitoxin

7) Miscellaneous:

Aspirin
Miflagin

8) Vasodila

Minoxidil
Hydro...

MOA: Nitrate / Nitrites

↓ [Aldehyde dehydrogenase]

They are converted to oxide (NO)

↓ [Cyclic guanylate activates into]

Guanylyl bisphosphate (GTP) + cGMP (cyclic guanylate mono-phosphate)

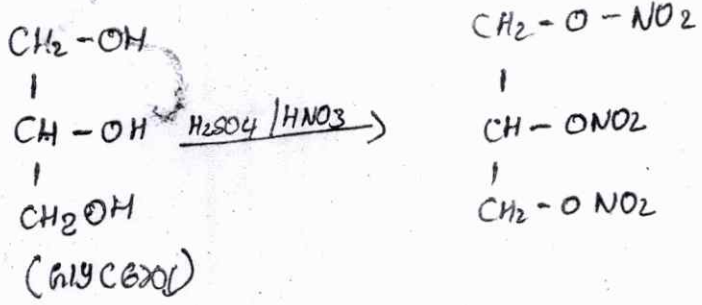
↓ [Dephosphorylation occurs]

light myosin chain p1 → light myosin chain (me)

↓

Relaxation and contraction (Decrease interaction b/w a





Properties:

- > liquid light yellow colour
- > immiscible in water, benzene

side effect

- light headedness
- blurred vision
- diarrhoea

Brand names

- nitral
- nitroglycerol

5)

Arrhythmic

Disturbance in heart rate, rhythm, impulses of generation
 conduction of electrical impulse which are responsible for
 the depolarization.

Disturbance of above one's alter overall cardiac function.

Classification:

Class-I

- Ia -> Prolong depolarization
- quinidine
 - procainamide
 - disopyramide

Ib -> shorter depolarized

- lignocaine
- mexiletin
- phenytoin

Ic -> little (or) less depolarization

- encainide
- flecainide
- propafenone




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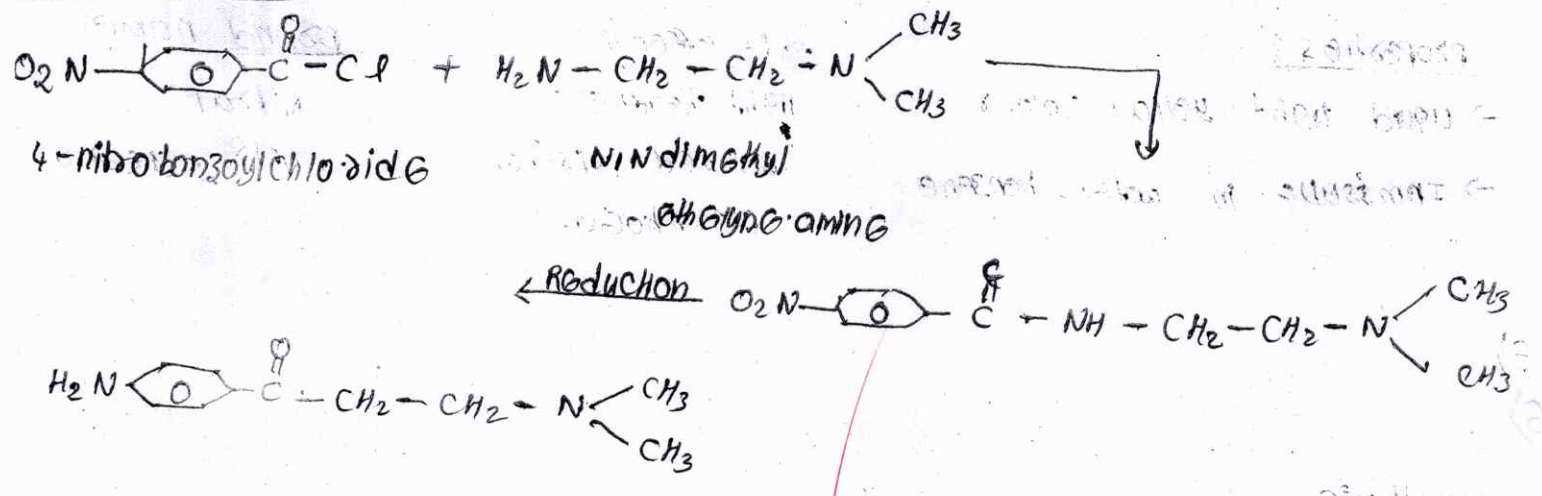
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1088 ÷ 10

Ca²⁺ channel blockers

verapamil
Dil. ha zem

propranolol



MOA

It act on Na⁺ channel of heart muscle thereby blocks ion gated closures (intracellular or extracellular closures)

Properties

- white - tan colour
- soluble in glycerol
- insoluble in water
- chloroform

side effects

Hypotension, shock

Brand name

- propranolol tab
- propranolol inj
- I-22010



SAR

1. Less acid stable the ketone replaced by amine to form oxime (Roxithromycin)
2. Introduction of 'N' to expand from better spectrum than erythromycin. 14-15 to give eg: (Azithromycin)
3. The presence of dimethyl amine in one sugar gives basicity & forms salt.

MOA

→ It binds to 50S subunit of bacteria and stops elongation of polypeptide chain resulting in protein synthesis inhibition.

Properties


- yellow crystals
- insoluble in H₂O
- soluble in DMSO

Side effect

Vomition

Allergics.




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→ Althocin

→ Erythocin

→ Eromycin

→ Calthox

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202

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Principal
Department of Biological Sciences
University of Lagos
Akoka, Lagos State

121

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Medicinal Chemistry

Assignment - I

Name :- M. Arkhila


class :- pharm-D III year

Roll no :- 196N10008

topic :- Antifungal agents and its uses.

submitted to :- U. Rishika madam




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Antifungal agents.

* Antifungal drugs are used to treat fungal infections on the skin, scalp, nails, vagina or inside the mouth. These medications come as creams, gels, lotions, ointments, powders, shampoos, tinctures and sprays. Most antifungal drugs induce fungal cell death by destroying the cell wall of the fungus. These drugs inhibit the production of ergosterol, which is a fundamental component of the fungal cell membrane and wall.

Antifungal drugs are generally classified according to their chemical structures and their corresponding mechanism of actions are azole antifungals, polyene antifungals, allylamine antifungals, and other antifungals. Azole antifungals, and other antifungals, Azole antifungals inhibit the enzyme that converts lanosterol into ergosterol.

Common examples of azole antifungals include clotrimazole



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ecanazole, ketoconazole, miconazole, and fluconazole.

The only polyene antifungal available topically is nystatin, which works by binding to ergosterol thus disrupting the integrity of the fungal cell membrane. Similar to azoles, allylamines disrupt the fungal cell synthesis through inhibition of the squalene epoxidase enzyme, that converts squalene into ergosterol.

Examples: -

allylamines antifungals comprise amorolfin, naftifine and terbinafine. The last group consists of antifungal drugs with a different mechanism of action than the other three classes.


These drugs include benzoxazole antifungals, eidepirox olanine antifungals, thiocarbamate antifungals and undecylenic alkandamide antifungals.

Topical antifungal may come with side effects such as itching and local irritation. They can also interact with food and different medications. Therefore topical antifungals should be used with caution & with advice from medicinal professionals.

Azole antifungals:

Azole antifungals are generally divided into two groups, imidazoles and triazoles. Common examples of imidazoles include clotrimazole, econazole, miconazole, ketoconazole, while fluconazole, itraconazole, posaconazole and voriconazole fall under triazoles group. Both groups cause substantial damage in fungal membrane integrity by lowering ergosterol levels, along with loss of cytoplasmic components - thus bringing similar effects to the polyene antifungals.




