Code No:H-8139/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV - Semester (Backlog) Examination, February/March 2026

Subject: Medicinal Chemistry-I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define metabolism and list out factors affecting metabolism.
2. Give the structure and uses of Phenylephrine.
3. Write the synthesis of catecholamines.
4. What is glucuronidation reaction and write its significance.
5. Define ultra short acting Barbiturates and give two structural examples.
6. Classify cholinergic receptors and write their distribution.
7. Mention various physicochemical properties which affect the biological action. Write two examples.
8. Define parasympatholytics and write two structural examples.
9. Give the structures and uses any two analogues of Alpha-adrenergic blockers.
10. Give the synthesis of Carbachol.

PART - B

Note: Answer any two questions. **(2 x 10= 20 Marks)**

11. Summarize about various physicochemical factors that affect drug action.
12. a) Write the synthesis of Diazepam.
    b) Classify sedatives and hypnotics and write the SAR of Benzodiazepines.
13. Define and classify NSAIDS. Give the synthesis and mechanism of action of Ibuprofen.

PART C

Note: Answer any seven questions. **(7 x 5= 35 Marks)**

14. Stereochemistry contributes towards biological action of Drug. Explain with examples.
15. Give the structures of solanaceous alkaloids and discuss their pharmacological actions
16. Define and classify sympathomimetics and write the synthesis of Phenytoin.
17. Classify cholinesterase Inhibitors with examples and write their SAR.
18. Write the synthesis and uses of Dicyclomine and Ipratropium bromide.
19. Give the Synthesis of Propranolol and discuss the SAR of beta blockers.
20. Classify anticonvulsants and write SAR of Phenothiazines.
21. What are Narcotic agonists and antagonists? Explain their pharmacological action.
22. Give the structure and Mechanism of Action and uses of a) Indomethacin
    b) Sulindac.

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Code No: H-8140/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV - Semester (Backlog) Examination, February/March 2026

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 Brownian motion and write its importance?
2. Define Rheology and write its applications.
3. What is thixotropy and give an example.
4. What is Nernst potential in dispersed systems?
5. Define pseudo plastic flow with diagram.
6. What is dialysis and mention its importance?
7. Mention characteristics and applications of multiple emulsions.
8. What is degree of flocculation and write its applications.
9. What is bulk density and its significance?
10. Mention order of reactions and its applications.

PART B

Note: Answer any two questions. **(2 x 10= 20 Marks)**

11. Explain the electrical and optical properties of colloids.
12. Explain different methods of determining particle size.
13. Describe physical and chemical factors affecting drug degradation.

PART C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Classify colloids. Write the effect of electrolytes on colloids.
15. Write the Heckel equations and mention their importance.
16. Describe the formulation of deflocculated and flocculated suspension.
17. Explain factors improving physical stability of emulsions.
18. Write the working principle of cup and bob viscometers with the help of a diagram.
19. Describe a method to determine surface area.
20. Explain the equations applicable to pseudo zero order reactions.
21. The first order rate constant of a drug is 0.033 per annum. Calculate the shelf-life and half-life in months with help of relevant equations.
22. Explain the requirements of accelerated stability testing.

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Code No: H-8141/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV-Semester (Backlog) Examination, February/March 2026

Subject: Pharmacology - I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate enzyme induction and enzyme inhibition.
2. Discuss the concept of first pass metabolism with examples.
3. Mention the functions of receptors.
4. Define therapeutic index. Write the examples of narrow therapeutic index drugs.
5. Discuss the differences between general anesthetics and local anesthetics.
6. Describe the stages of general anesthesia.
7. Mention the uses of disulfiram.
8. Differentiate competitive and non competitive antagonism.
9. Define tachyphylaxis. Give examples.
10. Mention the clinical uses of naltrexone.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. 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.
12. Define Receptor. Classify receptors and discuss about signal transduction mechanism of transmembrane enzyme linked receptors.
13. a) Write the pharmacological actions of adrenaline.
    b) Explain the various therapeutic uses and adverse reactions of β-adrenergic blockers.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Compare the merits and demerits of oral and parenteral routes of administration.
15. Differentiate enzyme induction and enzyme inhibition.
16. Explain about the factors modifying drug action.
17. Explain the pharmacological actions of Acetylcholine.
18. Classify antiParkinson's drugs with examples. Write the mechanism of action and adverse effects of dopamine precursor.
19. Define myasthenia gravis. Enlist the drugs used in its treatment.
20. Explain the pharmacology of hydantoins.
21. Classify sedative-hypnotics with examples. Explain the mechanism of action, adverse effects and uses of benzodiazepines.
22. Discuss the mechanism of action and uses of morphine.

