

**PARUL UNIVERSITY**  
**FACULTY OF PHARMACY**  
**B. Pharm. Winter 2021 - 22 Examination**

Enrollment No: \_\_\_\_\_

Semester: 3

Subject Code: BP304T

Subject Name: Pharmaceutical Engineering

Date: 11-10-2021

Time: 02:00 pm to 05:00 pm

Total Marks: 75

**Instructions:**

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

**Q.1 Multiple Choice Questions (MCQs) (1 Mark Each)**

(20)

1. If Reynolds's number is 1700, the flow is called as
  - a) Laminar
  - b) Transition
  - c) Turbulent
  - d) None of the above
2. Ball mill works on the principle of
  - a) Attrition
  - b) Impact
  - c) Attrition and Impact
  - d) Cutting
3. Sieve number is
  - a) No. of holes present per inch
  - b) No. of holes present per feet
  - c) No. of holes present per cm
  - d) No. of holes present per mm
4. One of the following is not an example of filter aid
  - a) Bentonite
  - b) Calcium Carbonate
  - c) Diatomaceous Earth
  - d) Talc
5. One of the following is not a flow meter
  - a) Orifice meter
  - b) Venturimeter
  - c) Rotameter
  - d) Inclined Manometer
6. The value of EMC depends upon
  - a) Material
  - b) Temperature of the air
  - c) Relative Humidity
  - d) All the above
7. The pore size of membrane filter used for sterile filtration is
  - a) 0.22  $\mu\text{m}$
  - b) 1  $\mu\text{m}$
  - c) 0.90  $\mu\text{m}$
  - d) 1.2  $\mu\text{m}$
8. Doctor's knife is a part of
  - a) Meta filter
  - b) Cartridge Filter
  - c) Rotary Drum Filter
  - d) Membrane filter
9. Bernoulli's Theorem does not include one of the following energy
  - a) Potential Energy
  - b) Kinetic Energy
  - c) Thermal Energy
  - d) Pressure Energy
10. Flash distillation is also called as
  - a) Non Equilibrium Distillation
  - b) Equilibrium Distillation
  - c) Light Distillation
  - d) Thermal Distillation
11. Impingement is a mechanism of
  - a) Size Reduction
  - b) Size Separation
  - c) Filtration
  - d) Centrifugation
12. Thermal degradation of materials is disadvantage of
  - a) Size Separation
  - b) Size Reduction
  - c) Filtration
  - d) Fluid Flow
13. Hardinge Mill is variant of
  - a) Ball Mill
  - b) Fluid Energy Mill
  - c) Hammer Mill
  - d) Edge Runner Mill
14. For separation of two immiscible liquid one of the following equipment is used
  - a) Perforated Basket Centrifuge
  - b) Semi Continuous Centrifuge
  - c) Super Centrifuge
  - d) Non-perforated Basket Centrifuge



15. Absolute alcohol is prepared by one of the following
  - a) Azeotropic Distillation
  - b) Simple Distillation
  - c) Steam Distillation
  - d) Vacuum Distillation
16. Oscillation is the mechanism of Size Separation which is based on
  - a) Agitation
  - b) Brushing method
  - c) Centrifugal Force
  - d) All the above
17. Mixing of ingredients is a problem when
  - a) amount of active constituent is low
  - b) Dose of Drug is high
  - c) Materials are non cohesive
  - d) Shape of components are similar
18. Rubber contains one of the following chemical units
  - a) Amino acids
  - b) Glycosidal
  - c) Isoprene
  - d) Sugar
19. Which one of the following material is used for the construction of outer surface of jacket of steam pans because of its low thermal conductivity?
  - a) Carbon steel
  - b) Cast Iron
  - c) Copper
  - d) Stainless Steel
20. Uneven mixing leads to one of the following problems in tablet manufacturing
  - a) Content uniformity variation
  - b) Disintegration time fluctuates
  - c) Friability problems
  - d) poor flow of granules

**Q.2 Long Answers (any 2 out of 3) (10 Mark Each)**

(20)

1. Define Centrifugation. Enlist different types of centrifuge. Discuss principle, construction, working, uses, merits and demerits of Perforated Basket Centrifuge.
2. Describe Bernoulli's Theorem and discuss its application in detail.
3. Discuss different factors that affect the rate of filtration.

**Q.3 Short Answers (any 7 out of 9) (5 Mark Each)**

(35)

1. Write short note on Venturimeter.
2. Discuss applications of Planetary Mixers.
3. Explain different types of corrosion and methods of prevention of corrosion.
4. Draw a well labeled diagram of Rotary Drum Filter.
5. Discuss merits and demerits of Double Cone Blender.
6. Discuss the factors that affect during material selection for pharmaceutical plant construction.
7. Describe objective, applications and mechanism of Drying.
8. Discuss the method to determine Reynolds's number. Explain application of Reynolds's number in pharmacy.
9. Discuss in detail Drying Curve.