FACULTY OF PHARMACY

B. Pharmacy VI Semester (PCI) (Backlog) Examination, February / March 2022

Subject: Medicinal Chemistry - III

Time: 3 Hours   Max. Marks: 75

PART - A

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

1. Define & classify β-lactam antibiotics?
2. Write the structure of Sulbactam & Monobactam?
3. Give the structure and uses of Neomycin?
4. Write the structure of Pyrazinamide & Isoniazid?
5. Write the structure and uses of Dapsone?
6. Define Partition coefficient, Tafts steric parameter?
7. Write the mechanism of action of Tetracyclines?
8. Write the mechanism of action of Macrolides?
9. Define prodrugs?
10. Write the structure and uses of Clindamycin?

PART - B

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

11. Write the various classes of antitubercular drugs. Write the synthesis & mode of action of Para amino salicylic acid?
12. Write the life cycle of malaria parasite and Write the synthesis and mode of action of the Chloroquine?
13. Write the mode of action and SAR of Sulphonamides and Write the synthesis of Sulfacetamide?

PART - C

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

14. Write the chemical degradation of Pencillins?
15. Explain the mode of action, SAR and uses of Cephalosporins?
16. Give the structure, synthesis, mode of action and uses of Chloramphenicol?
17. Write a note of Prodrugs?
18. Give the various classes of Antifungal agents & write the synthesis of Miconazole?
19. Write the synthesis, mode of action and uses Diethylcarbamazine citrate?
20. Give a note on liquid phase synthesis in combinatorial chemistry?
21. Write the structure, synthesis and uses of Tolnaftate?
22. Give the various classes of Anti-protozoal agents & write the synthesis of Metronidazole?

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FACULTY OF PHARMACY
B. Pharmacy III Semester (PCI) (BACKLOG) Examination, February / March 2022

Subject: Pharmaceutical Microbiology

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

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

1 What are prokaryotes and Eukaryotes?
2 Write pharmaceutical significance of protozoa.
3 What is Tyndalization?
4 What is sterilization, disinfection and antisepsis?
5 What is aseptic area?
6 Define antiseptic and disinfection.
7 Define pasteurization.
8 What is antibiotic?
9 What is bacteriostatic and bactericidal?
10 Write a note on hot air oven.

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

11 Explain in detail about Dark field microscopy.

12 Explain Physical and Radiation methods of Sterilization.

13 Explain sterility testing of solids and liquids.

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

14 Explain about preservation of pure cultures.

15 Explain Acid fast staining.

16 Write the applications of Animal cell culture.

17 Explain the reproduction in Bacteriophages.

18 Explain about starch hydrolysis test.

19 Explain about cultivation of aerobic bacteria.

20 Write about moist heat sterilisation.

21 Write about different sources of contamination in aseptic area.

22 Explain viable count method of bacteria.

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FACULTY OF PHARMACY
B. Pharmacy III Semester (PCI) (Backlog) Examination, February / March 2022

Subject: Pharmaceutical Engineering

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

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

1 What Reynolds number ad mention terms in it?
2 Write the objectives of size separation and mention its applications.
3 Classify modes of heat transfer and mention the applications of it.
4 What is elutriation and mention its importance?
5 Draw the diagram of simple distillation unit.
6 Define equilibrium moisture content and mention its significance.
7 Classify mixing equipments.
8 List the factors affecting mixing.
9 Mention the application of centrifugation.
10 Define corrosion and classify it.

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

11 Explain the factors affecting size reduction. Write construction working, uses, merits and demerits of fluid energy mill.

12 Explain the factors affecting filtration. Write construction working, uses, merits and demerits of plate and frame filter press with wash facility.

13 What are factors affecting corrosion and explain the prevention of corrosion?

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

14 Explain the different energy losses during flow of fluids.
15 Write construction and working of pilot tube.
16 Differentiate between heat exchanger and heat interchanger.
17 What is multiple effect evaporators and write the economy of it?
18 Explain the concept of flash distillation with help of diagram and mention the advantages.
19 Write working principle of vacuum dryer and its merits and demerits in comparison to tray dryer.
20 Write the working principle, construction of ribbon blender.
21 Write the construction and working of semi-continuous centrifuge.
22 Describe nonferrous metals as materials for plant construction.

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FACULTY OF PHARMACY
B. Pharmacy III Semester (PCI) (BACKLOG) Examination, February 2022

Subject: Pharmaceutical Organic Chemistry-II

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

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

1   Describe resonance in benzene.
2   Write the structure and uses of Chloramine.
3   Define and differentiate fats & oils with examples.
4   Write any two methods for the preparation of cycloalkanes.
5   Write any two qualitative tests for phenols.
6   What are puckered rings? Give structural examples.
7   Write the resonance structures and uses of phenanthrene.
8   Describe the drying of fats and oils.
9   Write about Haworth synthesis of naphthalene.
10 Write the structure & uses of cresol.

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

11 Describe the following reactions of benzene with their mechanism: Halogenation & Nitration.

12 Explain diazotization reaction. Write the synthetic applications of aryl diazonium salts.

13 Write the definition, significance and determination of following analytical constants: iodine value & saponification value.

