

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination, September 2024

Subject: Medicinal Chemistry - I

Time: 3 Hours

Max. Marks: 75

PART – A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Define hydrogen bonding and its effect on biological activity of drugs.
2. What is Chelation and write its significance?
3. Write biosynthesis of Catecholamines.
4. Give the structures and uses any two analogues of Beta-adrenergic blockers.
5. Explain the effect of solubility in relation to biological action of drug.
6. Define anti-inflammatory Drugs and give two examples with structures.
7. Give the structure and uses of haloperidol.
8. O-Salicylic acid is more active than p-hydroxybenzoic acid. Why?
9. Define inhalation anaesthetics with examples.
10. Give the structure and uses for Fentanyl citrate and Diclofenac.

PART – B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Define and give the significance of the following physicochemical parameters on biological activity (a) Ionization (b) Optical Isomerism (c) Protein binding
12. (a) Classify parasympathomimetics with examples.
(b) Write SAR and MOA of barbiturates.
13. Write the synthesis, Mechanism of action and uses of
(a) chlorpromazine hydrochloride (b) Procyllidine (c) Methadone (d) Mefenamic acid

PART – C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Explain the significance and determination methods of partition coefficient.
15. Write the importance of Bio -isosterism in drug design.
16. Write the SAR and mechanism of action of Morphine analogues.
17. Explain in detail about SAR of Benzodiazepines.
18. Give the synthesis and uses of Neostigmine and Carbamazepine.
19. Write a short note on Phenothiazines.
20. Explain the role of cytochrome P 450 enzyme in drug Metabolism.
21. Give the synthesis and MOA of Phenytoin and Dicyclomine hydrochloride.
22. Give the structure, Mechanism of action and uses of (a) Ibuprofen (b) Paracetamol.

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination, September 2024

Subject: Physical Pharmaceutics-II

Time: 3 Hours

Max. Marks: 75

PART - A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Classify Disperse systems.
2. What is Nernst potential?
3. Define Newton's law.
4. What are Non-Newtonian systems?
5. What is sedimentation volume and degree of flocculation?
6. Differentiate micro emulsion and multiple emulsions.
7. What is angle of repose and mention its significance.
8. Write any three applications of micrometrics.
9. List the physical factors affecting degradation of drug product.
10. How do you determine order of a reaction?

PART - B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Explain Accelerated stability studies and determination of expiry date.
12. Describe formulation of flocculated and deflocculated suspensions.
13. Explain different viscometers used in determination of viscosity. Their benefits and limitations.

PART - C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Explain the effect of electrolytes on colloid dispersions.
15. Write the optical properties of colloid.
16. Describe the significance of Heckel equation.
17. Explain Plastic, Pseudoplastic and Dilatant flow with examples.
18. Write a note on theories of emulsification.
19. Write a note on packing arrangements and densities.
20. Explain methods for determining surface area of particle.
21. Explain decomposition by Hydrolysis and how do you prevent it.
22. Describe the factors affecting stability of drug product.

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination, September 2024

Subject: Pharmaceutical Organic Chemistry-III

Time: 3 Hours

Max. Marks: 75

PART - A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Why Pyridine is more basic than Pyrrole.
2. What is optical activity and give its significances.
3. Give any two applications of Lithium Aluminium hydride.
4. Draw the structures and uses of Pyrazole and Pyrimidine.
5. Define Birch reduction and give the example.
6. Mention any two reactions of Thiophene.
7. Write the structures and medicinal uses of Isoxazole and Thiazole.
8. What is the reason for electrophilic substitution at 2nd position in Pyrrole.
9. Draw the structures of Acridine and Indole.
10. Draw the structure and medicinal uses of Purine.

PART - B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Explain the mechanisms and applications of following reactions.
(a) Beckmann rearrangement (b) Oppenauer oxidation.
12. Write any three synthesis, reactions and medicinal uses of Pyrazole and Oxazole.
13. Define racemic mixture. Explain the various methods of resolution of racemic mixture.