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Mechanism of action:-

Azole antifungal drugs exert their effects by inhibiting the synthesis of the sterol components of the fungal membrane. Azoles are predominantly fungistatic which inhibit the growth of the fungus instead of killing the fungus.

* These drugs target the ergosterol biosynthetic pathway by inhibiting the C-14 α -demethylase or cytochrome P450 enzyme, thus preventing the demethylation of lanosterol to ergosterol which is an essential component of the fungal cell membrane. The impaired use of synthesis of ergosterol leads to a cascade of membrane defects, hence fungal cell growth is inhibited due to the disrupted structure & function of the membrane.

Clinical Use:-


Nystatin is used topically for the treatment of candida infections of the skin and mucous membranes.

• Oral candidiasis (oral thrush).

Nystatin is commonly used in treatment of lesions of the mouth caused by Oral candidiasis.

The drug can be formulated in pastilles or suspensions and is directly applied to the affected area. After application, patients should avoid taking food or drink for an hour to allow sufficient time for the drug to exert its effect locally. Oral irritation or sensitization may occur in some patients after applying the drug to the oral ^{mucous} membrane.




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Nystatin in the forms of creams ointments or powders can also be used to treat fungal infections of the skin. The medication is directly applied to the affected area at around the same times on a daily basis.

* Some patients may experience itchiness, pain or burning sensations in the area where the drug is applied, while some may develop rashes or hives. On rare occasions, patients may have difficulty breathing or swallowing after topical use of Nystatin.

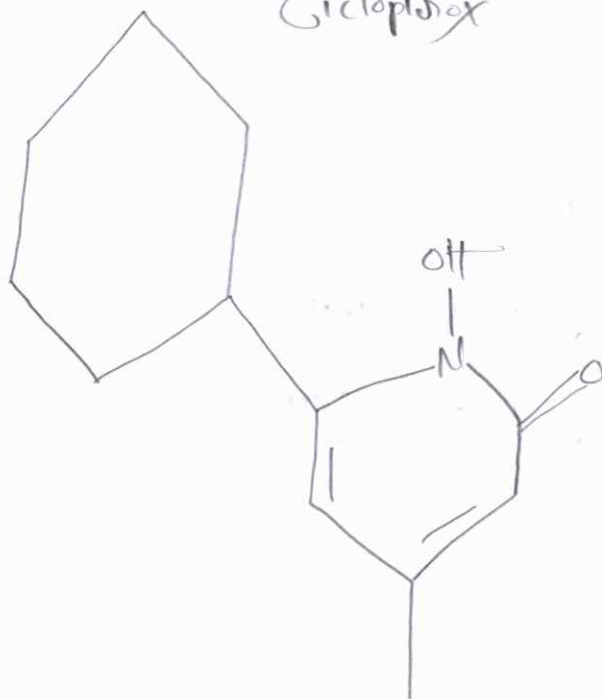
Vaginal Infections:

Nystatin is also used to treat fungal infections in the vaginal area. It is commonly formulated into pessaries or vaginal cream for application.

Ciclopirox is a synthetic antifungal agent for topical dermatologic treatment of superficial mycoses.

It is most useful against *Trichophyton*.
It is often used clinically as ciclopirox olamine, the olamine salt of ciclopirox.

Ciclopirox



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clinical data many

Trade names Lopax, cpx

Other names micromedex Detailed consumer information

ATFS/ Drugs AG646021

medline plus B

Pregnancy

category B

routes of admⁿ Topical

ATC code D01AE14 (WHO)
B01AX12 (WHO)

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Medicinal Chemistry

Assignment - II

Name :- M. Kavya

Class :- Pharm-D III year


Roll no :- 196W01T0006

Topic :- About Antibiotics

Submitted to :- U. Rishika madam

5/5




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-: Introduction To Antibiotics :-

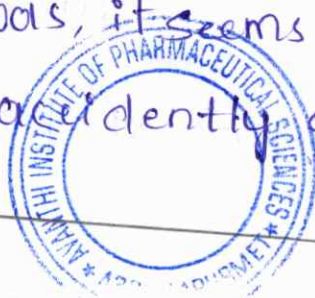
- ⇒ Antibiotics were a major discovery in the 1920s.
- ⇒ Major Source of Antibiotics.
- ⇒ Three main Antibiotic (A₀) targets in bacteria.
- ⇒ Five basic mechanisms of Antibiotics Action against bacterial cells.
- ⇒ Side effects of taking Antibiotics.

Introduction to Antibiotics And its Discovery:-

An antibiotic is a type of antimicrobial substances active against bacteria. It is the most important type of antibacterial agent for fighting bacterial infections, and antibiotic medications are widely used in the treatment (of) and prevention of such infections. They may either kill or inhibit the growth of bacteria.

In 1928s, at St. Mary's Hospital, London, Alexander Fleming discovered penicillin. This discovery led to introduction of Antibiotics that greatly reduced the number of deaths from infections.

Fleming was, it seems, a bit disorderedly in his work and accidentally discovered penicillin.



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Need for Antibiotics

Antibiotics are only needed for treating certain infections caused by bacteria. We rely on antibiotics to treat serious, life-threatening conditions such as pneumonia and sepsis, the body's extreme response to an infection. Effective antibiotics are also needed for people who are at high risk for developing infections.

Antibiotics as a major discovery in 1920's

The discovery of penicillin changed the world of medicine enormously. With its development, infections that were previously severe and often fatal, like bacterial endocarditis, bacterial meningitis and pneumococcal pneumonia, could be easily treated.

Antibiotics were widely used for treating soldiers during World War II, caring for battle wound infections and pneumonia. By the mid-to late 1940's, it became widely accessible for the general public.

Major Source of Antibiotics:-

Antibiotics commonly are produced by soil microorganisms and probably represent a means by which organisms in a complex environment, such as soil, control the growth of competing microorganisms. Microorganisms that produce antibiotics useful in preventing or treating disease include the bacteria and the fungi.

Main Antibiotic targets in bacteria:-

- The cell wall or membranes that surround the bacterial cell.
- The machineries that make the nucleic acids DNA and RNA.
- The machinery that produces proteins (the ribosome and associated proteins).

Pros of taking of Antibiotics:-

- Antibiotics can ^{slow} the growth of and kill



many types of Infections.

- In some cases, such as before surgery, Antibiotics can prevent infection from occurring.
- Antibiotics are fast acting; some will begin working within a few hours.
- They are easy to take. Most Antibiotics are oral medications.

In principle, there are three Main Antibiotic targets In bacteria:-

- The cell wall or me

Five Basic Mechanisms of Antibiotics

Action Against Bacterial Cells:-

- Inhibition of cell wall synthesis (most common mechanism).
- Inhibition of protein synthesis (translation)
- Alteration of cell membranes.
- Inhibition of Nucleic acid synthesis.

- Antimetabolite Activity.

The ribosome is a major target for Antibiotics. Drugs inhibit ribosome functions either by interfering in messenger RNA translation or by blocking the formation of peptide bonds at the peptidyl transferase centre. These effects are the consequence of the binding of drugs to ribosomal subunits.

Side Effects of taking Antibiotics:-

The most common side effects of Antibiotics is, it affects the digestive system. This happens around 1 in 10 people.

- Vomiting.
- Nausea
- Diarrhoea.
- Bloating and maldigestion.
- Abdominal pain
- Loss of appetite.

- development of AMR (Antimicrobial resistance) and cumulative risk of adverse events.



⇒ An antibiotic is a type of (antibac) antimicrobial substance active against bacteria. It is the most important type of antibacterial agent for fighting bacterial infections, and antibiotic medications are widely used in the treatment and prevention of such infections. They may either kill or inhibit the growth of bacteria.

