



**BRAINWARE UNIVERSITY**  
**ODD Semester Examinations 2021- 22**

Programme – Bachelor of Pharmacy - 2019 [B.Pharm]

Course Name – Pharmaceutical Engineering

Course Code – BP304T

(Semester III)

Time allotted : 1 Hour 30 Minutes

Full Marks : 75

(Multiple choice type question)

75 x 1 = 75

*Choose the correct alternative from the following*

- (I) In drying process, the final product is in the form of-
- A) Slurry  
B) Solid  
C) Solution  
D) Solvent concentrate
- (II) Distillation involves -
- A) Vapourization  
B) Vapourization and condensation  
C) Condensation and crystallization  
D) Crystallization and drying
- (III) What is the unit of pressure energy in hydraulics?
- A) Joules  
B) Kg. M/s<sup>2</sup>  
C) Metre  
D) Pascal
- (IV) In ball mill, the balls should occupy \_\_\_\_\_ of the volume of the cylinder?
- A) 10 to 20 %  
B) 30 to 50%  
C) 20 to 40%  
D) 40 to 60%
- (V) Which one of the following is non-thermal drying?
- A) Fluidized bed dryer  
B) Spray drying  
C) Vacuum drying  
D) Tray drying
- (VI) Which kind of mill can be used for hygroscopic materials?
- A) Colloid mill  
B) Triple roller mill  
C) Fluid energy mill  
D) Hammer mill
- (VII) In freeze drying, the major portion of water is removed in-
- A) Prefreezing  
B) Pretreatment  
C) Primary drying  
D) Secondary drying
- (VIII) With increase in temperature, the total emissivity of conductors-
- A) Decreases  
B) Increases  
C) Remains unchanged  
D) Decreases linearly
- (IX) In which proportion of pipe, the flow of liquid is high?
- A) At actual surface of pipe wall  
B) Central portion  
C) Near the pipe wall  
D) Transition region
- (X) Which of the following has maximum thermal conductivity?
- A) Iron  
B) Coal  
C) Tar  
D) Nitrogen
- (XI) Separation of liquids by distillation is based on the principle of-
- A) Boiling point  
B) Miscibility  
C) Vapour pressure  
D) Viscosity
- (XII) McCabe and Thiele method represents

- A) Graphical method for determining the number of theoretical plates of a fractionating column  
B) Graphical relation between vapour pressure and temperature of component liquids of a mixture  
C) Relationship between the vapour pressure and mole fraction of component of a mixture  
D) Graphical relation between relative humidity and temperature
- (XIII) Which one of the following is a disadvantage of sieve shaker method?  
A) Attrition  
B) Capacity limited  
C) Expensive  
D) Tedious
- (XIV) In sieve shaker, a major disadvantage of size reduction takes place due to -  
A) Impact  
B) Cutting  
C) Attrition  
D) Compression
- (XV) Which type of liquid evaporates first in distillation?  
A) Immiscible liquid  
B) Less volatile liquid  
C) More volatile liquid  
D) Non-volatile liquid
- (XVI) When a substance is dissolved in a liquid, the vapour pressure of the liquid is -  
A) Decreased  
B) Increased  
C) Unchanged  
D) Initially increase then decrease
- (XVII) The process of converting vapour from solid state is known as-  
A) Evaporation  
B) Distillation  
C) Sterilization  
D) Sublimation
- (XVIII) Brushing materials hastens the movement of \_\_\_\_\_ materials.  
A) Coarse  
B) Dry  
C) Light  
D) Sticky
- (XIX) With increase in temperature, the thermal conductivity of most liquids-  
A) Decreases  
B) Increases  
C) Remains unchanged  
D) Initially increases then become constant
- (XX) Which one of the following factor must be considered for fixing effective drying conditions?  
A) Pressure  
B) Humidity  
C) Height  
D) None of these
- (XXI) Heat transfer rate per unit area is known as-  
A) Thermal diffusivity  
B) Thermal conductivity  
C) Heat flux  
D) Heat transfer co-efficient
- (XXII) According to Fourier's law, heat transfer rate will decrease, if \_\_\_\_\_ increases.  
A) Thickness  
B) Thermal conductivity  
C) Temperature difference  
D) Heat transfer area
- (XXIII) Mean free path is associated with:  
A) Fractional distillation  
B) Molecular distillation  
C) Steam distillation  
D) Azeotropic distillation
- (XXIV) In climbing film evaporator, a common disadvantage is-  
A) Boiling point of liquid  
B) Droplet formation  
C) Entrainment of liquid  
D) Film formation
- (XXV) Fixed oils can be extracted using  
A) Vacuum still  
B) Molecular still  
C) Water still  
D) Fractional distillation
- (XXVI) Which one of the following forms scales in an evaporator?  
A) Benzoic acid  
B) Calcium sulphate  
C) Salicylic acid  
D) Sodium chloride
- (XXVII) Reynolds number may be defined as the ratio of -  
A) Elastic force to pressure force  
B) Gravity force to inertial force

