

Exam Date & Time: 27-Jan-2022 (10:00 AM - 01:00 PM)

**MANIPAL ACADEMY OF HIGHER EDUCATION****Pharmaceutical Engineering [PCE-BP304T]****Marks: 75****Duration: 180 mins.****I Multiple Choice Questions (MCQs)****Answer all the questions.**

Section Duration: 30 mins

- 1) 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

(1)

D. Rotameter

1) A	2) B	3) C	4) D
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- 2) Which one of the following experiments is used for the study of flow of fluids?

A) Bernoulli's
B) Orifice meter
C) Reynolds
D) Stokes

(1)

1) A	2) B	3) C	4) D
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- 3) The enzyme, vitamins, glycoside and alkaloids are extracted by

A. Steam distillation
B. Distillation under reduced pressure
C. Flash distillation
D. Vacuum distillation

(1)

1) A	2) B	3) C	4) D
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- 4) Which of the following evaporator is also known as rising film evaporator?

(1)

A. Horizontal tube evaporator
B. Steam jacketed kettle
C. Climbing film evaporator
D. Forced circulation evaporator

1) A	2) B	3) C	4) D
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- 5) 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

1) A		2) B		3) C		4) D	
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- 6) Which of the following distillation process is also called as rectification
A. Molecular distillation
B. Flash distillation
C. Steam distillation
D. Fractional distillation

1) A		2) B		3) C		4) D	
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- 7) Fourier's law is applicable to one of the following types of heat flow.
A. Conduction
B. Convection
C. Emission
D. Radiation

1) A		2) B		3) C		4) D	
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- 8) In the heat interchanger, finned tubes are used for one of the following purposes.
A. Increasing the surface area

- C. Introducing the cold fluid
D. Reducing the size of apparatus
B. Introducing steam

(1)

1) A		2) B		3) C		4) D	
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- 9) Sorption occurs when moisture in a

- sample is (1)
A. Lesser than EMC of solid
B. Greater than EMC of solid
C. Equal to EMC of solid
D. Zero

1) A		2) B		3) C		4) D	
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- 10) The particle size in a spray dryer is controlled by
A. Atomizer
B. Cyclone separator
C. Drying chamber
D. Fluid bed
- 11) The type of flow component observed with paddles
A. Radial and axial
B. Radial and tangential
C. Axial and tangential
D. Axial, radial and tangential
- 12) Which of the following mixing mechanism is likely to cause segregation?
A. Shear mixing
B. Diffusive mixing
C. Convective mixing
D. None of the above
- 13) _____ is involved in depth filtration.
A. Straining
B. Impingement
C. Entanglement
D. Attractive forces
- 14) 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
- 15) _____ is made up of polypropylene. (1)
A. Meta filter
B. Plate and frame filter
C. Drum filter
D. Cartridge filter

1)	A		2)	B		3)	C		4)	D	
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- 16) Velocity of centrifuge is expressed in terms of
 A. Meter per second
 B. Meter per minute
 C. Revolutions per minute
 D. Diameter of rotation (1)

1)	A		2)	B		3)	C		4)	D	
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- 17) Which of the following is used in the removal of precipitated proteins from insulin?
 A. Perforated basket centrifuge
 B. Non-perforated basket centrifuge
 C. Semi-continuous centrifuge (1)
 D. Super centrifuge

1)	A		2)	B		3)	C		4)	D	
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- 18) Weirs are used in centrifugation for
 A. Separation of solids
 B. Separation of liquids
 C. Preventing air entrapment
 D. Adding water for washing (1)

1)	A		2)	B		3)	C		4)	D	
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- 19) Graphite is used as an inert anode in
 A. Anodic protection
 B. Sacrificial anodic protection
 C. Impressed current cathodic protection
 D. Corrosion inhibitors

- 20) Which of the following is NOT true about plastics? (1)
 A. Resistant to weak acids
 B. Low thermal resistance
 C. Resistant to weak acids
 D. Low rate of expansion

1)	A		2)	B		3)	C		4)	D	
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II Long Answers

Answer all the questions.

- 1) Explain the principle, construction and working of Cyclone Separator.

- 2) Define equilibrium moisture content. What is its importance? Discuss the principle, construction, working and uses of equipment which works on the principle of sublimation. (10)

III Short

Answers Answer all the questions.

- 1) Differentiate between orifice meter and venture meter

- 2) Define Distillation and mention its application? Define distillation under reduced pressure.

- 3) Explain the working of multiple effect evaporator

- 4) Elaborate the principle, construction and working of a drum filter. Mention two advantages.

- 5) Explain theory of centrifugation. Mention any FOUR applications of centrifugation

- 6) Outline the use of rubber as a material of construction.

- 7) Enlist the differences between dry and wet corrosion. What is galvanic corrosion?

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