AUTUMN END SEMESTER EXAMINATION-2025

3rd Semester B.Pharm

PHARMACEUTICAL ORGANIC CHEMISTRY-II

BP 301T

(For 2024 Admitted Batch)

Time: 3 Hours | Full Marks: 75

Answer Question No.1 (Part-A) is compulsory,
any SEVEN from Part-B and any TWO from Part-C.
The figures in the margin indicate full marks.
All parts of a question should be answered at one place only.

PART-A

1. Objective Answer Type Questions (Answer All) [2 × 10]

(a) Why is phenol acidic? (2)

(b) Define MUFA and PUFA. (2)

(c) Mention the steps involved in electrophilic substitution reaction of benzene. (2)

(d) Define diazotization reaction. (2)

(e) State Huckel's rule for aromaticity. (2)

(f) What causes rancidity? (2)

(g) Name the oxidised product of anthracene. (2)

(h) Mention the theories to explain the stability of cycloalkanes. (2)

(i) Why C1-C2 bond length is shorter than C2-C3 in naphthalene? (2)

(j) Define polynuclear aromatic hydrocarbons with example. (1+1)

PART-B

2. Focused-Short Answer Type Questions-(Answer Any Seven) [5 × 7]

   (a) Describe the orbital picture and resonance in benzene with diagrams. (2.5+2.5)

   (b) Write synthetic uses of diazonium salts. (5)

   (c) Write the reaction and mechanism of sulphonation of benzene. (2+3)

   (d) Explain the important reactions of benzoic acid. (5)

   (e) Discuss the Hawarth process for synthesis of anthracene. (5)

   (f) Give a comparison study between fats and oils. (5)

   (g) Write a short note on polynuclear hydrocarbons. (5)

   (h) Classify fatty acids. Explain the reactions of fats and oils. (1+4)

   (i) Explain the conformations of cyclohexane with energy diagram. (3+2)

PART-C

Long Answer Type Questions (Answer Any Two)

3. Explain the preparation and reactions of polynuclear hydrocarbons (naphthalene, anthracene, phenanthrene, diphenylmethane, triphenylmethane). [2+2+2+2 +2]

4. Write the structure and medicinal uses of Saccharin, BHC, Chloramine and DDT [2.5+2.5+ 2.5 +2.5]

5. Describe the qualitative tests for phenols. [10]

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Semester: 3rd
Programme: B.Pharm

AUTUMN END SEMESTER EXAMINATION-2025

3rd Semester B.Pharm

PHYSICAL PHARMACEUTICS-I

BP 302T

(For 2024 Admitted Batch)

Time: 3 Hours | Full Marks: 75

Answer Question No.1 (Part-A) is compulsory,
any SEVEN from Part-B and any TWO from Part-C.
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PART-A

1. Objective Answer Type Questions (Answer All) [2 × 10]

(a) Define molality. (2)

(b) What is Dipole moment? (2)

(c) Write down BET equation for Adsorption Isotherm. (2)

(d) Define Eutectic mixtures. (2)

(e) Describe parachor. (2)

(f) Outline Triple point. (2)

(g) How refractive index can be determined? (2)

(h) List the different terms used with solvent specification to denote solubility. (2)

(i) Draw HLB Scale. (2)

(j) Highlight the effect of temperature on solubility. (2)

PART-B

2. Focused-Short Answer Type Questions-(Answer Any Seven) [5 × 7]

   (a) Explain in detail about Langmuir adsorption isotherm. (5)

   (b) Write a note on spreading coefficient. (5)

   (c) Write a short note on CST. (5)

   (d) Depict the kinetics of protein binding. (5)

   (e) Write down the application of buffers in pharmaceutical and other systems. (5)

   (f) Classify complexation and write its applications. (3+2)

   (g) Present eutectic mixtures in brief. (5)

   (h) Depict Nernst distribution law and highlight its limitations. (2+3)

   (i) Give a brief note on buffered isotonic solutions. (5)

PART-C

Long Answer Type Questions (Answer Any Two)

3. What are the different methods used for measurement of surface and interfacial tension? Write in detail about two methods. [2+4+4]

4. Write down the various diffusion principles in biological systems and explain in brief about gastrointestinal and percutaneous absorption. [2+6+2]

5. Derive Raoults Law and explain its mathematical expression. Highlight its applications in Ideal and real solutions with deviations. [4+6]

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Semester: 3rd
Programme: B.Pharm

AUTUMN END SEMESTER EXAMINATION-2025

3rd Semester B.Pharm

PHARMACEUTICAL MICROBIOLOGY

BP 303T

(For 2024 Admitted Batch)

Time: 3 Hours | Full Marks: 75

Answer Question No.1 (Part-A) is compulsory,
any SEVEN from Part-B and any TWO from Part-C.
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All parts of a question should be answered at one place only.