- C) Inertial force to viscous force  
D) Viscous force to inertial force
- (XXVIII) Which one of the following uses a thin plate for the measurement of flow of fluids?  
A) Orifice meter  
B) Pilot tube  
C) Displacement meter  
D) Venturi meter
- (XXIX) Select the preferable evaporator suitable for corrosive liquid that gives a crystalline product.  
A) Falling film evaporator  
B) Forced circulation evaporator  
C) Horizontal film evaporator  
D) Vertical evaporator
- (XXX) Which one of the following is a static bed dryer?  
A) Drum dryer  
B) Fluidized bed dryer  
C) Spray dryer  
D) Tray dryer
- (XXXI) In SI system, the unit of conductance is -  
A) W/m<sup>2</sup>  
B) W/m  
C) W/°K  
D) W/m°K
- (XXXII) Liquid which decompose at or below their boiling point are purified by-  
A) Distillation under reduced pressure  
B) Simple distillation  
C) Fractional distillation  
D) Steam distillation
- (XXXIII) Native state of metal means-  
A) Combined state  
B) Alloy  
C) Uncombined state  
D) Corrosive state
- (XXXIV) Silverson mixer is preferably used for -  
A) Emulsion  
B) Syrup  
C) Mouthwash  
D) Elixirs
- (XXXV) In drying, rate of moisture evaporation becomes equal to rate of diffusion at-  
A) First falling rate period  
B) Second falling rate period  
C) Equilibrium moisture content  
D) Constant rate period
- (XXXVI) Critical value of the \_\_\_\_\_ number governs the transition from laminar to turbulent flow in free convection of heat transfer.  
A) Grashoff  
B) Bonds  
C) Reynolds  
D) Prandtl and Grashoff
- (XXXVII) Which law satisfies the batch type distillation of a binary system for separation?  
A) Dalton's law  
B) Raoult's law  
C) Rayleigh's law  
D) Stokes law
- (XXXVIII) In colloid mill, the rotational speed varies between-  
A) 1000 - 5000  
B) 2000 - 10000 rpm  
C) 3000- 15000  
D) 3000 - 20000 rpm
- (XXXIX) In flow of fluids, the principles of energy conservation is described through -  
A) Bernoulli's theorem  
B) Reynolds number  
C) Kick's theory  
D) Rittinger's theory
- (XL) The velocity distribution of a fluid in a pipe is parabolic for one of the following types of flow-  
A) Non- uniform laminar flow  
B) Non- uniform turbulent flow  
C) Uniform laminar flow  
D) Uniform turbulent flow
- (XLI) What is the emissivity of a black body?  
A) 0  
B) 0.25  
C) 0.5  
D) 1
- (XLII) Evaporator tubes are generally  
A) Vertical  
B) Horizontal  
C) Inclined  
D) Random
- (XLIII) Size separation is not based on -  
A) Particle density  
B) Particle shape

