QP Code: 321006 **Reg. No……**

Third Semester B. Pharm Degree Supplementary Examinations September 2025

Pharmaceutical Organic Chemistry - II

(2017 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. Describe the reaction mechanism and limitations of following reactions of benzene
   a) Nitration
   b) Friedel-Crafts alkylation (5+5)
2. a) What are fats and oils. Enumerate their pharmaceutical importance.
   b) Explain the principle involved in the determination of saponification and iodine values of fats along with their significance. (3+7)

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

3. Explain the aromatic behavior of benzene based on Huckel's rule.
4. Explain the influence of substituents on acidity of phenols.
5. Give a note on basicity of amines.
6. Describe the hydrogenation reactions of fats.
7. What are polynuclearhydrocarbons. Outline any two methods of preparation of anthracene.
8. Write any three electrophilic substitution reactions of naphthalene.
9. What are cycloalkanes. Outline any two methods of preparation of cyclopropane.

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

10. Add a note on orbital picture of benzene.
11. Give the structure and uses of
    a) Dichlorodiphenyltrichloroethane (DDT)
    b) Saccharin
12. Write any two qualitative tests for phenols.
13. Enumerate the synthetic uses of aryl-diazonium salts.
14. Write any two methods of preparation of triphenyl methane.
15. Draw the structure of phenanthrene and write the medicinal uses of any two phenanthrene derivatives
16. What are fatty acids. Give examples.
17. Explain the significance of Reichert-Meissl (RM) value in the quality analysis of oils and fats.
18. Outline the two important chemical reactions of cyclopropane.
19. State Bayers Strain theory.

****

QP Code: 322006 **Reg. No……**

Third Semester B. Pharm Degree Supplementary Examinations September 2025

Physical Pharmaceutics I

(2017 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. Define Nernst distribution law and derive the equation for the same.
2. Write the principle and method involved in the determination of particle size in a powder using Andreasen apparatus.

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

3. Explain Raoult's law.
4. Define Angle of repose and explain briefly the method to determine the same.
5. Discuss liquid crystalline state and describe its properties.
6. Define dielectric constant and mention its applications in pharmacy.
7. Describe one experimental method for studying drug-protein binding.
8. Describe the buffer action of an acid and alkaline buffers with suitable examples.
9. Mention the advantages and disadvantages of calorimetric estimation of pH.

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

10. What are aerosols inhalers.
11. Define polymorphism.
12. Describe the effect of drug-protein binding on drug-distribution of drug.
13. Define porosity.
14. Explain different classes of complexes.
15. What is dipole moment.
16. Define critical solution temperature with an example.
17. What are real solutions.
18. Define buffer and buffer capacity.
19. Write the importance of isotonicity in pharmaceutical formulations.

****

QP Code: 323006 **Reg. No……**

Third Semester B. Pharm Degree Supplementary Examinations
September 2025
Pharmaceutical Microbiology
(2017 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 ultra-structure of a bacterial cell with a neat diagram and explain its cellular components.
2. Define and classify disinfectants. Describe the various evaluation techniques of disinfectants.

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

3. Explain IMViC test.
4. Describe the different sources of contamination in an aseptic area.
5. Write a note on principle and procedure of Grams staining.
6. Explain the principle involved in autoclave and its applications.
7. Briefly describe any two methods of isolation of pure cultures.
8. Write a note on sterility testing of liquid products.
9. Application of cell culture in pharmaceutical industry and research.

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

10. Define culture medium.
11. Explain the mechanism of action of UV radiation.
12. Differentiate prokaryotes and eukaryotes.
13. Define clean area.
14. Different kinds of electron microscopes.
15. Define plasmid and its use.
16. Structure of enveloped virus.
17. What is D value.
18. Preservation of pharmaceutical products.
19. What is viable count.

****

QP Code: 324006 **Reg. No……**

Third Semester B. Pharm Degree Supplementary Examinations
September 2025
Pharmaceutical Engineering
(2017 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 objectives and types of distillation. Describe in brief about distillation under reduced pressure
2. Write the principle, working, construction, advantages, disadvantages and applications of Climbing film evaporator

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

3. Explain about differential manometer with a neat diagram
4. Write the principle, working and construction of fluid energy mill
5. Mechanism of heat transfer
6. Explain factors influencing evaporation
7. Explain the rate of drying curve
8. Write about the theories of filtration
9. Explain the principle, working and construction of Super centrifuge

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

10. Explain the mechanism of size separation
11. Write the significance of Bernoulli's theorem
12. Define Fourier's law
13. Economy of Multiple effect evaporator
14. Define bound and unbound water
15. Equilibrium Moisture Content
16. Define Centrifugation
17. State about Vortex formation
18. Write the various types of Glasses
19. Classification of materials for plant construction

****