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II/IV B. PHARMACY (REGULAR) DEGREE EXAMINATIONS, SEPTEMBER – 2025**FOURTH SEMESTER****PHARMACEUTICAL ORGANIC CHEMISTRY III – THEORY**

Time: 3 Hours

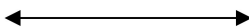
Maximum : 75 Marks

SECTION – A**Answer any FIVE of the following questions.****Each question carries “TEN” marks. 5 x 10 = 50 M**

01. Discuss the concepts of optical activity, enantiomerism, diastereomerism, meso compounds with suitable example.
02. Write the nomenclature of geometrical isomers with reference to Cis-Trans, E-Z and Syn-Anti Systems.
03. Write the methods of synthesis and chemical reactions of pyrrole. Compare and explain its aromaticity with furan and thiophene.
04. Discuss in detail about various conformational isomers of n-butane.
05. Explain the mechanism involved in Oppenauer-oxidation reaction.
06. Mention the methods used for the resolution of racemic mixture and explain any two reactions of chiral molecules.
07. Explain Fischer-Indolesynthesis, give its mechanism and applications.

SECTION – B**Answer any FIVE of the following questions.****Each question carries “FIVE” marks. 5 x 5 = 25 M**

08. Discuss the various conformational isomers of cyclohexane.
09. Briefly explain elements of symmetry.
10. Describe in detail about Clemmensen reduction.
11. Write the method of synthesis and chemical reactions of Thiazole.
12. Outline two methods of synthesis and chemical reactions of oxazole.
13. Explain in detail about elements of symmetry by giving examples.
14. Explain enantiomers and diastereomers with suitable examples. How do they differ from each other?



II/IV B. PHARMACY (REGULAR) DEGREE EXAMINATIONS, SEPTEMBER – 2025**FOURTH SEMESTER****MEDICINAL CHEMISTRY I – THEORY**

Time: 3 Hours

Maximum : 75 Marks

SECTION – A**Answer any FIVE of the following questions.****Each question carries “TEN” marks.****5 x 10 = 50 M**

01. Write is Phase-I metabolism? Explain reductive and hydrolytic metabolisms with examples.
02. Define adrenergic agents, classify and write SAR of adrenergic agents and give the synthesis of Phenylephrine.
03. Write the SAR of benzodiazepines. Outline the synthesis of diazepam.
04. Classify NSAIDS with suitable example from each class. Write the synthesis of Ibuprofen.
05. Write the synthesis of procyclidine hydrochloride. Discuss its mechanism of action, uses and possible side effects.
06. Explain the SAR of Morphine with respect to peripheral modification. Write the synthesis of Fentanyl citrate.
07. Define anti-psychotic drugs. Write the structure of any four drugs to treat the same from different classes. Outline the synthesis of chlorpromazine hydrochloride.

SECTION – B**Answer any FIVE of the following questions.****Each question carries “FIVE” marks.****5 x 5 = 25 M**

08. Define biotransformation. What is its importance? Write the sites of biotransformation.
09. Define and classify cholinergic agents. Give the synthesis of carbachol.
10. Discuss the role of ionization and solubility in drug action.
11. Discuss the SAR of phenothiazine analogues used as tranquilizers.
12. Explain the role of hydrogen bonding and protein binding on drug action.
13. Write the mechanism of action of cholinesterase inhibitors. Give two structural examples each for reversible and irreversible type.
14. Write the structure, uses and their serious side effects of :
 - a) Indomethacin b) Ketorolac c) Naproxen.