- C) Particle size  
D) Particle texture
- (XLIV) The equilibrium moisture content of talc is -  
A) High  
B) One  
C) Variable  
D) Zero
- (XLV) Which one of the following metal is used in the making of sieves?  
A) Zinc  
B) Aluminium  
C) Stainless steel  
D) Tin
- (XLVI) Which distillation method is used to prepare aromatic spirit of ammonia?  
A) Flash Distillation  
B) Fractional distillation  
C) Molecular distillation  
D) Simple distillation
- (XLVII) Which mill produces finer particles?  
A) Ball mill  
B) Fluid energy mill  
C) Hammer mill  
D) Cutter mill
- (XLVIII) Which of the following is true for static mixer?  
A) Shell and blades are stationary  
B) Shell and blades both rotates  
C) Stationary shell with rotating blades  
D) Rotating shell with stationary blades
- (XLIX) Which of the following is not considered as a mechanism of size reduction?  
A) Elutriation  
B) Impact  
C) Cutting  
D) Compression
- (L) Calandria consists a number of-  
A) baffles  
B) jackets  
C) Outlets  
D) Tubular surface
- (LI) Which of the following device is used for temporary flow measurement?  
A) Displacement meter  
B) Pilot static tube  
C) Orifice plate  
D) Venturi meter
- (LII) The major mechanism of mixing in sigma blade is-  
A) Convective mixing  
B) Diffusive mixing  
C) Shear force  
D) Tumbling
- (LIII) In a sieve shaker, particles are separated on the basis of -  
A) Particle size  
B) Particle shape  
C) Particle density  
D) Volume of the powder
- (LIV) Which one of the following aids in size separation in sieve shaker?  
A) Agitation  
B) Brushing  
C) Centrifugal force  
D) Shearing force
- (LV) Silverson emulsifier shears the material by using-  
A) Suction force  
B) Centrifugal force  
C) Turbines  
D) Ultrasonic vibrations
- (LVI) Measurement of time of flow is important for the determination of flow of fluid in one of the following-  
A) Displacement meter  
B) Orifice meter  
C) Rotameter  
D) Venturi meter
- (LVII) How many liquids are used in differential manometer?  
A) Four  
B) One  
C) Three  
D) Two
- (LVIII) Mixing of powders is a required step involved in the preparation of-  
A) Emulsions  
B) Creams  
C) Syrups  
D) Tablets
- (LIX) Fluid energy mill works in the principle of -  
A) Impact  
B) Impact and attrition

- C) Compression  
D) Attrition
- (LX) "Impact" is the mechanism of size reduction for which of the following mill?  
A) Roller mill  
B) Cutter mill  
C) Hammer mill  
D) Fluid energy mill
- (LXI) Breakdown of material by rubbing action between two surface is called-  
A) Impact  
B) Compression  
C) Attrition  
D) Cutting
- (LXII) The potential energy in Bernoulli's theorem is also known as-  
A) Datum energy  
B) Kinetic energy  
C) Thermal energy  
D) Resonance energy
- (LXIII) During size separation, movement of particles can be enhanced by-  
A) Agitation  
B) Attrition  
C) Gravitation  
D) Mixing
- (LXIV) Duhring's rule is related to  
A) Crystallization  
B) Distillation  
C) Filtration  
D) Size reduction
- (LXV) Surface tension is expressed in-  
A) Centi poise  
B) Poise  
C) N/m<sup>2</sup>  
D) Dynes/cm
- (LXVI) The mechanism of size reduction in ball mill is-  
A) Crushing  
B) Compression  
C) Cutting  
D) Impact and attrition
- (LXVII) Which of the following process is not associated with distillation?  
A) Vapourisation  
B) Size reduction  
C) Purification  
D) Separation
- (LXVIII) At low density, thermal conductivity of a gas \_\_\_\_\_ with increasing temperature.  
A) Increases  
B) Decreases  
C) Remains unaffected  
D) May alter depending on gas
- (LXIX) Attrition is a major disadvantage with-  
A) Fluidized bed dryer  
B) Drum dryer  
C) Spray drying  
D) Tray drying
- (LXX) Vacuum dryer is a modified form of  
A) Vacuum still  
B) Simple distillation  
C) Evaporation  
D) Sublimation
- (LXXI) Hot spots are formed during which of the following period?  
A) Constant rate period  
B) First falling period  
C) Initial readjustment period  
D) Second falling period
- (LXXII) Size reduction of a brittle thermolabile substance should be done by-  
A) Cutter mill  
B) Hammer mill  
C) Colloid mill  
D) Fluid energy mill
- (LXXIII) Mixing of liquids is done for the preparation of-  
A) Emulsions  
B) Compound powders  
C) Tablets  
D) Capsules
- (LXXIV) Preparation of fine emulsion from coarse emulsion is called as-  
A) Homogenization  
B) Size separation  
C) Mixing  
D) Creaming
- (LXXV) Which of the following equipment is used for sieve analysis?  
A) Alpine airjet sieve  
B) Cyclone separator

C) Rotex screen

D) Shaking screen