



- Notes :
1. Answer **all** question.
  2. Illustrate your answer necessary with the help of neat sketches.
  3. Use of pen Blue/Black ink/refill only for writing the answer book.

**1. Multiple choice questions (MCQS)****20**

- a) In the surface area of evaporator pan is small, the rate of evaporation will be
  - i) More
  - ii) Less
  - iii) Both
  - iv) None
- b) Entrainment separator in climbing evaporator act as
  - i) Only foam breaks
  - ii) Only entrainment separator
  - iii) Both
  - iv) None
- c) Supersaturation can be achieved through one of the following mechanism
  - i) By evaporating solvent from solution
  - ii) By cooling of hot solution
  - iii) By addition of a substance which is more soluble in solvent than the solid to be crystallized.
  - iv) All of the above
- d) Super saturation theory was proposed by
  - i) Meirs
  - ii) Stock's
  - iii) Henry's
  - iv) All of above
- e) Bound water is having ----- vapour pressure than the pure water.
  - i) Less
  - ii) More
  - iii) Equal
  - iv) None
- f) In drying rate curve, the 2<sup>nd</sup> phase is known as
  - i) Initial adjustment period
  - ii) Constant rate period
  - iii) Falling rate period
  - iv) None
- g) Solutions which do not obeys Raoult's law are known as
  - i) Real solution
  - ii) Ideal solutions
  - iii) Both
  - iv) None
- h) When liquid starts boiling?
  - i) When it's vapour pressure is equal to atmospheric pressure.
  - ii) When it's vapour pressure is less than to the atmospheric pressure
  - iii) When vapour pressure is more than to atmospheric pressure
  - iv) All the above
- i) Simple distillation process based on
  - i) Difference in volatilities only
  - ii) Difference in vapour pressure only
  - iii) Both
  - iv) None

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- j) Process of separation of low content of solids from a liquid is known as  
 i) Filtration ii) Crystallization  
 iii) Clarification iv) None
- k) Plate & frame filter press works on the principle of  
 i) Surface filtration ii) Depth filtration  
 iii) Both iv) None
- l) Super centrifuge is which types of centrifuge.  
 i) Sedimentation centrifuge ii) Filtration centrifuge  
 iii) Both iv) None
- m) Planetary mixture is used to mix  
 i) Cohesive solids ii) Free flow solids  
 iii) Both iv) None
- n) To prevent vortex formation, which of the following method is used  
 i) By avoid the symmetry ii) By using baffled containers  
 iii) By mounting 2 or more impellers iv) All the above
- o) Ball mill also called as  
 i) Tumbling mill ii) Pebble mill  
 iii) Both iv) None
- p) To mill the sticky materials which of the following mill is used.  
 i) Fluid energy mill ii) Colloid mill  
 iii) Rod mill iv) None
- q) If fluid corrosion occurs on different location  
 i) General corrosion ii) Localized corrosion  
 iii) Structural corrosion iv) Biological corrosion
- r) If the heat flow is achieved by mixing of warmer portions with cooler portions, that process is known as.  
 i) Conduction ii) Convection  
 iii) Radiation iv) None
- s) Amount of radiation is emitted by black body is expressed by  
 i) Fourier's law ii) Stefan-Boltzmann law  
 iii) Thermal radiation law iv) None
- t) If Reynold's number is less than 2000 then the flow type is  
 i) Laminar ii) Turbulent  
 iii) Laminar or turbulent iv) None

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2. Long answer type question solve any two.

- a) Explain the principle and procedure of molecular distillation what are its application.
- b) Explain the principle, construction and working and advantages of Krystal crystallizer.
- c) Discuss the construction, working advantages & disadvantages of Spray dryer.

3. Short answer type question solve **any seven**.

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- a) Define the following
  - i) Critical moisture content.
  - ii) Equilibrium moisture content
  - iii) Bound moisture
  - iv) Moisture content
- b) What are the merits & demerits of venturi meter over orifice meter.
- c) Explain the working of heat exchanger with labelled diagram.
- d) Explain with the help of a diagram the construction and working of ball mill.
- e) Describe the construction and working of silverson mixture-emulsifier with the help of a neat diagram.
- f) Explain the mechanism of filtration.
- g) Explain various factor affecting rate of filtration.
- h) Describe the principle & application of steam distillation.
- i) Give the mechanism by which heat transfer.

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