Printed Pages: 01
Paper Id: 233039

Sub Code: BP-301T

Roll No.

B.PHARM.
(SEM III) THEORY EXAMINATION 2022-2023
PHARMACEUTICAL ORGANIC CHEMISTRY-II

Time: 3 Hours *Total Marks: 75*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

(a) What is Huckel's rule?

(b) Give structure of DDT and its uses.

(c) Describe structure and uses of Phenol.

(d) What is Fat and Oil? Give examples.

(e) What is Acid value? Give its use.

(f) Explain Iodine value and its significance.

(g) Define Saponification value.

(h) What is Ester value?

(i) Give resonance structure and uses of Resorcinol.

(j) Give physical and chemical properties of Naphthalene.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

(a) Explain Baeyer strain theory of stability of Cycloalkanes and give its limitations.

(b) Explain Sachse Mohr's theory. Give reactions of cyclopropane and cyclobutane only.

(c) Explain synthetic and other evidences in the derivation of structure of benzene.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

(a) Give structures, synthesis, reactions and uses of Anthracene derivatives.

(b) Explain structure and uses of Saccharin, BHC and Chloramine.

(c) Define aromatic amines and give resonance structure of Aniline

(d) Give structure, synthesis and importance of diphenylmethane.

(e) Why phenols are acidic in nature? Explain effect of substituents on acidity of phenols.

(f) What is principle and procedure involved in estimation of acid value of fat/oil?

(g) Explain structure and medicinal uses of Phenanthrene and Triphenylmethane.

PAPER ID-411621

Roll No: | | | | | | | | | | | | |

BPHARM
(SEM III) THEORY EXAMINATION 2021-22
PHARMACEUTICAL ORGANIC CHEMISTRY II

Time: 3 Hours *Total Marks: 75*

Notes:

- *Attempt all Sections and Assume any missing data.*
- *Appropriate marks areallotted to each question, answer accordingly.*

SECTION-A

Q.1	Attempt **All** of the following Questions in brief	Marks**(10X2=20)**
a.	Give the structure and uses of Saccharin.	
b.	Give molecular orbital picture of benzene.	
c.	Explain Saponification value	
d.	Give stability order of cycloalkanes.	
e.	What are the uses of triphenylmethane?	
f.	Mention uses of Naphthalene.	
g.	Define cycloalkanes.	
h.	What is Friedal craft acylation?	
i.	What is Reichert Meissl (RM)	
j.	Draw any four aromatic structures.	

SECTION-B

Q.2	Attempt **ANY TWO** of the following Questions	Marks**(2X10=20)**
a.	Discuss in detail Baeyer's strain theory and its limitation.	
b.	Give analytical, synthetic and other evidences in derivation of structure of benzene.	
c.	Give structures, synthesis, reactions and uses of Phenanthrene derivatives.	

SECTION-C

Q.3	Attempt **ANY FIVE** following Question	Marks **(5X7=35)**
a.	Give structure, preparation and properties of benzoic acid.	
b.	Write a note on theory of strainless ring.	
c.	Give the structure and uses of BHC and Chloramine T.	
d.	Explain Friedel Crafts for alkylation with suitable examples.	
e.	What is principle and procedure involved in estimation of Iodine value and acetyl value of fat/oil?	
f.	Give the process involved in the synthesis of Triphenylmethane and their derivatives.	
g.	Explain Coulson and Moffitt's modification theory of cycloalkanes. Give reactions of cyclopropane and cyclobutane.	

PAPER ID-310888

Roll No: | | | | | | | | | | | | | |

B PHARM
(SEM-III) THEORY EXAMINATION 2020-21
PHARMACEUTICAL ORGANIC CHEMISTRY II

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a.	Define aromaticity.
b.	Why phenol is acidic?
c.	Why *p*-nitroaniline is less basic than aniline?
d.	Write the definition of RM value.
e.	Discuss the difference between drying and nondrying oil with example.
f.	What do you understand by angle strain?
g.	Write the different conformations of ethane.
h.	Illustrate the principle of saponification value.
i.	Predict the structure and medicinal uses of DDT and Naphthalene.
j.	What is banana bonding.

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

a.	Explain the methods of preparations and chemical reactions of Phenol.
b.	Discuss in detail about the methods of preparations chemical reactions of naphthalene.
c.	Write in detail about the methods of preparation and chemical reactions of cycloalkanes.

