Code No. G-13090/PCI

FACULTY OF PHARMACY

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

Subject: Pharmaceutical Organic Chemistry - III

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

PART – A

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

1. Draw the conforrmations of Cyclohexane
2. Explain the DL system of Nomenclature.
3. What is the reason for Electrophillic Substitution at 2nd position in Pyrrole.
4. Write the Medicinal uses of Azepines.
5. Define Clemenson reductionand give the example.
6. Mention any two reactions of Thiophene.
7. Define elements of Symmetry
8. Write any two reactions of Acridine.
9. Write any two reactions of Pyrazole.
10. Give the importance of Dakin reaction.

PART – B

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

11. Define racemic mixture and Explain the various methods of resolution of racemic mixture.
12. Describe the Mechanism and applications of Following
    a). Beckmann rearrangement b). Oppenauer Oxidation.
13. Write any two Synthetic methods, three reactions and medicinal uses of Furan and Thiazole.

PART – C

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

14. Explain synthesis of Quinoline.
15. Describe stereospecific or stereoselective reactions with examples.
16. Write a note on Asymmetric synthesis
17. Explain the relative Aromaticity and reactivity of Pyrrole, Furan and Thiazole
18. Write the mechanism involved in Wolf -Kishner rearrangement.
19. Define Birch reduction and explain its reactions.
20. Write the different methods of determination of configuration of Geometrical isomers.
21. Write the reactions of Chiral molecules
22. Describe the mechanism of Clemmenson reduction and Mention its applications.

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.

Code No. G13089/PCI

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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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-13087/PCI

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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Code No: F-7325/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Backlog) Examination, October 2024

Subject: Pharmaceutical Organic Chemistry-II

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

PART - A

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

1. Write the structure and uses of Chloramine.
2. Define Saponification value and write its significance.
3. What is drying of oils?
4. Write the mechanism of Friedel craft alkylation.
5. Why – NH2 group is activating and ortho, Para directing group and why NO_2 group is deactivating and meta directing explain.
6. Write the structure & uses of Naphthol.
7. Write any two reactions of Cyclobutane.
8. Write the structure and uses of Triphenylmethane.
9. Write any two reactions of Amines.
10. Explain o-nitrophenol is more acidic than phenol.

PART – B

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

11. Write the synthesis and applications of aryl diazonium salts.
12. Explain the effect of substituents on reactivity and orientation of electrophilic substitution reactions of mono substituted benzene.
13. Write the preparation and electrophilic substitution reactions of Naphthalene and Anthracene.

PART – C

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

14. Write any two methods of preparation and reactions of phenols.
15. Explain about the Sachse Mohr's theory.
16. Draw and explain the molecular orbital picture of benzene.
17. Explain in detail about Huckel's rule with examples.
18. Explain in detail about Basicity of amines.
19. Describe in detail about Baeyer's strain theory.
20. Write any two methods of preparation and reactions of Cyclopropane.
21. Discuss about Hydrolysis and Hydrogenation reactions of fats and oils.
22. Write the structure and uses of (a) DDT (b) Saccharin (c) Cresol, (d) Diphenyl methane (e) BHC.

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Code No: F-7328/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Backlog) Examination, October 2024

Subject: Pharmaceutical Engineering

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

PART - A

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

1. Write Bernoulli's theorem.
2. Mention the different modes of size reduction.
3. List the critical parameters in working of hammer mill.
4. Define Fourier's law.
5. Write the factors affecting filtration.
6. Differentiate between drying and evaporation.
7. What is mean free path and mentions its significance.
8. Mention the problems in solid mixing.
9. What is filter aid and write its importance?
10. Write merits and demerits of tray drier.

PART - B

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

11. Write the importance of FMC and EMC in drying rate. Write the construction, working principle, merits and demerits Fluidized bed drier.
12. What is Rectification and mention its significance in construction and working of fractional distillation unit.
13. (a) Write the theories of corrosion.
    (b) Explain the material characteristics, merits and demerits of glass as material for plant construction.

PART - C

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

14. Explain the critical factors applicable to end runner mill working and mention its merits and demerits.
15. Write construction and working of Rotameter.
16. Describe the principle of determining particle size and its distribution using sieve shaker.
17. Describe construction and working of multi-pass heat interchanger.
18. Write the characteristics of liquid mixing equipment.
19. Explain the climbing film evaporator and its merits.
20. Explain the equipment and functioning of freeze drier.
21. Describe perforated basket centrifuge with the help of a diagram and mention its applications.
22. Write different conveying equipment in material handling systems.

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Code No. F-7327/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Backlog) Examination, October 2024

Subject: Pharmaceutical Microbiology

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

PART – A

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

1. What is the role of agar in culture media?
2. Explain the bacterial growth curve.
3. Write about autotrophs and chemotrophs.
4. Write short notes on sterility indicators.
5. Explain about isolation of pure culture.
6. What is meant by MIC and antibiotic?
7. Give the different sources of contamination in aseptic area.
8. List out sources of microbial contaminations in pharmaceuticals.
9. Write in detail about viruses.
10. Enumerate the differences between sterilization and disinfection.

PART – B

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

11. Explain in detail about the principle and working of an instrument used in moist heat sterilization.
12. Classify disinfectants. Write the mechanism of action and uses of phenolic disinfectants.
13. (a) Give the composition of various media used in the sterility testing of pharmaceutical products.
    (b) What are various approved methods of Sterility testing.

PART – C

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

14. Differentiate between gram positive and Gram negative cell wall.
15. Explain in detail about Filtration sterilization with merits and demerits.
16. Write briefly about various stages of sterility testing of ophthalmic products.
17. Explain about various factors affecting disinfectants.
18. Explain in detail about replication of fungi.
19. Describe the general procedure of antibiotic assay.
20. Discuss in detail about growth of animal cells in culture.
21. Explain in detail about casein hydrolysis by microroganisms.
22. Explain various types of microbial spoilage.

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Code No. F-7326/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Backlog) Examination, October 2024

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 diffusion principles in biologic systems.
2. Define solubility. Write solubility expressions.
3. Write a note on changes in states of matter.
4. Write applications of liquid crystals and eutectic mixtures.
5. Write a note on crystalline state and amorphous.
6. Write the uses of surfactants with examples.
7. Write a note on detergency and solubilization.
8. Classify the complexes.
9. Write the crystalline structure of complexes.
10. What will happens if solutions are Hypertonic or Hypotonic.

PART – B

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

11. (a) Write a note on Raoult's law and real solutions.
    (b) What is critical solution temperature? Write its applications.
12. Write about determination and applications of
    (i) Refractive index (ii) Optical rotation
    (iii) Dielectric constant (iv) Dissociation constant.
13. (a) What is surface tension? Explain various methods for determination of surface tension.
    (b) Write a note on buffers and its importance in pharmaceutical and biological systems.

PART – C

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

14. Write the factors influencing on solubility of drugs.
15. Write a note on mechanisms of solute – solvent interactions.
16. What is Polymorphism. Write its applications.
17. Write a note on HLB scale and its applications.
18. Write the applications of complexation in pharmacy.
19. What is protein binding. Write the importance of protein binding.
20. Write about pH scale. Write methods for determination of pH.
21. Write a note on buffer capacity and maximum buffer capacity. Write Vanslyke's equation.
22. What is isotonicity? Write a note on buffered isotonic solutions and its applications.

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Code No: F-7173/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Main & Backlog) Examination, April 2024

Subject: Pharmaceutical Microbiology

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

PART-A

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

1. What is the role of agar in culture media?
2. Explain the bacterial growth curve.
3. Write about autotrophs and chemotrophs.
4. Write short notes on sterility indicators.
5. Explain about isolation of pure culture.
6. What is meant by MIC and antibiotic?
7. Give the different sources of contamination in aseptic area.
8. List out sources of microbial contaminations in pharmaceuticals.
9. Write in detail about viruses.
10. Enumerate the differences between sterilization and disinfection.

PART-B

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

11. Explain in detail about the principle and working of an instrument used in moist heat sterilization.

12. Classify disinfectants. Write the mechanism of action and uses of phenolic disinfectants.

13. (a) Give the composition of various media used in the sterility testing of pharmaceutical products.
    (b) What are various approved methods of Sterility testing?

PART-C

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

14. Differentiate between gram positive and Gram negative cell wall.
15. Explain in detail about Filtration sterilization with merits and demerits.
16. Write briefly about various stages of sterility testing of ophthalmic products.
17. Explain about various factors affecting disinfectants.
18. Explain in detail about replication of fungi.
19. Describe the general procedure of antibiotic assay
20. Discuss in detail about growth of animal cells in culture.
21. Explain in detail about casein hydrolysis by microorganisms.
22. Explain various types of microbial spoilage.

Code No: F-7172/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Main & Backlog) Examination, March 2024

Subject: Physical Pharmaceutics- I

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

PART-A

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

1.State the Gibbs phase rule.
2.Write a note on Raoult's law.
3.Define latent heat and sublimation critical point.
4.Write a note on eutectic mixtures.
5.What is interfacial tension?
6.Write a note on CMC.
7.Write a note on complexation and drug action.
8.Write a note on surface free energy.
9.Write a note on buffers and its uses.
10.What is Isotonicity?

