Code No. G-13088/PCI

FACULTY OF PHARMACY
B. Pharmacy III - Semester (PCI) (Main & Backlog) Examination, March 2025
Subject: Pharmaceutical Microbiology

Time: 3 Hours   Max. Marks: 75

PART – A
Note: Answer all the questions.   (10 x 2 = 20 Marks)

1. Write the composition of nutrient broth and Nutrient agar medium.
2. Write about Koch's postulates.
3. Write about cultural characteristics of bacteria in liquid and solid media.
4. Describe mechanism of action of phenols as disinfectants?
5. Draw the typical structure of bacterial virus with a neat labeled diagram?
6. Explain the purpose of sterility testing of pharmaceutical products.
7. Write a note on autoclave?
8. Write a note on methyl red test?
9. Explain the working procedure of Micromanipulator.
10. Define Primary established and transformed cells.

PART – B
Note: Answer any two questions.   (2 x 10 = 20 Marks)

11. Explain about Isolation and preservation of pure cultures.
12. Explain evaluation of efficacy of sterilization methods.
13. Explain different sources of contamination in aseptic area and methods of prevention.

PART – C
Note: Answer any seven questions.   (7 x 5 = 35 Marks)

14. Write the differences between prokaryotes and eukaryotes.
15. Explain about phase contrast microscopy with neat labeled diagram.
16. Write about sterility indicators.
17. Explain the principle involved in laminar flow unit.
18. Explain principle and procedure of microbiological assay of antibiotics by diffusion method.
19. Write the methods of enumeration of bacteria.
20. Explain the general procedure of animal cell culture.
21. Write about cultivation of anaerobic bacteria.
22. Explain synchronous growth curve and normal growth curve of bacteria.

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Code No. G-13086/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Main & Backlog) Examination, March 2025

Subject: Pharmaceutical Organic Chemistry-II

Time: 3 Hours

Max. Marks: 75

PART – A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Give the structure and uses of Chloramine.
2. What is Aromatic character and explain with an example.
3. Explain the significance of Aryl diazonium salt.
4. Give the structure and uses of Diphenyl methane.
5. Explain the significance of RM value.
6. Write about drying oils.
7. Give a note on acidity of Benzoic acid.
8. Give the structure and uses of Phenanthrene.
9. Write two reactions of cyclobutane.
10. What are the causes for rancidity of oils.

PART – B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. Explain why phenols are more acidic than alcohols.and emphasize the effect of substituents on acidity of phenols.
12. Discuss in detail the effect of substituents on reactivity and orientation of monosubstituted Benzenes.
13. a). Explain Baeyers angle strain theory with its limitations.
    b). Define Iodine value. Describe its significance and determination.

PART – C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Explain Friedel crafts acylation and its limitations.
15. Discuss about qualitative tests for Phenols.
16. Explain the method of preparation of Anthracene.
17. Write about any 3 chemical reactions of Fatty acids.
18. Discuss about Sachse mohrs theory.
19. Give the chemical reactions of Benzoic acid.
20. Give a note on Basicity of Aromatic amines.
21. Explain the reaction and mechanism of Halogenation of Benzene.
22. Discuss the chemical reactions of Naphthalene.

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Code No. G13089/PC

FACULTY OF PHARMACY

B. Pharmacy (PCI) III - Semester (Main & Backlog) Examination, March 2025

Subject: Pharmaceutical Engineering

Time: 3 Hours   Max. Marks: 75

PART – A

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

1. Mention the different mechanisms of size reduction.
2. List the critical parameters in working of ball mill.
3. What is Reynolds's number and mentions its significance.
4. Write Stefan Boltzmann law along with terms in it.
5. Write merits and demerits of simple distillation unit.
6. Mention the problems in liquid mixing.
7. What is filter medium and write its importance?
8. Write the factors affecting centrifugation.
9. Differentiate between centrifugation and filtration.
10. Define Corrosion.

PART – B

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

11. Write the importance of heat transfer. Explain the differences in construction and working of heat exchanger and heat interchanger.
12. What are Rectification towers and mention their significance in construction and working of fractional distillation unit.
13. Explain the material characteristics, merits and demerits of metals as material for plant construction.

PART – C

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

14. Explain the critical factors applicable to hammer mill working and mention its merits and demerits.
15. Write construction and working of any one manometer.
16. Describe the principle of size separation and merits & demerits of elutriation tank.
17. Explain the forced film evaporator and its merits.
18. Explain the equipment and functioning of drum drier.
19. Describe construction and working of filter leaf.
20. Write the subsystems, mechanism of working in semisolid mixing equipment.
21. Describe non perforated basket centrifuge with the help of a diagram.
22. Explain the factors influencing selection of plant materials.

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FACULTY OF PHARMACY

B. Pharmacy (PIC) III - Semester (Main & Backlog) Examination, March 2025

Subject: Physical Pharmaceutics – I

Time: 3 Hours

Max. Marks: 75

PART – A

Note: Answer all the questions.

(10 x 2 = 20 Marks)

1. Write the phase rule.
2. Write a note on critical solution temperature.
3. Write a note on liquid crystals.
4. Write the difference between crystalline state and amorphous.
5. Write a note on eutectic mixtures.
6. Write a note on solubilization and detergency.
7. What is surface tension? Write examples.
8. Write a note on crystalline structures of complexes.
9. Write a note on isotonic solutions.
10. What is a buffer? Write its applications in pharmaceutical formulations.

PART – B

Note: Answer any two questions.

(2 x 10 = 20 Marks)

11. (a) What is polymorphism? Write the applications of Polymorphism.
    (b) Write the determination and applications of Refractive index and Pka.
12. (a) Write the methods for determination of surface tension.
    (b) Write a note on HLB scale and its applications.
13. (a) How do you measure pH using hydrogen electrode?
    (b) What is buffer capacity? Write Vanslyke's equation for buffer capacity and maximum buffer capacity.

PART – C

Note: Answer any seven questions.

(7 x 5 = 35 Marks)

14. Write a note on quantitative approach to the factors influencing solubility of drugs.
15. What is critical solution temperature? Write its applications.
16. Explain distribution law and it's applications.
17. Write a note on Raoult's law and real solutions.
18. Define protein binding. Explain its significance.
19. What is complexation? Write the crystalline structure of complexes.
20. Write the applications of complexation in pharmacy.
21. How to determine the pH of solution and add a note on Sorenson's pH scale.
22. Write a note on pharmaceutical buffers with examples.

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