SECTION C

3. Attempt any *five* parts of the following: 5 x7 = 35

a.	Explain effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction.
b.	Write about analytical, synthetic, and other evidence in the derivation of structure of benzene.
c.	Discuss Basicity of amines and effect of substituents on basicity of amines.
d.	Write a detailed note on Iodine value.
e.	Discuss the Haworth synthesis of Anthracene and Phenanthrene.
f.	Illustrate in detail about Baeyer's Strain theory with its limitations.
g.	What do you mean by fats, oils, and waxes? Discuss the chemical reactions of fats, oils and waxes.

Sub Code:BP301T

Paper Id: 150301 Roll No:

B. PHARM
(SEM III) THEORY EXAMINATION 2019-20
PHARMACEUTICAL ORGANIC CHEMISTRY-II

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Give structure and uses of DDT.

b. Give molecular orbital picture of benzene.

c. Why phenol is acidic in nature?

d. What is Friedal craft acylation? Explain with suitable reaction.

e. Give structure and uses of Naphthols.

f. Explain acid value.

g. Give Hawarth synthesis of phenanthrene.

h. Give stability order of cycloalkanes.

i. Draw any four aromatic structures.

j. Give structure and uses of diphenylmethane.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a. Give structure, preparation and properties of phenol.

b. Give analytical, synthetic and other evidences in derivation of structure of benzene.

c. Write a note on theory of strainless ring.

SECTION C

3. Attempt any *five* parts of the following: **5 x 7 = 35**

a. Give Huckel's theory with suitable examples.

b. Give structure, preparation and properties of benzoic acid.

c. Give effect of substituent on orientation of monosubstituted benzene compounds towards electrophilic substitution reaction.

d. Explain saponification and iodine number.

e. Give reactions of fat and oils.

f. Give Baeyer's strain theory and its limitation.

g. Give structure, preparation and properties of naphthalene.

Printed Pages:1 **Sub Code: BP301T**

Paper Id: 150301 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM-III) THEORY EXAMINATION 2018-19
PHARMACEUTICAL ORGANIC CHEMISTRY –II

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a. Write a short note on resonance structure of benzene.

b. Give the structure and uses of Saccharin.

c. What are phenols? Give physical properties of it.

d. Give resonance structure and uses of Resorcinol.

e. What is the difference between fats and oils?

f. Define Iodine number (Iodine value).

g. Define acetyl value. Give its signification.

h. What are the uses of triphenylmethane?

i. Give physical and chemical properties of naphthalene.

j. Define cycloalkanes.

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

a. Explain aromatic electrophilic substitution reactions in Benzene with respect to halogenation with mechanism.

b. Give structures, synthesis, reactions and uses of Anthracene derivatives.

c. Explain Baeyer strain theory of stability of Cycloalkanes and give its limitations.

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a. Give the structure and uses of DDT, BHC and Chloramine.

b. Define aromatic amines and give resonance structure of aniline. Explain basicity of aromatic amines and effect of substituent.

c. Explain the principle involved in determination of saponification value of a fat/oil.

d. Why phenols are acidic in nature? Explain effect of substituents on acidity of phenols.

e. What is principle and procedure involved in estimation of acid value of fat/oil?

f. Give structure, synthesis and importance of diphenylmethane.

g. Explain Sache-Mohr theory of stability of cycloalkanes. Give reactions of cyclopropane and cyclobutane.

Printed Pages:01
Paper Id: 233443

Sub Code:BP-302T

Roll No.

B PHARM
(SEM III) THEORY EXAMINATION 2022-23
PHYSICAL PHARMACEUTICS I

Time: 3 Hours *Total Marks: 75*

Note: Attempt all Sections. If require any missing data; then choose suitably

SECTION A

1. **Attempt *all* questions in brief.** **10 x 2 = 20**

(a) State the equation forIdeal solubility parameter.

(b) Define Solvation and Association.

(c) Define the term "eutectic mixture" with an example.

(d) Enumerate the term "Vapor Pressure".

(e) Explain the term "Detergency".

(f) Classify surfactants with examples.

(g) List out the various methods used for determining protein binding.

(h) Define Chelate compounds.

(i) Define Buffer capacity.

(j) Define Sorensen's pH scale.

SECTION B

2. **Attempt any *two*parts of the following:** **2 x 10 = 20**

(a) Demonstrate various methods used for the determination of surface and interfacial tension.