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Code No: H-8141/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV-Semester (Backlog) Examination, February/March 2026

Subject: Pharmacology - I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate enzyme induction and enzyme inhibition.
2. Discuss the concept of first pass metabolism with examples.
3. Mention the functions of receptors.
4. Define therapeutic index. Write the examples of narrow therapeutic index drugs.
5. Discuss the differences between general anesthetics and local anesthetics.
6. Describe the stages of general anesthesia.
7. Mention the uses of disulfiram.
8. Differentiate competitive and non competitive antagonism.
9. Define tachyphylaxis. Give examples.
10. Mention the clinical uses of naltrexone.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. 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.
12. Define Receptor. Classify receptors and discuss about signal transduction mechanism of transmembrane enzyme linked receptors.
13. a) Write the pharmacological actions of adrenaline.
    b) Explain the various therapeutic uses and adverse reactions of β-adrenergic blockers.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Compare the merits and demerits of oral and parenteral routes of administration.
15. Differentiate enzyme induction and enzyme inhibition.
16. Explain about the factors modifying drug action.
17. Explain the pharmacological actions of Acetylcholine.
18. Classify antiParkinson's drugs with examples. Write the mechanism of action and adverse effects of dopamine precursor.
19. Define myasthenia gravis. Enlist the drugs used in its treatment.
20. Explain the pharmacology of hydantoins.
21. Classify sedative-hypnotics with examples. Explain the mechanism of action, adverse effects and uses of benzodiazepines.
22. Discuss the mechanism of action and uses of morphine.

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Code No: H-8141/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV-Semester (Backlog) Examination, February/March 2026

Subject: Pharmacology - I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate enzyme induction and enzyme inhibition.
2. Discuss the concept of first pass metabolism with examples.
3. Mention the functions of receptors.
4. Define therapeutic index. Write the examples of narrow therapeutic index drugs.
5. Discuss the differences between general anesthetics and local anesthetics.
6. Describe the stages of general anesthesia.
7. Mention the uses of disulfiram.
8. Differentiate competitive and non competitive antagonism.
9. Define tachyphylaxis. Give examples.
10. Mention the clinical uses of naltrexone.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. 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.
12. Define Receptor. Classify receptors and discuss about signal transduction mechanism of transmembrane enzyme linked receptors.
13. a) Write the pharmacological actions of adrenaline.
    b) Explain the various therapeutic uses and adverse reactions of β-adrenergic blockers.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Compare the merits and demerits of oral and parenteral routes of administration.
15. Discuss about drug addiction, abuse & tolerance.
16. Explain about the factors modifying drug action.
17. Explain the pharmacological actions of Acetylcholine.
18. Classify antiParkinson's drugs with examples. Write the mechanism of action and adverse effects of dopamine precursor.
19. Define myasthenia gravis. Enlist the drugs used in its treatment.
20. Explain the pharmacology of hydantoins.
21. Classify sedative-hypnotics with examples. Explain the mechanism of action, adverse effects and uses of benzodiazepines.
22. Discuss the mechanism of action and uses of morphine.

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Code No: H-8141/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV-Semester (Backlog) Examination, February/March 2026

Subject: Pharmacology - I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate enzyme induction and enzyme inhibition.
2. Discuss the concept of first pass metabolism with examples.
3. Mention the functions of receptors.
4. Define therapeutic index. Write the examples of narrow therapeutic index drugs.
5. Discuss the differences between general anesthetics and local anesthetics.
6. Describe the stages of general anesthesia.
7. Mention the uses of disulfiram.
8. Differentiate competitive and non competitive antagonism.
9. Define tachyphylaxis. Give examples.
10. Mention the clinical uses of naltrexone.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. 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.
12. Define Receptor. Classify receptors and discuss about signal transduction mechanism of transmembrane enzyme linked receptors.
13. a) Write the pharmacological actions of adrenaline.
    b) Explain the various therapeutic uses and adverse reactions of β-adrenergic blockers.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Compare the merits and demerits of oral and parenteral routes of administration.
15. Discuss about drug addiction, abuse & tolerance.
16. Explain about the factors modifying drug action.
17. Explain the pharmacological actions of Acetylcholine.
18. Classify antiParkinson's drugs with examples. Write the mechanism of action and adverse effects of dopamine precursor.
19. Define myasthenia gravis. Enlist the drugs used in its treatment.
20. Explain the pharmacology of hydantoins.
21. Classify sedative-hypnotics with examples. Explain the mechanism of action, adverse effects and uses of benzodiazepines.
22. Discuss the mechanism of action and uses of morphine.

