

W-2022

Seat Number

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PANKH-13

BP-304T

Pharmaceutical Engineering

(723304)

Total Pages : 5]

Time : 3 Hours

Max Marks : 75

**Note :** (1) Do not write anything on question paper except Seat No.

(2) Students should note, no supplement will be provided.

(3) Draw well labelled diagram wherever necessary.

(4) Figures to the right indicate full marks.

(A) Choose the proper alternative of the following :

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(i) Principle of ultrafine grinder is :

(a) Impact and share (b) Attrition and share

(c) Impact and attrition (d) Attrition and compression

(ii) Which of the following has good thermal conductivity ?

(a) Aluminium (b) Glass

(c) Copper (d) Steel

(iii) Corrosion developed in highly localised area of metal called as :

(a) Galvanic corrosion (b) Erosion

(c) Pitting corrosion (d) Stress corrosion

P.T.O.

- (iv) Which glass container is used for IR rays protection ?  
 (a) Transparent (b) Amber colour  
 (c) Green colour (d) Yellow colour
- (v) Creep and fatigue properties of lead can be improved by addition of :  
 (a) Silicon (b) Tin  
 (c) Copper (d) Chromium
- (vi) Alkali limit can be detected by :  
 (a) Water attack test (b) Conductivity test  
 (c) Both (a) and (b) (d) None of these
- (vii) Velocity of centrifuge is expressed in.....  
 (a) Diameter of rotation (b) RPM  
 (c)  $m/s^2$  (d)  $m^2/s$
- (viii) Which of the following is not a size reduction process ?  
 (a) Diminution (b) Pulverization  
 (c) Clarification (d) Comminution
- (ix) Which is the principle of Hammer Mill ?  
 (a) Impact (b) Cutting  
 (c) Compression (d) Attrition
- (x) Which equipment is not required manometer for fluid flow measurement ?  
 (a) Rota meter (b) Orifice meter  
 (c) Pitot tube (d) Venturi meter

- (xi) Thermoliable substances can be milled by :  
(a) Edge Runner Mill (b) Ball Mill  
(c) Fluid Energy Mill (d) Hammer Mill
- (xii) Which is *not* the mechanism of filtration ?  
(a) Entanglement (b) Impact  
(c) Straining (d) Impingement
- (xiii) Centrifugation is used for.....  
(a) Purification (b) Separation  
(c) Mixing (d) Size Reduction
- (xiv) Separation in cyclone separator depends on :  
(a) Shape and Surface area  
(b) Size and density  
(c) Density and shape  
(d) Size and texture
- (xv) Lyophiliser is also called :  
(a) Spray dryer (b) Fluidised bed dryer  
(c) Freeze dryer (d) Vacuum dryer
- (xvi) Which heat flow follows Fourier's law ?  
(a) Convection (b) Emission  
(c) Conduction (d) Radiation

(xviii) Bone dry products means :

- (a) Product with 2% moisture content
- (b) Powdered form of bone
- (c) Product with 0% moisture content
- (d) Granular form of bone

(xviii) Short path distillation is :

- (a) Molecular distillation
- (b) Vacuum distillation
- (c) Fractional distillation
- (d) Steam distillation

(xix) Which is not the mechanism of solid mixing ?

- (a) Diffusive mixing (b) Convective mixing
- (c) Turbulent mixing (d) Shear mixing

(xx) Equation for metals (not black body) of Stefan Boltzaman constant :

- (a)  $q = \epsilon bAT^3$  (b)  $q = bAT^3$
- (c)  $q = \epsilon bAT^4$  (d)  $q = bAT^4$

(B) Attempt any two :

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- (i) Explain Bernoulli's experiment with its derivation and describe the working of orifice meter.
- (ii) Explain fractional distillation method in detail. Add a note on boiling point composition diagram for miscible liquid.
- (iii) Explain the modes of heat transfer. Write a short note on tubular heat exchanger.

(C) Attempt any *seven* :

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- (i) Explain principle, construction and working of cartridge filter.
- (ii) Write a note on Silverson emulsifier.
- (iii) Define corrosion and explain the theory of corrosion.
- (iv) Write a note on perforated basket centrifuge.
- (v) Explain distillation under reduced pressure.
- (vi) Explain the Fourier's law with derivation.
- (vii) Write the principle, construction and working of Ball Mill.
- (viii) What is Reynold's experiment ? Give its significance.
- (ix) Explain the *four* mechanisms of liquid-liquid mixing.