(b) Describe the classification of complexation in detail.

(c) Describe the solubility of liquids in liquids.

SECTION C

3. **Attempt any *five*parts of the following:** **7 x 5 = 35**

(a) Explain the working of the polarimeter for finding optical rotation.

(b) Explain the differences between the solid-crystalline and amorphous states.

(c) Derive the equations for spreading coefficient and surface free energy.

(d) Discuss the various methods used for the analysis of complex formation.

(e) Discuss the distribution law along with its applications and limitations.

(f) Demonstrate various applications of buffers in pharmaceutical and biological systems.

(g) Derive the buffer equations for a weak acid and its salt.

PAPER ID-411744

Roll No: | | | | | | | | | | | | | |

BPHARM
(SEM III) THEORY EXAMINATION 2021-22
PHYSICAL PHARMACEUTICS I

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define the term "critical solution temperature" with an example.
b.	Interpret the term "freely soluble".
c.	Define the term "relative humidity".
d.	Define the term "sublimation" with an example.
e.	List various types of surfactants according to their use as per the HLB scale.
f.	Define the term "detergency".
g.	Define the term "plasma protein binding" with an example.
h.	Identify the central metal ion present in the Vitamin B_{12}.
i.	Differentiate between an isotonic, a hypotonic and a hypertonic solution.
j.	Explain the term "pH".

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Discuss in detail the "Raoult's law" with the help of diagrams showing positive and negative deviations and explain reasons behind these deviations.
b.	Differentiate between amorphous and crystalline solids with proper examples and also explain the phenomenon of polymorphism with suitable example.
c.	Illustrate the Freundlich and Langmuir adsorption isotherms.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Explain distribution law and mention some of its applications.
b.	Explain the term "eutectic mixture" with proper example.
c.	Write down the different methods for the measurement of surface and interfacial tensions and illustrate any one of these methods in detail.
d.	Classify and discuss the different types of complexes with appropriate examples.
e.	Explain various factors affecting protein binding of drugs and discuss any one method for the determination of protein binding of a drug.
f.	Describe the term "buffer capacity" and also explain the applications of buffers in pharmaceutical and biological systems.
g.	Write down the various methods for adjusting the tonicity of a pharmaceutical solution and applying an appropriate method determine the %-age of sodium chloride needed to make a solution of 0.05% of atropine sulphate isotonic with blood plasma. (Sodium chloride equivalent value (E) of atropine sulphate is 0.12.)

PAPER ID-311004

Roll No: | | | | | | | | | | | | | |

B PHARM
(SEM: III) THEORY EXAMINATION 2020-21
PHYSICAL PHARMACEUTICS I

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define Molarity and Normality.
b.	Differentiate crystalline solid and amorphous solid.
c.	Define critical solution temperature.
d.	What is critical micelles concentration.
e.	What are chelating agents?
f.	Define buffer capacity.
g.	Detergency.
h.	Define glassy state.
i.	What is liquid crystal? Name its two types.
j.	What is surface tension and surface free energy?

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Derive Raoult's law and discuss deviation from Raoult's law giving example.
b.	Explain buffer action and application of buffer in pharmaceutical and biological system.
c.	Classify complex compounds. Discuss chelates and cyclodextrin complexes with its application in pharmacy.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Discuss diffusion mechanism in biological system with examples.
b.	Discuss various method of analysis of complexation.
c.	What are different methods of determining surface tension? Discuss construction, working principle of capillary rise method.
d.	Classify surface active agents. Discuss application of surface active agents in pharmaceutical system.
e.	How will you determine optical activity? Explain.
f.	Define Nernst potential and Zeta potential. Discuss the electrical properties at the interface.
g.	What are buffered isotonic solution? Write different method of adjusting tonicity of solution.

Sub Code:BP302T

Paper Id: 150302 Roll No:

B. PHARM
(SEM-III) THEORY EXAMINATION 2019-20
PHYSICAL PHARMACEUTICS-I

Time: 3 Hours *Total Marks: 75*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Enlist limitations of distribution law.

b. Define salvation and association.

c. Define real solution.

d. Define diffusion.

e. What are chelate compounds?

f. State Raoult's Law.

g. What is vapor pressure?

h. Define HLB scale.

i. What are surface and interfacial tensions?

j. Define Sorensen's pH scale.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a. Describe solubility of liquid in liquids.

b. Describe determination and applications of dipole moment and dissociation constant.

c. Describe classification of complexation.