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Code No: H-8142/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV - Semester (Backlog) Examination, Feb/March 2026

Subject: Pharmacognosy and Phytochemistry-I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Exemplify plant hallucinogens. Write about Indian hemp.
2. Write about any two animal derived crude drugs.
3. Mention various types of cultures in PTC (Plant Tissue Culture).
4. Write 'Murexide test' and 'Shinoda test.
5. Write about adulteration of honey and its detection.
6. What are auxins? Write their physiological functions.
7. Define 'glycosides'. Classify giving examples.
8. Write the source and uses of Honey and chaulmoogra oil.
9. Write source and uses of bromolein.
10. Explain any two methods to improve soil fertility.

PART B

Note: Answer any Two questions. **(2 x 10= 20 Marks)**

11. Discuss about various methods of classification of crude drugs.
12. a) Write a detailed Pharmacognostic note on Cotton.
    b) Discuss the advantages of cultivation of medicinal plants.
13. Define 'Drug Evaluation'. Write a note on (i) Determination of Moisture
    (ii) Morphological evaluation.

PART C

Note: Answer any Seven questions. **(7 x 5= 35 Marks)**

14. Write a brief note on novel medicinal agents from marine sources
15. Write the applications of plant tissue culture
16. Explain about lycopodium spore method.
17. Define and classify alkaloids and write the identification tests for alkaloids
18. Explain influence of living and non- living factors in storage of crude drugs.
19. Explain the principles of Homeopathy.
20. Write Pharmacognostic note on Tragacanth.
21. Define leaf constants. Discuss the procedure to determine palisade ratio.
22. Elaborate the applications of plant growth hormones in the cultivation of medicinal plants.

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Code No: H-8138/PCI

FACULTY OF PHARMACY

B.Pharmacy (PCI) - IV Semester (Backlog) Examinations, Feb/March 2026

Subject: Pharmaceutical Organic Chemistry-III

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Write about any two elements of symmetry?
2. Define RS system of configuration?
3. Write cis trans isomerism with examples?
4. Draw the conformations of butane?
5. Write the chemical reactions of pyrrole?
6. Define and classify heterocyclic compounds with examples?
7. Explain why pyridine is more basic than pyrrole?
8. Give the structure and medicinal uses of oxazole and thiazole?
9. Write any two application of $LiAlH_4$?
10. Give any two application of Clemmenson reduction?

PART B

Note: Answer any Two questions. **(2 x 10= 20 Marks)**

11. Define racemic mixture. Explain the various methods of resolution of racemic mixture?
12. Write any two synthesis, reactions and medicinal uses of indole and acridine?
13. Describe the mechanism and applications of Wolf-Kishner reduction and Oppenauer-oxidation reactions?

PART C

Note: Answer any seven questions. **(7 x 5= 35 Marks)**

14. Outline the method of preparation of Quinoline and Isoquinoline.?
15. Write a note on Atropisomerism?
16. Write a note on asymmetric synthesis?
17. Write the synthesis of pyrazol and imidazole of oxazole and medicinal uses of derivative compounds.
18. Describe the mechanism & its applications of Beckmann rearrangement?
19. Explain the relative aromaticity and reactivity of Pyrole, Furan of Thiophene.?
20. Write any three chemical reactions of pyridine?
21. Write the reaction and mechanism involved in Schmidt rearrangement?
22. Give any two methods of preparation and chemical reactions of thiophene?

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Code No: G-13237/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV – Semester (Main & Backlog) Examination, September 2025

Subject: Medicinal Chemistry - I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define and classify bioisosterism.
2. Define partition coefficient and give its significance.
3. Write the catabolism of catecholamines.
4. What is glucuronidation reaction and write its significance?
5. Outline the synthesis of Phenylephrine.
6. Classify Adrenergic receptors and write their distribution.
7. Write about Pralidoxime.
8. Classify general anaesthetics and write examples.
9. Give the structures and uses any two analogues of Alpha-adrenergic blockers.
10. Give the structure and uses of Flouro buterophenones.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What is drug metabolism? Discuss in detail phase I reactions involved in the drug metabolism.