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II/IV B. PHARMACY (REGULAR) DEGREE EXAMINATIONS, SEPTEMBER – 2025**FOURTH SEMESTER****PHYSICAL PHARMACEUTICS II – THEORY**

Time: 3 Hours

Maximum : 75 Marks

SECTION – A**Answer any FIVE of the following questions.****Each question carries “TEN” marks.****5 x 10 = 50 M**

01. Define first order reaction with examples. Deduce an equation for the determination of rate constant, half-life and shelf-life for first order reaction kinetics.
02. With the help of neat diagram explain the working, principle, advantages and disadvantages of any two rotational viscometers.
03. Discuss formulation parameters of suspension.
04. Explain in detail the measurement of interfacial tension properties.
05. Discuss the electrical properties and kinetic properties of colloids.
06. Define and explain non Newtonian flow of liquids.
07. Explain different purification methods and protection of colloids.

SECTION – B**Answer any FIVE of the following questions.****Each question carries “FIVE” marks.****5 x 5 = 25 M**

08. Explain the preventive measures for chemical degradation due to hydrolysis.
09. Explain Heckel equation and elastic modulus.
10. Explain the setting in suspensions.
11. Write a note on surface active agents.
12. Classify dispersed systems and write their general characteristics.
13. Write the difference between micro emulsion and multiple emulsion.
14. Write a note on HLB scale.



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II/IV B. PHARMACY (REGULAR) DEGREE EXAMINATIONS, SEPTEMBER – 2025**FOURTH SEMESTER****PHARMACOLOGY I – THEORY**

Time: 3 Hours

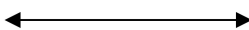
Maximum : 75 Marks

SECTION – A**Answer any FIVE of the following questions.****Each question carries “TEN” marks.****5 x 10 = 50 M**

01. Explain about different routes of drug administration.
02. Describe the neurohumoral transmission with examples.
03. What are types of receptors? Explain in detail G-protein coupled receptors and ion channel receptor.
04. What are parasympathomimetics? Classify parasympathomimetics. Explain in detail any one parasympathomimetics.
05. Describe signal transduction mechanism. Explain in detail regulation of receptor and JAK/STAT binding receptor.
06. Write the principle and mechanism of drug action.
07. Classify antipsychotic drugs and write the pharmacology of chlorpromazine.

SECTION – B**Answer any FIVE of the following questions.****Each question carries “FIVE” marks.****5 x 5 = 25 M**

08. Write in brief about anti anxiety agents.
09. Write a note on L-dopa as an anti-parkinsons agents.
10. Write about the pharmacology of succinylcholine.
11. Write in brief about adverse reactions of the drug.
12. What are the different steps involved in drug discovery?
13. Explain about drug tolerance.
14. How the receptors regulate the transcription factors?



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II/IV B. PHARMACY (REGULAR) DEGREE EXAMINATIONS, SEPTEMBER – 2025**FOURTH SEMESTER****PHARMACOGNOSY AND PHYTOCHEMISTRY I – THEORY**

Time: 3 Hours

Maximum : 75 Marks

SECTION – A**Answer any FIVE of the following questions.****Each question carries “TEN” marks.****5 x 10 = 50 M**

01. What are sources of crude drugs? Explain about different sources of crude drugs in detail.
02. Write in detail about cultivation and collection of drugs of natural origin.
03. Explain about nutrition requirements used in plant tissue culture. Write its applications in the field of Pharmacognosy.
04. What are secondary metabolites? Write the classification and properties of alkaloids.
05. Explain in detail about Hallucinogens and natural allergens.
06. Define and classify volatile oils along with their physicochemical properties.
07. Explain various methods of Adulteration and detection of adulterants in crude drugs.

SECTION – B**Answer any FIVE of the following questions.****Each question carries “FIVE” marks.****5 x 5 = 25 M**

08. Mention the scope and development of Pharmacognosy.
09. Write about collection, processing and storage of crude drugs of natural origin.
10. Write a note on hybridization and its applications.
11. Explain in detail about Edible vaccines along with any two examples.
12. What are fibers? Write the biological source, chemical nature and uses of Jute and Hemp.
13. Write the pharmacognostic study of Acacia and Honey.
14. Write a short note on Proteins and Enzymes and explain about Casein.