Antibiotics are medicines that fight bacterial infections in people and animals.

They work by killing the bacteria or by making it hard for the bacteria to grow and multiply. Antibiotics can be taken in different ways.

Antibiotic Resistance What You can do:-

Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.

- ① Only use antibiotics when prescribed by a certified health professional.
- ② Always take the full prescription, even if you feel better.

③ Never use left over antibiotics.

④ Never share antibiotics with others.

⑤ Prevent infections by regularly washing your hands, avoiding contact with sick people and keeping your vaccinations up to date.

Six Smart Facts About Antibiotic Use:-

① Antibiotics are life-saving drugs.

② Antibiotics only treat bacterial infections.

③ Some ear infections do not require an antibiotic.

④ Most Sore throat do not require an antibiotic.

⑤ Green coloured mucus is not a sign that an antibiotic is needed.

⑥ There are potential risks when taking any prescription ~~drug~~



A handwritten signature in green ink, consisting of a stylized 'A' followed by a long horizontal line and a small flourish at the end.

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Conclusion:-

Antibiotic resistance has increased worldwide in bacterial pathogens leading to treatment failures in human and animal infectious diseases.

Resistance against antibiotics by pathogenic bacteria is a major concern in the anti-infective therapy of both humans and animals.

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TOPIC - 1

1st subtopic

Running Note

* Epidemiology

is the study of distribution of the disease and its determinants (factors & causes) in a group of population

* Pharmacoepidemiology

It is nothing but application of principles of epidemiology like drug use, and its effects in a population.

* Origin

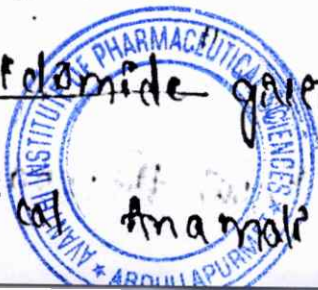
→ In the early days of drug utilization, the ADRs of a particular drug are not reported because of the inadequate clinical trial

→ Though, clinical trials were implemented, there is a problem with sample size and with exclusion criteria.

→ After the reporting of case reports in a condition like morning sickness to the pregnant women, the origin of ADR Reporting have been started.

→ 1960's

* Case reports are noted to the pregnant women who used a drug like Thalidomide given birth to the babies who are having physical anomalies (or) malformation of



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Rajamahendravaram (D)

① Grey baby's syndrome is seen in women who use a drug like chloramphenicol.

② Vaginal cancer was reported in the offspring, the mother who use diethylstilbestrol which comes under class of oral contraceptives.

→ Triazolam → Anxiety, Aggressive → CNS depressant

→ Aim of the Pharmacoepidemiology :-

Methods:
 - Usual dose
 - Drug dose
 - Period of use

1) Signal Generation :-

It is nothing but finding a new indication with the drug that already exists.

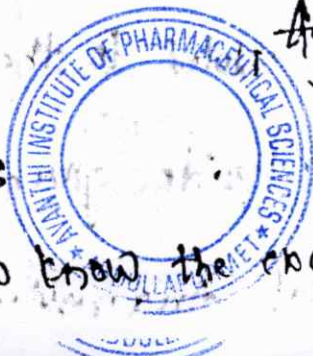
Post pregnant
 - Neuroleptic
 - Fluoroquinolones

1) Minoxidil → a) to treat Alopecia
 → b) to treat High Blood pressure [New indication]

2) Aspirin → a) Used as NSAID's
 → b) Used as Antiplatelet agent [Blood thinning Agent [New indication]]

2) Hypothesis Generation :-

It is nothing, but to know the exact cause and effect



3) Risk quantification

It is nothing, but, quantifying the ADRs that are already reported and also need to be reported.

⇒ Need for pharmacovigilance / Applications of pharmacovigilance

1) Estimation of Risk & Quantification


2) In providing patient counselling

3) Formulation of public Health decisions → deaminiization

4) Estimation of pharmaco-economic studies → reduce cost

Efficiency
Maximal ADR
Reduce hospitalization




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Subtopic: Origin and Evaluation of Pharmacoepidemiology

* "Epidemiology" study of the distribution and determinants of a disease in a population.

* "Pharmacoepidemiology" is the application of epidemiological

principles or principles of epidemiology to drug effects and drug use.

* Origins:


* ADRs to drugs were old as modern pharmacotherapy which developed in the 20th century.

* Drug resistance, drug abuse and variations in rates of clinical effectiveness were the other therapeutic problems which emerged.

* In 1961, the case reports of maternal use of "Thalidomide" with malformations in offspring resulted in awareness of the potential for drugs to cause ADRs.

* Since then a greater attention was focused on the detection, prevention or management of ADRs and the era of pharmacoepidemiology has began.




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→ The Important ADR's detected through ~~clinical trials~~ ~~in the~~ ~~use of~~

→ Grey baby syndrome due to chloramphenicol

→ Vaginal cancer in offspring of women who took

diethyl stilbestrol during pregnancy.

→ Icotinipin induced birth defects.

→ Deaths with fenofenol

→ Venous thromboembolism with OC's [oral contraceptives]

→ Intersociety for PE
⇒ ISPE was formed to obtain more data on risks & benefits

b) of drugs in population and to discuss ~~the~~ benefits of drugs in

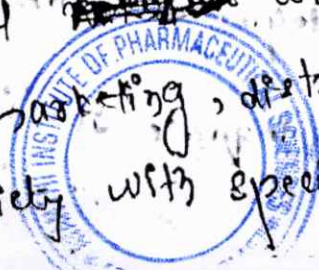
population develop and disseminate information about pharmacoep-
-demological methods.

→ In early 1960's, the related field of drug utilisation was developed
along with the study of ADR's

→ Previously, studies were conducted for marketing purposes
and data were not accessible for use by health authorities

→ As a result of wide variations in the pattern and extent of drug
prescribing, growing concern about ADR's and cost of the drugs
the pharmacoepidemiological ~~methods~~ were developed.

→ Acc to WHO, DDD is the marketing, distribution, prescriptions
and use of drugs in a society with special emphasis on the



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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by PCI, AICTE & Affiliated to JNTUH)

Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.



Department:		PHARM D							
Course Outcome Attainment - Internal Assessments									
Name of the Faculty:		URISHIKA		Academic Year:		2021-22			
Branch & Section:		PHARM D		Exam:		MID - I			
Course/Sub:		MC		Year/Semister:		III			
Sl.No	Roll Number	CO1	CO1	CO1	CO1	CO1	CO1	CO2	CO2
		Question No.							
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Maximum Marks		5	5	5	5	5	5	5	5
1	19GN1T0001	5	4	4		5	5	4	
2	19GN1T0002	4	5	5	5	5		4	
3	19GN1T0003	5	4	5	5	5		4	
4	19GN1T0004		4	5	4		4	5	4
5	19GN1T0005	4		5	4	5	3	5	
6	19GN1T0006	5	5	4	4		4	5	
7	19GN1T0007	5	4	4		5	5		4
8	19GN1T0008	5	4	4		5	4		5
9	19GN1T0009	4	5	4		5	5		4
10	19GN1T0010	5	4		5	4	4		4
11	19GN1T0011	5	4	5	4	5		5	
12	19GN1T0012	4	5		5		4	5	5
13	19GN1T0013	5	5	5	4		5		3
14	19GN1T0014		4	5	5	4		5	5
15	19GN1T0015	5	4	5	5	4	4		
16	19GN1T0016	5	4	4	5		4		5
17	19GN1T0017		5	4	4	5		5	5
18	19GN1T0018	4		5	5		4	5	4
19	19GN1T0019	4	5	4		5	4		5
20	19GN1T0020		5	4		4	4	5	5
21	19GN1T0021	5	4	5			5	4	5
22	19GN1T0022	5	4	4		5		4	5
23	19GN1T0023	5		5	4		5	4	5
24	19GN1T0024	4		4	5		5	5	4
25	19GN1T0025	4			5	4	5	4	5
26	19GN1T0026		5	3	5		4	5	5
27	19GN1T0027	5	5	4			5	4	4
28	19GN1T0028	5		5	4	4	5	4	
29	19GN1T0029		5	4	4	5		5	4
30	19GN1T0030	5		5		4	5	4	4
No. of students attempted		24	23	27	20	19	23	22	22
Max Marks Question wise		5	5	5	5	5	5	5	5
Target 50%		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of Students above 50%		24	23	27	20	19	23	22	22
% of Students > 50%		100.0	100	100	100.0	100.0	100	100	100.0
Attainment Level		3	3	3	3	3	3	3	3
Attainment table									
70-80%	1								
80-90%	2								
90-100%	3								