12. (a) Write in detail about reversible cholinesterase inhibitors.
    (b) Classify sedatives and hypnotics and write the SAR of Benzodiazepines.

13. Write the synthesis Mechanism of Action and uses of
    (a) Ketamine hydrochloride (b) Methadone hydrochloride
    (c) Ibuprofen (d) Fentanyl Citrate

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the factors affecting drug metabolism including stereo chemical aspects.
15. Give the structures of solanaceous alkaloids and discuss their pharmacological actions.
16. Write about protein binding of drugs its advantages and disadvantages.
17. Classify cholinolytics agents with examples and write their SAR.
18. Write the synthesis and uses of Dicyclomine and Ipratropium bromide.
19. Write the synthesis and MOA of Salbutamol & Tolazoline.
20. Classify antipsychotics and write SAR of Phenothiazines.
21. What are Narcotic agonists and antagonists? Explain their pharmacological action.
22. Give the structure Mechanism of Action and uses of (a) Carvedilol (b) Chlordizepoxide.

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Code No. G-13236/PCI

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination, September 2025
Subject: Pharmaceutical Organic Chemistry - III

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Atropisomerism of Biphenyl compounds.
2. Differentiate between Enantiomres and Diastereomers with examples.
3. Define Elements of Symmetry
4. Give the structure and Uses of Pyrrole
5. Draw the structures of Pyrimidine and Oxazole.
6. Define and classify Heterocyclic compounds.
7. Give the reason for Electrophillic substitution at 2nd position in Pyrrole.
8. Discuss the Basicity of Pyridine,
9. Draw the structures of Quinoline and Isoquinoline.
10. Define the terms Mesocompound and Specific rotation

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write the mechanism and applications of any two Metal hydride reductions.
12. a) Define geometrical isomerism and Explain Cis -Trans nomenclature of geometrical isomers with Examples.
    b) Discuss different conformations of Cyclohexane.
13. Write any two synthesis, three reactions and medicinal uses of Imidazole and Thiazole

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Compare and contrast the acidity of Pyrrole and basicity of Pyridine.
15. Write the Metal hydride reactions of Sodium borohydride and Lithium Aluminium hydride.
16. Explain Stereoisomerism in Biphenyl compounds and give the conditions for Optical activity.
17. Write any four synthesis and medicinal uses of Furan.
18. Give a note on Resolution and Explain the RS system of nomenclature of optical activity.
19. Explain the Fisher Indole synthesis.
20. Write about different conformations of Ethane.
21. Give a note on Oppenauer oxidation.
22. Define clemmensen reduction and give its applications.

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Code No: G-13238/PCI

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination, September 2025
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 peptization and mention its applications.
2. Define and classify colloid dispersions.
3. What is plastic and elastic deformation?
4. What are Newtonian systems?
5. Write stokes equation for sedimentation of particles.
6. Write the applications of microemulsions.
7. Define porosity. Write its applications in pharmacy.
8. What is angle of repose? Suggest methods to improve flow properties of granules.
9. What is photolysis and how to prevent it?
10. What is pseudo first order reaction?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Classify colloids and give comparison of their general properties.
12. Define Thixotropy. Add a note on thixotropy in formulation & its importance in pharmacy.
13. Explain different methods of determining particle size.

PART - C

Note: Answer any seven questions **(7 x 5 = 35 Marks)**

14. Describe Electrical properties of colloidal systems.
15. Describe the method of preparation of association colloid.
16. Write the construction and working of capillary viscometers.
17. Explain the interfacial properties of suspensions.
18. Explain physical stability of emulsions and preservation of emulsions.
19. Write different derived properties of powders.
20. Explain methods for determining surface area of particle.
21. Write the stabilization of medicinal agents against oxidation.
22. The initial drug dose is 400 mg. Its concentration is reduced to 380 mg in 18 months. Calculate the zero order constant, half life and shelf life in years.

