Code No: G-13226/PCI

FACULTY OF PHARMACY

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

Subject: Human Anatomy Physiology - II

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

PART – A

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

1. Discuss the structural composition of limbic system.
2. Write the composition and functions of cerebrospinal fluid
3. Write the functions of liver.
4. Describe the different stages of deglutition.
5. Discuss the factors affecting pulmonary ventilation.
6. Differentiate inspiratory reserve volume and expiratory reserve volume.
7. What is glomerulonephritis and nephrotic syndrome?
8. What is micturition? Explain micturition reflex.
9. Enumerate the functions of thyroid hormones.
10. What is gene and explain genetic pattern of inheritance.

PART – B

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

11. Discuss the functions of cerebrum with a neat labeled diagram.
12. Discuss the steps involved in the process of digestion and absorption.
13. Discuss the physiology of urine formation in detail.

PART – C

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

14. Discuss the electrophysiology of neuron.
15. Discuss the process of digestion in small intestine and role of pepsin.
16. Explain the regulation of respiration.
17. Explain the structure and functions of adrenal gland.
18. Explain the metabolic acidosis and alkalosis in detail.
19. Discuss the structure and functions of parathyroid gland.
20. Discuss the structure and functions of male reproductive system with a neat labeled diagram.
21. Discuss the physiology of menustration.
22. Explain tubular reabsorption in detail.

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Code No: G-13227/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) II - Semester (Main & Backlog) Examination, September 2025

Subject: Pharmaceutical Organic Chemistry – I

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

PART - A

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

1. Define position isomerism with examples.
2. Write about Saytzreffs rule
3. Write the structure and IUPAC name of (a) Isopentane (b) Neopentane
4. Give the structure and use of Chlorobutanol.
5. Write the structure and uses of oxalic acid.
6. Write any two qualitative tests for amines
7. Explain the stability of alkene with example.
8. What is esterification? Give reaction.
9. How do you differentiate aldehydes and ketones by chemical test.
10. Give an example of Diel's alder reaction.

PART - B

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

11. Explain the kinetics, mechanism, stereochemistry and reactivity of SN_2 reaction.
12. Explain the mechanism of Benzoin condensation and Cannizzaro reaction.
13. What are addition reactions? Explain the mechanism of electrophilic and free Radical addition reactions of alkenes with the suitable example.

PART - C

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

14. What is hybridization? Write a note on SP^3 hybridization in alkanes.
15. How will you differentiate E_1 and E_2 reactions.
16. Write the note on Markownikoff's rule.
17. Explain geometrical isomerism with examples.
18. Discuss any four general methods of preparation for aliphatic amines.
19. Give any four qualitative tests for alcohol.
20. Why carboxylic acids are acidic in nature? Chloro acetic acid is more acid than acetic acid. Give reason.
21. Explain the reaction and mechanism of Perkin condensation.
22. Write the structure and uses of
    (a) Tetrachloromethane (b) Benzyl alcohol (c) Vanillin
    (d) Acetyl salicylic acid (e) Ethylenediamine

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Code No. G-13228/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) II - Semester (Main & Backlog) Examination, September 2025
Subject: Biochemistry

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

PART – A

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

1. Explain Isoenzymes & allosteric enzymes?
2. Mention types of RNA & their function.
3. Define enthalpy and entropy.
4. Explain in brief G6PD deficiency.
5. Explain the biological significance of ATP and cyclic AMP.
6. What is Albinism and phenylketonuria?
7. Explain the biological significance of vit-D.
8. Explain redox potential.
9. What is atherosclerosis.
10. What is a genetic code?

PART – B

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

11. What are enzymes? Explain its IUB classification? What are the factors affecting enzyme action.
12. Explain about Electron transport chain (ETC) and its mechanism.
13. Write the short notes on
    (i) Mammalian genome (ii) Ketoacidosis (iii) Glycogen storage diseases.