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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by PCI, AICTE & Affiliated to JNTUH)

Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.



Department:		PHARM D							
Course Outcome Attainment - Internal Assessments									
Name of the Faculty:		U RISHIKA		Academic Year:		2021-22			
Branch & Section:		PHARM D		Exam:		MID - II			
Course/Sub:		MC		Year/Semester:		III			
SLNo	Roll Number	Question No.							
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Maximum Marks		5	5	5	5	5	5	5	5
1	19GN1T0001	5		4	5	4		5	5
2	19GN1T0002		4	5	4	5		4	5
3	19GN1T0003		4	5	4	5	4	5	
4	19GN1T0004		4		4	5	5	5	4
5	19GN1T0005		5	5	5	5	4		3
6	19GN1T0006	5	3		5	5		4	5
7	19GN1T0007	4		4	5	5		4	5
8	19GN1T0008	4	5	5	4		5	5	
9	19GN1T0009	5	4	5	5	5	4		
10	19GN1T0010	4	5		5	3	5	5	
11	19GN1T0011			4	5	5	4	5	4
12	19GN1T0012			5	4	5	5	4	4
13	19GN1T0013	4	5	4	5		5		4
14	19GN1T0014	5	4	5	5	5	4		
15	19GN1T0015	5		4	5	5	4		4
16	19GN1T0016	4		4	5	5		4	5
17	19GN1T0017		5	4	5	4	4	5	
18	19GN1T0018	5		5	5	4	4		4
19	19GN1T0019		4	5		5	4	4	5
20	19GN1T0020		5	5		4	4	4	5
21	19GN1T0021		4	5	4	5	5	4	
22	19GN1T0022	5	5	4	5	4		4	
23	19GN1T0023	4	5	5	4	4	5		
24	19GN1T0024	5	5	4		5	4	5	4
25	19GN1T0025		4		5	4	5	4	
26	19GN1T0026		4	5	5	4	4	5	
27	19GN1T0027		5	4	4		5	5	4
28	19GN1T0028			4	4	5	5	5	4
29	19GN1T0029	5		4	5	5	5	3	5
30	19GN1T0030		5	4	5		5	5	4
No. of students attempted		24	23	27	20	19	23	22	22
Max Marks Question wise		5	5	5	5	5	5	5	5
Target 50%		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of Students above 50%		24	23	27	20	19	23	22	22
% of Students > 50%		100.0	100	100	100.0	100.0	100	100	100.0
Attainment Level		3	3	3	3	3	3	3	3
Attainment table									
70-80%	1								
80-90%	2								
90-100%	3								



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Department:		PHARM D							
Course Outcome Attainment - Internal Assessments									
Name of the Faculty:		URISHIKA		Academic Year:		2021-22			
Branch & Section:		PHARM D		Exam:		MID - III			
Course/Sub:		MC		Year/Semester:		III			
		CO1	CO1	CO1	CO1	CO1	CO1	CO2	CO2
SLNo	Roll Number	Question No.							
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Maximum Marks		5	5	5	5	5	5	5	5
1	19GN1T0001	5		4	5	4		5	5
2	19GN1T0002		4	5	4	5		4	5
3	19GN1T0003		4	5	4	5	4	5	
4	19GN1T0004		4		4	5	5	5	4
5	19GN1T0005		5	5	5	5	4		3
6	19GN1T0006	5	3		5	5		4	5
7	19GN1T0007	4		4	5	5		4	5
8	19GN1T0008	4	5	5	4		5	5	
9	19GN1T0009	5	4	5	5	5	4		
10	19GN1T0010	4	5		5	3	5	5	
11	19GN1T0011			4	5	5	4	5	4
12	19GN1T0012			5	4	5	5	4	4
13	19GN1T0013	4	5	4	5		5		4
14	19GN1T0014	5	4	5	5	5	4		
15	19GN1T0015	5		4	5	5	4		4
16	19GN1T0016	4		4	5	5		4	5
17	19GN1T0017		5	4	5	4	4	5	
18	19GN1T0018	5		5	5	4	4		4
19	19GN1T0019		4	5		5	4	4	5
20	19GN1T0020		5	5		4	4	4	5
21	19GN1T0021		4	5	4	5	5	4	
22	19GN1T0022	5	5	4	5	4		4	
23	19GN1T0023	4	5	5	4	4	5		
24	19GN1T0024		5	4		5	4	5	4
25	19GN1T0025	5	4		5	4	5	4	
26	19GN1T0026		4	5	5	4	4	5	
27	19GN1T0027		5	4	4		5	5	4
28	19GN1T0028			4	4	5	5	5	4
29	19GN1T0029			4	5	5	5	3	5
30	19GN1T0030		5	4	5		5	5	4
No. of students attempted		24	23	27	20	19	23	22	22
Max Marks Question wise		5	5	5	5	5	5	5	5
Target 50%		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of Students above 50%		24	23	27	20	19	23	22	22
% of Students > 50%		100.0	100	100	100.0	100.0	100	100	100.0
Attainment Level		3	3	3	3	3	3	3	3
Attainment table									
70-80%	1								
80-90%	2								
90-100%	3								



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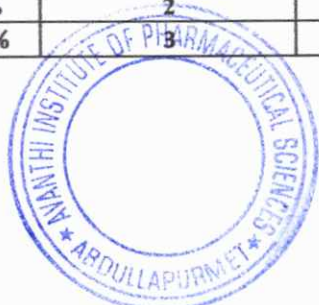
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Department:		PHARM D			
Course Outcome Attainment External Examination					
Name of the Faculty:		U RISHIKA		Academic Year:	2021-22
Branch & Section:		PHARM D		Exam:	EXTERNAL
Course:		MC		Year/Semester:	III
S.NO.	HALLTICKET NO	TOTAL(Max. Score Marks)			
1	19GN1T0001	47			
2	19GN1T0002	46			
3	19GN1T0003	46			
4	19GN1T0004	46			
5	19GN1T0005	43			
6	19GN1T0006	39			
7	19GN1T0007	45			
8	19GN1T0008	53			
9	19GN1T0009	52			
10	19GN1T0010	53			
11	19GN1T0011	53			
12	19GN1T0012	35			
13	19GN1T0013	53			
14	19GN1T0014	53			
15	19GN1T0015	33			
16	19GN1T0016	61			
17	19GN1T0017	48			
18	19GN1T0018	52			
19	19GN1T0019	34			
20	19GN1T0020	56			
21	19GN1T0021	35			
22	19GN1T0022	42			
23	19GN1T0023	53			
24	19GN1T0024	35			
25	19GN1T0025	47			
26	19GN1T0026	37			
27	19GN1T0027	44			
28	19GN1T0028	46			
29	19GN1T0029	36			
30	19GN1T0030	43			
No. of students who attempted the subject		30			
Max. Marks		70			
No. of students secured > 26 marks		30			
Percentage of students secured > 26 marks		100.0			
Overall External Attainment level		3			
Attainment table					
70-80%	1				
80-90%	2				
90-100%	3				



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Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.



