

II/IV B. PHARMACY DEGREE EXAMINATIONS, OCT / NOV - 2023**Fourth Semester****PHARMACEUTICAL ORGANIC CHEMISTRY III - THEORY**Time: **Three Hours**Maximum: **75 Marks**

SECTION - A**Answer any FIVE Questions. 5x10 = 50 M**

1. Discuss the concepts of optical activity, enantiomerism, diastereomerism, meso compounds with suitable example.
2. Write the nomenclature of geometrical isomers with reference to Cis-Trans, E-Z and Syn-Anti systems.
3. Write the methods of synthesis and chemical reactions of pyrrole. Compare and explain its aromaticity with furan and thiophene.
4. Write the methods to synthesize pyridine. Give the name, structure and medicinal uses of two pyridines.
5. Explain in detail about Beckmanns rearrangement and Schmidt rearrangement along with its mechanism.
6. Explain three methods for determination of configuration of geometrical isomers.
7. What are heterocyclic compounds? Give their classification and systematic nomenclature with examples.

SECTION - B**Answer any FIVE Questions.****5x5 = 25 M**

8. Distinguish between configuration and confirmation with examples.
9. Discuss the various conformational isomers of cyclohexane.
10. Write in detail about the methods of synthesis and chemical reactions of pyrazole.
11. Write the mechanism of oppenauer - oxidation reaction.
12. Explain any two reactions of chiral molecules.
13. Write the method of synthesis and chemical reactions of Thiazole.
14. Explain the sequence rule for R S system of nomenclature of optical isomers.

II/IV B. PHARMACY DEGREE EXAMINATIONS, OCT / NOV - 2023**Fourth Semester****MEDICINAL CHEMISTRY I - THEORY**Time: **Three Hours**

Maximum : 75 Marks

SECTION - A**Answer any FIVE Questions.****5x10 = 50 M**

1. Explain the principles of drug metabolism and write a note on factors affecting drug metabolism.
2. Classify adrenergic antagonists with suitable example from each class along with structure and specific uses. Write the synthesis of Tolazoline.
3. Write the SAR of benzodiazepines. Outline the synthesis of diazepam.
4. Classify NSAIDS with suitable example from each class. Write the synthesis of Ibuprofen.
5. Write the synthesis of procyclidine hydrochloride. Discuss its mechanism of action, uses and possible side effects.
6. Classify barbiturates based on duration of action with suitable examples. Write the synthesis of barbital.
7. What are Narcotic antagonists? Write the structure, uses and demerits of any two narcotic antagonists.

SECTION - B**Answer any FIVE Questions.****5x5 = 25 M**

8. What is Phase-I metabolism? Explain reductive and hydrolytic metabolisms with examples.
9. Write the mechanism of action of cholinesterase inhibitors. Give two structural examples each for reversible and irreversible type.
10. Give an account of Solanaceous alkaloids with structural examples. Write the synthesis of Ipratropium bromide.
11. Discuss the SAR of phenothiazine analogues used as tranquilizers.
12. Explain the role of hydrogen bonding and protein binding on drug action.
13. Discuss in detail about SAR of cholinergic agonists.
14. Define and classify NSAIDS with example. Give the structure of one drug from each class.

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Fourth Semester

PHYSICAL PHARMACEUTICS II - THEORY

Time: Three Hours

Maximum: 75 Marks

SECTION - A

Answer any FIVE Questions.

5x10 = 50 M

1. Briefly explain the effect of electrolytes, coacervation on colloids.
2. Explain the Newtonian and Non-Newtonian systems with suitable plots.
3. Explain the interfacial properties of suspended particles.
4. What is specific surface? What are the methods for determining surface area?
5. Explain in detail about the accelerated stability testing for pharmaceutical dosage form.
6. What are the rheological properties of emulsions? Explain.
7. Discuss briefly the derived properties and flow properties of powders.

SECTION - B

Answer any FIVE Questions.

5x5 = 25 M

8. Discuss how the electrolytes effects the colloidal system.
9. Briefly explain the Heckel's equation and write its significance in deformation of solids.
10. Write the differences between emulsions and suspensions.
11. Discuss about the packing arrangement of powders.
12. How the photolytic degradation takes place? Write its preventive measures.
13. Explain sedimentation method and coulter-counter method for particle size determination.
14. What are the chemical factors influencing the chemical degradation of pharmaceutical product?

Fourth Semester

PHARMACOLOGY I - THEORY

Time: Three Hours

Maximum: 75 Marks

SECTION - A

Answer any FIVE Questions.

5x10 = 50 M

1. Describe in detail about the metabolism of drugs.
2. Explain the factors modifying drug action.
3. Write in detail about the pharmacology of Local Anaesthetics.
4. What is Parkinson's disease? Classify anti-Parkinsonian drugs. Write the mechanism of action, adverse effects and use of Levodopa.
5. What are Sympathomimetics? Write the pharmacology of Acetylcholine in detail.
6. Write about Neurohumoral transmission in CNS.
7. Define Epilepsy. Classify anti-epileptic drugs. Write the pharmacology of phenytoin.

SECTION - B

Answer any FIVE Questions.

5x5 = 25 M

8. Define pharmacology. Write about the different sources of drugs.
9. Define the following terms :
 - a) Agonist b) Antagonist c) Drug addiction d) Drug dependence e) Drug allergy.
10. Write about Dose Response relationship.
11. Mention the different functions of ANS and also write about its organization.
12. Make a note on Skeletal Muscle relaxants.
13. Write about the different receptors of serotonin.
14. Write about opioid analgesics.

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Fourth Semester

PHARMACOGNOSY AND PHYTOCHEMISTRY I - THEORY

Time: **Three Hours**

Maximum: 75 Marks

SECTION - A

Answer any FIVE Questions.

5x10 = 50 M

1. What are the sources of drugs with examples. Explain about taxonomical and pharmacological classification of drugs.
2. Write a note on plant hormones and their applications.
3. Explain the applications of plant tissue culture in pharmacognosy.
4. a) Write about ayurvedic system of medicine along with its theory and principle.
b) Define and classify Resins with examples.
5. Write the biological source, chemical nature, identification tests and uses of cotton and Hemp.
6. What are Lipids. Add a note on pharmacognosy of chaulmoogra oil.
7. Write about pharmacognosy of Acacia and Honey.

SECTION - B

Answer any FIVE Questions.

5x5 = 25 M

8. Define glycosides. Write classification with examples and identification tests.
9. Write a note on teratogens and natural allergens with examples.
10. Write about different methods of adulterants with examples.
11. Explain briefly on edible vaccines with examples.
12. Describe about Flavonoids and Resins.
13. Write about Lycopodium spore method.
14. Differentiate between organised and unorganised drugs.