PART – C

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

14. Explain in detail about Michaelis plot.
15. Write in detail about glycolysis pathway and its significance.
16. Explain the process of conversion of cholesterol into bile acids and write its biological significance.
17. Explain β-Oxidation of saturated fatty acid.
18. How the hormones regulate blood glucose levels.
19. Write the synthesis and significance of melatonin.
20. Explain urea cycle in detail.
21. Write about Oxidative phosphorylation with mechanism.
22. Explain the semi conservative model of DNA.

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Code No: G-13230/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) II - Semester (Main & Backlog) Examination, September 2025
Subject: Computer Application in Pharmacy

Time: 2 Hours **Max. Marks: 50**

PART – A

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

1. (i) Apply the conversion of Octal Number into binary number with the example.
   (ii) Classify different types of web servers.

2. (i) Summarize the need of diagnostic and lab diagnostic systems.
   (ii) Categorize various applications of bioinformatics.

3. (i) Find out the history of chromatography data systems.
   (ii) Discuss list tags from HTML.

PART – B

Note: Answer any five questions from following. **(5 x 6 = 30 Marks)**

4. Demonstrate binary division with example of 101010 / 000111.

5. Show the examples of pharmacy drug database.

6. Propose some of the medication services.

7. How the methodology of reverse vaccinology uses bioinformatics tools?

8. What is the need of Laboratory information system?

9. List out the fields being used Bioinformatics.

10. Summarize various types of storage Media.

11. Discuss the rules for XML Syntax declaration and its characteristics.

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Code No: G-13229/PCI

FACULTY OF PHARMACY

B. Pharmacy II – Semester (PCI) (Main & Backlog) Examination, September 2025
Subject: Patho Physiology

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

PART - A

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

1. Explain pathogenesis of irreversible cell injury.
2. What is calcium overload? Explain.
3. Discuss the significance of autophagy.
4. Discuss the effects of myocardial ischaemia.
5. Explain the etiopathogenesis of PCOS.
6. What is the pathogenesis of parkinsonism.
7. Discuss the pathogenesis of leprosy.
8. What is pseudogout and explain it.
9. Classify tuberculosis and discuss etiological factors of it.
10. Explain etiopathogenesis of AIDS.

PART - B

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

11. Discuss in detail etiological factors and pathogenesis of ischaemic heart disease.
12. Discuss classification, etiology and pathogenesis of cancer.
13. Give a detail note on mechanism of inflammation, types of inflammation.

PART - C

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

14. Discuss the chemical mediators involved in inflammation process
15. Give a note on morphology of cell injury.
16. Discuss the etiopathogenesis of hypertension.
17. Explain the pathogenesis of pneumonia
18. Explain the immunological mechanisms in glomerular injury.
19. Explain the pathogenesis of hypo and hyperthyroidism.
20. Explain the pathogenesis of major depressive illness.
21. Discuss the clinical features and pathogenesis of osteoporosis.
22. Explain the etiological factors and pathophysiology of gonorrhea.

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Code No: G-13231/PCI

FACULTY OF PHARMACY

B. Pharmacy (PCI) II - Semester (Main & Backlog) Examination, September 2025

Subject: Environmental Sciences

Time: 2 Hours **Max. Marks: 50**

PART – A

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

1. List and explain the natural resources in detail. Differentiate between renewable and non renewable resources citing examples.
2. What are the causes of air pollution? How can we reduce air pollution?
3. Explain the different natural resources. What is the role of an individual in the conservation of natural resources?

PART – B

Note: Answer any five questions from following. **(5 x 6 = 30 Marks)**

4. Classify the aquatic ecosystem and briefly explain each one.
5. What are the reasons for soil pollution? What is its impact on the health?
6. What are the functions of food? Add a note on the world food problems?
7. Explain food chain and food web with examples.
8. List and explain the different resources of water?
9. Explain the economic importance of mineral resources citing suitable examples for mineral resources.
10. What is meant by grass land ecosystem? Explain the different grass land ecosystems.
11. Explain the different forest resources.