Department:		PHARM D				
Overall Course Outcome Attainment						
Name of the Faculty:	U RISHIKA		Academic Year:	2021-22		
Branch & Section:	PHARM D		Exam:			
Course:	MC		Semister:	III		
Course Outcomes	1st Inte	2nd	3rd	Internal Exam(Avg.)	University Exam	Overall Attainment
Course outcome - 1	3	-	-	3	3	3
Course outcome - 2	3	3	-	3	3	3
Course outcome - 3	-	3	3	3	3	3
Course outcome - 4	-	-	3	3	3	3
Average				3	3	3

OVERALL ATTAINMENT OF THE SUBJECT = $0.25*INT + 0.75*EXT$




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COURSE OUTCOMES

CO1	In continuation with the previous year, this subject would have continued describing about the different drugs used for treatment of diseases.
CO2	The students would have learnt about drugs used to cancer, inflammation, respiratory system, GIT, immune system and hormones.
CO3	They would have understood the principles of animal toxicology and bioassay procedures.
CO4	They would have learnt in depth knowledge on cell, macromolecules, cell signaling, DNA replication and cell cycle.

CO-PO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	2	2	3	2	3	2	3	3	3	3	3	2	2	2
CO2	3	3	2	3	3	2	2	2	3	2	3	3	3	3
CO3	3	3	3	3	2	2	2	3	3	3	3	2	3	2
CO4	2	2	2	2	2	3	3	2	2	2	3	3	2	3
CO avg(M)	2.5	2.5	2.5	2.5	2.5	2.25	2.5	2.5	2.75	2.5	2.5	2.5	2.5	2.5
Attainment Level*	2.5	2.5	2.5	2.5	2.5	2.25	2.5	2.5	2.75	2.5	3	2.5	2.5	2.5




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DATE: 06-03-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D I-YEAR I MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
10-03-2022/THU	HUMAN ANATOMY & PHYSIOLOGY
11-03-2022/FRI	PHARMACEUTICS
12-03-2022/SAT	MEDICINAL BIOCHEMISTRY
14-03-2022/MON	PHARMACEUTICAL INORGANIC CHEMISTRY
15-03-2022/TUE	PHARMACEUTICAL ORGANIC CHEMISTRY
16-03-2022/WED	REMEDIAL MATHEMATICS

P. Nagaraj
EXAMINATION BRANCH

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DATE: 05-06-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D I-YEAR II MID EXAMINATIONS

Time: 1.30 PM to 3.30 PM

DATE & DAY	SUBJECT
09-06-2022/THU	HUMAN ANATOMY & PHYSIOLOGY
10-06-2022/FRI	PHARMACEUTICS
11-06-2022/SAT	MEDICINAL BIOCHEMISTRY
13-06-2022/MON	PHARMACEUTICAL INORGANIC CHEMISTRY
14-06-2022/TUE	PHARMACEUTICAL ORGANIC CHEMISTRY
15-06-2022/WED	REMEDIAL MATHEMATICS

P. Nagaraj

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DATE: 04-09-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D I-YEAR III MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
08-09-2022	HUMAN ANATOMY & PHYSIOLOGY
09-09-2022	PHARMACEUTICS
10-09-2022	MEDICINAL BIOCHEMISTRY
12-09-2022	PHARMACEUTICAL INORGANIC CHEMISTRY
13-09-2022	PHARMACEUTICAL ORGANIC CHEMISTRY
14-09-2022	REMEDIAL MATHEMATICS

P. Nagareddy

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DATE: 13-01-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D II-YEAR I MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
17-01-2022/MON	PATHOPHYSIOLOGY
18.01.2022/TUES	PHARMACEUTICAL MICROBIOLOGY
19.01.2022/WED	PHARMACOGNOSY & PHYTOPHARMACEUTICALS
20.01.2022/THUS	PHARMACOLOGY-1
21.01.2022/FRI	COMMUNITY PHARMACY
22.01.2022/SAT	PHARMACOTHERAPEUTICS-1

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DATE: 14-04-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D II-YEAR II MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
18-04-2022/MOM	PATHOPHYSIOLOGY
19-04-2022/TUE	PHARMACEUTICAL MICROBIOLOGY
20-04-2022/WED	PHARMACOGNOSY & PHYTOPHARMACEUTICALS
21-04-2022/THU	PHARMACOLOGY-1
22-04-2022/FRI	COMMUNITY PHARMACY
23-04-2022/SAT	PHARMACOTHERAPEUTICS-1

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DATE: 28-07-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D II-YEAR III MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
01-08-2022/MON	PATHOPHYSIOLOGY
02-08-2022/TUE	PHARMACEUTICAL MICROBIOLOGY
03-08-2022/WED	PHARMACOGNOSY & PHYTOPHARMACEUTICALS
04-08-2022/THU	PHARMACOLOGY-1
05-08-2022/FRI	COMMUNITY PHARMACY
06-08-2022/SAT	PHARMACOTHERAPEUTICS-1

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DATE: 04-11-2021

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D III-YEAR I MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
08-11-2021/MON	PHARMACOLOGY-II
09-11-2021/TUE	PHARMACEUTICAL ANALYSIS
10-11-2021/WED	PHARMACOTHERAPEUTICS-II
11-11-2021/THU	PHARMACEUTICAL JURISPRUDENCE
12-11-2021/FRI	MEDICINAL CHEMISTRY
13-11-2021/SAT	PHARMACEUTICAL FORMULATIONS

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DATE: 10-02-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D III-YEAR II MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
14-02-2022/MON	PHARMACOLOGY-II
15-02-2022/TUES	PHARMACEUTICAL ANALYSIS
16-02-2022/WED	PHARMACOTHERAPEUTICS-II
17-02-2022/THUS	PHARMACEUTICAL JURISPRUDENCE
18-02-2022/FRI	MEDICINAL CHEMISTRY
19-02-2022SAT	PHARMACEUTICAL FORMULATIONS

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DATE: 05-05-2022

EXAMINATION BRANCH

NOTICE TIME-TABLE PHARM D III-YEAR III MID EXAMINATIONS

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
09-05-2022/MON	PHARMACOLOGY-II
10-05-2022/TUES	PHARMACEUTICAL ANALYSIS
11-05-2022/WED	PHARMACOTHERAPEUTICS-II
12-05-2022/THUS	PHARMACEUTICAL JURISPRUDENCE
13-05-2022/FRI	MEDICINAL CHEMISTRY
14-05-2022/SAT	PHARMACEUTICAL FORMULATIONS

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DATE: 04-11-2021

**EXAMINATION BRANCH
NOTICE
TIME-TABLE
PHARM D IV-YEAR I MID EXAMINATIONS**

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
08-11-2021/MON	PHARMACOTHERAPEUTICS-III
09-11-2021/TUE	HOSPITAL PHARMACY
10-11-2021/WED	CLINICAL PHARMACY
11-11-2021/THU	BIostatISTICS & RESEARCH METHODOLOGY
12-11-2021/FRI	BIOPHARMACEUTICS & PHARMACO KINETICS
13-11-2021/SAT	CLINICAL TOXICOLOGY

P. Nagaraj

EXAMINATION BRANCH

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HOD

[Signature]