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Code No: G-13239/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV - Semester (Main & Backlog) Examination, September 2025
Subject: Pharmacology – I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Differentiate enzyme induction and enzyme inhibition.
2. Define prodrug. Give the examples of prodrugs.
3. Define synergism. Classify with examples.
4. Mention the functions of receptors.
5. Write a note on co-transmission.
6. Discuss the differences between general anesthetics and local anesthetics.
7. Mention the uses of disulfiram.
8. Describe the stages of general anesthesia.
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 Parkinsonism. Classify anti-Parkinson's drugs with examples. Write the mechanism of action and therapeutic uses of peripheral decarboxylase inhibitors.
12. (a) Write the pharmacological actions of acetylcholine.
    (b) Explain the various therapeutic uses and adverse reactions of parasympatholytics.
13. Define Receptor. Classify receptors and discuss about signal transduction mechanism of transmembrane enzyme linked receptors.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

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

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Code No. G-13240/PCI

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination,
September 2025
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 adulteration with two examples.
2. Give the list of plant hormones? Write their applications.
3. What are 'bio fertilizers'? Write about any two Biofertilizers.
4. Write sources and uses of Pepsin and Serratiopeptidase.
5. What are flavonoids? Write their identification tests.
6. Define glycosides. Write any two identification tests for glycosides.
7. Write the chemical constituents and uses of woolfat.
8. What is hybridisation and write its application in cultivation of medicinal plants.
9. Write the source and uses of castor oil.
10. Define 'Yin' and 'Yang' concepts of Chinese system of medicine.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Write the applications of plant tissue culture.
12. a) Write a Pharmacognostic note on agar.
    b) Discuss various factors affecting cultivation of medicinal plants.
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 a note on edible vaccines.
15. Define and classify Alkaloids. Write their identification tests.
16. Write the source, chemical constituents and uses of Bees wax and Chaulmoogra oil.
17. Write a note on Lycopodium Spore method.
18. Define Tannins, Classify them by giving examples and write general identification tests for tannins.
19. Write about morphological classification of crude drugs.
20. Explain the role of pharmacognosy in homeopathic system of medicine.
21. Write the advantages & disadvantages of cultivation of medicinal plants.
22. Write a note on Novel medicinal agents from marine source.

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Code No. G-13093/PCI

FACULTY OF PHARMACY

B. Pharmacy (PIC) IV - Semester (Backlog) Examination, March 2025

Subject: Pharmacology - I

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Define Bioavailability. Why the bioavailability of drugs is lower after oral administration.
2. Define prodrug. Give the examples of prodrugs.
3. Define plasma half life. Mention its significance.
4. Mention the uses of pre-anesthetic medication.
5. What is vasomotor reversal of Dale?
6. Enlist the drugs used in glaucoma.
7. What is dose response relationship? What are its advantages?
8. Name inhibitory neurotransmitters present in CNS.
9. What is drug tolerance? Give examples.
10. Mention the therapeutic uses and adverse reactions of benzodiazepines.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. a) Write the pharmacological actions of acetylcholine.
    b) Explain the various therapeutic uses and adverse reactions of parasympatholytics.
12. Define Parkinsonism. Classify anti-Parkinson's drugs with examples.
    Write the mechanism of action and therapeutic uses of peripheral decarboxylase inhibitors.
13. Classify antiepileptic drugs. Explain the mechanism of action, adverse effects and uses of hydantoins and aliphatic carboxylic acids.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain in detail about phase-I biotransformation of drugs with examples.
15. Describe the three major effector pathways through which G-protein coupled receptors function.
16. Discuss about pharmacokinetic drug interactions with suitable examples.
17. Mention the mechanism of action and uses of local anesthetic agents.
18. Classify neuromuscular blockers with examples. Write the mechanism of action, adverse effects and therapeutic uses of curare alkaloids.
19. Write the pharmacological actions of alcohol.
20. Write a note on various phases of clinical trials.
21. Write about the mechanism and stages of general anesthesia.
22. Discuss in detail the pharmacological actions of morphine.

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Code No. G-13090/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV - Semester (Backlog) Examination, March 2025
Subject: Pharmaceutical Organic Chemistry - III

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Draw the conforrmations of Cyclohexane
2. Explain the DL system of Nomenclature.
3. What is the reason for Electrophillic Substitution at 2nd position in Pyrrole.
4. Write the Medicinal uses of Azepines.
5. Define Clemenson reductionand give the example.
6. Mention any two reactions of Thiophene.
7. Define elements of Symmetry
8. Write any two reactions of Acridine.
9. Write any two reactions of Pyrazole.
10. Give the importance of Dakin reaction.

