Seat Number

लक्ष - 013

* 1 6 7 4 *

H-18

BP 304 T
Pharmaceutical Engineering
(731104)

P. Pages : 3

Time : Three Hours **Max. Marks : 75**

Instructions to Candidates :

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. Students should note, no supplement will be provided.
4. All questions are compulsory.
5. Draw well labelled diagram wherever necessary.
6. Figures to the right indicates marks.

1. Choose the proper alternative of the following. **20**

a) Hammer mill works on the principle of
   i) Impact ii) Compression
   iii) Impact and attrition iv) Attrition

b) Reynolds number is ratio of
   i) Elastic force to pressure
   ii) Gravity force to inertial force
   iii) Inertial force to viscous force
   iv) Elastic force to inertial force

c) Which equation express Stefan Boltzmann law for black body?
   i) $q = bAT$ ii) $q = \epsilon bAT^4$
   iii) $q = bAT^3$ iv) $q = bAT^4$

d) Equilibrium distillation is also known as ------ distillation.
   i) Simple ii) Azeotropic
   iii) Flash iv) Fractional

e) Mean free path is associated with ------ distillation.
   i) Azeotropic ii) Steam
   iii) Vacuum iv) Molecular

f) Which of the following is a Pneumatic dryer?
   i) Vacuum dryer ii) Freeze dryer
   iii) Drum dryer iv) Spray dryer

g) Vapor pressure at triple point of water is
   i) 45.8 mm Hg ii) 1.22 mm Hg
   iii) 4.58 mm Hg iv) 458 mm Hg

h) Which is the disadvantage of sieve shaker method?
   i) Attrition ii) Capacity limited
   iii) Expensive equipment iv) Tedious method

i) ------ is used for the filtration of parentral/ophthalmic solution.
   i) Filter leaf ii) Meta filter
   iii) Cartridge filter iv) Drum filter

j) The device used to measure the pressure difference is known as
   i) Psychrometer ii) Manometer
   iii) Rheometer iv) Thermometer

k) Which one of the following is known as 'Lyophilizer'?
   i) FBD ii) Freeze dryer
   iii) Spray Dryer iv) Vacuum dryer

l) Which is the principle difference in the properties of material that influences centrifugation?
   i) Density ii) Interfacial tension
   iii) Particle shape iv) Viscosity

m) Centrifugation is useful in one of the following type of soft dispersion.
   i) Coarse dispersion ii) Colloidal dispersion
   iii) Molecular dispersion iv) Multisize dispersion

n) Which one of these is the value of gravitational constant in SI unit (m/s^2)
   i) 0.09807 ii) 0.9807
   iii) 9.807 iv) 98.07

o) Which is not a mechanism of liquid mixing?
   i) Bulk transport ii) Laminar mixing
   iii) Shear mixing iv) Turbulent mixing.

p) Mixing of ingredients is a problem when
   i) Amount of active constant is low
   ii) dose of drug is high
   iii) materials are non – cohesive
   iv) shape of components are similar

q) Water attack test is performed on glass in order to find the limits of
   i) Acid ii) Alkali
   iii) Conductivity iv) Metal ions

r) Which glass container is used for storage of light sensitive material?
   i) Amber Colored ii) Air tight
   iii) Unit dose iv) Well closed

s) Which one of the following is associated with flow of current?
i) Cavitation corrosion ii) Galvanic corrosion
iii) Impingement corrosion iv) All of these

t) The ability of metal surface to with stand repeated cycles of corrosion is known as
i) Cavitation corrosion ii) Corrosion fatigue
iii) Erosion iv) Corrosion cracking

2. Attempt **any seven** of the following. 35

a) Write a note on cyclone separator.

b) Give the principle, construction and working of Fluid energy mill.

c) Give the principle, construction and working of Freeze dryer.

d) Explain in detail the Reynold's Experiment.

e) Write down the Fourier's law and give its derivation.

f) Explain the four mechanism of liquid – liquid mixing.

g) Give the principle, construction and working of Rotary drum filter.

h) Write a note on Fluidized bed dryer.

i) Explain the principle, working and use of perforated basket centrifuge.

3. Attempt **any two** of the following. 20

a) Explain fractional distillation method in detail. Add a note on boiling point composition diagram of miscible liquid.

b) Classify evaporators. Explain the construction and working of multiple tube evaporator. Add a note on economy of multiple effect evaporator.

c) Write a note on Bernoulli's experiment with its derivation and describe working of Orifice Meter.

****