PART-B

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

11.Write a note on solubility expressions and factors influencing on solubility of drugs.

12.Write a note on (a) HLB Scale (b) Surfactants (c) Detergency

13.(a) What is protein binding? Write its importance.
(b) Write a note on buffers and its importance in pharmaceutical and biological systems.

PART-C

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

14.What the solute- solvent interactions.

15.Explain the factors influencing on solubility of drugs.

16.Write methods to determine PKa and write its applications.

17.What is surface tension? Explain various methods for determination of surface tension.

18.What is complexation? Write the classification of complexation.

19.Write about pH scale. Write methods for determination of pH.

20.What is buffer capacity? Write Van-Slyke's equation for buffer capacity and maximum buffer capacity.

21.Write a note on buffers in pharmaceutical and biological systems.

22.Write a note on spreading coefficient and adsorption at solid interface.

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Code No: F-7174/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Main & Backlog) Examination, April 2024

Subject: Pharmaceutical Engineering

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

PART-A

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

1. Enlist the merits and demerits of a sieve shaker.
2. Write the mechanisms of size reduction.
3. Differentiate between evaporation and drying.
4. Write the principle of distillation under reduced pressure.
5. List objectives and applications of drying.
6. Write factors affecting mixing.
7. Write the application of centrifugation.
8. Mention various filteration techniques & equipment.
9. Classify the ferrous material for plant construction.
10. Write different types of corrosion.

PART-B

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

11. Describe Bernoulli's theorem and write the construction, working principle of Orifice meter.

12. Explain the concept of drying rate curve and write its importance in construction & working of freeze dryer.

13. Write the factors affecting selection of plant materials and classify them.

PART-C

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

14. Explain the losses of energy during flow of fluids.
15. Describe the construction and working of a fluid energy mill.
16. Compare and contrast heat interchanger and heat exchanger.
17. Explain the factors influencing evaporation.
18. Write the mechanisms of solid mixing and mention differences between solid and liquid mixing.
19. Write working principle of Silverson emulsifier with help of diagram.
20. Describe the working principle, merits and demerits of Seidtz filter.
21. Write the construction and working principle of semi continuous centrifuge.
22. Explain the material characteristics, advantages and disadvantages of organic nonmetals for plant construction.

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Code No: F-7171/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Main & Backlog) Examination, March 2024
Subject: Pharmaceutical Organic Chemistry-II

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

PART-A

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

1. Discuss about activating and deactivating groups with examples.
2. Write the structure and uses of Aryl diazonium salts.
3. How do you differentiate fats and oils?
4. Write any two methods of preparation of Aromatic Amines.
5. Explain briefly about Huckels rule.
6. Give the Resonance.structure of Benzene.
7. Write about angle strain.
8. Write the structure and uses of Resorcinol and Naphthol.
9. Give the structure and medicinal uses of Anthracene.
10. Write the structure and uses of DDT.

PART-B

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

11. (a) Explain Bayer's strain theory.
    (b) Write the synthesis and reactions of Naphthalene.

12. Describe the Nitration, Sulphonation and Halogenation reactions of Benzene with mechanisms**.**

13. (a) Discuss the principle and significance of Saponification value and Acid value.-**6+4**
    (b) Explain the Basicity of Aromatic amines.

PART-C

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

14. Explain Friedel crafts alkylation and its limitations**.**
15. Draw and explain the molecular orbital picture of Benzene.
16. Write the methods of preparation and chemical reactions of Phenanthrene**.**
17. Write the note on Sache mohrs theory and give the chemical reactions of Cyclobutane.
18. Explain the principle and significance of Iodine value.
19. Discuss the Acidity of phenols.
20. Explain the reactions of Benzoic acid.
21. Discuss about Hydrolysis and Hydrogenation reactions of fats and oils.
22. Explain the effect of E.W groups on reactivity and orientation of monosubstituted Benzenes with example.

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Code No: E-12401/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Backlog) Examination, October 2023

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 concept of Resonance.
2. Write the structure and uses of DDT.
3. Define acid value and give its significances.
4. How do you differentiate fats and oils?
5. Write any two methods of preparation of Phenols.
6. Give the structure and medicinal uses of Phenanthrene.
7. Define angle strain and give the reasons.
8. Explain Reichert- Meissel value.
9. Write the structure and uses of Resorcinol and Naphthol.
10. Define ortho/para and Meta directing groups with examples.

PART – B

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

11. (a) Explain the acidity and effect of substituent's on the acidity of Phenols.
    (b) Give any three method of preparation of Phenols.

12. Describe the Nitration, Sulphonation and Halogenation reactions of Benzene with mechanisms.

13. (a) Explain Bayer's strain theory.
    (b) Write the synthesis and reactions of Naphthalene.

PART – C

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

14. Explain the Friedel crafts alkylation of Benzene and its limitations.
15. Write the Preparation methods of Cyclopropane.
16. Explain the principle and significance of Iodine value.
17. Explain the reactions of Anthracene.
18. Add a note basicity of Aromatic amines.
19. Discuss about Hydrolysis and Hydrogenation reactions of fats and oils.
20. Draw and explain the molecular orbital picture of Benzene.
21. Write the note on Sachse mohrs theory and give the chemical reactions of Cyclobutane.
22. Add a note on Drying oils and saponification value.

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Code No: E-12402/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Backlog) Examination, November 2023

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 solubility expressions.
2. Write the diffusion principles in biologic systems.
3. Write a note on liquid crystals and applications.
4. What are eutectic mixtures?
5. Write a note on detergency.
6. Write uses of surfactants.
7. Write the classification of complexes.
8. Write a note on complexation and drug action.
9. Define Isotonic solutions and Hypotonic solutions.
10. Write applications of buffers.

PART-B

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

11. (a) Write a note on quantitative approach to the factors influencing solubility of drugs.
    (b) Write a note on mechanisms of solute - solvent interactions.
12. Write a note on Refractive index, optical rotation, dielectric constant and dissociation constant.
13. (a) Explain various methods for determination of surface tension.
    (b) What is protein binding. Write the importance of protein binding.

PART-C

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

14. Write a note on Raoult's law and real solutions.
15. What is critical solution temperature? Write its applications.
16. Write a note on crystalline state and amorphous.
17. What is Polymorphism. Write its applications.
18. Write a note on HLB scale and its applications.
19. Write the applications of complexation in pharmacy.
20. Write a note on buffer capacity and maximum buffer capacity. Write Vanslyke's equation.
21. Write about pH scale. Write methods for determination of pH.
22. Write a note on buffers and its importance in pharmaceutical and biological systems.

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Code No: E-12404/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Backlog) Examination, November 2023

Subject: Pharmaceutical Engineering

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

PART-A

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

1. What is Reynolds number? Expand terms applicable to it.
2. Mention the official standards of sieves.
3. List the critical parameters in working of ball mill
4. Define black body and gray body.
5. Write the mechanisms of heat transfer.
6. Differentiate between distillation and evaporation.
7. What is equilibrium moisture content and mentions its significance.
8. Draw the diagram of ribbon blender.
9. What is filter aid and filter media?
10. Write merits and demerits of inorganic materials for plant construction.

PART-B

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

11. Describe the size separation principles, construction, working, merits and demerits of sieve shaker.

12. Write the construction, working principle, merits and demerits plate and frame filter press with washing facility.

13. Write the theories of corrosion and explain the methods to prevent corrosion.

PART-C

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

14. Explain the factors influencing the size reduction.
15. Write construction and working of pilot tube.
16. Describe fourier's law and stefan boltzmann law for heat transfer along with their significance.
17. What is Mean free path and mention its significance in construction and working of molecular distillation unit.
18. Write the characteristics and working of propellers, turbines and paddles
19. Explain the multiple effect evaporator and its economy.
20. Explain the equipment parts and their functioning in a fluid bed dryer.
21. Describe super centrifuge with the help of a diagram and mention its applications.
22. Write basic equipment applicable to material handling systems.

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Code No: E-12403/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Backlog) Examination, November 2023

Subject: Pharmaceutical Microbiology

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

PART – A

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

1. Write Koch's Postulates.
2. Explain the contribution of Joseph Lister in the field of microbiology
3. Explain principle involved in Simple staining technique
4. Explain how ethylene oxide used for sterilization with mechanism of action.
5. Explain lysogeny in virus.
6. Define Antiseptic, Disinfectant, inhibition and Bactericide.
7. Write about clean area classification.
8. Write about media used in animal cell culture.
9. What are primary, established and transformed cell cultures?
10. What is HEPA?

PART – B

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

11. Explain different methods of evaluation of disinfectants.
12. Explain the ultra structure of Bacteria with neat labelled diagram.
13. Explain about assessment of new antibiotic.

PART – C

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

14. Write about Redial-Walker test.
15. Explain about preservation of pure cultures.
16. Explain Acid fast staining.
17. Write the applications of Animal cell culture.
18. Explain the reproduction in Bacteriophages.
19. Explain about Indole production test.
20. Explain morphology of viruses.
21. Write about Dark field microscopy.
22. Write about different sources of contamination in aseptic area.

