

Exam Date & Time: 14-Dec-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) In the heat interchanger, finned tubes are used for one of the following purposes.

1) Increasing the surface area	2) Introducing steam	3) Introducing the cold fluid	4) Reducing the size of apparatus	(1)
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2) Which of the following distillation process is also called as rectification

1) Molecular distillation	2) Flash distillation	3) Steam distillation	4) Fractional distillation	(1)
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3) Which one of the following experiments is used for the study of flow of fluids?

1) Bernoulli's	2) Orifice meter	3) Reynolds	4) Stokes	(1)
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4) Which of the following evaporator is also known as rinsing film evaporator?

1) Horizontal tube evaporator	2) Steam jacketed kettle	3) Climbing film evaporator	4) Forced circulation evaporator	(1)
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5) Fourier's law is applicable to one of the following types of heat flow.

1) Conduction	2) Convection	3) Emission	4) Radiation	(1)
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6) Which of the following hydrodynamic method for measurement of rate of flow of fluids is also called as variable head meter?

1) Orifice meter	2) Venturi meter	3) Pitot tube	4) Rotameter	(1)
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7) Which of the following evaporator is used in pharmaceutical, pulp and paper industry?

1) Horizontal tube evaporator	2) Steam jacketed kettle	3) Climbing film evaporator	4) Forced circulation evaporator	(1)
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8) The enzyme, vitamins, glycoside and alkaloids are extracted by

1) Steam distillation	2) Distillation under reduced pressure	3) Flash distillation	4) Vacuum distillation	(1)
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9) Lead is an example of which type of material of construction?

1) Ferrous	2) Non-	3) Organic	4) Inorganic	(1)
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	type of metals		ferrous type of metals		types of non-metals		type of non-metals	
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10) Which of the statement is correct for Carbon steel....

1)	Strong steel; alloy of iron, contains < 1.5% carbon	2)	Mild steel; alloy of iron, contains < 1.5% carbon	3)	Strong steel; alloy of iron, contains > 1.5% carbon	4)	Mild steel; alloy of iron, contains > 1.5% carbon	(1)
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11) What is hot filtration?

1)	Prevent virus during filtration	2)	Prevent bacteria during filtration	3)	Minimize crystal formation during filtration	4)	Prevent yeast during filtration	(1)
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12) Which of the following is NOT true about filter media?

1)	acts as a mechanical support	2)	ceramic cartridges offer surface filtration	3)	should absorb dissolved material	4)	should allow passage of liquid while retaining solids	(1)
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13) What is the principle of Centrifugation?

1)	Sedimentation principle	2)	Evaporation principle	3)	Filtration principle	4)	Size reduction principle	(1)
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14) What type of filter does not come under the membrane filters?

1)	Ultra-filtration	2)	Microfiltration	3)	Precoat (Filter aid) filtration	4)	Nanofiltration	(1)
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15) Which of the following forces aids the tumbling action for promoting inter-particle movement?

1)	Electrostatic force	2)	Surface force	3)	Gravitational force	4)	Van der Waals force	(1)
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16)is the polymer of monomeric isoprene

1)	Soft rubber	2)	Hard rubber	3)	Synthetic rubber	4)	Plastic	(1)
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17) Which of these is NOT a mechanism of liquid mixing?

1)	Bulk transport mixing	2)	Shear mixing	3)	Laminar mixing	4)	Turbulent mixing	(1)
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18) Which of the following is NOT true about plastics?

(1)

1)	Resistant to weak acids	2)	Low thermal resistance	3)	Resistant to weak acids	4)	Low rate of expansion
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- 19) The following constituent belongs to
SiO₂ 72-75%, B₂O₃ 7-10%, Al₂O₃ 6%, Na₂O 6-8%, K₂O 0.5-2% BaO 2-4%

1)	Neutral Glass	2)	Coloured glass	3)	Type I glass	4)	Type II glass
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(1)

- 20) Which statement is NOT true about dry corrosion?

1)	Corrosion occurs in the absence of moisture	2)	Rapid process	3)	Process of corrosion is uniform	4)	Corrosion products are produced at the site of corrosion
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(1)

II Long Answers

Answer all the questions.

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

III Short Answers

Answer all the questions.

- 1) Differentiate between orifice meter and venturimeter. (5)
- 2) Define Distillation and mention its application? Define Dalton's law. (5)
- 3) Explain the working of multiple effect evaporator. (5)
- 4) Define mixing. What are the different types of mixtures? (5)
- 5) Define clarification. How is it different from filtration? Explain the mechanisms of filtration. (5)
- 6) Outline the use of rubber as a material of construction. (5)
- 7) Explain the principle, construction and working of a supercentrifuge. (5)

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