QP Code: 321006 **Reg. No……**

Third Semester B. Pharm Degree Regular/Supplementary Examinations April 2026

Pharmaceutical Organic Chemistry - II

(2017 and 2024 Scheme)

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

- ***Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space***
- ***Answer all parts of a single question together • Leave sufficient space between answers***
- ***Draw table/diagrams/flow charts wherever necessary***

Essays **(2x10=20)**

1. What is aromatic electrophilic substitution reaction (AES). Discuss the mechanism of sulphonation and Friedel craft alkylation reaction. (2+4+4)
2. Enlist the analytical constants used in determining the quality of oils and fats. Explain the principle and significance of any two analytical constants. (2+4+4)

Short Notes **(7x5=35)**

3. Explain the role of activating and deactivating functional groups on directing aromatic electrophilic substitution on aromatic ring.
4. Give a note on diazotization reaction along with their synthetic uses.
5. Discuss the acidity of phenols.
6. Give a note on rancidity and drying of oils.
7. What are polynuclearhydrocarbons. Outline the Haworth synthesis of naphthalene.
8. Write any three chemical reactions of phenanthrene.
9. Explain the stabilities of cycloalkanes through Baeyer's strain theory.

Answer Briefly **(10x2=20)**

10. State Huckel's rule.
11. Draw the structure and uses of
    a) Chloramine
    b) Benzene hexachloride (BHC)
12. Explain Sachse Mohr theory.
13. Give any two medicinally important derivatives of phenathrene.
14. What are oils and fats.
15. Give any one method of preparation of anthracene.
16. Enlist the medicinal uses of triphenyl methane and diphenyl methane derivatives.
17. Give any one general method of preparation of cycloalkane.
18. Outline two important chemical reactions of cyclobutane.
19. Explain the Coulson and Moffitt's Modification concepts.

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QP Code: 322006 **Reg. No……**

Third Semester B. Pharm Degree Regular/Supplementary Examinations April 2026

Physical Pharmaceutics I

(2017 and 2024 Scheme)

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

- ***Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space***
- ***Answer all parts of a single question together • Leave sufficient space between answers.***
- ***Draw diagrams wherever necessary***

Essays **(2x10=20)**

1. Explain mechanisms of solute solvent interaction and factors influencing solubility of drugs.
2. Classify complexes and discuss with suitable examples the inclusion complexes.

Short Notes **(7x5=35)**

3. Explain protein binding and its pharmaceutical significance.
4. Explain polymorphism and solvates.
5. Discuss principles of dielectric constant and its applications.
6. How do you determine the Stoke's diameter of the particles in powder
7. Explain liquid crystals and glassy states and their applications in pharmacy.
8. Discuss Sorensen's pH scale and its applications.
9. Write Henderson-Hasselbalch equation for weak acid and weak bases along with its applications.

Answer Briefly **(10x2=20)**

10. Define ideal and real solutions.
11. State and explain Raoult's law.
12. Define Critical temperature and Critical pressure.
13. Explain angle of repose.
14. What is the Optical activity. Discuss its relationship with specific rotation.
15. State fundamental and derived properties of the powder.
16. Explain the equilibrium stability constant of complexes
17. What are Isotonic solutions and Hypotonic solutions, give one example each.
18. What does pH indicator mean
19. Explain molarity and normality.

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QP Code: 323006 **Reg. No……**

Third Semester B. Pharm Degree Regular/Supplementary Examinations April 2026
Pharmaceutical Microbiology

(2017 and 2024 Scheme)

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

- ***Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space***
- ***Answer all parts of a single question together • Leave sufficient space between answers***
- ***Draw table/diagrams/flow charts wherever necessary***

Essays **(2x10=20)**

1. Explain the design and working of a laminar airflow unit and its importance in microbiology.
2. Explain the sterility testing of pharmaceutical products according to I.P.

Short Notes **(7x5=35)**

3. Structure of bacterial cell.
4. Biochemical tests for bacterial identification.
5. Chemical methods of sterilization.
6. Classification and mode of action of disinfectants.
7. Preservation of pure cultures.
8. Applications of microbiological assays.
9. Evaluation of microbial stability of formulations.

Answer Briefly **(10x2=20)**

10. Cultivation of viruses.
11. Microbial spoilage of pharmaceutical products.
12. Methods of microbial standardization of vitamins.
13. What is autoclaving.
14. Types of mechanical sterilization.
15. Differentiate between antiseptics and disinfectants.
16. Principles of phase contrast microscopy.
17. What are facultative anaerobes.
18. Physical parameters for bacterial growth.
19. Explain "primary cell cultures."

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QP Code: 324006 **Reg. No……**

Third Semester B. Pharm Degree Regular/Supplementary Examinations April 2026
Pharmaceutical Engineering
(2017 and 2024 Scheme)

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

- ***Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space***
- ***Answer all parts of a single question together • Leave sufficient space between answers***
- ***Draw table/diagrams/flow charts wherever necessary***

Essays **(2x10=20)**

1. Discuss about the Reynold's Number and its significance. Explain the mechanism of heat transfer of conduction through a metal wall.
2. Explain the principle, construction, working, applications, advantages and disadvantages of Fluidized Bed Dryer.

Short Notes **(7x5=35)**

3. List out the various types of corrosion with suitable examples.
4. Classify the glasses with its composition.
5. Outline the mechanism of size reduction with some suitable examples.
6. Differentiate between evaporation and other heat process.
7. Explain the principle, construction and working of industrial steam distillation apparatus.
8. Explain vortex formation and methods to prevent the same.
9. Interpret the working of propellers, turbines and paddles.

Answer Briefly **(10x2=20)**

10. Differentiate between filter aids and filter medias.
11. Write the principle behind the non-perforated basket Centrifuge.
12. Define flash distillation.
13. Give the applications of size reduction.
14. Uses of Twin shell blender.
15. Mechanism of freeze dryer
16. Enlist factors affecting mixing of liquids.
17. Draw well labeled diagram of Multiple effect evaporator.
18. Classify metals and non-metals.
19. Differentiate between solid mixing and liquid mixing.

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