SECTION C

3. Attempt any *five* parts of the following: **5 x 7 = 35**

a. Describe pharmaceutical and biological buffers.

b. Define buffered isotonic solution. Describe methods of adjustment tonicity.

c. Discuss protein binding.

d. Explain solubilization and detergency.

e. Describe sublimation critical point and eutectic mixtures.

f. Discuss critical solution temperature and applications.

g. Write short notes on liquid crystals and glassy states.

Printed Pages: 01 **Subject Code:BP302T**

Paper Id: 150302 **Roll No:** | | | | | | | | | | |

B PHARM
(SEM III) THEORY EXAMINATION 2018-19
PHYSICAL PHARMACEUTICS -I

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Define ideal solution?
b. A solution contains 0.25 mole of solute and 0.75 mole of solvent. Calculate mole fraction of solvent in the solution?
c. What is Charles's law? Explain it.
d. Explain eutectic mixtures.
e. Why drop of liquid hanging in air is spherical in shape?
f. Explain the term Solubilization.
g. Define complexation.
h. What are chelate compounds and chelation?
i. What is Sorensen's pH scale?
j. Name the two important biological buffer systems.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a. Explain ideal solubility parameters. What are its applications, advantage and limitation? Describe briefly the methods for determination of ideal solubility parameters.
b. Define crystalline solid. What are the types of crystals? Enlist and explain characteristics of crystals.
c. Define tonicity. Differentiate between isosmotic and isotonic solutions. Describe the methods that are used to adjust pH and tonicity.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a. Define solubility. Explain mechanism of solute solvent interaction. Mention the reason of solubility in different type of solvents.
b. Explain critical solution temperature and its applications using suitable example.
c. Differentiate between crystalline solid and amorphous solid.
d. Define adsorption. Explain the factors affecting adsorption. Mention the characteristic features of physisorption and chemisorptions.
e. Give the statement and postulates of kinetic molecular theory of ideal gases.
f. Discuss the thermodynamic treatment of stability constants.
g. Elaborate the electrometric and colorimetric pH determination methods.

Printed Pages:01
Paper Id: 233584

Sub Code: BP-303T

Roll No.

B PHARM
(SEM III) THEORY EXAMINATION 2022-23
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours *Total Marks: 75*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

(a) Mention any two reagents used for acid fast staining.
(b) Classify physical method of sterilization.
(c) Mention type of media used for cultivation of fungi.
(d) Write in brief about the principle of sterility testing.
(e) What is the role of agar in culture media?
(f) What are Rodac plates?
(g) Write the incubation conditions for cell culture.
(h) List out different types of spoilage in pharmaceuticals.
(i) Write a note on Grade B room.
(j) Write a short note on bio-indicators for thermal sterilization.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

(a) Enlist various methods of evaluation of bacteriostatic and bactericidal disinfectant. Explain any method of bacteriostatic disinfectant.
(b) Write about importance of microbial preservation technique. Write procedure, merit, and demerit of any four preservation techniques.
(c) Explain the source, mechanism of sterilisation, merit, demerits, and applications of sterilization using radiations.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

(a) Write in detail about the construction and design of aseptic room.
(b) What are the methods used for the evaluation of microbial stability of formulations?
(c) Explain in detail about the principle involved in autoclaving.
(d) Describe steps involved in replication of virus.
(e) Explain IMViC tests used for identification of bacteria.
(f) Write briefly on different methods used for microbiological assay of antibiotics.
(g) Give the principle and main characteristic of phase contrast microscopy.

PAPER ID-411888

Roll No: | | | | | | | | | | | | |

BPHARM
(SEM III) THEORY EXAMINATION 2021-22
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours *Total Marks: 75*

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Outline the differences between Prokaryotic and eukaryotic cell.
b.	Enlist (only names) equipments employed in large scale sterilization.
c.	Explain the uses of biological Sterility Indicators.
d.	Discuss the differences between gram positive and gram-negative bacteria.
e.	Explain the advantages of Chick Martin Test over Rideal Walker test.
f.	Illustrate the Media suitability test and Growth promotion test.
g.	Classify clean area in pharmaceutical industry.
h.	Enlist various sources of contamination in sterile area.
i.	Write a note on bacterial spoilage.
j.	Why are eye drops advised to be used or discarded within 30 days after opening?

