

Time : 3Hrs

Total Marks 75

Question No 1. Multiple choice questions

1×20=20 Marks

1. Which type of head is measured during pitot tube?
 - A. Kinetic velocity head
 - B. Pressure head
 - C. Static velocity head
 - D. Total head
2. Reynolds number may be defined as
 - A. The ratio of elastic forces to pressure forces
 - B. The ratio of gravity forces to inertial forces
 - C. The ratio of inertial forces to viscous forces
 - D. The ratio of viscous forces to inertial forces
3. Which of the quality control parameter is important for size reduction of potent materials in formulation of dosage forms?
 - A. Content uniformity
 - B. Friability
 - C. Hardness
 - D. Strength
4. In cyclone separator the separation depends on?
 - A. Density and shape
 - B. Shape and surface area
 - C. Surface texture and size
 - D. Size and density
5. Which of the following is TRUE about multiple effect evaporator
 - A. It is suitable for batch operation
 - B. It is highly economical relative to single effect
 - C. It cannot attach more than two evaporators
 - D. It utilizes horizontal tube evaporator
6. In evaporators calandria consists of number of
 - A. Baffles
 - B. Jackets
 - C. Outlets
 - D. Tubular surfaces
7. Which of the following statements is true about heat transfer by thermal radiation
 - A. IR lamp is a source for low intensity radiation
 - B. Thermal radiation usually occurs simultaneously with heat transfer by conduction
 - C. Thermal radiations are not reflected from a surface
 - D. Solid bodies radiate energy at a temperature below absolute zero
8. Emissivity value for black body is _____
 - A. Equal to 1
 - B. Less than 1
 - C. More than 1
 - D. Equal to zero
9. In fractional distillation as the vapours travels from bottom to top of the fractionating column it becomes rich in _____
 - A. Less volatile component of the mixture
 - B. More volatile component of the mixture
 - C. With component of intermediate volatility
 - D. the amount of vapours
10. Condenser function as
 - A. Energy exchanger
 - B. Heat exchanger
 - C. Liquid exchanger
 - D. Mass exchanger
11. In which step of the freeze dryer, 98 % of moisture is removed?
 - A. Pre-freezing
 - B. Pretreatment
 - C. Primary drying
 - D. Secondary drying
12. Fluidised bed dryer has one of the following advantages?
 - A. Attrition is observed
 - B. Entire material is continuously exposed to a heat source
 - C. Fluffy mass is formed
 - D. Humidity can be increased

13. Which equipment is used for mixing of immiscible liquids?
A. Double cone Mixer
B. Jet Mixer
C. Silverson Mixer
D. Sigma Mixer
14. Which type of mixture is easily formed?
A. Positive
B. Negative
C. Neutral
D. Ampholytic
15. Who proposed the filtration process is similar to the streamline flow of a liquid under pressure through capillaries?
A. Carman
B. Darcy
C. Kozeny
D. Poiseuille
16. The separation process in which the amount of solid in a liquid is not more than 1% w/v is called
A. Clarification
B. Filtration
C. Centrifugation
D. Evaporation
17. The solid that has high specific gravity remains in one of the following states in a centrifuge tube, once centrifugation is completed
A. Bottom
B. Middle
C. Top
D. Uniform
18. Centrifugation is based on?
A. Patrick's Law
B. Stoke's Law
C. McLaren's law
D. Stain's Law
19. Zinc – aluminium galvanic couple, when exposed to acidic solutions
A. Zinc dissolves
B. Aluminium dissolves
C. Both zinc – aluminium dissolve
D. Both zinc – aluminium remains undissolved
20. Containers made for storage of parenterals are made from one of the following types of glass.
A. General purpose
B. Lime soda
C. Neutral
D. Borosilicate

Question No. 2: Answer any TWO of the following **10×2= 20 Marks**

- A. What are different types of corrosion? Give different preventive measures to control the corrosion.
- B. Elaborate on a dryer with an atomizer used for manufacturing of powder for reconstitution.
- C. Give objectives of size reduction. Describe the construction working, advantages and disadvantages of fluid energy mill.

Question No. 3: Answer any SEVEN of the following **5×7= 35 Marks**

- A. Describe Reynolds classical experiment elucidating different types of flow patterns.
- B. Explain the principle, construction and working of evaporating pan
- C. What are the objectives of heat transfer process and describe the working of multipass double pipe heat exchanger.
- D. With the help of neat labelled diagram explain the principle and working of falling film Molecular still
- E. What is mixing? Elaborate liquid mixing mechanisms.
- F. Explain the principle, construction, working and uses of double cone blender
- G. Write an account on filter media.
- H. Describe the principle, construction, working and uses of super centrifuge
- I. What are the properties of glass? Discuss its applications as a material of construction