PART-A

1. Objective Answer Type Questions (Answer All) [2 × 10]

   (a) Why are disinfectants not suitable for sterilizing surgical instruments? (2)

   (b) What is Tyndallisation? Name the scientist associated with this method. (1+1)

   (c) Differentiate between antiseptics and disinfectants. (1+1)

   (d) Define phenol coefficient. (2)

   (e) What are surface active agents? Give examples. (1+1)

   (f) Define minimum inhibitory concentration (MIC). (2)

   (g) What is AHVAC system? (2)

   (h) Why do Gram-negative bacteria not retain crystal violet stain? (2)

   (i) Why is oxygen toxic to obligate anaerobic bacteria? (2)

   (j) What is meant by thermal death time in sterilization? (2)

PART-B

2. Focused-Short Answer Type Questions-(Answer Any Seven) [5 × 7]

   (a) Describe the principles, types, and applications of Scanning electron microscopy in detail. (3+1+1)

   (b) Explain the role of preservatives in pharmaceutical preparations and Give the factors affecting Spoilage. (1+4)

   (c) Outline the principle and method of the staining technique applied in the identification of Mycobacterium. (3+2)

   (d) Describe the tube dilution method principle, procedure, and advantages. (2+2+1)

   (e) What is bacteriostatic activity? Discuss the principles and procedures of cup plate. (1+2+2)

   (f) Describe the different phases of the bacterial growth curve with suitable explanation. (5)

   (g) Describe clean areas, their classification, and their role in contamination control in pharmaceutical production. (1+3+1)

   (h) Differentiate between moist heat sterilization and dry heat sterilization with suitable examples. (5)

   (i) Outline the reproductive mechanisms in fungi, highlighting major types. (5)

PART-C

Long Answer Type Questions (Answer Any Two)

3. Explain in detail the construction and working principle of Laminar Airflow. Add a note on its types, applications, merits, and demerits. [3+3+2 +1+1]

4. Discuss in detail the structure and role of the bacterial cell wall, supported by a labelled diagram. [5+3+2]

5. Discuss different classes of chemical sterilization methods, their mechanisms, examples, and associated advantages and disadvantages [2+6+1 +1]

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Programme: B.Pharm

AUTUMN END SEMESTER EXAMINATION-2025

3rd Semester B.Pharm

PHARMACEUTICAL ENGINEERING

BP 304T

(For 2024 Admitted Batch)

Time: 3 Hours | Full Marks: 75

Answer Question No.1 (Part-A) is compulsory,
any SEVEN from Part-B and any TWO from Part-C.
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PART-A

1. Objective Answer Type Questions (Answer All) [2 × 10]

   (a) What is Reynold's Number? (2)

   (b) Distinguish between Evaporation and Distillation. (2)

   (c) Define Filter aids. Give two examples. (2)

   (d) What is Comminution? (2)

   (e) Define Fourier's Law. (2)

   (f) What is equilibrium moisture content? (2)

   (g) Define the term Elutriation. (2)

   (h) Give the limitations of Raoult's Law. (2)

   (i) Define corrosion. Enlist the types of corrosion. (2)

   (j) Differentiate between conduction, convection and radiation. (2)

PART-B

2. Focused-Short Answer Type Questions-(Answer Any Seven) [5 × 7]

   (a) Explain Edge and End Runner mill. (3+2)

   (b) Explain the principle, construction, working, uses, merit and demerits of multiple effect evaporation. (1+1+1+1+1)

   (c) Explain theories of Filtration. (5)

   (d) Describe various mechanisms of Heat Transfer. (5)

   (e) Enumerate theories, types and prevention of Corrosion. (2+1+2)

   (f) Give the construction, working and uses of Sigma blend mixer. (2+2+1)

   (g) Explain perforated and non-perforated centrifuge. (2.5+2.5)

   (h) Explain the principle, construction, working, uses, merit and demerits of Cyclone separator. (1+1+1+1+1)

   (i) Discuss about molecular Distillation. (5)

PART-C

Long Answer Type Questions (Answer Any Two)

3. Write down mechanisms, laws and factors affecting size reduction. Briefly discuss about Ball mill. [2+2+2+4]

4. Write down the objective, application and mechanisms of the drying process, also explain Fluidized Bed Dryer. [2+2+2+4]

5. Explain Bernoulli's theorem and highlight how it is used to find the rate of flow of fluids in a horizontal pipe. [6+4]

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