Code No: E-12219/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Semester (PCI) (Main & Backlog) Examination, April / May 2023

Subject: Physical Pharmaceutics-I

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

PART-A

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

1. Define Solubility
2. Write the phase rule.
3. Write a note on Raoult's law.
4. Write a note on changes in the state of matter.
5. Write a note on eutectic mixtures.
6. What is interfacial tension?
7. Write a note on solubilization and detergency.
8. Write the classifications of complexes.
9. What is a buffer? What are its uses? Give examples.
10. Define isotonic solutions.

PART-B

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

11. a) Write a note on determination and applications of Refractive index, Dipole moment.
    b) Write a note on Polymorphism and its applications.
12. a) Write a note on HLB scale and its applications.
    b) Write the methods for determination of surface tension.
13. a) Define protein binding. Explain its significance.
    b) Write the applications of complexation in pharmacy.

PART-C

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

14. Write the factors influencing on solubility of drugs.
15. What is critical solution temperature? Write its applications.
16. What is dissociation constant and how to determine it? Write applications of PKa.
17. Explain distribution law and it's applications.
18. What is complexation? Write the crystalline structure of complexes.
19. Write a note on Sorenson's pH scale. Write its importance determination of pH.
20. Write a note on pharmaceutical buffers with examples.
21. How do you measure pH using hydrogen electrode?
22. What is buffer capacity? Write Vanslyke's equation for buffer capacity and maximum buffer capacity.

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Code No. E-12218/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Sem. (PCI) (Main & Backlog) Examination, April / May 2023

Subject: Pharmaceutical Organic Chemistry-II

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

Note: Answer all questions from part-A, Any two questions from part-B and Any seven questions from part-C

PART – A (10 x 2 = 20 Marks)

1. Define Huckel's rule with example.
2. Write the mechanism of Friedel craft acylation.
3. Write the structure & uses of Saccharin.
4. Explain ortho, para and meta-directing groups with examples.
5. Write the structure & uses of Cresol.
6. Define Saponification value.
7. Write the Significance of acid value.
8. Write the structure and uses of diphenylmethane.
9. What are the limitations of Bayer's strain theory?
10. Write any two qualitative tests for phenol.

PART – B (2 x 10 = 20 Marks)

11. Explain electrophilic substitution reactions of benzene with examples.
12. Write the preparation methods of cyclopropane and cyclobutane.
13. Explain principle and significance of Saponification value and Reichert Meissl (RM) value.

PART – C (7 x 5 = 35 Marks)

14. Write a note on Baeyer's strain and Sache Mohr's theories.
15. Explain any two reactions of fatty acids.
16. Write any two preparation methods of Phenols.
17. Write the synthetic applications of aryl diazonium salts.
18. Explain the principle and significance of iodine value.
19. Define acetyl value. Describe its significance and determination.
20. Draw and explain the molecular orbital picture of benzene.
21. Explain the electrophilic substitution reactions of Naphthalene
22. Explain any three reactions of benzoic acid.

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Code No. E-12220/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Main & Backlog) Examination, April / May 2023

Subject: Pharmaceutical Microbiology

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

Note: Answer all questions from part-A, Any two questions from part-B and Any seven questions from part-C.

PART – A (10 x 2 = 20 Marks)

1. Distinguish between Prokaryotes and Eukaryotes
2. Define total and viable count of microbes.
3. Write about indole production test.
4. Give the list of various types of sterilisations with examples.
5. Explain the mode of action of disinfectants.
6. What is meant by HEPA?
7. Give the classification of Fungi.
8. Write short notes on various microbial spoilage.
9. Write in detail about aseptic area.
10. Enumerate the differences between bacteriostatic and bactericide.

PART – B (2 x 10 = 20 Marks)

11. Explain in detail about the principle and working of an instrument used in dry heat sterilisation.
12. a) Explain the role of vitamins in microbiological assay.
    b) Write in detail about chemical sterilization.
13. a) Give the composition of various media used in the sterility testing of pharmaceutical products.
    b) What are various approved methods of Sterility testing?

PART – C (7 x 5 = 35 Marks)

14. Define staining and explain in detail about differential staining of bacteria.
15. Explain in detail about phenol coefficient test with merits and demerits.
16. Write briefly about various stages involved in Lytic cycle.
17. Explain about various factors affecting disinfectants.
18. Explain in detail about bacterial growth curve and Synchronous growth.
19. Write short notes on sterility indicators.
20. Discuss the general procedure for cell culture.
21. Explain the replication of Viruses.
22. Give the design of aseptic area and explain the methods of prevention of contamination.

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Code No. E-12221/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Main & Backlog) Examination, May 2023

Subject: Pharmaceutical Engineering

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

PART - A

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

1. Mention different types of manometers.
2. List the factors affecting size reduction.
3. Write applications of bag filter.
4. Define black body and grey body.
5. Write the theory of multiple effect evaporator.
6. Write principle of vacuum distillation.
7. Classify solid mixing equipment.
8. Write the factors influencing filtration.
9. Write different types of corrosion.
10. Classify plastic materials with examples.

PART - A

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

11. a) Write the laws governing size reduction.
    b) Write the construction and working of hammer mill.
12. a) Explain the stages of drying rate curve.
    b) Write the construction, working, uses, merits and demerits of freeze dryer.
13. a) Explain the factors affecting selection of materials for plant construction.
    b) Write the properties, applications and disadvantages of glass as material for plant construction.

PART - C

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

14. Explain different energy losses during flow of liquids.
15. Write the construction working, uses, merits and demerits of sieve shaker.
16. Describe the construction and working of tubular heat interchanger.
17. Write basic principle and methodology of fractional distillation.
18. Write the construction, working principle, uses, merits and demerits of semisolid mixing equipment.
19. Explain the construction and working of frame and plate filter press.
20. Differentiate between pressure and vacuum filters.
21. Write the construction and working of super centrifuge.
22. Explain the theories of corrosion.

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Code No. E-12014/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Backlog) Examination, November 2022
Subject: Pharmaceutical Organic Chemistry – II

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

PART – A

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

1. Explain briefly about resonance structure of benzene.
2. Explain about angle strain.
3. Write the structure & uses of Chloramines.
4. Mention meta and orthoxproz directing groups with examples.
5. Write the structure & uses of napthols.
6. Define Iodine value.
7. Write the Significance of acid value.
8. Write the structure and medicinal uses of phenanthrene.
9. Differentiate fats and oils.
10. Explain briefly basicity of amines.

PART – B

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

11. (a) Explain the Saponification value. Write the significance & principle involved in it. (b) Explain the sulphonation reaction of benzene.
12. (a) Explain the acidity & effect of substituents on the acidity of phenol.
    (b) Explain Bayer's strain theory
13. Write the preparation methods of cyclopropane and cyclobutane

PART – C

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

14. Explain the orientation and reactivity of cholorobenzene of further electrophilic substitution.
15. Write the conformations of cyclohexane and explain their relative stabilities.
16. Describe about Acetyl value and Ester value.
17. Explain the Friedel crafts alkylation and acylation of benzene.
18. Draw and explain the molecular orbital picture of benzene.
19. Explain rancidity and drying of oils.
20. Explain the hydrolysis and hydrogenation reactions of oils.
21. Explain the electrophilic substitution reactions of Anthracene.
22. Explain any three reactions of amines.

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Code No: E-12017/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Backlog) Examination, November 2022
Subject: Pharmaceutical Engineering

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

PART - A

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

1. Classify flow of liquids based on Reynolds number.
2. Mention different standards applicable to sieves.
3. Define size reduction and classify it.
4. Write the principle of heat exchanger.
5. Define radiation and conduction.
6. Write principle of steam distillation.
7. Write the differences between FMC and EMC?
8. What is filter aid and mention its applications?
9. Classify liquid mixing equipment.
10. List different material handling equipment.

PART - B

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

11. Explain Bernoulli's theorem and derive the equation for measurement of flow using Venturi meter.
12. Explain the theory, construction, working and applications of centrifugal molecular distillation unit.
13. Describe the factors affecting corrosion and methods for prevention of corrosion.

PART - C

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

14. Compare and contrast between air separator and cyclone separator.
15. Explain the procedure of particle size measurement by sieve analysis.
16. Write the construction and working of fluid energy mill.
17. Write principle, advantages and limitations of climbing film evaporator.
18. Explain the construction and working of drum filter.
19. Describe equipment parts and working principle of spray drier.
20. Write the application of mixing and write the working, uses, merits and demerits of double cone blender.
21. Differentiate between filtration and sedimentation centrifuges.
22. Write the properties, applications and disadvantages of iron as material for plant construction.

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Code No. E-12016/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Backlog) Examination, November 2022
Subject: Pharmaceutical Microbiology

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

PART – A

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

1. Give the list of nutritional requirements of bacteria.
2. Explain the bacterial growth curve
3. Write about autotrophs and chemotrophs.
4. Write short note on sterility indicators.
5. Explain about isolation of pure culture.
6. What is meant by MIC and antibiotic?
7. Give the different sources of contamination in aseptic area.
8. Write short notes on various microbial spoilage.
9. Write in detail about viruses.
10. Enumerate the differences between sterilisation and disinfection.