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Discuss morphology, Classification and Reproduction of Fungi.
b.	Classify sterilization methods and explain sterilization by autoclaving.
c.	Discuss the design of an aseptic area. What special precautions are to be kept before designing to reduce the risk of contamination?

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Explain the bacterial growth curve.
b.	Discuss the biochemical tests for microbial identification in brief. Elaborate the Indole production test.
c.	Write a descriptive note on Sterility testing of Liquids and Solids as per IP.
d.	Describe in detail the methods for viral cultivation.
e.	Elaborate the methods for standardization of Vitamins.
f.	Enlist the applications of cell culture in pharmaceutical Industry.
g.	Write a note on different types of preservatives used in pharmaceutical industry.

PAPER ID-311328

Roll No: | | | | | | | | | | | | | |

B PHARM
(SEM-III) THEORY EXAMINATION 2020-21
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Differentiate between Pharmaceutical and Medical Microbiology.
b.	Give the difference between Prokaryotic and Eukaryotic cell.
c.	How will you define cell culture?
d.	Write any four names of equipments for sterilization.
e.	Give the contribution of Louis Pasteur in the field of Microbiology.
f.	Enlist types of Microscopy.
g.	Define Mechanical Sterilization with example.
h.	Give the difference between bacteriostatic and bactericidal.
i.	Enumerate the sources of contamination in aseptic area.
j.	What is microbial spoilage?

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Give the morphological classification of bacteria with suitable examples and diagram.
b.	Write the mechanism, procedure and advantages of gram staining technique.
c.	Discuss the applications of cell culture in pharmaceuticals and research.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Describe the bacterial growth curve with all phases.
b.	Discuss the methods for prevention of contamination in aseptic area.
c.	Give the principle, working and application of moist heat sterilizer.
d.	What are the factors influencing disinfection?
e.	Discuss the factors affecting microbial spoilage of pharmaceutical products.
f.	Describe different types of sterility indicators for evaluation of sterilization.
g.	How to preserve pharmaceutical products with the help of antimicrobial agent?

Sub Code:BP303T

Paper Id: 150303 Roll No:

B. PHARM
(SEM-III) THEORY EXAMINATION 2019-20
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define antiseptic and disinfectant.
b.	Differentiate microbial spoilage of pharmaceutical product.
c.	Define microbial assay with two examples.
d.	What is disinfectant with two examples?
e.	Enlist the different staining technique.
f.	Differentiate bactericidal & bacteriostatic.
g.	Define aseptic area.
h.	Define microbial contamination.
i.	Write application of cell culture.
j.	What is difference between yeast & moulds

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Write in detail about scope and application of pharmaceutical microbiology.
b.	Write classification and mode of action of disinfectant.
c.	Write principle, procedure & application of Ziehl Neelson staining.

SECTION C

3. Attempt any *five* parts of the following: **5 x 7 = 35**

a.	Explain ultra structure and morphological classification of bacteria.
b.	Write principle, application, advantages and disadvantages of phase contract microscopy.
c.	Explain microbial assay of erythromycin.
d.	Differentiate moist heat and dry heat sterilization.
e.	Explain different source of contamination an aseptic area and method of prevention.
f.	Explain cell cultures in pharmaceutical industry and research.
g.	Describe the concept and design of clean and aseptic area.

Printed Pages: 01 **Sub Code: BP303T**

Paper Id: 150303 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM III) THEORY EXAMINATION 2018-19
PHARMACEUTICAL MICROBIOLOGY

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Differentiate between Prokaryotes and Eukaryotes in two main aspects.

b. What is contribution of Alexander Flemming in Microbiology?

c. How will you define Pasteurization?

d. What do you understand by aseptic and clean area?

e. Draw a neat labeled diagram of a bacterial cell.

f. What is the difference between Yeast and Mould?

g. Enlist the vegetative modes of reproduction in Fungi.

h. Define Sterilization.

i. What do you understand by IMViC?

j. Enlist different types of phenol Coefficient tests.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a. Enumerate the parameters required for designing of Aseptic area.

b. Describe the method for microbial standardization of Vitamin B_{12} or streptomycin.

c. Discuss various types of animal cell cultures and write the procedure for isolation of cells for *in-vitro* culture.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a. Describe various factors affecting bacterial growth.

b. Explain the reproductive cycles of Virus.

c. Differentiate between dry and moist heat sterilization.

d. Write principle, procedure and applications of Ziehl-Neelson staining.

e. What are the various air flow patterns in laminar flow equipments?

f. Write principle, applications, advantages and disadvantages of Phase contrast microscopy.

g. Elaborate various factors affecting microbial spoilage.