PART - C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Write the mechanism involved in Wolf -kishner rearrangement.
15. Write any three reactions and uses of Acridine.
16. Outline the method of preparation of Quinoline and Isoquinoline.
17. Compare and contrast the acidity of Pyridine and basicity of Pyrrole.
18. Explain the relative aromaticity and reactivity of Pyrrole, Furan and Thiophene.
19. Explain Fisher Indole synthesis.
20. Write a note on Atropisomerism.
21. Describe the mechanism of Clemmenson reduction and mention its applications.
22. Explain stereospecific and Stereoselective reactions with examples.

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination, October 2024

Subject: Pharmacognosy & Phytochemistry-I

Time: 3 Hours

Max. Marks: 75

PART - A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. What are gums and mucilages give examples
2. Write the basic concept of ayurveda
3. Write the chemical constituents and uses of woolfat
4. Define glycosides and give examples
5. Write sources and uses of bromelain and Serratiopeptidase.
6. What is polyploidy and write its application in cultivation of medicinal plants
7. What are resins give examples
8. Write the source of honey and detection of adulteration of honey
9. Define alkaloids write their identification tests
10. Write the chemical tests for acacia and agar

PART - B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. (a) Explain the role of pharmacognosy in homeopathic system of medicine
(b) Write pharmacognostic note on Tragacanth.
12. What are various methods of classification of crude drugs .Write about morphological and chemical classification of crude drugs.
13. What is drug evaluation? Explain about physical evaluation of crude drugs

PART - C

Note: Answer any seven questions

(7 x 5 = 35 Marks)

14. Write the applications of plant harmones.
15. Define and classify Tannins. Write their identification tests.
16. Write a note on any two plant fibre drugs.
17. What are leaf constants write their importance?
18. How do waxes differ from fats? Write a pharmacognostic note on Bees wax.
19. Write a note on edible vaccines.
20. Discuss the nutritional requirements for culturing cells/tissues in Plant Tissue Culture.
21. Write the advantages & disadvantages of cultivation of medicinal plants.
22. Explain about lycopodium spore method.

FACULTY OF PHARMACY

B. Pharmacy IV-Semester (PCI) (Backlog) Examination, April 2024

Subject: Pharmacognosy and Phytochemistry-I

Time: 3 Hours

Max.Marks:75

PART - A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Define and classify resins with examples.
2. Write source and active constituents of any two dried extracts.
3. What are organoleptic characters? Write description of acacia.
4. Enlist ash values of significance in the evaluation of crude drugs.
5. Write physiological effects of auxins.
6. What is calibration?
7. Write the basic concept of Chinese systems of medicine.
8. Write the procedure and use of shinoda test and borntrager's test.
9. Write the source and uses of beeswax and jute.
10. Exemplify fibers. Write features and tests for plant fibers.

PART - B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Discuss about various methods of classification of crude drugs.
12. Write about (i) Extraction methods for fixed oils
(ii) Alkaloids
13. Write about advantages & disadvantages of cultivation of medicinal plants.

PART - C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Write in detail about leaf constants.
15. Discuss factors affecting cultivation of medicinal plants.
16. Write pharmacognosy of Gelatin.
17. Write about edible vaccines.
18. Write a note on plant allergens.
19. Write biological source, active constituents of chalmogra oil and agar.
20. Define glycosides and classify with examples.
21. Write about plant hormones & their applications.
22. Write the role and importance of pharmacognosy in Ayurveda system of medicine.

FACULTY OF PHARMACY
B. Pharmacy IV - Semester (PCI) (Backlog) Examination, April 2024
Subject: Physical Pharmaceutics-II

Time: 3 Hours

Max. Marks: 75

PART-A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. What is coacervation?
2. Define yield point and mention its importance in rheology.
3. What is dilatant flow and give an example.
4. What is Ostwald ripening and its effect on the stability of dispersed systems?
5. Write the importance of stress and strain diagrams.
6. What is flocculated suspension?
7. Mention characteristics and applications of microemulsion.
8. What is sedimentation volume and its applications?
9. What is % porosity and mention its significance.
10. Write kinetic equation for second order reaction.

