Time: 3 Hours

Total Marks 75

1×20=20 Marks

Question No, 1. Multiple choice questions

1. Which of the following equipment works on the principle of variable area meter
   A. Pitot tube
   B. Rotameter
   C. Venturimeter
   D. Orificemeter
2. Which of the following is TRUE about Multiple effect evaporator
   A. a. It is suitable for batch operation
   B. It cannot attach more than two evaporators
   C. It utilizes horizontal tube evaporator
   D. It is highly economical relative to single effect
3. The fixed plate in flat plate type heat exchanger is called as
   A. Carrying beam
   B. Pressure plate
   C. Frame plate
   D. Guiding bar
4. In _____ process the entire liquid mixture is suddenly vaporized by passing the feed from a high pressure zone to a low pressure zone
   A. Azeotropic distillation
   B. Flash Distillation
   C. Simple distillation
   D. Molecular distillation
5. The fluid pressure, exerted upon a column of liquid, can be measured by an instrument called
   A. Pressure gauge
   B. Venturimeter
   C. Manometer
   D. Energy meter
6. According to Rittinger's Law, the energy required for size reduction is directly proportional to ___
   A. Crushing strength
   B. Crack length
   C. Stress at atomic bond
   D. Surface area
7. What is the percent volume of balls filled in the ball mill for it's effective operation?
   A. 30–50%
   B. <30%
   C. 60–70%
   D. >50%
8. In horizontal tube evaporator steam is circulated through
   A. Outside the evaporating tubes
   B. Condensate inlet
   C. Inside the evaporating tubes
   D. Product outlet
9. In Fourier's law rate of heat flow is
   A. Inversely proportional to area
   B. Directly proportional to temperature drop
   C. Constant
   D. Directly proportional to thickness of wall
10. Rayleigh Distillation is also known as
    A. Flash distillation
    B. Fractional distillation
    C. Extractive distillation
    D. Differential distillation
11. Which one is NOT application of centrifugation
    A. To reduce particle size
    B. Evaluation of suspensions and emulsion.
    C. Biopharmaceutical analysis of drugs.
    D. Determination of molecular weight of collides.
12. Which of the following metal is the best resistant to corrosion in acid environment?
    A. Tin
    B. Stainless steels
    C. Nickel and its alloys
    D. Steel

13. Which of the following forces aids the tumbling action for promoting inter-particle movement?
    A. Surface force
    B. Electrostatic force
    C. Electrostatic force
    D. Gravitational force
14. $V=\pi\Delta Pr4/8\eta L$ this equation of filtration belongs to _____
    A. Carman
    B. Darcy
    C. Poiseuilli
    D. Kozeny
15. "Boiling bed" term is connected with one of the following dryer?
    A. Drum dryer
    B. Freeze dryer
    C. Spray dryer
    D. Fluidized bed dryer
16. Why particles having size 5 micrometre or less do not sepearted by centrifugation
    A. sediment under gravity
    B. particles sediment under gravity works
    C. sediment under gravitational force
    D. do not sediment under gravity
17. when sulphar combines with polymeric chain of rubber by crosslinking is known as
    A. Vulcanization
    B. Densification
    C. Crystallization
    D. Purification
18. In meta filter the rings dimensions of about _____mm external diameter.
    A. 15
    B. 20
    C. 22
    D. 12
19. Which type of mixer has a fixed trough?
    A. Barrel mixer
    B. Ribbon mixer
    C. Double cone blender
    D. Zigzag mixer
20. In a spray dryer, the particle size is closely controlled by_____
    A. Atomizer
    B. Drying chamber
    C. Fluid bed
    D. Cyclone separator

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

A. Explain factors influencing selection material for construction?
B. Give a detail account of the dryer which works on the principle of sublimation
C. What are the different mechanisms of size separation? Explain in detail Ball mill.

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

A. Differentiate between Orificemeter and Venturimeter
B. Explain in brief the principle, construction and working of climbing film evaporator.
C. Elaborate different mechanisms of heat transfer processes
D. Dscribe n detail fractionating colunms
E. Enlist different equipments used for solid mixing and explain any one in detail.
F. What is randamization? Explain liquid mixing mechanisms
G. With neat labeled diagram explain cartidge filter
H. Eloborate on principles of Centrifugation
I. Explain in brief localized corrosion with example