PART – B

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

11. Explain in detail about the principle and working of an instrument used in moist heat sterilisation.
12. Discuss the principle, method and procedure of microbiological assay. Explain in detail about microbiological assay of Penicillin.
13. a) Give the composition of various media used in the sterility testing of pharmaceutical products.
    b) What are various approved methods of Sterility testing?

PART – C

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

14. Explain in detail about Phase contrast microscopy.
15. Explain in detail about Filtration sterilization with merits and demerits.
16. Write briefly about various stages sterility testing of ophthalmic products.
17. Explain about various factors affecting disinfectants.
18. Explain in detail about replication of fungi.
19. Write short notes on microbial motility.
20. Discuss in detail about growth of animal cells in culture.
21. Explain in detail about casein hydrolysis by microorganisms.
22. Explain various types of microbial spoilage.

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Code No. E-12015/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Backlog) Examination, November 2022

Subject: Physical Pharmaceutics – I

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

PART – A

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

1. Write a note on Gibbs phase rule
2. Write a note on Raoult's law
3. Define latent heat and sublimation critical point
4. What are eutectic mixtures?
5. What is interfacial tension?
6. Define surface tension
7. Write a note on complexation and drug action
8. Write a note on surface free energy
9. Write a note on applications of buffers
10. Define isotonicity

PART – B

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

11. Write a note on solubility expressions and factors influencing on solubility of drugs.
12. Write a note on (a) HLB Scale (b) Surface active agents (c) Detergency
13. (a) Write a note on Refractive index and its applications.
    (b) What is protein binding? Write its importance.

PART – C

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

14. What the solute-solvent interactions.
15. Write a note on critical solution temperature.
16. Write methods to determine dissociation constant and write its applications.
17. Write a note on critical micellar concentration.
18. What is complexation? Write the classification of complexation.
19. Write about pH scale. Write methods for determination of pH.
20. What is buffer capacity? Write Van-slyke's equation for buffer capacity and maximum buffer capacity.
21. Write a note on buffers in pharmaceutical and biological systems.
22. Write a note on spreading coefficient and adsorption at solid interface.

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Code No. D-8237/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Main) Examination, May 2022
Subject: Pharmaceutical Organic Chemistry-II

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

PART - A

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

1 Explain Friedel-Crafts alkylation of benzene with an example.
2 Define the iodine value and give its significance.
3 Write the structure and uses of Saccharin.
4 Define angle strain. Explain the reasons for the same.
5 Write any two reactions of benzoic acid.
6 Write the structure & uses of resorcinol.
7 Define polynuclear aromatic hydrocarbons with examples.
8 Write the structure and uses of tripenylmethane.
9 Write the special reactions of cyclopropane.
10 What is rancidity of oils? How can it be prevented?

PART - B

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

11 (a) Explain the acidity of aromatic carboxylic acids with special emphasis on the effect of substituents on their acidity.
(b) Write about the Reimer-Tiemann reaction of phenols.

12 Explain the effect of substituents on reactivity and orientation of electrophilic substitution reactions of monosubstituted benzene.

13 (a) Write the preparation and electrophilic substitution reactions of anthracene.
(b) Define acid value. Describe its significance and determination.

PART - C

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

14 Define the terms aromaticity & resonance. Explain in detail about Huckel's rule.
15 Explain about the Hinsberg method of separation of amines.
16 Write about the electrophilic substitution reactions of naphthalene.
17 Explain the mechanism involved in nitration of benzene.
18 What are the limitations of Baeyer's strain theory and explain the theory of strain-less rings?
19 Write the decreasing order of aromaticity among anthracene, benzene and naphthalene and explain the reason for the same.
20 Explain about hydrolysis & drying of fats and oils.
21 Write the synthetic applications of aryl diazonium salts.
22 Define saponification value. Explain its determination.

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Code No. D-8240/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Main) Examination, May 2022

Subject: Pharmaceutical Engineering

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

PART - A

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

1 What is Bernoulli's theorem and write its application?
2 Write the objectives of size reduction and mention its applications.
3 Classify mechanisms of size separation.
4 Draw the diagram of steam jacketed kettle.
5 Write the significance of drying rate curve.
6 Classify evaporation equipments.
7 Mention the challenges in solid mixing.
8 What are applications of bag filter?
9 List the factors affecting centrifugation.
10 Classify material for plant construction.

PART - B

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

11 Explain the factors affecting drying. Write construction working, uses, merits and demerits of fluidized bed dryer.

12 Write principles, methodology and applications of fractional distillation.

13 Write the theories of corrosion. Explain the factors affecting corrosion.

PART - C

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

14 Write construction and working of differential manometer.
15 Write principle and procedure of determining particle size by sieve shaker.
16 Explain the different laws governing size reduction.
17 Differentiate between forced circulation evaporator and climbing film evaporator.
18 Write the working principle, construction of double cone blender.
19 Explain the concept of semisolid mixing with help of diagram.
20 Write working principle, construction of double cone blender.
21 Write the construction and working of super centrifuge.
22 Describe plastic and rubber as materials for plant construction along with their advantages and disadvantages.

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Code No. D-8239/PCI

FACULTY OF PHARMACY

B. Pharmacy III Semester (PCI) (Main) Examination, May 2022

Subject: Pharmaceutical Microbiology

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

PART - A

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

1 Write the Koch's postulates.
2 Write a note on Indole production test.
3 Write about fractional sterilization.
4 What are the factors affecting disinfectants?
5 What is antiseptic and fungi static?
6 What is HEPA?
7 What is aseptic area?
8 What are the uses of antibiotics and Vitamins?
9 What is bacteriostatic and fungi static?
10 Write a notes autoclave.

PART - B

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

11 Explain general procedures of animal cell culture.

12 Explain chemical and gaseous methods of Sterilization.

13 Explain principle and procedure involved in microbiological assay of antibiotics.

PART - C

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

14 Explain the methods of isolation of pure cultures.
15 Explain simple staining technique.
16 Explain about cultivation of anaerobic bacteria.
17 Write about nutritional requirements of bacteria.
18 Write the differences between prokaryotes and Eukaryotes.
19 Explain about gelatin hydrolysis test.
20 Explain about gaseous sterilization.
21 Write types of spoilage.
22 Explain reproduction in animal viruses.

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Code No. D-8238/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Semester (PCI) (Main) Examination, May 2022

Subject: Physical Pharmaceutics – I

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

PART – A

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

1. Define solubility
2. What is phase rule?
3. Write a note on eutectic mixtures
4. What is dipole moment? Write its applications
5. Define interfacial tension
6. Write a note on solubilization
7. What is complexation? Write its applications
8. Write a note on Sorenson's pH scale
9. What is isotonicity?
10. Define protein binding

PART – B

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

11. Explain briefly on the following with applications
    (a) Refractive index (b) Optical rotation (c) Dissociation constant.
12. (a) Write a note on surfactants and its applications.
    (b) Write the methods for determination of surface tension.
13. (a) Write the applications of buffers in pharmaceutical and biological systems.
    (b) Write a note on buffered isotonic solutions.

PART – C

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

14. Write briefly on factors influencing on solubility of drugs.
15. Write a note on solubility of liquids in liquids and gases in liquids.
16. What is Polymorphism? Write about polymorphism and its importance.
17. Write a note on (a) Changes in states of matter (b) Liquid crystals.
18. Write a note on HLB Scale and its applications.
19. Write about the crystalline structure of complexes.
20. Write a note on thermodynamic treatment of stability constants.
21. Write a note on measurement of pH using hydrogen electrode.
22. Write a note on buffer equation and buffer capacity.

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Code No: 12323/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Semester (PCI) (Backlog) Examination, September 2021

Subject: Pharmaceutical Organic Chemistry-II

Time: 2 Hours **Max. Marks: 75**

Note: Answer any Seven Questions from Part –A, Any One Questions from Part-B. and Any Five Questions from Part-C

PART – A (7X3 = 21 Marks)

1. Define Huckel's rule with example.
2. Write the limitations of Friedel craft acycation.
3. Explain activating & deactivating group with example.
4. Write the structure & uses of DDT.
5. Write the structure & uses of Resorcinol.
6. Define saponefication value.
7. Write the significance of Iodine value.
8. Write the medicinal uses of Anthracene & Triphenylmethane
9. Explain Puckered ring
10. Explain the effect of electron withdrawing groups in the acidity of benzoic acid.

PART- B (1 X 14 = 14 Marks)

11. a) Explain the Nitration reaction of nenzene.
    b) Write the significance & principle involved in the determination of Acid value.
12. a) Explain the acidity & effect of substituent's on the acidity of phenol.
    b) Explain Beyer's strain theory.
13. Write the synthesis & reactions of Naphthalene.

PART - C (5 X 8 = 40 Marks)

14. Explain sulphonation reaction of benzene.
15. Explain the reactions of benzoic acid.
16. Explain hydrogenation reaction of fatty acid.
17. Write the significance and principle involved in the determination of RM value.
18. Explain the reactions of cyclopropane & cyclobutance
19. Write the short note on coulson and Moffitt's modifications.
20. Explain the orientation and reactivity of cholorobenzene of further electrophilic substitution.
21. Write the qualitative test of phenol.
22. Explain the basicity of Amines.

