Seat Number

* 4 3 0 5 *

Jun – 19

BP 304-T
Pharmaceutical Engineering
(723304)

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. Figure to the right indicates full marks.
5. Draw well labelled diagram wherever necessary.

1. Multiple choice questions. **20**

i) The disadvantage of sieve shaker is --------
   a) Attrition b) Capacity limited
   c) Tedious d) Expensive equipments

ii) Sterile product cannot be obtained by ---------
   a) Fluid energy mill b) Ball Mill
   c) Colloidal Mill d) Cutter Mill

iii) Which mechanism is involved in meta filter ------.
   a) Calre filtration b) Depth filtration
   c) Surface filtration d) Ziq-Zaq filtration

iv) How many liquids are used for differential monometer.
   a) Four b) One
   c) Three d) Two

v) Centrifugation is used to analyse -------- of dosage form.
   a) Physical stability b) Chemical stability
   c) Photostability d) Thermal stability

vi) Method used for distillation of camphor.
   a) Simple distillation b) Fractional distillation
   c) Molecular distillation d) Steam distillation

vii) Which method is used to dry blood plasma ------.
   a) Tray Dryer b) Spray Dryer
   c) Drum Dryer d) Freeze Drying

viii) Flow of heat is not applicable to --------.
a) Drying b) Crystallization
c) Centrifugation d) Refrigeration

ix) Which one of the following factor does not affect evaporators.
a) Viscosity of liq. b) Melting point of solid
c) Surface area of liq. d) Boiling point of liq.

x) Which part of spray dryer control the particle size ------.
a) Cyclone separator b) Atomizer
c) Drying chamber d) None of the above

xi) Which one of the filter is used for sterile filtration --------.
a) Meta filter b) Catridge filter
c) Seitz filter d) All of the above

xii) Fluid energy mill uses --------.
a) Impact b) Attrition
c) Both a & b d) None of the above

xiii) Pumps are not used to increase --------- energy of liquid.
a) Kinetic energy b) Potential energy
c) Pressure energy d) Radiant energy

xiv) One of the following is not a mechanism of filtration -------.
a) Entanglement b) Impact
c) Straining d) Impingement

xv) Disadvantage of spray Dryer is ---------.
a) Limited capacity b) Not suitable for sol^{n} of salt
c) Thermal efficiency is quite low d) All of the above

xvi) Reynold's Formula is ----------.
a) $Re = D_V D / \mu$ b) $Re = D_u \mu / D$
c) $Re = D_u D / n$ d) None of the above

xvii) Silverson mixer is used for prep^{n} of ---------
a) Emulsion b) Suspension
c) Syrup d) Elixir

xviii) Heat transfer take place according to --------.
a) First law of thermodynamics. b) Second law of thermodynamics
c) Third law of thermodynamics d) Zero law of thermodynamics

xix) Flash distillation also called as --------.
a) Equilibrium distillation b) Rectification
c) Flash vaporisation d) Distillation under Reduced pressure

xx) Size Reduction cannot be obtained by ----------
a) Mechanical
b) Physical
c) Precipitation
d) Flocculation

2. Attempt **any two**. **20**

a) Define drying. Explain principle, construction, working & advantage of FBD.

b) Discuss factor affecting size reduction. Explain in detail fluid energy mill.

c) Write principle, construction, working & advantage of fractional distillation. Explain application in pharmacy.

3. Attempt **any seven**. **35**

a) Write principle, construction & working of spray dryer.

b) Gives method of prevention & control of corrosion.

c) Explain Bernoulli's theorem.

d) Write principle, construction & working of perforated Basket centrifuge.

e) Discuss in detail belt conveyor.

f) Write a note on shell & tube heater.

g) Explain in brief factor affecting rate of evaporation.

h) Write construction & working of plate & frame filtration.

i) Draw a well labelled diagram of

1) Drum Dryer

2) Climbling film evaporators

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