Printed Pages: 01
Paper Id: 233685 Sub Code: BP -304T

Roll No.

B. PHARM.
(SEM III) THEORY EXAMINATION 2022-23
PHARMACEUTICAL ENGINEERING

Time: 3 Hours *Total Marks: 75*

Note: Attempt all Sections. If require any missing data; then choose suitably

SECTION A

1. **Attempt *all* questions in brief.** **2 x 10 = 20**
   a. Describe Attrition & Impact.
   b. Name any two mechanisms of Size Separation.
   c. Define the term Entrainment. How it is prevented?
   d. Compare Heat-interchanger and Heat-exchanger.
   e. Differentiate between Bound Moisture & Unbound Moisture.
   f. What is Convective and Diffusive Mixing?
   g. Discuss Impingement & Entanglement
   h. What are Filter Aids? Discuss in brief.
   i. Define Corrosion. Explain the effect of pH on corrosion.
   j. Name the materials comes under Inorganic and organic non-metals.

SECTION B

2. **Attempt any *two* parts of the following:** **10 x 2 = 20**
   a. Draw a neat sketch of Fluid Energy Mill. Describe principle, construction, working and applications of Hammer Mill.
   b. Explain principle, construction, and operational details of Freeze Drying. Summarize its pharmaceutical applications also.
   c. Categorize the types of Filters. Describe principle, construction and working of Plate & Frame Filter Press.

SECTION C

3. **Attempt any *five* parts of the following:** **7 x 5 = 35**
   a. Derive an equation to determine velocity of fluid at orifice by using Orifice meter.
   b. Classify Evaporators. Describe construction and working of Horizontal Tube Evaporator.
   c. Distinguish between Mixing and Blending. Describe construction, working and uses of Silverson Emulsifier.
   d. Compare and contrast Poiseuille's & Darcy's theory of filtration, Express Kozeny-Carman equation also.
   e. Define Centrifugation. Explain theory of centrifugation with respect to centrifugal effect.
   f. Discuss about the principle, construction, working and uses of Fractional Distillation.
   g. Write a descriptive note on types of Stainless Steel, composition, and its uses.

PAPER ID-411975

Subject Code: BP304T

Roll No: | | | | | | | | | | | | |

BPHARM

(SEM III) THEORY EXAMINATION 2021-22

PHARMACEUTICAL ENGINEERING

Time: 3 Hours *Total Marks: 75*

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Give the difference between evaporation and drying.
b.	Define filtration.
c.	Draw the labelled diagram of non perforated basket centrifuge.
d.	Write Reynold's equation.
e.	Define size reduction.
f.	Write the statement of Raoult's law.
g.	List the types of corrosion.
h.	Distinguish the solid and liquid mixing.
i.	Define centrifugation.
j.	Discuss the advantages of double cone blender.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Explain the principles, construction, working, uses, merits and demerits of ball mill with suitable diagram.
b.	Summarize the factors affecting selection of material for pharmaceutical plant construction.
c.	Explain the theory and applications of centrifugation.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Discuss Fourier's law of heat transfer and its applications.
b.	Show the basic principle and applications of steam distillation with a neat sketch.
c.	Describe the applications and mechanisms of size reduction.
d.	Outline the principle, construction, working, uses, merits and demerits of planetary mixer using suitable diagram.
e.	Discuss the factors influencing filtration.
f.	Describe the principle and working of filter leaf with a clear and labelled diagram.
g.	Describe the different phases of drying using rate of drying curve.

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B. PHARM.
(SEM: III) THEORY EXAMINATION 2020-21
PHARMACEUTICAL ENGINEERING

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a.	What is the significance of Reynold's Number?
b.	Define the terms Attrition & Impact?
c.	Name any 2 mechanisms of Size Separation.
d.	State and express Fourier's Law of heat transmission with equation.
e.	How evaporation differs from drying and distillation?
f.	What do you understand by Molecular Distillation?
g.	What do you mean by Eutectic Point?
h.	Differentiate between Mixing & Blending with examples.
i.	How will you write Poiseuille's and Darcy's equation for theory of filtration?
j.	What are Ferrous and Non-ferrous metals? Give 2 examples each.