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Code No. 12324/PCI

FACULTY OF PHARMACY

B.Pharmacy III Semester (PCI) (Backlog) Examination, September 2021

Subject: Physical Pharmaceutics - I

Time: 2 Hours **Max. Marks: 75**

PART - A

Note: Answer any seven questions. **(7 x 3 = 21 Marks)**

1 What is solubility?
2 State the phase rule.
3 Write a note on changes in the states of matter.
4 What are aerosol systems?
5 What is interfacial tension?
6 Write a note on detergency.
7 Write the classifications of complexes.
8 Write a note on pH scale.
9 What is a buffer? What are its uses? Give examples.
10 Define isotonic solutions.

PART - B

Note: Answer any one questions. **(1 x 14 = 14 Marks)**

11 Write a note on following physicochemical properties of drugs
(a) Refractive index (b) Optic rotation (c) Dielectric constant
(d) Dipole moment.

12 (a) Write a note on HLB scale and its applications.
(b) Write the methods for determination of surface tension.

13 Define protein binding. Explain its significance. Explain kinetics of protein binding.

PART - C

Note: Answer any five questions. **(5 x 8 = 40 Marks)**

14 Explain the factors influencing on solubility of drugs.

15 What is Polymorphism? Explain about polymorphism with its importance.

16 What is dissociation constant and how to determine? Write applications of PKa.

17 Explain liquid crystalline state with example.

18 Explain distribution law and it's applications.

19 What is complexation? Write the crystalline structure of complexes.

20 Write a note on pharmaceutical buffers with examples.

21 How do you measure pH using hydrogen electrode?

22 Write the applications of complexation in pharmacy.

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Code No: 12326/PCI

FACULTY OF PHARMACY

B.Pharmacy III-Semester (PCI) (Backlog) Examination, September 2021

Subject: Pharmaceutical Engineering

Time: 2 Hours **Max. Marks: 75**

Note: Answer any Seven Questions from Part –A, Any One Questions from Part-B. and Any Five Questions from Part-C

PART – A (7X3 = 21 Marks)

1. Mention various energy losses during flow of fluids.
2. Write impact and attrition with examples.
3. Differentiate cyclone separator and air separator.
4. Define radiation and write equation of Stefan Boltzmann's law.
5. Define evaporation and write its applications.
6. Write the principle involved in flash distillation.
7. Define bound and unbound water.
8. Define mixing and write objectives of mixing.
9. List out the factors affecting filtration.
10. Write any two alloys of stainless steel with composition.

PART- B (1 X 14 = 14 Marks)

11. Define size separation. Write the procedure for determination of particle size and its distribution by sieve analysis.
12. Define drying and classify different types of dryers. Write principle, construction, working, applications, advantages and disadvantages of any one dryer.
13. Write the mechanisms of liquid Mixing. Explain in detail about any one mixing equipment.

PART - C (5 X 8 = 40 Marks)

14. Explain the principle, construction, working of venturimeter.
15. Discuss the construction, working and application of fluid energy mill with diagram.
16. Write the construction and working of floating-head two-pass heater.
17. Describe the factors that affect rate of evaporation.
18. Write a note on fractionating columns used in fractional distillation.
19. Explain the construction and working of sigma blade mixer.
20. Discuss the construction and working of rotary drum filter.
21. Describe the theory of centrifugation with applications.
22. Write about merits and demerits of cast iron as a material for plant construction.

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Code No: 12325/PCI

FACULTY OF PHARMACY

B.Pharmacy III-Semester (PCI) (Backlog) Examination, September 2021

Subject: Pharmaceutical Microbiology

Time: 2 Hours **Max. Marks: 75**

Note: Answer any Seven Questions from Part –A, Any One Questions from Part-B. and Any Five Questions from Part-C

PART – A (7X3 = 21 Marks)

1. Distinguish between 'phototrophs' and 'chemotrophs' with examples.
2. Write about 'Selective media' and 'Differential media'.
3. Briefly explain the term 'Thermal Death Time'.
4. Write about importance of 'Sterilization indicators'.
5. Write four different factors influencing disinfectant action.
6. What is 'sterility' testing'.
7. What is 'Aseptic room'.
8. Explain the principle for microbiological assay of vitamins.
9. Write any two factors affecting microbial spoilage.
10. Write a note on 'Transformed cell culture'.

PART- B (1 X 14 = 14 Marks)

11. Describe the different techniques used for determination of 'Total' and 'Viable' counts of bacteria.
12. Write the different types of identification of bacteria and explain 'IMviC' tests.
13. Explain in detail about replication of viruses.

PART - C (5 X 8 = 40 Marks)

14. What is a 'Pure culture'? How do you preserve it.
15. Explain the principle and application of 'Electron microscopy'.
16. Write a note on 'Acid-fast staining' and its significance.
17. Write about sterilization by 'filtration'.
18. Differentiate between 'Bacteria' and 'Virus'.
19. Explain 'Rideal – walker coefficient' test
20. What do you mean by clean room. Write short notes on 'HEPA' filters.
21. Discuss the principle and any one method involved in microbiological assay of 'antibiotics'.
22. Write short notes on 'Microbial Contaminants'.

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Code No: 12063/PCI

FACULTY OF PHARMACY

B.Pharmacy III-Semester (PCI) (Main & Backlog) Examination, March 2021

Subject : Pharmaceutical Organic Chemistry-II

Time: 2 Hours **Max. Marks: 75**

Note: Answer Any Seven Questions from Part –A, Any one Question from Part-B. and Any Five Questions from Part-C

PART – A (7 X 3 = 21 Marks)

1. Write the difference between oils & fats.
2. Explain ranciclity of oil.
3. Explain resonance in benzene
4. Write the uses of triphenyle methane.
5. Write the structure & uses of chloramines.
6. Explain o/p and m-directing groups with examples.
7. Explain Reichert – Meissel value.
8. Write the limitation of Friedel – craft reaction.
9. Write the structure of saccharin and BHC.
10. Write the structure & uses of cresols.

PART- B (1 X 14 = 14 Marks)

11. a) Explain the saponitication value. Write the significance & principle involved in it.
    b) Explain the sulphonation reaction of benzene.
12. a) Explain the acidity and effect of substituent's on the acidity of benzoic acid.
    b) Explain Baeyer's strain theory.
13. Write the synthesis & reactions of anthracene.

PART - C (5 X 8 = 40 Marks)

14. Explain Nitration reaction of benzene.
15. Explain the reactions of benzoic acid
16. Explain the hydrolysis reaction of fatty acids
17. Write the significance & principle involved in the determination of iodine value
18. Explain the reactions of cyclopropane & Cyclobutance.
19. Write a short note on Sachse Mohr's theory
20. Explain the orientation & reactivity of chlorobenzene on further electrophilie substitution.
21. Write the synthetic applications of aryl diazonium salt.
22. Explain the basicity of amines.

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Code No: 12067/PCI

FACULTY OF PHARMACY

B.Pharmacy III-Semester (PCI) (Main & Backlog) Examination, March 2021

Subject : Pharmaceutical Engineering

Time: 2 Hours **Max. Marks: 75**

Note: Answer Any Seven Questions from Part –A, Any one Question from Part-B. and Any Five Questions from Part-C

PART – A (7 X 3 = 21 Marks)

1 Give the equation for Reynold's number and write its significance.
2 Write the principle involved in hammer mill.
3 Define elutriation method of size separation.
4 Define black body and grey body.
5 Differentiate evaporation and drying.
6 Define distillation and write its applications.
7 Define EMC and FMC.
8 Write the differences between solid and liquid mixing.
9 Define filter aid with examples.
10 Write any two methods to prevent and control corrosion.

PART- B (1X 14 = 14 Marks)

11 Define size reduction. Write principle, construction, working, applications, advantages and disadvantages of ball mill.
12 Explain the theory, equipment and applications of molecular distillation.
13 Classify and enumerate different types of corrosion.

PART- C (5X 8 = 40 Marks)

14 Derive and explain Bernoulli's theorem with applications.
15 Explain the principle, working, and applications any one filter.
16 State Fourier's law and derive an equation for heat transfer through a metal wall.
17 Explain the principle, construction and working of any one evaporator.
18 Write the construction and principle involved in spray drying process with help of diagram.
19 Write the principle and working of planetary mixer with the help of diagram.
20 Explain the theories filtration.
21 Write about the principle, construction, working and advantages of super centrifuge.
22 Discuss the factors to consider in selection of materials for pharmaceutical plant construction.

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Code No: 12065/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Semester (PCI) (Main & Backlog) Examination, March 2021

Subject : Pharmaceutical Microbiology

Time: 2 Hours **Max. Marks: 75**

Note: Answer Any Seven Questions from Part –A, Any one Question from Part-B. and Any Five Questions from Part-C

PART – A (7 X 3 = 21 Marks)

1 Distinguish between 'autotrophs' and 'heterotrophs' with examples.
2 Write about i) Enrichment media ii) Differential media
3 Briefly explain the term – 'decimal reduction time'.
4 Explain about 'Fractional sterilizations'.
5 What are the different sterility tests.
6 Differentiate 'disnfectants' and 'antiseptics'
7 What do you know about 'HEPA'.
8 Give the principle of 'Microbial assay'.
9 How would you prevent, contamination.
10 Write about 'Transformed cell cutture'.

