Seat Number ☐☐☐☐☐☐ **PANKH-56**

BP-304-T

Pharmaceutical Engineering

(723304)

Total Pages : 6]

Time : 3 Hours   Max Marks : 75

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

(2)   Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.

(3)   Figures to the right indicate full marks.

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

(5)   Draw well labelled diagram wherever necessary.

1.   Multiple Choice Questions :   20

(i)   One of the method is not hydrodynamic ....

(a)   Direct displacement value

(b)   Venturimeter

(c)   Rotameter

(d)   Orifice meter

(ii)   Heat labile substance can be milled by ....

(a)   Edge Runner Mill   (b)   Ball Mill

(c)   Fluid Energy Mill   (d)   Colloid Mill

P.T.O.

(iii) In Cyclone Separator the Separation depends on ....

   (a) Density and shape

   (b) Shape and surface area

   (c) Size and density

   (d) Surface texture and size

(iv) Which equation causes the heat transfer by radiation ?

   (a) Hot air oven   (b) Incubator

   (c) Microwave oven   (d) Refrigerator

(v) Evaporation is carried out in which one of the following conditions ?

   (a) Above B.P.   (b) At the B.P.

   (c) Below the B.P.   (d) All of these

(vi) W.F.I. is prepared by using ....

   (a) Simple distillation

   (b) Fractional distillation

   (c) Molecular distillation

   (d) Steam distillation

(vii) Separation of liquid by distillation is based upon one of the following :

   (a) B.P.   (b) Miscibility

   (c) Viscosity   (d) Vapour pressure

(viii) Fluidized bed dryer has one of the following advantages ....

    (a) Attrition is not observed

    (b) Fluffy mass is formed

    (c) Entire material is continuously exposed to heat source

    (d) Humidity can be increased

(ix)   Eutectic point is important factor for one of the following methods ....

    (a) Drum dryer

    (b) Fluidized bed dryer

    (c) Spray dryer

    (d) Freeze dryer

(x)   Which type of kinetic is involved in mixing of solids ?

    (a) First order   (b) Pseudo first order

    (c) Second order   (d) Zero order

(xi)   Planetary mixer is used for wet granulations because of its ....

    (a) Kneading action   (b) Blending action

    (c) Shearing action   (d) Agitatory action

(xii) Which mechanism is involved in meta filter ?

    (a) Cake filtration   (b) Depth filtration

    (c) Surface filtration   (d) Zig-Zag filtration

(xiii) Which one of the following is *not* mechanism of filtration ?

(a) Entagement

(b) Impact

(c) Straining

(d) Impigment

(xiv) Centrifugation is used for ....

(a) Mixing

(b) Purification

(c) Separation

(d) Reduction

(xv) Which metal make steel corrosion free ?

(a) Chromium and Nickel

(b) Copper and Selenium

(c) Tantalum and Molybdenum

(d) Titanium and Niobium

(xvi) How many liquids are used in differential manometer ?

(a) 3

(b) 2

(c) 4

(d) 1

(xvii) Size reduction of potent drugs is necessary due to one of the quality control parameters in tablet formulation ....

(a) Content uniformity

(b) Friability

(c) Hardness

(d) Poor mixing

(xviii) To which type of heat flow Fourier's law is applicable ?

    (a)   Conduction

    (b)   Convection

    (c)   Radiation

    (d)   Conduction and Convection

(xix) Calandria consists the number of ....

    (a)   Baffler   (b) Tubular surface

    (c)   Outlets   (d) Jackets

(xx) Complete separation of individual component is not possible in ....

    (a)   Simple distillation

    (b)   Flash distillation

    (c)   Molecular distillation

    (d)   Steam distillation

                                                20

2.   Attempt any *two* :

    (1)   Explain principle, construction, working, merits and demerits of MEE. Add a note on economy of multiple effect of evaporator.

    (2)   Explain principle, construction, working, advantages and disadvantages of Spray Dryer.

    (3)   What is fractional distillation ? Discuss in detail fractional distillation and type of fractionating column.

3. Attempt any *seven* : 35

    (1) Write in detail factors affecting rate of evaporation.

    (2) Give principle, construction and working of Super centrifuge.

    (3) Give method of prevention and control of corrosion.

    (4) Explain in detail Plate and Frame Filter.

    (5) Explain Bernoulli's theorem and its application.

    (6) Give objective of drying. Explain mechanism and rate of drying rate curve in detail.

    (7) Write a note on Cyclone separator.

    (S) Define the heat transfer. Write a note on conduction heat transfer.

    (9) Write a note on Double cone blender.