

Question Paper

Exam Date & Time: 29-Nov-2023 (02:00 PM - 05:00 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 size separation method is based on the principle of 'centrifugal force'? (1)
- A. Air separator
 - B. Cyclone Separator
 - C.. Elutriation
 - D. Sieving

A

B

C

D

- 2) Which is also known as short path distillation (1)
- A. Flash distillation
 - B. Fraction distillation
 - C. Molecular distillation
 - D. Steam distillation

A

B

C

D

- 3) Which of the following hydrodynamic method for measurement of rate of flow of fluids is also called as variable head meter? (1)
- A. Manometer
 - B.Venturi meter
 - C. Pitot tube
 - D.Rotameter

A

B

C

D

- 4) Which of the following evaporator is also known as rinsing film evaporator? (1)
- A.Horizontal tube evaporator
 - B. Steam jacketed kettle
 - C. Climbing film evaporator
 - D. Forced circulation evaporator

A

- B
- C
- D

5) Heat transfer from a metal wall does NOT involve one of the following mechanism. (1)
A. Conduction
B. Convection
C. Emission
D. Radiation

- A
- B
- C
- D

6) Reynolds number is indicative of one of the following? (1)
A. Frictional factor
B. Fluid flow type
C. Pumping rate
D. Roughness of the pipe

- A
- B
- C
- D

7) Which of the below is application of distillation (1)
A. Separation of Volatile oils
B. Purification of Organic solvents
C. Separation of drugs from plant and animal sources
D. All of the above

- A
- B
- C
- D

8) Lead is an example of which type of material of construction. (1)
A. Ferrous type of metals
B. Non-ferrous type of metals
C. Organic types of non-metals
D. Inorganic type of non-metals

- A
- B
- C
- D

9) Which of the statement is correct for Carbon steel.... (1)
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

- A
- B
- C
- D

10) What is the advantage of vacuum filtration? (1)
A. Efficiency

- B. Faster than other filtration equipment
- C. Cost effective
- D. Low power cost

A
B
C
D

- 11) Filter aid can also be added to the fermentation broth to increase the porosity of the cake as it forms", what does this statement means? (1)
- A. To increase the pH of the fermentation broth
 - B. To decrease the filtration rate
 - C. To decrease the pH of the fermentation both
 - D. To increase the filtration rate

A
B
C
D

- 12) What are applications of centrifugation (1)
- A. To separate two immiscible substances and analyse the hydrodynamic properties of macromolecules
 - B. To separate two miscible substances and water treatment
 - C. Purification of mammalian cells and water treatment
 - D. Analyze the hydrodynamic properties of macromolecules and water treatment

A
B
C
D

- 13) _____ is made up of polypropylene. (1)
- A. Meta filter
 - B. Plate and frame filter
 - C. Drum filter
 - D. Cartridge filter

A
B
C
D

- 14) Degree of mixing is also known as: (1)
- A. Degree of Homogeneity
 - B. Extent of mixing
 - C. Ordered mixing
 - D. Random mixing

A
B
C
D

- 15)is the polymer of monomeric isoprene (1)
- A. Soft rubber
 - B. Hard rubber
 - C. Synthetic rubber
 - D. Plastic

- A
- B
- C
- D

16) Uneven mixing leads one of the following problems in tablets manufacture. (1)
A. Content uniformity variation
B. Disintegration time fluctuates
C. Friability problems
D. Poor flow of granules

- A
- B
- C
- D

17) 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

- A
- B
- C
- D

18) With what is the feed introduced in the spray dryer? (1)
A. Spray
B. Atomizer
C. Nucleator
D. Heat exchanger

- A
- B
- C
- D

19) The enzyme, vitamins, glycoside and alkaloids are extracted by (1)
A. Steam distillation
B. Distillation under reduced pressure
C. Flash distillation
D. Vacuum distillation

- A
- B
- C
- D

20) Graphite Corrosion is which type of corrosion? (1)
A. General Corrosion
B. Localized Corrosion
C. Structural Corrosion
D. Biological corrosion

- A
- B
- C
- D

Answer all the questions.

- 1) Explain the principle, construction and working of hammer mill. (10)
- 2) 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) Explain Reynolds experiment and define Reynolds number. (5)
- 2) Explain the working of distillation under reduced pressure. (5)
- 3) Explain the construction of steam jacketed kettle with a diagram. Mention with its uses. (5)
- 4) Describe the mechanisms of liquid mixing. Write a note on flow pattern observed in liquid mixing. (5)
- 5) Discuss the theory of filtration using suitable equations. (5)
- 6) Write a note on Inorganic Non-metals used in plant constructions. (5)
- 7) Explain the principle, construction, working, uses of Non-perforated type of centrifuge. (5)

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