PART- B (1 X 14 = 14 Marks)

11 a) Describe the different phases of bacterial growth curve.
b) Explain in detail about the isolation and cultivation of anaerobic bacteria.

12 What is sterilization? Classify different methods of sterilization and describe the construction, principle, procedure, merits, demerits and applications of 'Autoclaving'.

13 Describe the various factors influencing disinfection.

PART - C (5 X 8 = 40 Marks)

14 Describe the different techniques used for isolation of pure cultures.
15 Describe the construction and working of 'phase contrast microscopy'.
16 Differentiate 'Gram positive' and 'Gram-negative' bacteria with suitable examples.
17 Write a note on 'Gaseous sterilization'.
18 Discuss any two groups of disinfectants with their mode of action and applications.
19 Write about 'Chick – martin test'.
20 Write short notes on 'Assessment of new antibiotic'.
21 Write short notes on 'Applications of cell cultures'.
22 Write short notes on factors affecting microbial spoilage of pharmaceutical products.

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Code No: 12064/PCI

FACULTY OF PHARMACY

B.Pharmacy III-Semester (PCI) (Main & Backlog) Examination, March 2021

Subject : Physical Pharmaceutics-I

Time: 2 Hours **Max. Marks: 75**

Note: Answer Any Seven Questions from Part –A, Any one Question from Part-B. and Any Five Questions from Part-C

PART – A (7 X 3 = 21 Marks)

1. Define solubility.
2. What is critical solution temperature.
3. Define amorphous and crystalline matter.
4. What are eutectic mixtures.
5. Define ph scale..
6. What is surface free energy.
7. What is buffer capacity.
8. Define isotonic solutions.
9. What are liquid crystals.
10. What is HLB. Give two examples

PART – B (1 X 14 = 14 Marks)

11. Write a note on quantitative approach to the factors influencing solubility of drugs.
12. Write a note on (i) Refractive index (ii) Dipole movement (iii) Dissocaiation constant
13. Define complexation Write a note on classification and methods of analysis of complexation.

PART – C (5 X 8 = 40 Marks)

14. Write a note on distribution law, its application and limitation.
15. Define polymorphism. Write its applications.
16. What is HLB. Write a note on surface active agents.
17. Write a note on protein binding.
18. What are buffers. Write the importance of pharmaceutical and biological buffers.
19. What a note on measurement of surface tension.
20. What is the importance of diffusion principles in biological systems.
21. What is critical solution temperature. Write its application.
22. Write a note on adsorption at solid interface.

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Code No. 6278/PCI

FACULTY OF PHARMACY

B. Pharmacy III- Semester. (PCI) (Backlog) Examination, December 2020

Subject: Pharmaceutical Organic Chemistry - II

Time: 2 Hours **Max. Marks: 75**

PART – A

Note: Answer any Seven questions. ***(7 x3=21 Marks)***

1. What is the difference between an oil and a fat?
2. Define the term aromaticity? How is it related to Huckel rule?
3. Write the structure and uses of DDT.
4. Write any two qualitative tests for phenol.
5. Write the signigicance of acid value.
6. Write the structures of Phenanthrene and Triphenyl methane.
7. Explain the limitations of Baeyer's strain theory.
8. Define o/p and m-directing group with examples.
9. Explain resonance structures of benzene.
10. Write the uses of Saccharin and Resorcinol.

PART – B

Note: Answer One question. ***(1 x14=14 Marks)***

11. Give ion detail the mechanism of sulphonation and Friedelcrafts alkylatin.
12. Explain any two methods of preparation and reactions of phenol.
13. Explain principle and significance of Saponification value and Reichert Meissl(RM) value.

PART - C

Note: Answer any Five questions. ***(5x8=40 Marks)***

14. Write any two reactions of cyclopropane and cyclobutane.
15. How will you distinguish between 1^0, 2^0 and 3^0 aromatic amines?
16. Explain acidic nature of aromatic acid. Discuss the effect of electron donating substituents on the acidity of aromatic acid.
17. Explain the prepartions (any 2) and reactions (any 2) of naphthalene.
18. Explain any two reactions of fatty acid.

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19. Explain the deactivating nature of chlorobenzene.
20. Write the synthetic uses of aryl diazonium salts.
21. Explain the reactions of Anthracene.
22. Write the notes on -
    a. Sachse Mohr's theory
    b. Drying of oils.

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Code No. 6281/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Semester (PCI) (Backlog) Examination, December 2020
Subject: Pharmaceutical Engineering

Time: 2 Hours **Max. Marks: 75**

PART – A

Note: Answer any Seven questions. ***(7 x3=21 Marks)***

1. List the types of manometers.
2. Write the official standards for powders.
3. State Fourier's law.
4. Write the principle involved in ste4am distillation.
5. What is mixing index.
6. What is drying and its importance in pharmaceuticals.
7. Define filtration.
8. List centrifuges based on mechanism of separation.
9. Classify materials used for plant construction.
10. Explain wet or Electrochemical corrosion.

PART – B

Note: Answer One question. ***(1 x14=14 Marks)***

11. Write about forced circulation evaporator and climbing film evaporator with diagrams.
12. Explain the theories and factors influencing filtratin.
13. Explain the principle, construction and working of Simple distillation.

PART - C

Note: Answer any Five questions. ***(5x8=40 Marks)***

14. Differentiate between Venturimeter and Rotameter.
15. Describe the principle and working of bellmill.
16. Write a note on shell and tube heat exchanger.
17. Explain the principle involved in fractional distillation.
18. Explain the principle and working of Silveson Emulsifier.
19. Write a note on rete of drying & its applications.
20. Write a not on filter media and filter aids.
21. Discuss the factors to be considered in the selection of materials for plant construction.
22. Discuss about any one type of fluid corrosion.

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Code No. 6280/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Semester (PCI) (Backlog)Examination, December 2020

Subject: Pharmaceutical Microbiology

Time: 2 Hours **Max. Marks: 75**

PART – A

Note: Answer any Seven questions. ***(7 x3=21 Marks)***

1. Explain the bacterial growth curve.
2. Write the difference between Prokaryotes and Eukaryotes cells.
3. What is the difference between disinfectant and antiseptic?
4. Describe Indole test.
5. What is sterility testing? Explain.
6. Explain the factors affecting disinfectant.
7. Describe the classification of fungus.
8. Explain in-vitro test for assessment of new antibiotic.
9. Write note on HEPA.
10. Explain the type of spoilage.

PART – B

Note: Answer One question. ***(1 x14=14 Marks)***

11. Explain the various methods used for cultivation of virus in detail.
12. Describe the various physical methods of sterilization with examples.
13. Discuss the principles, methods and procedure of microbial assay. Explain the assay of antibiotic.

PART - C

Note: Answer any Five questions. ***(5x8=40 Marks)***

14. Explain the various methods of classification of bacteria with examples.
15. Discuss the various methods for counting of bacteria.
16. Explain the type of phase contrast microscopy.
17. Define staining. Describe various staining techniques used in bacterial identification.
18. Describe the evaluation of efficiency of sterilization method.
19. Classify the disinfectant and explain their mode of actions.
20. Explain the various sources of contamination in aseptic area and its prevention methods.
21. Discuss the general procedure for cell culture.
22. Describe the different tests used to assess microbial contamination.

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Code No. 6279/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Sem. (PCI) (Backlog) Examination, December 2020

Subject: Physical Pharmaceutics - I

Time: 2 Hours **Max. Marks: 75**

PART – A

Note: Answer any Seven questions. ***(7 x3=21 Marks)***

1. Define super saturated solutions and ideal solutions.
2. Dissolution of drug is faster in granules. Why?
3. Write the applications of Fick's first law of diffusion in pharmacy.
4. State the phase rule.
5. What are super critical fluids?
6. Define dielectric constant. What is snell's law?
7. Differentiate between cohesive forces and adhesive forces.
8. Write the classifications of complexes.
9. Define Isotonic solutions and Hypotonic solutions.
10. How pH is affected by temperature?

PART – B

Note: Answer One question. ***(1 x14=14 Marks)***

11. Describe the measurement of surface tension & write the application of surfactants.
12. State Gibb's phase rule. Explain the phase diagram of phenol water system.
13. Define protein binding. Explain its significance. Explain kinetics of protein binding.

PART - C

Note: Answer any Five questions. ***(5x8=40 Marks)***

14. Define solubility. Explain different factors influencing solubility.
15. Explain Dalton's law of partial pressure.
16. What is buffer capacity? Write vanslyke's equation for buffer capacity and maximum buffer capacity.
17. Write a note on –
    (a) Molar refraction (b) Dipole moment.
18. Write the applications of complexation in pharmacy.
19. Explain about Polymorphism and its importance.
20. Explain liquid crystalline state with example.
21. How do you measure pH using Hydrogen electrode?
22. Write about pharmaceutical buffers.