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

14 Explain the mechanism involved in Friedel-craft's alkylation reaction of benzene with its limitations.
15 Explain about oxidation & hydrogenation of fats and oils.
16 Write the structure and uses of anthracene and its derivatives.
17 Write the preparation and reactions of benzoic acid.
18 Explain Baeyer's angle strain theory along with its limitations.
19 Define acid value. Describe its significance and determination.
20 What are activating & deactivating groups? Explain the theory of orientation in electrophilic substitution reactions of mono substituted benzene.
21 Write the preparation, reactions and uses of diphenylmethane.
22 Explain the acidity of phenols.

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FACULTY OF PHARMACY
B. Pharmacy III Semester (PCI) (BACKLOG) Examination, February / March 2022

Subject: Physical Pharmaceutics - I

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

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

1 Define saturated solution, solubility.
2 Write a note on solubility expressions.
3 What is the difference between crystalline state and amorphous state?
4 What are eutectic mixtures?
5 Write a note on detergency.
6 Define surface tension. Write uses of surfactants.
7 What is complexation?
8 Write the classifications of complexes.
9 Write a note on applications of buffers.
10 Define Isotonic solutions and Hypotonic solutions.

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 Gibbs phase rule.

12 Explain various methods for determination of surface tension.

13 (a) Write a note on Refractive index and dielectric constant.
   (b) What are buffers? Write the importance of pharmaceutical and biological buffers.

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

14 What is critical solution temperature? Write its applications.
15 Define and explain optical rotation and dipole moment. Write their applications.
16 How to determine dissociation constant and write its applications?
17 Write the applications of complexation in pharmacy.
18 What is protein binding? Write the importance of protein binding.
19 Write about pH scale. Write methods for determination of pH.
20 Write a note on buffers in pharmaceutical and biological systems.
21 Write a note on HLB scale and its applications.
22 What is buffer capacity? Write vanslyke's equation for buffer capacity and maximum buffer capacity.

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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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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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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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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.

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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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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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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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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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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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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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FACULTY OF PHARMACY
B. Pharmacy III-Semester (CBCS) (Backlog) Examination, September 2021
Subject: Pharmaceutical Engineering - I

Time: 2 Hours   Max. Marks: 70

Note: Answer any four questions. $(4 \times 17^{1/2} = 70 \text{ Marks})$

1.   Define the concepts of dimentional analysis, unit operation and unit process, steady and unsteady states. Dimentationless formula with examples.

2.   Explain the characteristics and applications of glass and iron as material of plant construction.

3. (a) Explain Reynold's experiment and it's significance.
   (b) Derive the equation for measurement of pressure using simple manometer.

4. (a) Explain construction and workings of heat exchanger.
   (b) Write the concepts of steam traps and entrainment separators.

5. (a) Describe in detail pneumatic conveyer and it's advantages.
   (b) Write the construction and working of air jet pump.

6.   Describe various types of valves and their applications along with diagrams.

7. (a) Write the procedures for dehumidification with help of diagrams.
   (b) Describe construction and working principle of air conditioner.

8. (a) Explain the compression refrigeration cycle with help of diagram.
   (b) Describe various refrigerators and their factors influencing their selection.

9. (a) Explain the filter aid along with examples.
   (b) Explain subparts and working principles of frame and plate filter press with wash facility.

10. (a) Write the theory and significance centrifugation.
    (b) Write the construction and working of continuous centrifuge.

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FACULTY OF PHARMACY
B.Pharmacy 2/4 - I- Semester (Non-CBCS) (Backlog) Examination, September 2021

Subject: Pharmaceutical Microbiology

Time: 2 Hours   Max. Marks: 70

Note: Answer any four questions.   **(4 x 17$^{1/2}$ = 70 Marks)**

1 (a) Explain in detail about morphology of typical bacteria with neat labelled diagram.
   (b) Explain different methods of bacterial count.

2 (a) Explain Nutritional requirements of bacteria with examples.
   (b) Explain cultivation of aerobic and anaerobic bacteria.

3 (a) Define stain. Write types of Stains. Explain principle and procedure of Gram staining technique.
   (b) What are mutations? Write the types mutations. Explain isolation of mutants.

4 (a) Define growth. Explain different phases of growth in bacteria.
   (b) Explain synchronous growth.

5 (a) Explain in detail about heat and radiation sterilization.
   (b) Explain abut sterilization indicators.

6 (a) Explain different groups of disinfectants with mechanism of action.
   (b) Explain about sterilization of premises.

7 (a) Explain about humoral immunity and cell mediated immunity.
   (b) What are toxins? Types of toxins and explain in detail types of toxins.

8 (a) Explain about phagocytosis with neat labelled diagram.
   (b) Describe precipitation reactions and their applications.

9 (a) Write the causative organism, mode of transmission, pathophysiology, symptoms, diagnosis, treatment and prevention of typhoid fever.
   (b) What is epidemic, endemic and pandemic?

10 (a) Write the causative organism, mode of transmission, pathophysiology of Tuberculosis.
   (b) Explain the principle of Indole production test.