PART-B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Describe different methods of determining viscosity.
12. Explain the derived properties of powder and describe a method to determine surface area by adsorption method.
13. What is accelerated stability testing and its use in determination of expiration date?

PART-C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Explain optical properties of colloids.
15. Classify colloids. Write the effect of electrolytes on colloids.
16. Write the Heckel equations and mention their importance.
17. Describe the formulation of emulsions by HLB method.
18. Explain the preservation of emulsions.
19. Write the working principle of the counter counter with the help of a diagram.
20. What is specific and general acid base catalysis?
21. Explain the equations applicable to pseudo zero order reactions.
22. The first order rate constant of a drug is 0.003 per month. Calculate the shelf-life and half-life in years with help of relevant equations.

FACULTY OF PHARMACY
B. Pharmacy IV - Semester (PCI) (Backlog) Examination, March 2024
Subject: Medicinal Chemistry – I

Time: 3 Hours

Max. Marks: 75

PART-A

Note: Answer all the questions.

(10 x 2 = 20 marks)

1. What is Chelation? Write its significance.
2. Ortho salicylic acid is more active than para hydroxy benzoic acid. Why?
3. Classify cholinergic receptors and write their distribution.
4. Give the uses of Isoproterenol & Phentolamine.
5. Give the uses of phenytoin and clonazepam.
6. Outline the biosynthesis of Acetyl choline
7. Define Sedatives? Give two examples
8. Write the structures of any two barbiturate drugs & their uses.
9. Give the synthesis of Ibuprofen.
10. Define narcotic antagonists? Give two examples

PART-B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Explain how the following physicochemical properties influence the biological action of a drug molecule
(i) Bio isosterism (ii) Chelation (iii) Protein binding (iv) Partition coefficient
12. Define, classify cholinergic agonists with examples and discuss the mode of action of acetyl cholinesterase inhibitors.
13. Define NSAIDs with minimum two structural examples in each class and write MOA, uses & SAR of morphine analogues.

PART-C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Discuss Phase-I reactions.
15. Explain the role of cytochrome 450 enzyme in drug Metabolism
16. Write a note on alpha adrenergic blockers
17. Write a note on Neuromuscular blocking agents
18. Write the classification & SAR of parasympathomimetics agents.
19. Give the structures, MOA and uses of Methantheline, Clonidine.
20. Write the structures and uses of a) Diazepam b) Triclofos Sodium.
21. Classify antipsychotics with examples.
22. Write the synthesis and uses of Halothane & Ketamine.

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Backlog) Examination, April 2024

Subject: Pharmacology - I

Time: 3 Hours

Max. Marks: 75

PART-A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Discuss the concept of first pass metabolism with examples.
2. Differentiate enzyme induction and enzyme inhibition.
3. Mention the functions of receptors.
4. Discuss the differences between general anesthetics and local anesthetics.
5. Write a note on co-transmission.
6. Describe the stages of general anesthesia.
7. Define synergism. Classify with examples.
8. Mention the uses of disulfiram.
9. Mention the clinical uses of naltrexone.
10. Define drug abuse. Give examples.

PART-B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Define Receptor. Classify receptors and discuss about signal transduction mechanism of transmembrane enzyme linked receptors.
12. (a) Write the pharmacological actions of adrenaline.
(b) Explain the various therapeutic uses and adverse reactions of β -adrenergic blockers.
13. What is Alzheimer's disease? Classify drugs used in Alzheimer's disease and explain the mechanism of action, adverse effects and therapeutic uses of cholinergic activators.

PART-C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Discuss the mechanism of action of local anesthetics.
15. Write a note on various phases of clinical trials.
16. Explain about the factors modifying drug action.
17. Compare the merits and demerits of oral and parenteral routes of administration.
18. Explain the pharmacological actions of adrenaline.
19. Define myasthenia gravis. Enlist the drugs used in its treatment.
20. Explain the pharmacology of hydantoins.
21. Discuss the mechanism of action and uses of morphine.
22. Classify sedative-hypnotics with examples. Explain the mechanism of action, adverse effects and uses of benzodiazepines.

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