MANIPAL COLLEGE
OF PHARMACEUTICAL SCIENCES
MANIPAL
(A constituent unit of MAHE, Manipal)

BPharm Semester III Make-up End Semester Examination January 2023

PCE-BP304T: Pharmaceutical Engineering (Theory)

Date: 25/01/2023 Duration: 3 hrs Max. Marks: 75

Instructions: Answer ALL questions.

I Multiple Choice Questions (MCQs)	**20 Q × 1 mark = 20 marks**
Fourier's law is applicable to one of the following types of heat flow. A. Conduction B. Convection C. Emission D. Radiation	
Which of the following evaporator is used in pharmaceutical, pulp and paper industry? A. Horizontal tube evaporator B. Steam jacketed kettle C. Climbing film evaporator D. Forced circulation evaporator	
Which of the following distillation process is also called as rectification A. Molecular distillation B. Flash distillation C. Steam distillation D. Fractional distillation	
Which one of the following experiments is used for the study of flow of fluids? A. Bernoulis B. Orifice meter C. Reynolds D. Stokes	
The enzyme, vitamins, glycoside and alkaloids are extracted by	

A. Stem distillation

B. Distillation under reduced pressure

C. Flash distillation

D. Vacuum distillation

Which of the following evaporator is also known as rinsing film evaporator?

A. Horizontal tube evaporator

B. Steam jacketed kettle

C. Climbing film evaporator

D. Forced circulation evaporator

In the heat interchanger, finned tubes are used for one of the following purposes.

A. Increasing the surface area

B. Introducing steam

C. Introducing the cold fluid

D. Reducing the size of apparatus

Which of the following hydrodynamic method for measurement of rate of flow of fluids is also called as variable head meter?

A. Orifice meter

B. Venturi meter

C. Pitot tube

D. Rotameter

What is the principle of Centrifugation?

A. Sedimentation principle
B. Evaporation principle
C. Filtration principle
D. Size reduction principle

What is hot filtration?

A. Prevent virus during filtration

B. Prevent bacteria during filtration
C. Minimize crystal formation during filtration
D. D. Prevent yeast during filtration

Lead is an example of which type of material of construction.

A. Ferrous type of metals
B. Non-ferrous type of metals
C. Organic types of non-metals
D. Inorganic type of non-metals

Which of the statement is correct for Carbon steel….

A. Strong steel; alloy of iron, contains < 1.5% carbon
B. Mild steel; alloy of iron, contains < 1.5% carbon
C. Strong steel; alloy of iron, contains > 1.5% carbon
D. Mild steel; alloy of iron, contains > 1.5% carbon

Which of the following is NOT true about filter media?

A. acts as a mechanical support
B. ceramic cartridges offer surface filtration
C. should absorb dissolved material
D. should allow passage of liquid while retaining solids

What type of filter does not come under the membrane filters?

A. Ultra-filtration
B. Microfiltration
C. Precoat (Filter aid) filtration
D. Nanofiltration

Which of the following forces aids the tumbling action for promoting inter-particle movement.

A. Electrostatic force
B. Surface force
C. Gravitational force
D. Van der walls force

…….is the polymer of monomeric isoprene

A. Soft rubber
B. Hard rubber
C. Synthetic rubber
D. Plastic

Which of these is NOT a mechanism of liquid mixing?

A. Bulk transport mixing
B. Shear mixing
C. Laminar mixing
D. Turbulent mixing

Which of the following is NOT true about plastics?

A. Resistant to weak acids
B. Low thermal resistance
C. Resistant to weak acids
D. Low rate of expansion

The following constituent belongs to

SiO_2 72-75%, B_2O_3 7-10%, Al_2O_3 6%, Na_2O 6-8%, K_2O 0.5-2% BaO 2-4%

A. Neutral Glass
B. Coloured glass
C. Type I glass
D. Type II glass

Which statement is NOT true about dry corrosion?

A. Corrosion occurs in the absence of moisture
B. Rapid process
C. Process of corrosion is uniform
D. Corrosion products are produced at the site of corrosion

II Long Answers	**2 Q × 10 marks = 20 marks**
1. Explain Sieve Shaker with a diagram.	
2. Explain the principle, construction, working and uses of a tray dryer.	
III Short Answers	**7 Q × 5 marks = 35 marks**
1. Explain conduction, convection and radiation	
2. Describe the process of Simple distillation with a diagram.	
3. Define Evaporation. What are the applications of evaporation? Enlist the factors affecting evaporation	
4. Describe the principle and working of a double cone blender.	
5. What is the use of filter aid? Mention different types of filter media.	
6. Mention the differences between dry and wet corrosion.	
7. Explain theory of centrifugation. Mention any FOUR applications of centrifugation.	