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Code No. 6052/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Semester (PCI) (Main & Backlog) Examination, January 2020

Subject: Physical Pharmaceutics - I

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

Note: Answer all Questions from Part – A, and Two questions from Part – B, and any Seven questions from Part – C.

PART – A (10 X 2 = 20)

1. What is sorensen's pH scale?
2. What is buffer? Write the buffer equation.
3. What are solid dispersions?
4. What is common ion effect? Explain.
5. What is Refractive index?
6. What are ampholytes, Give examples?
7. Write the solubility of drug as part of solvent required for a part of solute as per USP.
8. Define complexation & chelation.
9. Define Detergency with example.
10. Define optical activity and specific rotation.

PART – B (2 x 10 = 20)

11. State and explain the relative lowering of vapour pressure of Roult's law. Explain its limitations.
12. What is Polymorphism? Give 4 examples of drugs exhibiting Polymorphism, Write its significance.
13. Explain in detail methods of adjustment of tonicity.

PART - C (7 x 5 = 35)

14. Write a note on Liquid Crystalls.
15. Write a short note on –
    (a) Noyes-whitney equation (b) Dankwert's Model
16. State distribution law. Discuss the applications.
17. Explain about Protein binding.
18. Define refractive index. Describe snell's law in detail.
19. Describe capillary rise method to determine surface tension of liquid.
20. Define complexation. What are types of complexes? Write about inclusion complex.
21. Enlist various methods of liquefaction gases. Explain any two.
22. Explain the difference between ideal solution and real solution.

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Code No. 6051/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Sem. (PCI) (Main & Backlog) Examination, December 2019

Subject: Pharmaceutical Organic Chemistry - II

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

Note: Answer all Questions from Part – A, and Two questions from Part – B, and any Seven questions from Part – C.

PART – A (10 X 2 = 20)

1 Define Huckel's rule.
2 Write the structures of DDT and BHC.
3 Explain activating and deactivating groups with examples.
4 Write the uses of cresols and naphthols.
5 Explain rancidity of oil.
6 Write the structure and uses of anthracene.
7 Define saponification value.
8 Explain the significance of ester value.
9 Explain about puckered ring structure.
10 Explain resonance in benzene.

PART – B (2 x 10 = 20)

11 Explain electrophilic substitution reactions of benzene with any one example.
12 Write the short notes on -
a. RM Value b. Acid value c. Drying of oil.
13 Write the preparation methods of cyclopropane and cyclobutane.

PART - C (7 x 5 = 35)

14 Explain the nitration reaction of aniline with mechanism.
15 Write the note on Baeyer's strain and Sachse Mohr's theories.
16 Write any two preparation methods of Naphthalene.
17 Explain acidic nature of phenols. Discuss the effect of electron withdrawing substituents on the acidity of phenol.
18 Write the synthetic uses of aryl diazonium salts.
19 Explain the principle and signigicance of iodine value.
20 Explain the hydrolysis and hydrogenation reactions of oils.
21 Explain any two reactions of obenzoic acid.
22 Explain the deactivating nature of chlorobenzene.

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Code No. 6054/PCI

FACULTY OF PHARMACY

B. Pharmacy III-Sem. (PCI) (Main & Backlog) Examination, January 2020

Subject: Pharmaceutical Engineering

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

Note: Answer all Questions from Part – A, and Two questions from Part – B, and any Seven questions from Part – C.

PART – A (10 X 2 = 20)

Answer all questions. All questions carry equal marks.

1 What is size reduction and its importance?
2 Write the equation for Reynolds number with units.
3 Define conduction and convection with example.
4 Classify Evaporators.
5 Draw rate of drying curve.
6 Differentiate between solid and liquid mixing.
7 What is distillation and its applications with examples?
8 Define filter aids with examples.
9 Name any two alloys of cast iron with composition and properties.
10 What are the types of corrosion?

PART – B (2 x 10 = 20)

Answer any Two questions. All questions carry equal marks.

11 Write the principle, construction and working of Ball mill with diagram.
12 Write the principle, construction and working of fludized bed dryer with diagram.
13 Describe the different methods for prevention and control of corrosion.

PART - C (7 x 5 = 35)

Answer any Five questions. All questions carry equal marks.

14 Write a note on Bernoulli's theorem and applications.
15 Describe elutriation method of size separation.
16 Describe the factors influencing evaporation.
17 Derive an equation for heat transfer through a cylinder by conduction.
18 Describe the mechanism of drying process.
19 Explain the principle and working of planetary mixer.
20 Compare plate & frame filter press with chamber press.
21 Explain the principle/theory involved in centrifugation.
22 Write a note on Glass as material of construction in Pharmaceutical industry.

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Code No. 6053/PCI

FACULTY OF PHARMACY

B. Pharmacy III - Sem. (PCI) (Main & Backlog) Examination, January 2020

Subject: Pharmaceutical Microbiology

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

Note: Answer all Questions from Part – A, and Two questions from Part – B, and any Seven questions from Part – C.

PART – A (10 X 2 = 20)

1. Explain the structure of bacterial cell wall.
2. What are the advantages of phase contrast microscopy?
3. Classify the bacteria according to the morphology.
4. Explain Gram's staining.
5. What is the difference between disinfectants and antiseptic?
6. Write the difference between virus and bacteria.
7. Explain the clean area classification.
8. Draw bacterial growth curve & explain.
9. What is aseptic area? Mention the classification.
10. Mention preservative used in pharmaceutical products.

PART – B (2 x 10 = 20)

11. Describe the various methods used for isolation, cultivation and preservation of pure culture.
12. Classify the sterilization methods with examples. Discuss various sterilization methods by Heat.
13. Discuss the sterility testing of solid as per I.P. in detail.

PART - C (7 x 5 = 35)

14. Describe the nutritional requirements of microbes.
15. Explain bacterial identification by IMVIC test.
16. Describe the replication of virus.
17. Write detail note on sterility indicators.
18. Discuss the methods for evaluation of disinfectants.
19. Explain principle method and procedure involved in microbiological assay of Vitamin.
20. Write the construction and working of laminar air flow equipment.
21. Describe the application of animal cell culture.
22. Explain various factors affecting the microbial spoilage of pharmaceutical products.

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Code No. 13237 / PCI

FACULTY OF PHARMACY

B. Pharmacy III – Semester (PCI) (Suppl.) Examination, August 2019

Subject : Pharmaceutical Microbiology

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

Note : Answer all questions from Part-A. Any Two questions from Part-B and any Seven questions from Part-C.

PART-A (10 x 2 = 20 Marks)

1 What are protoplasts and spheroplasts?
2 Distinguish between Autotrophs and Heterotrophs.
3 Write about Indole test and its importance.
4 Differentiate between moist heat and dry heat sterilization.
5 What is sterilization and disinfection?
6 Differentiate between virus and bacteria.
7 What is paesturisation?
8 What is an antibiotic and it's applications?
9 Write about the tests used to assess microbial contamination.
10 Add a note on merits and demerits of animal cell culture.

PART-B (2 x 10 = 20 Marks)

11 Describe the different techniques used for determination of viable and total counts of bacteria.

12 Write about the different of sterilization techniques and their applications.

13 Describe the principle and method of antibiotic assay.

PART-C (7 x 5 = 35 Marks)

14 Explain the principle, advantages, disadvantages and applications of Electron microscopy.
15 Describe the different techniques used for preservation of pure cultures.
16 Discuss the physical methods of sterilization.
17 Write a note on gaseous and filtration sterilization.
18 Add a detailed note on phenol coefficient tests.
19 Describe the microbiological assay of Vitamin B_{12}.
20 Explain the methods involved in assay of aminoacids.
21 Explain the various factors that affects the microbial spoilage of pharmaceutical products.
22 Mention the various factors that affects the antimicrobial activity of preservatives.

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Code No. 13238 / PCI

FACULTY OF PHARMACY

B. Pharmacy III – Semester (PCI) (Suppl.) Examination, August 2019

Subject : Pharmaceutical Engineering

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

Note : Answer all questions from Part-A. Any Two questions from Part-B and any Seven questions from Part-C.

PART-A (10 x 2 = 20 Marks)

1 Define black body and grey body.
2 Write equation of Fourier's law and mention the terms in it.
3 Write the equation of Reynolds number. What are its applications?
4 Mention the factors influencing evaporation.
5 Differentiate between evaporation and drying.
6 What is size reduction and its importance?
7 Classify drying equipment.
8 What is distillation and its uses?
9 Mention different types of glass.
10 Differentiate conveyor and pump.

PART-B (2 x 10 = 20 Marks)

11 a) Explain the factors affecting mixing.
b) Write construction working, uses, merits and demerits of ball will.

12 Write the construction, working, uses merits and demerits of frame and plate filter press with washing facility.

13 Define corrosion. Explain the factors influencing corrosion along with methods to prevent corrosion.

PART-C (7 x 5 = 35 Marks)

14 Explain various energy losses during flow of fluids along with equations.
15 Explain about rate of drying.
16 Explain the laws governing size reduction.
17 Write the construction and working of hammer mill with help of diagram.
18 Derive the equation for rate of heat transfer through a plain wall.
19 Describe construction and working of double pipe heat exchanger.
20 Explain the construction, working, principle of conveyor.
21 Write construction and working principle of fluid bed dryer.
22 Write construction, working and uses of centrifuge.

