

341354(41)

**B Pharmacy (Third Semester) Examination
Nov.-Dec. 2019**

(PCI)

(Pharmacy Branch)

PHARMACEUTICAL ENGINEERING-THEORY

(BP304T)

Time Allowed : Three hours

Maximum Marks : 75

Note : All sections as directed.

Section - A

(Multiple Choice Questions)

Note : Attempt all questions from MCQs. All question carry 01 mark each.

1. Choose the correct answer : 1×20=20

(i) Manometers are the device used for measuring :

- (a) Temperature difference
- (b) Density difference
- (c) Viscosity difference
- (d) Pressure difference

(ii) In Reynold's experiment, the flow conditions are affected by :

- (a) Diameter of pipe
- (b) Area of pipe
- (c) Radius of pipe
- (d) None of the above

(iii) Fluid energy mill operates on the principle of :

- (a) Cutting or shearing
- (b) Impact and attrition
- (c) Crushing or compression
- (d) Grinding

(iv) The function of cyclone separator is :

- (a) To separate solids from fluids
- (b) To separate liquid from liquid
- (c) To separate liquid from solid
- (d) To sperate solid from solid

- (v) Air separator works on the principle of :
- (a) Vonderwaal forces
 - (b) Force of attraction
 - (c) Centrifugal force
 - (d) Radial force
- (vi) Which of the following equipment is used for mixing :
- (a) Sigma blender
 - (b) Ball mill
 - (c) Hammer mill
 - (d) Cutter mill
- (vii) Rate of evaporation is :
- (a) Directly proportional to vapour pressure of liquid
 - (b) Inversly proportional to vapour pressure of liquid
 - (c) Do not depend on vapour pressure of liquid
 - (d) Ten times proportional to vapour pressure of liquid
- (viii) When a drug exist in more than one crystalline form the phenomena is known as :

- (a) Amorphism
 - (b) Isomerism
 - (c) Polymorphism
 - (d) Pseudo polymorphism
- (ix) Mier's theory of super saturation postulates a definite relationship between :
- (a) Concentration and temperature
 - (b) Concentration and pressure
 - (c) Temperature and pressure
 - (d) None of the above
- (x) When heat flow is achieved by actual mixing of warmer portion with cooler portion of the same material the process is known as :
- (a) Conduction
 - (b) Radiation
 - (c) Transduction
 - (d) Convection
- (xi) The function of freeze dryer is :
- (a) Evaporation
 - (b) Condensation

- (c) Lyophilization
- (d) Size reduction

(xii) Super centrifuge works on the principle of :

- (a) Filtration
- (b) Migration
- (c) Size reduction
- (d) Sedimentation

(xiii) Semi continuous centrifuge works on the principle of :

- (a) Sedimentation
- (b) Gravity
- (c) Filtration
- (d) Evaporation

(xiv) Plate and frame filters are classified under :

- (a) Vacuum filters
- (b) Pressure filters
- (c) Centrifugal filters
- (d) Membrane filters

(xv) Cyclone separator works on the principle of :

- (a) Sedimentation

- (b) Centrifugation
- (c) Density difference
- (d) Filtration

(xvi) Steam jacketed kettle consist of :

- (a) Evaporators with heating medium in jacket
- (b) Evaporator with tubular heating surfaces
- (c) Evaporator with water bath
- (d) None of the above

(xvii) Spray dryer is a type of :

- (a) Pneumatic dryer
- (b) Fluidized bed dryer
- (c) Moving bed dryer
- (d) Static bed dryer

(xviii) Centrifugal pump and gear pump are classified under :

- (a) Reciprocating pump
- (b) Rotary pump
- (c) Miscellaneous pumps
- (d) Pumps

(xix) Which of the following is synthetic rubber :

- (a) Neoprene
- (b) Polyethylene
- (c) Polypropylene
- (d) Poly butylene

(xx) In cast iron proportion of carbon is :

- (a) Greater than 1.5%
- (b) Below 1.5%
- (c) Both (a) and (b)
- (d) None of the above

Section - B

(Long Answer Type Question) 4×10=40

Note : Attempt any four questions. Each question carry 10 marks.

- 2. Explain the mechanism of drying process. Write construction, working and use of fluidised bed dryer.
- 3. Define size reduction. Classify size reduction equipment. Explain construction and working of Hammer Mill.
- 4. Describe filter media and filter aids. Discuss factors influencing filtration.

- 5. Define mining. Classify equipments for solid mixing. Explain construction, working and use of sigma blade mixer.
- 6. What is centrifugal force? Explain theory of centrifugation with its classification. Describe in detail about construction and working of perforated basket centrifuge.
- 7. Write difference between Ideal solution and Real solution. Describe construction, working and use of equipment for simple distillation.

Section - C

3×5=15

- 8. Write short note (any three) :
 - (a) Types of corrosion and their prevention
 - (b) Raoult's law
 - (c) Manometry
 - (d) Fourier's law

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