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Code No. G-13080/PCI

FACULTY OF PHARMACY

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

Subject: Human Anatomy and Physiology - II

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

PART – A

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

1. Discuss the functions of basal ganglia .
2. Define reflex and reflex arc. Discuss the functional components of reflex arc.
3. Write the compositions and functions of bile juice.
4. Write the composition and functions of gastric juice.
5. What is the pheocromocytoma and explain it.
6. Explain resuscitation methods.
7. Explain metabolic acidosis and alkalosis.
8. Write the functions of adrenal gland.
9. Discuss the functions of estrogen and progesterone.
10. Explain the structure of gene.

PART – B

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

11. Enumerate the events in detailed in the process of respiration.
12. Explain oogenesis and menstruation and in detail.
13. A) Discuss the structure of thyroid gland and enumerate the synthesis and functions of thyroid hormone with a neat labeled diagram.

    B) Explain the structures and functions of accessory organs of digestive system with a neat labelled diagram.

PART – C

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

14. Explain the structural components and functions of sympathetic nervous system.
15. Enumerate the steps involved in neurohumoral transmission.
16. Discuss the structure and functions of thymus with a neat labelled diagram.
17. Discuss the role of Kidneys in acid base balance.
18. Give a detailed note on structure and functions of pancreas.
19. Discuss the structure and functions of female reproductive system with a neat labelled diagram
20. Describe the structure and functions of nephron in detail with a neat labelled diagram.
21. Explain protein synthesis in detail.
22. Enumerate events in pulmonary respiration in detail.

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Code No: G-13083/PCI

FACULTY OF PHARMACY

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

Subject: Pathophysiology

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

PART - A

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

1. What are causes of cell injury?
2. What are signs and symptoms of asthma?
3. Mention the parts of heart.
4. Define the following terms
   (a) Haemophilia (b) Sickle cell anaemia
5. What is neoplasm? List out the types of neoplasms?
6. What are the patterns of cell death?
7. What is Jaundice?
8. Differentiate between asthma and COPD.
9. What are causes and symptoms of typhoid?
10. Define cell death acidosis and calcification.

PART - B

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

11. Discuss neural basis of epilepsy. Add a note on types of epilepsies.
12. Define hypertension. Discuss etiology and pathogenesis of hypertension.
13. Define cell injury. Explain the mechanism of cell injury.

PART - C

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

14. Write a note on metaplasia.
15. Discuss in brief about electrolyte balance.
16. Discuss the pathogenesis of tuberculosis.
17. Explain the role of H. Pylori in peptic ulcer.
18. Discuss the pathogenesis of anaemia.
19. Write a note on chemical mediators of acute inflammation.
20. Explain the pathogenesis of osteoporosis.
21. Discuss alcoholic liver disease in detail.
22. What is the role of hypertrophy in congestive heart failure?

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Code No. G-13081/PCI

FACULTY OF PHARMACY

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

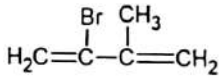
Subject: Pharmaceutical Organic Chemistry-I

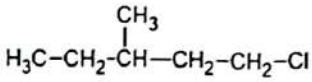
Time: 3 Hours **Max. Marks: 75**

PART – A

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

1. Define the following terms: Functional group and Hybridization.
2. Write the IUPAC names for the following structures:

a) 

b) 

3. Classify alkadienes with examples.
4. Explain Saytzeff's rule with an example.
5. What is an esterification test?
6. Write the structure and uses of iodoform.
7. Explain the perkin reaction with an example.
8. Write the structure and uses of acetone.
9. Explain the significance of tollen's test.
10. Write the structure and uses of salicylic acid.

PART – B

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

11. Explain the acidity of carboxylic acids with special emphasis on the effect of substituents on their acidity. Write the structure and uses of benzoic acid and acetylsalicylic acid.
12. Explain the mechanism involved in aldol condensation and crossed-aldol condensation with relevant examples.
13. Describe structural isomerism with examples.