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3) ALL STUDENTS
4) OFFICE
5) NOTICE BOARD



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DATE: 10.02.2022

**EXAMINATION BRANCH
NOTICE
TIME-TABLE
PHARM D IV-YEAR II MID EXAMINATIONS**

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
14-02-2022/MON	PHARMACOTHERAPEUTICS-III
15-02-2022/TUE	HOSPITAL PHARMACY
16-02-2022/WED	CLINICAL PHARMACY
17-02-2022/THU	BIostatISTICS & RESEARCH METHODOLOGY
18-02-2022/FRI	BIOPHARMACEUTICS & PHARMACO KINETICS
19-02-2022SAT	CLINICAL TOXICOLOGY

P. Nagarej
EXAMINATION BRANCH

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DATE: 05-05-2022

**EXAMINATION BRANCH
NOTICE
TIME-TABLE
PHARM D IV-YEAR III MID EXAMINATIONS**

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
09-05-2022/MON	PHARMACOTHERAPEUTICS-III
10-05-2022/TUE	HOSPITAL PHARMACY
11-05-2022/WED	CLINICAL PHARMACY
12-05-2022/THU	BIOSTATISTICS & RESEARCH METHODOLOGY
13-05-2022/FRI	BIOPHARMACEUTICS & PHARMACO KINETICS
14-05-2022/SAT	CLINICAL TOXICOLOGY

P. Nagarajh
EXAMINATION BRANCH

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DATE: 04-11-2021

**EXAMINATION BRANCH
NOTICE
TIME-TABLE
PHARM D V-YEAR I MID EXAMINATIONS**

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
08-11-2021/MON	CLINICAL RESEARCH
09.11.2021/WED	PHARMACOEPIDEMIOLOGY & PHARMACOECONOMICS
10.11.2021/THUS	CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC MONITORING

P. Nagaraju
EXAMINATION BRANCH

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DATE: 10-02-2022

**EXAMINATION BRANCH
NOTICE
TIME-TABLE
PHARM D V-YEAR II MID EXAMINATIONS**

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
14-02-2022/MON	CLINICAL RESEARCH
15.02.2022/TUE	PHARMACOEPIDEMOLOGY & PHARMACOECONOMICS
16.02.2022/WED	CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC DRUG MONITORING

P. Nagaraja

EXAMINATION BRANCH

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DATE: 05-05-2022

**EXAMINATION BRANCH
NOTICE
TIME-TABLE
PHARM D V-YEAR III MID EXAMINATIONS**

Time: 1.30PM to 3.30 PM

DATE & DAY	SUBJECT
09-05-2022/MON	CLINICAL RESEARCH
10.05.2022/TUE	PHARMACOEPIDEMIOLOGY & PHARMACOECONOMICS
11.05.2022/WED	CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC DRUG MONITORING

P. Nagaraj
EXAMINATION BRANCH

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KUKATPALLY, HYDERABAD – 500 085

EXAMINATION BRANCH

II YEAR B.PHARM-II SEMESTER – R17, R16, R15, R13, R09 REGULATION- SUPPLEMENTARY EXAMINATIONS MARCH-2022

T I M E T A B L E

TIME → AN: 2:15 PM TO 5:15 PM

COURSE	R17	R16	R15	R13	R09
08-03-2022 TUESDAY	Pharmaceutical Organic Chemistry-III	PHARMACEUTICAL UNIT OPERATIONS – II	PHARMACEUTICAL UNIT OPERATIONS -II	PHARMACEUTICAL UNIT OPERATIONS-II	PHARMACEUTICAL UNIT OPERATIONS-II
10-03-2022 THURSDAY	Medicinal Chemistry-I	BIOCHEMISTRY	PHARMACEUTICAL BIOCHEMISTRY	PHARMACEUTICAL BIOCHEMISTRY	ENVIRONMENTAL SCIENCE
12-03-2022 SATURDAY	Physical Pharmaceutics-II	PHARMACEUTICAL JURISPRUDENCE	PHARMACOGNOSY- I	PHARMACOGNOSY-I	PHARMACOGNOSY-I
14-03-2022 MONDAY	Pharmacology-I	PHYSICAL PHARMACY-II	PHYSICAL PHARMACY- II	PHYSICAL PHARMACY-II	PHARMACEUTICAL ANALYSIS - I
16-03-2022 WEDNESDAY	Pharmacognosy and Phytochemistry-I	OPEN ELECTIVES	ENVIRONMENTAL STUDIES	ENVIRONMENTAL STUDIES	PHYSICAL PHARMACY - II
		INTELLECTUAL PROPERTY RIGHTS			
		HERBAL DRUGS TECHNOLOGY			
		GREEN CHEMISTRY			
					DISPENSING AND HOSPITAL PHARMACY

DATE: 22-02-2022

Sd/-

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NOTE:

- (i) ANY OMISSIONS OR CLASHES IN THIS TIME TABLE MAY PLEASE BE INFORMED TO THE CONTROLLER OF EXAMINATIONS IMMEDIATELY.
- (ii) EVEN IF GOVERNMENT DECLARES HOLIDAY ON ANY OF THE ABOVE DATES, THE EXAMINATIONS SHALL BE CONDUCTED AS USUAL
- (iii) READMITTED STUDENTS HAVE TO APPEAR FOR THE SUBSTITUTE SUBJECT(S) [WHICH IS/ARE NOT SHOWN IN THE TIME-TABLE] IN PLACE OF THE SUBJECT(S) ALREADY PASSED. FOR DETAILS OF SUBSTITUTE SUBJECTS REFER THE COMMUNICATIONS RECEIVED FROM THE DIRECTOR OF ACADEMIC & PLANNING.

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KUKATPALLY - HYDERABAD - 500085

EXAMINATION BRANCH

I YEAR B.PHARMACY I-SEMESTER- R17 REGULATION REGULAR / SUPPLEMENTARY EXAMINATIONS JUNE-2022

REVISED T I M E T A B L E

TIME → FN:9.45 AM TO 12.45 PM

BRANCH	DATE, SESSION AND DAY					
	04-06-2022 SATURDAY	07-06-2022 TUESDAY	09-06-2022 THURSDAY	11-06-2022 SATURDAY	14-06-2022 TUESDAY	16-06-2022 THURSDAY
B.PHARMACY	REMEDIAL BIOLOGY	HUMAN ANATOMY AND PHYSIOLOGY I	PHARMACEUTICAL ANALYSIS I	PHARMACEUTICS I	PHARMACEUTICAL INORGANIC CHEMISTRY-I	COMMUNICATION SKILLS
	REMEDIAL MATHEMATICS					

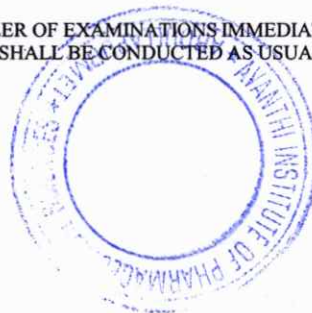
DATE: 24-05-2022


Sd/-

CONTROLLER OF EXAMINATIONS

NOTE:

- (i) ANY OMISSIONS OR CLASHES IN THIS TIME TABLE MAY PLEASE BE INFORMED TO THE CONTROLLER OF EXAMINATIONS IMMEDIATELY.
(ii) EVEN IF GOVERNMENT DECLARES HOLIDAY ON ANY OF THE ABOVE DATES, THE EXAMINATIONS SHALL BE CONDUCTED AS USUAL.




