

Time:3Hours

Total Marks 75

Question No. 1. Multiple choice questions**1×20=20 Marks**

1. According to Rittinger's Law, the energy required for size reduction is directly proportional to ____
 - A. Crack length
 - B. Surface area
 - C. Stress at atomic bond
 - D. Crushing strength
2. Which of the following is the primary objective of the evaporation process?
 - A. Separation of solid from liquid
 - B. Purification of product
 - C. Drying of product
 - D. Recovery of the solvent
3. Which part is **NOT** used in the construction of shell and tube heat exchanger?
 - A. Distribution chamber
 - B. Baffle plate
 - C. Tube bundle
 - D. Carrying Beam
4. Which of the mill primarily works on both the principles of interparticulate attrition and impact?
 - A. Cutter mill
 - B. Ball mill
 - C. Edge runner mill
 - D. End runner mill
5. Turbulent flow is also known as
 - A. Diffused flow
 - B. Streamline flow
 - C. Viscous flow
 - D. Laminar flow
6. Which evaporator is suitable for foam forming liquids?
 - A. Multiple effect evaporator
 - B. Horizontal tube evaporator
 - C. Climbing film evaporator
 - D. Falling film evaporator
7. Which of the following is a part of Bernoulli's theorem
 - A. Electric energy
 - B. Static energy
 - C. Potential energy
 - D. Heat energy
8. What is the expected product obtained through the process of distillation?
 - A. Liquid residue
 - B. Condensed vapours
 - C. Dried solid
 - D. Concentrated liquid
9. Which type of drying process is **Not** suitable for heat-sensitive materials?
 - A. Drum dryer
 - B. Freeze drying
 - C. Spray drying
 - D. Fluidized drying
10. Which mixing mechanism is involved in the fluidized bed system?
 - A. Diffusion
 - B. Sedimentation
 - C. Convection
 - D. Shear
11. Which is acts as a mechanical support for the filter cake and also responsible for collection of solids
 - A. Feed
 - B. Filter medium
 - C. Funnel
 - D. Filter aid
12. Which component of a centrifuge is responsible for creating centrifugal force?
 - A. Rotor
 - B. Sample chamber
 - C. Motor
 - D. Control panel
 - E.
13. Which of the following material that can contain bond water during drying?
 - A. Plastic
 - B. Wood
 - C. Glass
 - D. Metal
14. What is the purpose of a baffled tank in the mixing process?
 - A. To control the temperature
 - B. To reduce the risk of contamination
 - C. To increase the efficiency of mixing
 - D. To prevent foaming in the mixture

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15. Heat transfer through conduction process is carried out by _____.
A. Kinetic energy
B. Vibrational energy
C. Pressure energy
D. Potential energy
16. What is the purpose of a filter aid in the filtration process?
A. To decrease the flow rate of the filtrate
B. To reduce the filtration efficiency
C. To reduce the cost of filtration
D. To prevent clogging of the filter media
17. Centrifugation is useful in one of the following types of dispersions containing particles size _____.
A. Less than 5 micron
B. 25 to 50 micron
C. 15 to 25 micron
D. Above 50 micron
18. Which metal is commonly used as a sacrificial anode to protect other metals from corrosion?
A. Lead
B. Aluminum
C. Copper
D. Iron
19. Separation of Vitamin A and E is carried out by _____ process.
A. Distillation
B. Centrifugation
C. Filtration
D. Clarification
20. Ferritic is an alloy of _____.
A. Stainless Steel
B. Aluminium
C. Cast Iron
D. Carbon Steel

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

- A. Discuss the process of spray dryer along with its applications
- B. Discuss different methods to combat corrosion
- C. Classify mechanisms of the size separation process. Explain the principle, construction, and working of the End Runner Mill.

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

- A. Explain the theory of molecular distillation and justify why it is short path distillation
- B. Elaborate on different mechanisms of heat transfer processes
- C. Discuss in detail construction and working of Differential manometer.
- D. Explain construction and working, advantages and disadvantages of twin shell blender
- E. Explain the principle, construction and working of forced circulation evaporator
- F. Explain construction and working, advantages and disadvantages of filter leaf
- G. Discuss Copper and its alloys
- H. Explain principle and application of centrifugation
- I. Describe in detail solid mixing mechanisms