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Code No. 13235 / PCI

FACULTY OF PHARMACY

B. Pharmacy III – Semester (PCI) (Suppl.) Examination, July 2019

Subject : Pharmaceutical Organic Chemistry – II

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

Note : Answer all questions from Part-A. Any Two questions from Part-B and any Seven questions from Part-C.

PART-A (10 x 2 = 20 Marks)

1 Explain briefly about Huckel's rule.
2 Define saponification value and give its significance.
3 Write the structure and uses of DDT.
4 Describe the rancidity of fats and oils.
5 Write about Reimer-Tiemann reaction of Phenols.
6 Differentiate cycloalkanes from aromatic hydrocarbons.
7 Write the structure and uses of triphenylmethane.
8 What is the effect of substituents on basicity of aromatic amines?
9 Explain about angle strain.
10 What is hydrolysis of fatty oils?

PART-B (2 x 10 = 20 Marks)

11 Describe the nitratio, sulphonation and halogenation reactions of benzene with mechanisms. 10

12 a) Explain briefly why phenols are more acidic than alcohols and emphasize the effect of substituents on acidity of phenols. 6
b) Write the conformations of cyclohexane and explain their relative stabilities. 4

13 Write the electrophilic substitution reactions of monosubstituted benzenes. 10

PART-C (7 x 5 = 35 Marks)

14 Explain the Friedel crafts alkylation of benzene.
15 Explain about the hydrogenation of fats and oils.
16 Write the structure and uses of naphthalene and its derivatives.
17 Write the preparation of benzoic acid.
18 Explain about theory of strain-less rings.
19 Define acetyl value. Describe its significance and determination.
20 Draw and explain the molecular orbital picture of benzene.
21 Explain the electrophilic substitution reactions of Napthalene.
22 Describe the method of preparation of diazonium salts.

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Code No. 13104 / PCI

FACULTY OF PHARMACY

B. Pharmacy III – Semester (PCI) (Main) Examination, January 2019

Subject : Pharmaceutical Organic Chemistry – II

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

Note : Answer all questions from Part-A. Any Two questions from Part-B and any Seven questions from Part-C.

PART-A (10 x 2 = 20 Marks)

1 Explain the concept of resonance with suitable examples.
2 Define acid value and give its significance.
3 What are cycloalkanes? Give their nomenclature.
4 Write the structure and uses of chloramines and naphthol.
5 Give any 2 qualitative tests for phenols.
6 What are polynuclear aromatic hydrocarbons? Give examples.
7 Explain nitration of benzene reaction with structures.
8 Write the structure and uses of diphenylmethane and anthracene.
9 What is an electrophile? Give two examples.
10 What is drying of fats and oils? Give its importance.

PART-B (2 x 10 = 20 Marks)

11 Explain the effect of substituents on reactivity and orientation of electrophilic substitution reactions of monosubstituted benzene.

12 a) Explain the acidity of aromatic carboxylic acids with special emphasis on effect of substitution on their acidity.
b) Explain any three reactions of benzoic acid.

13 a) Write about the synthesis and uses of arydiazonium salts. 6
b) Define saponification value. Describe the significance and determination. 4

PART-C (7 x 5 = 35 Marks)

14 What is aromaticity? Explain in detail about Huckel's rule.
15 Explain about Hinsberg method of separation of amines.
16 Write about electrophilic substitution reactions of monosubstituted benzene.
17 Explain the mechanism of Friedel-Craft's alkylation and give a note on its limitations.
18 Explain about Baeyer's angle strain theory with its limitations.
19 List out the reaction of fats and oils. Explain about the hydrolysis of fats and oils.
20 Write the following reactions of phenols .
a) Williamson's synthesis of ethers
b) Reimer-Tiemann reaction
21 Keep the following aromatic hydrocarbons in the decreasing order of aromaticity and justify the same :
Anthracene, benzene and naphthalene.
22 Define iodine value. Describe Wij's method and its significance.

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Code No. 13106 / PCI

FACULTY OF PHARMACY

B. Pharmacy III – Semester (PCI) (Main) Examination, January 2019

Subject : Pharmaceutical Microbiology

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

Note : Answer all questions from Part-A. Any Two questions from Part-B and any Seven questions from Part-C.

PART-A (10 x 2 = 20 Marks)

1 Differentiate Prokaryotes and Eukaryotes.
2 Write the difference between enrichment and differential media.
3 What is Acid-fast staining?
4 What is Pasteurization?
5 Define Disinfection and Disinfectant.
6 Explain the practical application of phenotic compounds.
7 What is aseptic area?
8 Explain the uses of Laminar airflow unit.
9 Describe the changes in the product that occurs due to microbial spoilage.
10 What is an antibiotic? What are its uses?

PART-B (2 x 10 = 20 Marks)

11 With the help of a neat diagram describe the structure of a typical bacterial cell.

12 What are different types of sterilization methods? Explain in detail.

13 Explain how the sterility testing of different pharmaceutical preparations are done.

PART-C (7 x 5 = 35 Marks)

14 Describe the principle and applications of phase-contrast microscopy.
15 Discuss various methods for isolation of pure cultures.
16 Define differential staining with examples. Differentiate between gram-positive and gram-negative bacteria.
17 Discuss any five groups of disinfectants with their mode of action and applications.
18 Discuss about cultivation of viruses.
19 Mention principles of Microbiological assays.
20 Describe briefly the microbiological assay of Penicillin.
21 Enlist the sources and types of microbial contamination.
22 List out the applications of Animal cell culture in pharmaceutical industry and research.

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Code No. 13107 / PCI

FACULTY OF PHARMACY

B. Pharmacy III – Semester (PCI) (Main) Examination, January 2019

Subject : Pharmaceutical Engineering

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

Note : Answer all questions from Part-A. Any Two questions from Part-B and any Seven questions from Part-C.

PART-A (10 x 2 = 20 Marks)

1 Write the equation for determination Reynolds number and expand the terms in it.
2 What is size reduction and it's importance?
3 Mention any two differences between air separator and cyclone separator.
4 Write equation of Stefan Boltzmann's law and mention the terms in it.
5 Differentiate between evaporation and distillation.
6 Define bound and unbound water.
7 Mention the factors influencing filtration.
8 What is filter aid and mention its application?
9 Classify filtration equipment.
10 Write merits and demerits of glass as material.

PART-B (2 x 10 = 20 Marks)

11 Write the principle, construction and working of ball mill and hammer mill.

12 Write the construction, working, uses, merits and demerits of frame and plate filter press without washing facility.

13 Classify the materials for plant construction and mention the composition, merits and demerits of ferrous metals.

PART-C (7 x 5 = 35 Marks)

14 Derive the Bernoulli's theorem and mention its applications.

15 Write the construction and working of venturimeter.

16 Write the construction and working of fluid energy mill with help of diagram.

17 Explain the construction and working of bag filter with help of diagram.

18 Derive the equation for rate of heat transfer through a thick walled cylinder.

19 Mention the construction and working principle of climbing film evaporator.

20 Write construction and working principle of freeze dryer.

21 Write construction, working, uses, merits and demerits of rotary drum filter.

22 Explain the factors influencing selection of plant materials.

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Code No. 13105 / PCI

FACULTY OF PHARMACY

B. Pharmacy III – Semester (PCI) (Main) Examination, February 2019

Subject : Physical Pharmaceutics – I

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

Note : Answer all questions from Part-A. Any Two questions from Part-B and any Seven questions from Part-C.

PART-A (10 x 2 = 20 Marks)

1 Define and explain
   a) CMC b) Contact angle
2 Write about liquid crystalline state and it's applications.
3 Write applications of buffers in pharmacy.
4 Define and explain any two solubility expressions.
5 Give principle of HLB value and it's significance.
6 Define a) Dissociation constant b) Dielectric constant
7 What is a buffer? What are its uses? Give examples.
8 Explain the process of detergency.
9 Differentiate between physical adsorption and chemisorption.
10 Define and explain the uses of surface active agents.

PART-B (2 x 10 = 20 Marks)

11 What is polymorphism? Explain it's applications giving suitable examples.

12 What is buffer capacity? Derive and explain buffer equation.

13 How the binding of drug to proteins can influence their action? Deduce an equation for scat chard plot for drug-protein interaction.

PART-C (7 x 5 = 35 Marks)

14 Discuss ideal and non-ideal solutions by considering the solvation-association phenomena.
15 Define and explain optical rotation and dipole moment. Write their applications.
16 Describe capillary rise method for determination of surface tension.
17 Define complexation with the help of suitable example. Describe the following
   a) Metal complexes b) Occlusion compound.
18 What is buffer capacity of solution containing 0.2M acetic acid and 0.1M sodium acetate.
19 Explain Gibb's adsorption principle and it's applications.
20 Explain distribution law and it's applications.
21 Discuss the effect of pressure and temperature on solubility of gases in liquid.
22 How do you measure pH using hydrogen electrode?

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