

B.Pharm. - IInd Year (CBCS Pattern) Sem-III
BP 304T - Pharmaceutical Engineering

P. Pages : 2

Time : Three Hours



GUG/W/22/10887

Max. Marks : 75

- Notes :
1. Diagrams and Chemical equation should be given wherever necessary.
 2. Illustrate your answers wherever necessary with the help of neat sketches.
 3. All questions are compulsory.

1. Multiple choice questions.

20

- 1) Movement of particle can be enhanced during size separation by one of the following modes.
 - a) Agitation
 - b) Attrition
 - c) Gravitation
 - d) Mixing
- 2) Which principle operates in the hammer mill?
 - a) Attrition
 - b) Cutting
 - c) Crushing
 - d) Impact
- 3) Differential manometer is used to measure -----
 - a) Pressure in pipe
 - b) Atmospheric Pressure
 - c) Very low pressure
 - d) Difference of pressure between two points
- 4) Reynolds number is a ratio of the -----
 - a) Elastic forces to pressure forces
 - b) Gravity forces to inertial forces
 - c) Inertial forces to viscous forces
 - d) Viscous forces to inertial forces
- 5) Which are the modes observed in ball mill?
 - a) Attrition & cutting
 - b) Compression & impact
 - c) Cutting & compression
 - d) Impact & attrition
- 6) The loss of head sudden enlargement in a pipe depends on one of the following differences -----
 - a) Diameters
 - b) Flow rates
 - c) Surface area
 - d) Viscosities
- 7) To which type of heat flow Fourier's law is applicable -----
 - a) Conduction
 - b) Convection
 - c) Radiation
 - d) None of the above
- 8) In air separator centrifugal force for circulation of air is supplied by -----
 - a) Applying vacuum
 - b) Atomizing air
 - c) Pumping
 - d) Rotating blades
- 9) Which mechanism helps in size separation by sieve shaker?
 - a) Centrifugal force
 - b) Sedimentation
 - c) Brushing
 - d) Shearing forces
- 10) Sterile product cannot be obtained by -----
 - a) Ball mill
 - b) Colloid mill
 - c) Fluid energy mill
 - d) Cutter mill

- 11) The rate of evaporation is inversely proportional to -----
 - a) Temperature
 - b) External pressure
 - c) Surface area
 - d) Vapour pressure
- 12) Water for injection is prepared by one of the following distillation -----
 - a) Simple distillation
 - b) Flash distillation
 - c) Vacuum distillation
 - d) Steam distillation
- 13) The mixing of liquids at molecular level can be termed as -----
 - a) Bulk transport
 - b) Turbulent mixing
 - c) Laminar mixing
 - d) Molecular diffusion
- 14) One of the following filter is also known as edge filter -----
 - a) Filter leaf
 - b) Meta filter
 - c) Cartridge filter
 - d) Rotary drum filter
- 15) Which operation is generally carried out after evaporation -----
 - a) Distillation
 - b) Crystallization
 - c) Extraction
 - d) Drying
- 16) Which part of spray dryer controls the particle size of particle -----
 - a) Atomizer
 - b) Cyclone separator
 - c) Fluid bed
 - d) Drying chamber
- 17) Which mechanism is involved in meta filter?
 - a) Cake filtration
 - b) Depth filtration
 - c) Surface filtration
 - d) Zig-Zag filtration
- 18) Centrifugation is used for -----
 - a) Mixing
 - b) Purification
 - c) Separation
 - d) Sizing
- 19) This is irreversible type of mixing -----
 - a) Liquid
 - b) Solid
 - c) Neutral
 - d) All of the above
- 20) The product obtained from the condensation of vapours is known as -----
 - a) Distillate
 - b) Slurry
 - c) Distilland
 - d) Feed

2. Solve **any two**.
- a) Enlist flow rate measuring devices. Add a note on orifice meter & venturimeter.
 - b) Define size reduction? Explain ball mill.
 - c) Explain the concept of multiple effect evaporator.

**10x2
=20**

3. Solve **any seven**.
- a) Explain cyclone separator.
 - b) Discuss principle, construction & application of 'ball mill'.
 - c) Explain Reynolds number & its significance.
 - d) Give principle construction and working of steam jacketed kettle.
 - e) Give difference between evaporation and distillation.
 - f) Explain vacuum drying.
 - g) Write a note on double cone blender.
 - h) Explain plate and frame press filter.
 - i) Explain theories of corrosion.

**5x7
=35**