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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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FACULTY OF PHARMACY
B. Pharmacy III-Semester (CBCS) (Backlog) Examination, September 2021

Subject: Pharmaceutical Microbiology

Time: 2 Hours   **Max. Marks: 70**

Note: Answer any four questions.   **(4 X 17 $^{1/2}$ = 70 Marks)**

1. (a) Elaborate the methods used for isolation of aerobic and anaerobic bacteria.
   (b) Describe the growth of bacterial population with the help of growth curve.

2. (a) Write a note on electron microscopic methods.
   (b) Explain various methods used for preservation of pure culture.

3. (a) Write about various cultivation techniques for virus.
   (b) Define staining. Explain any two differential staining techniques in detail.

4. (a) Write about mechanisms used to repair mutagenesis.
   (b) Write about IMViC test.

5. (a) Write a note on sterilization indicators.
   (b) Define disinfectants. Write about the classification of disinfectants.

6. (a) Explain applications of disinfectants and the various factors influencing their efficiency.
   (b) Define sterilization. Explain in detail radiation method of sterilization.

7. (a) Describe about cell mediated immunity in detail.
   (b) Write in detail about antigen-antibody reactions and their applications.

8. (a) Write a note on different antigens of bacterial cell with suitable examples.
   (b) Explain in detail about phagocytosis with suitable diagram.

9. (a) Write a note on (i) Malaria (ii) Whooping cough (iii) Poliomyelitis.
   (b) Write about various methods used for identification of microbes present in milk.

10. (a) Define communicable diseases. Write a note on influenza.
    (b) Write a note on microbiology of water.

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FACULTY OF PHARMACY
B. Pharmacy 2/4 I Semester (Non-CBCS) (Backlog) Examination, September 2021

Subject: Pharmaceutical Analysis – I (Chemical Analysis)

Time: 2 Hours   **Max. Marks: 70**

Note: Answer any four questions.   **(4 x 17 $^{1/2}$ = 70 Marks)**

1. (a) Define the term error. Discuss the various types of errors and write a note on the calibration of errors.
    (b) Describe the different methods of expressing the concentration of solutions.

2   (a) Define the following terms.
        (i) Significant figure (ii) Accuracy (iii) Linearity (iv) end point.
    (b) What is meant by calibration and write the procedure for the calibration of burette.

3   (a) Discuss the theory of indicators.
    (b) Write a note on different theories of acids and bases.

4   (a) What are buffers, how they are prepared and explain their mechanism of action?
    (b) Write the preparation and standardization of 0.1N NaOH.

5   (a) Explain the co-precipitation and post precipitation with examples.
    (b) Write the Mohr's methods for the determination of chlorides.

6   (a) Write a note on redox indicators.
    (b) Describe the principle involved in complexometric titration. Write a short note on PM indicators.

7   (a) Write the principle, advantages and application of non-aqueous titrations.
    (b) Discuss the principle, procedure and apparatus used in the assay of Oxygen.

8   (a) Explain Iodometry and Iodimetry.
    (b) How do you prepare and standardize 0.1N $HClO_4$.

9   (a) Define the terms:
        (i) Molecular formula   (ii) Empirical formula.
    (b) Balance the following equations:
        (i) $Na_2 SO_4 + H_2O \rightarrow NaOH + H_2SO_4$.

10 (a) Describe mole concept and Avogadro's number.
    (b) Calculate the percentage composition of elements in Na_2SO_4.

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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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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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FACULTY OF PHARMACY

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

Subject: Pharmaceutical Organic Chemistry-II

Time: 2 Hours   **Max. Marks: 70**

Note: Answer any four questions.   **(4 x 17$^{1/2}$ = 70 Marks)**

1   Explain Huckle's rule and stability of benzene in detail.

2   Write the preparation and reactions of phenols. Explain in detail about the acidity of phenols.

3   What is geometrical isomerism? Explain the sequence of rules to determine E- & Z- configuration with suitable examples.

4   Define optical activity & plane polarized light. Discuss in detail about conditions required for optical activity.

5   Write the resonance structures, preparation (any two) and reactions (any four) of furan.

6   (a) Write the preparation and reactions of pyridine.
    (b) Write the structure and uses of medicinal compounds (any two) containing quinolone.

7   (a) Discuss any two methods of preparation each for thiazole and pyrazole.

    (b) Write the structure and uses of medicinal compounds (each one) containing the following heterocyclic compounds: Benzofuran and imidazole.

8   (a) Explain any two methods of preparation each for benzimidazole and imidazole.
    (b) Write the structure and uses of medicinal compounds (each one) containing the following heterocyclic compounds: Thiazole and benzopyran.

9   (a) Describe the mechanism of the following reactions:
        (a) Oppenauer oxidation   (b) Beckmnn rearrangement.
    (b) Write two applications for each of the following reagents:
        (a) NBS   (b) Perchloric acid.

10 (a) Explain the mechanism of the following reactions:
        (a) MPV reduction   (b) Arndt-Eistert synthesis.
    (b) Write two applications for each of the following reagents:
        (a) Selenium oxide (b) Lead tetraacetate.

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