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

a.	Give a neat sketch of two fluid manometers. Explain the construction and working principle of Simple Manometer,
b.	Describe principle, construction & working of Triple Effect Evaporator? What do you mean by economy of multiple effect evaporators? Explain.
c.	Discuss in details about the principle, construction, working and uses of Freeze Dryer.

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a.	What do you understand by Size Reduction? Describe the principle, construction, working and uses of Ball Mill.
b.	Define the term Distillation. Discuss about the principle, construction, working and uses of Steam Distillation.
c.	Distinguish between Solid Mixing & Liquid Mixing. Add a note on the mechanisms of solid mixing and liquid mixing.
d.	What are the factors influencing filtration? Explain the principle and working of Drum Filter with the help of suitable diagram.
e.	Classify Evaporators. What are the factors influencing evaporation? Discuss.
f.	Describe the principle, construction working and uses of Non-Perforated Basket Centrifuge
g.	What is Corrosion? Name the various types of corrosion. How can corrosion be prevented?

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B. PHARM
(SEM-III) THEORY EXAMINATION 2019-20
PHARMACEUTICAL ENGINEERING

Time: 3 Hours **Total Marks: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. **10 x 2 = 20**

a.	Differentiate between Fluid Statics & Fluid Dynamics.
b.	Define Attrition & Impact?
c.	What is the difference between Sedimentation & Elutriation?
d.	State and express Fourier's Law of heat transmission with equation.
e.	How evaporation differs from drying and distillation?
f.	Write the principle of Steam Distillation.
g.	What do you mean by Sublimation?
h.	Differentiate between Mixing & Blending. What do you understand by dead spot in solid mixing?
i.	Express the mechanisms of Impingement & Entanglement.
j.	What is meant by under-driven and over-driven assembly? Give examples also.

SECTION B

2. Attempt any two parts of the following: **2 x 10 = 20**

a.	State and derive Bernoulli's equation.
b.	What do you understand by Multiple Effect Evaporator? Describe construction & working of triple effect evaporator? Add a note on economy of multiple effect evaporators.
c.	Explain with the help of diagram the principle, working and applications of Flash Distillation.

SECTION C

3. Attempt any five parts of the following: **5 x 7 = 35**

a.	Describe Reynolds's experiment elucidating different types of flow patterns.
b.	Draw a neat and labeled diagram of a Shell & Tube Heat Exchanger and explain its construction and working.
c.	Describe the principle, construction, working and uses of Fluidized Bed Dryer.
d.	Describe the principle, construction working and uses of Twin Shell Blender.
e.	Explain theories of filtration. Add a note on objectives of filtration.
f.	Describe the principle, construction working and uses of Perforated Basket Centrifuge.
g.	Write a note on different types of Stainless Steel, its composition and its uses.

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B PHARM
(SEM-III) THEORY EXAMINATION 2018-19
PHARMACEUTICAL ENGINEERING

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Why there is a need for size separation?

b. What is boundary layer?

c. Give some real examples for heat transfer process (conduction, convection & radiation)

d. What is the relation among boiling point, vapor pressure & evaporation?

e. Differentiate between surface filtration and depth filtration.

f. Which equipment is suitable for filtration of slurry containing high solid content and why?

g. Write the principle of vacuum dryer.

h. Mention equipment suitable for semisolid mixing.

i. What is molecular distillation?

j. Give the properties of Chromium and Nickel.

SECTION B

2. Attempt any *two*parts of the following: **2 x 10 = 20**

a. Write in detail about factors influencing rate of filtration.

b. Write the applications of filtration, size reduction, mixing and distillation in pharma.

c. Elaborate the factors influencing evaporation rate. Write the principle, construction, working and advantages of forced circulation evaporators.

SECTION C

3. Attempt any *five*parts of the following: **7 x 5 = 35**

a. Write construction and working of Orifice meter and Rotometer.

b. Write the principle, construction, working, uses, merits and demerits of Ball mill.

c. What the principle of simple distillation. Write in detail about steam distillation.

d. Write the principle, construction, working, uses, merits and demerits of sigma blade mixer.

e. Write the principle, construction, working, uses, merits and demerits of Spray dryer.

f. Write in detail about the factors affecting selection of a material.

g. What is corrosion? Write in detail about the theory of corrosion.