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EXAMINATION BRANCH

II YEAR B.PHARM - I SEMESTER –R17,R16, R15 ,R13,R09 REGULATIONS-REGULAR/SUPPLEMENTARY EXAMINATIONS MARCH-2022

T I M E T A B L E

T I M E :FN9:45 AM TO 12:45PM

DATE& DAY	R17	R16	R15	R13	R09
07-03-2022 MONDAY	Pharmaceutical Organic Chemistry – II	Pharmaceutical Organic Chemistry – III	Pharmaceutical Organic Chemistry – II	Pharmaceutical Organic Chemistry-II	Pharmaceutical Organic Chemistry-II
09-03-2022 WEDNESDAY	Physical Pharmaceutics-I	Pharmacognosy I	Statistical Methods & Computer Applications	Statistical Methods& Computer Applications	Statistical Methods & Computer Applications
11-03-2022 FRIDAY	Pharmaceutical Microbiology	Hospital and Community Pharmacy	Anatomy, Physiology & Pathophysiology	Anatomy Physiology & Pathophysiology	Physical Pharmacy – I Dispensing and Hospital Pharmacy
15-03-2022 TUESDAY	Pharmaceutical Engineering	Pharmaceutical Unit Operations – I	Pharmaceutical Unit Operations – I	Pharmaceutical Unit Operations – I	Pharmaceutical Unit Operations – I
17-03-2022 THURSDAY	---	Pharmaceutical Analysis-I	Physical Pharmacy – I	Physical Pharmacy – I	Anatomy Physiology&Path physiology Health Educationand Path physiology

DATE:22-02-2022

NOTE:(i) ANY OMISSIONS OR CLASHES IN THIS TIME TABLE MAY PLEASE BE INFORMED TO THE CONTROLLER OF EXAMINATIONS IMMEDIATELY
(ii) EVEN IF GOVERNMENT DECLARES HOLIDAY ON ANY OF THE ABOVE DATES, THE EXAMINATIONS SHALL BE CONDUCTED AS USUAL



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EXAMINATION BRANCH

TIME TABLE

IV YEAR B.PHARM-II SEMESTER –R17, R16, R15, R13, R09 REGULATION-REGULAR/SUPPLEMENTARY EXAMINATIONS JULY-2021

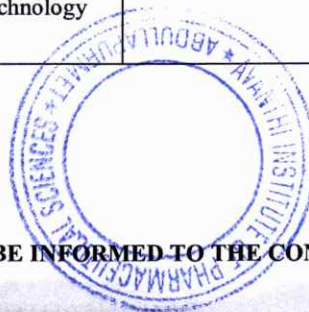
TIME → FN: 9.45 AM TO 12.45 PM

course	R17	R16	R15	R13	R09
05-07-2021 MONDAY	Biostatistics and Research Methodology	Novel Drug Delivery Systems	Novel Drug Delivery Systems and Regulatory Affairs	Novel Drug Delivery Systems and Regulatory Affairs	Pharmacognosy III
07-07-2021 WEDNESDAY	Social and Preventive Pharmacy	Clinical Pharmacy	Pharmaceutical Biotechnology	Pharmaceutical Biotechnology	Novel Drug Delivery Systems and Regulatory
09-07-2021 FRIDAY	Pharmaceutical Jurisprudence	Pharmaceutical Biotechnology	Pharmaceutical Analysis II	Pharmaceutical Analysis II	Clinical Pharmacy and Therapeutics
12-07-2021 MONDAY	Elective -IV	Pharmacognosy – III	Human Values and Professional Ethics	Human Values and Professional Ethics	Medicinal Chemistry III
	Computer Aided Drug Design				
	Nano Technology				
	Experimental Pharmacology				
	Advanced Instrumentation Techniques				
14-07-2021 WEDNESDAY	-----	Nano Technology	Clinical Pharmacy Practice	Clinical Pharmacy Practice	Pharmaceutical Biotechnology
		Pharmacoepidemiology, Pharmacoconomics and pharmacovigilance			
		Medicinal Plant Biotechnology			

DATE:20-06-2021

NOTE:

I). ANY OMISSIONS OR CLASHES IN THIS TIME TABLE MAY PLEASE BE INFORMED TO THE CONTROLLER OF EXAMINATIONS IMMEDIATELY



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DATE: 25.03.2022


B. PHARMACY

PROJECT SHEDULE

For the academic year **2021-2022** all the **IV B. PHARM II SEMESTER** are here by informed that the students should undergo the course project as per the JNTUH R17 REGULATIONS.

S.NO:	REVIEW & ASSESSMENT	TOPIC	TENTATIVE SCHEDULE
1	PROJECT INITIALIZATION	FINALIZATION OF TITLE & PLAN OF WORK	5.03.2022 to 17.03.2023
2	REVIEW-1	REVIEW OF LITERATURE	09.05.2022 to 20.05.2022
3	REVIEW-2	METHODOLOGY & EXPECTED RESULTS	22.06.2022 to 03.07.2022
4	REVIEW-3	RESULTS & DISCUSSION, CONCLUSION	19.07.2022 to 23.07.2022




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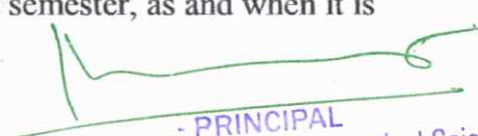
Committed to Excellence in Technical Education



Guidelines to students:

1. UG project work shall be carried out during IV Year II Semester.
2. Project will be evaluated for 100 marks. Student has to submit project work report at the end of semester.
3. Project shall be conducted in 3 Reviews
4. Project shall be completed before the commencement of SEE Theory examinations.
5. For Project the departmental committee consisting of Head of the Department, project supervisor and a senior faculty member shall evaluate the project work.
6. The student is deemed to have failed, if he/she
 - (i) Does not submit a report or does not make a presentation of the same before the evaluation committee as per schedule, or
 - (ii) Secures less than 40% marks in the sum total of the CIE and SEE taken together.
7. A student who has failed may reappear once for the above evaluation, when it is scheduled again; if he fails in such 'one reappearance' evaluation also, he has to reappear for the same in the next subsequent semester, as and when it is scheduled.




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8. For conducting viva-voce of project, University selects an external examiner from the list of experts in the relevant branch submitted by the Principal of the College.

9. A student who has failed may reappear once for the above evaluation, when it is scheduled again; if student fails in such 'one reappearance' evaluation also, he has to reappear for the same in the next subsequent semester, as and when it is scheduled.



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Department:		PHARM D							
Course Outcome Attainment - Internal Assessments									
Name of the Faculty:		URISHIKA		Academic Year:		2021-22			
Branch & Section:		PHARM D		Exam:		MID - I			
Course/Sub:		MC		Year/Semister:		III			
Sl.No	Roll Number	CO1	CO1	CO1	CO1	CO1	CO1	CO2	CO2
		Question No.							
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Maximum Marks		5	5	5	5	5	5	5	5
1	19GN1T0001	5	4	4		5	5	4	
2	19GN1T0002	4	5	5	5	5		4	
3	19GN1T0003	5	4	5	5	5		4	
4	19GN1T0004		4	5	4		4	5	4
5	19GN1T0005	4		5	4	5	3	5	
6	19GN1T0006	5	5	4	4		4	5	
7	19GN1T0007	5	4	4		5	5		4
8	19GN1T0008	5	4	4		5	4		5
9	19GN1T0009	4	5	4		5	5		4
10	19GN1T0010	5	4		5	4	4		4
11	19GN1T0011	5	4	5	4	5		5	
12	19GN1T0012	4	5		5		4	5	5
13	19GN1T0013	5	5	5	4		5		3
14	19GN1T0014		4	5	5	4		5	5
15	19GN1T0015	5	4	5	5	4	4		
16	19GN1T0016	5	4	4	5		4		5
17	19GN1T0017		5	4	4	5		5	5
18	19GN1T0018	4		5	5		4	5	4
19	19GN1T0019	4	5	4		5	4		5
20	19GN1T0020		5	4		4	4	5	5
21	19GN1T0021	5	4	5			5	4	5
22	19GN1T0022	5	4	4		5		4	5
23	19GN1T0023	5		5	4		5	4	5
24	19GN1T0024	4		4	5		5	5	4
25	19GN1T0025	4			5	4	5	4	5
26	19GN1T0026		5	3	5		4	5	5
27	19GN1T0027	5	5	4			5	4	4
28	19GN1T0028	5		5	4	4	5	4	
29	19GN1T0029		5	4	4	5		5	4
30	19GN1T0030	5		5		4	5	4	4
No. of students attempted		24	23	27	20	19	23	22	22
Max Marks Question wise		5	5	5	5	5	5	5	5
Target 50%		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of Students above 50%		24	23	27	20	19	23	22	22
% of Students > 50%		100.0	100	100	100.0	100.0	100	100	100.0
Attainment Level		3	3	3	3	3	3	3	3
Attainment table									
70-80%	1								
80-90%	2								
90-100%	3								