PART – C

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

14. Explain the IUPAC rules for alkenes with examples.
15. Explain the stability of conjugated dienes.
16. Describe Markovnikov's addition of alkenes with an example.
17. Describe the mechanism and stereochemistry of SN^2 reactions.
18. Write the structure for any five alcohols and provide their uses.
19. Explain the mechanism involved in nucleophilic addition reactions of carbonyls with two examples.
20. Describe the mechanism involved in perkin condensation.
21. Write the methods of preparation (any two) and qualitative tests (any two) for carboxylic acids.
22. Explain the basicity of amine with special emphasis on the effect of substituents on their basicity.

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Code No. G-13082/PCI

FACULTY OF PHARMACY

B. Pharmacy II - Semester (PCI) (Backlog) Examination, March 2025
Subject: Biochemistry

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

PART – A

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

1. Explain the biological significance of ATP and cyclic AMP.
2. Explain in brief G6PD deficiency.
3. Explain redox potential.
4. Write the difference between DNA & RNA.
5. Explain the biological significance of cholesterol.
6. Define enthalpy and entropy.
7. Explain biochemical functions of coenzyme.
8. What is Albinism and tyrosinemia?
9. What is atherosclerosis.
10. What is a genetic code?

PART – B

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

11. What are enzymes? Explain in detail about enzyme kinetics.
12. Explain electron transport chain (ETC) and Inhibitors of ETC.
13. Write the short notes on
    (i) Allosteric enzymes regulation (ii) Gout disease (iii) Glycogen storage diseases.

PART – C

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

14. Write about β-Oxidation of saturated fatty acid.
15. Explain the mechanism of hormones regulation of blood glucose levels.
16. Write the synthesis and significance of melatonin.
17. Write about fatty liver.
18. Explain the semi conservative model of DNA.
19. Explain in detail about protein synthesis.
20. Write in detail about glycolysis pathway and its significance.
21. Write the process of conversion of cholesterol into bile acids and write its biological significance.
22. Explain urea cycle and its disorder.

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Code No: G-13084/PCI

FACULTY OF PHARMACY

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

Subject: Computer Applications in Pharmacy

Time: 2 Hours **Max Marks: 50**

PART - A

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

1. (i) Write short notes on the applications of mobile technology in healthcare industry.

   (ii) Describe the Objectives for Input and Out Put Design

2. (i) What is SQL? List the features of SQL.

   (ii) Explain computer applications in clinical studies.

3. Write about the databases MYSQL and MS ACCESS and their applications.

PART - B

Note: Answer any six questions from the following. **(6 x 5 = 30 Marks)**

4. Explain the one's and two's complement representation of a binary number.
5. Explain about listing tags with attributes
6. Write in detail about patient monitoring system.
7. Write the impact of bioinformatics in the discovery of vaccines.
8. What is LIMS? Mention its various types.
9. Explain about process specifications.
10. Convert the following decimal numbers into their equivalent octal number.

    (i) $(4429.625)_{10}$ (ii) $(55)_{10}$

11. What is electronic prescribing? Add a note on its advantages.

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Code No. G13085/PCI

FACULTY OF PHARMACY

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

Subject: Environmental Science

Time: 2 Hours **Max. Marks: 50**

PART – A

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

1. Explain the food chain and food web with examples.
2. What are the causes of air pollution? What measures should be taken to reduce air pollution?
3. Classify aquatic ecosystems and explain each one in detail.

PART – B

Note: Answer any six questions. **(6 x 5 = 30 Marks)**

4. Explain the economic importance of mineral resources.
5. What are the different types of deserts? Explain the adaptation of plants and animals for desert life.
6. Explain the structure and functions of the forest ecosystem.
7. What are the reasons for soil pollution? What is its impact on human health?
8. What are the various water resources? Add a note on the conservation of water resources.
9. What are the environmental problems caused by mining of minerals?
10. What are the functions of an ecosystem?
11. List and differentiate between renewable and non-renewable resources with examples.

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