PART – B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Define racemic mixture and Explain the various methods of resolution of racemic mixture.
12. Describe the Mechanism and applications of Following
    a). Beckmann rearrangement b). Oppenauer Oxidation.
13. Write any two Synthetic methods, three reactions and medicinal uses of Furan and Thiazole.

PART – C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain synthesis of Quinoline.
15. Describe stereospecific or stereoselective reactions with examples.
16. Write a note on Asymmetric synthesis
17. Explain the relative Aromaticity and reactivity of Pyrrole, Furan and Thiazole
18. Write the mechanism involved in Wolf -Kishner rearrangement.
19. Define Birch reduction and explain its reactions.
20. Write the different methods of determination of configuration of Geometrical isomers.
21. Write the reactions of Chiral molecules
22. Describe the mechanism of Clemmenson reduction and Mention its applications.

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Code No. G-13092/PCI

FACULTY OF PHARMACY

B. Pharmacy IV - Semester (PCI) (Backlog) Examination, March 2025

Subject: Physical Pharmaceutics-II

Time: 3 Hours **Max. Marks: 75**

PART – A

Note: Answer all the questions. **(10 x 2 = 20 Marks)**

1. Classify colloidal dispersions.
2. What is Zeta potential? Write its importance.
3. Mention the factors influencing viscosity.
4. What is compression and consolidation?
5. List the steps involved in preparation of suspension?
6. What is molarity of reaction?
7. What is phase inversion?
8. Differentiate plastic and elastic behavior of solids?
9. Define angle of repose and mention its significance.
10. What is Hydrolysis and how to prevent it?

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. Explain various methods of determining viscosity.
12. Describe the theories of emulsification and methods to enhance stability of emulsions.
13. Explain derived properties of powder and different methods of determining particle size distribution.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain Kinetic properties of colloids.
15. What are Newtonian systems and explain the concept of dilatant flow with its significance.
16. Explain DLVO theory and mention its significance for making disperse systems.
17. Describe factors influencing settling in suspension.
18. Write the construction and working of coulter counter.
19. Differentiate between flocculated and deflocculated suspensions.
20. Describe drug stabilization from oxidation and photolysis.
21. Compare specific and general acid base catalysis in drug degradation.
22. The initial drug dose is 200 mg. Its concentration is reduced to 190 mg in 24 months. Calculate the zero order constant, half-life and shelf life in years.

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Code No. G-13091/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) IV - Semester (Backlog) Examination, March 2025

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 how it effect drug action.
2. Define partition coefficient and give its significance.
3. Classify cholinergic receptors and their distribution.
4. Differentiate benzodiazepines and Barbiturates.
5. Define parasympathomimetics and write two structural examples.
6. Classify adrenergic receptors and write their distribution.
7. Write the structure and action of Pralidoxime.
8. Classify general anaesthetics and write two structural examples.
9. Give the structures and uses any two analogues of Alpha-adrenergic agonists.
10. Give the synthetic route of Halothane.

PART - B

Note: Answer any two questions. **(2 x 10 = 20 Marks)**

11. What is biotransformation? Explain about principles of drug metabolism including phase I and phase-II pathways.
12. Write the classification, Mechanism of Action, structure activity relationship of Antipsychotics with examples.
13. Write the synthesis Mechanism of Action and uses of a) Ketamine hydrochloride b) Methadone hydrochloride c) Ibuprofen d) Fentanyl Citrate.

PART - C

Note: Answer any seven questions. **(7 x 5 = 35 Marks)**

14. Explain the factors affecting drug metabolism including stereo chemical aspects.
15. Discuss the mechanism of action and SAR of Barbiturates with suitable examples.
16. Describe geometrical isomerism in relation to biological activity.
17. Explain Bioisosterism, its types and their role in drug discovery with suitable examples.
18. Write the synthesis and uses of Carbachol and Ipratropium bromide.
19. Write the synthesis and MOA of Chlorpromazine & Dicyclomine.
20. Classify Sedatives and write SAR of Barbiturates.
21. What are Narcotic agonists and antagonists? Explain SAR of Morphine analogues.
22. Give the structure, Mechanism of Action and uses of (i) Meperidine Hydrochloridel (ii) Valproic acid.

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