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Department:		PHARM D							
Course Outcome Attainment - Internal Assessments									
Name of the Faculty:		U RISHIKA		Academic Year:		2021-22			
Branch & Section:		PHARM D		Exam:		MID - II			
Course/Sub:		MC		Year/Semester:		III			
SLNo	Roll Number	Question No.							
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Maximum Marks		5	5	5	5	5	5	5	5
1	19GN1T0001	5		4	5	4		5	5
2	19GN1T0002		4	5	4	5		4	5
3	19GN1T0003		4	5	4	5	4	5	
4	19GN1T0004		4		4	5	5	5	4
5	19GN1T0005		5	5	5	5	4		3
6	19GN1T0006	5	3		5	5		4	5
7	19GN1T0007	4		4	5	5		4	5
8	19GN1T0008	4	5	5	4		5	5	
9	19GN1T0009	5	4	5	5	5	4		
10	19GN1T0010	4	5		5	3	5	5	
11	19GN1T0011			4	5	5	4	5	4
12	19GN1T0012			5	4	5	5	4	4
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15	19GN1T0015	5		4	5	5	4		4
16	19GN1T0016	4		4	5	5		4	5
17	19GN1T0017		5	4	5	4	4	5	
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24	19GN1T0024	5	5	4		5	4	5	4
25	19GN1T0025		4		5	4	5	4	
26	19GN1T0026		4	5	5	4	4	5	
27	19GN1T0027		5	4	4		5	5	4
28	19GN1T0028			4	4	5	5	5	4
29	19GN1T0029	5		4	5	5	5	3	5
30	19GN1T0030		5	4	5		5	5	4
No. of students attempted		24	23	27	20	19	23	22	22
Max Marks Question wise		5	5	5	5	5	5	5	5
Target 50%		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of Students above 50%		24	23	27	20	19	23	22	22
% of Students > 50%		100.0	100	100	100.0	100.0	100	100	100.0
Attainment Level		3	3	3	3	3	3	3	3
Attainment table									
70-80%	1								
80-90%	2								
90-100%	3								



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Department:		PHARM D							
Course Outcome Attainment - Internal Assessments									
Name of the Faculty:		URISHIKA		Academic Year:		2021-22			
Branch & Section:		PHARM D		Exam:		MID - III			
Course/Sub:		MC		Year/Semester:		III			
		CO1	CO1	CO1	CO1	CO1	CO1	CO2	CO2
SLNo	Roll Number	Question No.							
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Maximum Marks		5	5	5	5	5	5	5	5
1	19GN1T0001	5		4	5	4		5	5
2	19GN1T0002		4	5	4	5		4	5
3	19GN1T0003		4	5	4	5	4	5	
4	19GN1T0004		4		4	5	5	5	4
5	19GN1T0005		5	5	5	5	4		3
6	19GN1T0006	5	3		5	5		4	5
7	19GN1T0007	4		4	5	5		4	5
8	19GN1T0008	4	5	5	4		5	5	
9	19GN1T0009	5	4	5	5	5	4		
10	19GN1T0010	4	5		5	3	5	5	
11	19GN1T0011			4	5	5	4	5	4
12	19GN1T0012			5	4	5	5	4	4
13	19GN1T0013	4	5	4	5		5		4
14	19GN1T0014	5	4	5	5	5	4		
15	19GN1T0015	5		4	5	5	4		4
16	19GN1T0016	4		4	5	5		4	5
17	19GN1T0017		5	4	5	4	4	5	
18	19GN1T0018	5		5	5	4	4		4
19	19GN1T0019		4	5		5	4	4	5
20	19GN1T0020		5	5		4	4	4	5
21	19GN1T0021		4	5	4	5	5	4	
22	19GN1T0022	5	5	4	5	4		4	
23	19GN1T0023	4	5	5	4	4	5		
24	19GN1T0024		5	4		5	4	5	4
25	19GN1T0025	5	4		5	4	5	4	
26	19GN1T0026		4	5	5	4	4	5	
27	19GN1T0027		5	4	4		5	5	4
28	19GN1T0028			4	4	5	5	5	4
29	19GN1T0029			4	5	5	5	3	5
30	19GN1T0030		5	4	5		5	5	4
No. of students attempted		24	23	27	20	19	23	22	22
Max Marks Question wise		5	5	5	5	5	5	5	5
Target 50%		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of Students above 50%		24	23	27	20	19	23	22	22
% of Students > 50%		100.0	100	100	100.0	100.0	100	100	100.0
Attainment Level		3	3	3	3	3	3	3	3
Attainment table									
70-80%	1								
80-90%	2								
90-100%	3								



(Signature)
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 Avanthi's Institute of Pharmaceutical Sciences
 Gunthapally (V), Hayath Nagar (M),
 Ranga Reddy Dist.



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by PCI, AICTE & Affiliated to JNTUH)

Gunthapally (V), Abdullapurmet (M), R.R. Dist., Near Ramoji Filmcity, Hyderabad - 501 512.



Department:		PHARM D			
Course Outcome Attainment External Examination					
Name of the Faculty:		U RISHIKA		Academic Year:	2021-22
Branch & Section:		PHARM D		Exam:	EXTERNAL
Course:		MC		Year/Semester:	III
S.NO.	HALLTICKET NO	TOTAL(Max. Score Marks)			
1	19GN1T0001	47			
2	19GN1T0002	46			
3	19GN1T0003	46			
4	19GN1T0004	46			
5	19GN1T0005	43			
6	19GN1T0006	39			
7	19GN1T0007	45			
8	19GN1T0008	53			
9	19GN1T0009	52			
10	19GN1T0010	53			
11	19GN1T0011	53			
12	19GN1T0012	35			
13	19GN1T0013	53			
14	19GN1T0014	53			
15	19GN1T0015	33			
16	19GN1T0016	61			
17	19GN1T0017	48			
18	19GN1T0018	52			
19	19GN1T0019	34			
20	19GN1T0020	56			
21	19GN1T0021	35			
22	19GN1T0022	42			
23	19GN1T0023	53			
24	19GN1T0024	35			
25	19GN1T0025	47			
26	19GN1T0026	37			
27	19GN1T0027	44			
28	19GN1T0028	46			
29	19GN1T0029	36			
30	19GN1T0030	43			
No. of students who attempted the subject		30			
Max. Marks		70			
No. of students secured > 26 marks		30			
Percentage of students secured > 26 marks		100.0			
Overall External Attainment level		3			
Attainment table					
70-80%	1				
80-90%	2				
90-100%	3				



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