

**B. PHARM.  
THIRD SEMESTER  
PHYSICAL PHARMACEUTICS-I  
BP302T**

**SET  
B**

[USE OMR FOR OBJECTIVE PART]

Duration : 3 hrs.

Full Marks : 75

**( PART-A: Objective )**

Time : 30 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

- ..... is the melting point of ice.  
a. 100°C  
b. 0°C  
c. 50°C  
d. None of the above
- A substance containing two or more donor groups combine with metal ions to form complex is known as  
a. Chelate  
b. Diluent  
c. Surfactant  
d. None of these
- Fick's first law applies to:  
a. Steady state system  
b. Dynamic state system  
c. Both a and b  
d. None of the above
- The latent heat of fusion is associated with the solid-liquid transition ..... change in temperature.  
a. with  
b. Without  
c. Both a and b  
d. None of the above
- ..... is used in making powder from heat-sensitive materials.  
a. Sublimation  
b. Melting  
c. Condensation  
d. Evaporation
- Example of practically immiscible liquids include:  
a. Phenol-water  
b. Alcohol-water  
c. Chloroform-water  
d. All of the above
- Ideal solutions are known to ..... Raoult's law.  
a. obey  
b. disobey  
c. deviate  
d. None of the above
- ..... is a mixture in which two solid particles mix together and reduce their melting point and convert into liquid at normal temperature.  
a. Eutectic mixture  
b. Concurrent mixture  
c. Bipolar mixture  
d. None of the above.
- $\text{pH} + \text{pOH} = \dots$   
a. 0  
b. 7  
c. 14  
d. 10

10. In colorimetric method for determination of pH, which filter is used?
- 575nm
  - 700nm
  - 625nm
  - 820nm
11. If  $[H^+] > [OH^-]$  then the solution is:
- Acidic
  - Basic
  - Neutral
  - None of the above
12. ....is the difference between work of adhesion and work of cohesion.
- Spreading coefficient
  - Diffusion
  - Osmotic
  - Boiling
13. Glycerin is completely miscible with water, hence there is.... interfacial tension present between them.
- High
  - No
  - Small
  - More
14. ....is a phenomenon in which surfactants are used for the removal of foreign materials from solid surfaces.
- Segregation
  - Detergency
  - Precipitation
  - Chelation
15. If adhesion forces between the molecules are stronger, then ... can take place.
- Miscibility
  - Immiscibility
  - Phase separation
  - Cracking
16. Surfactants are substances whose ionic characteristics depend on the pH of the system.
- Ionic
  - Nonionic
  - Cationic
  - Ampholytic
17. ....is/are classic examples of compounds that form inclusion complexes.
- Citric acid
  - Oxalic acid
  - Cyclodextrin
  - All of these
18. ....is/are the intermolecular forces involved in the complexation.
- Hydrogen bonding
  - Covalent bond or bonds
  - Van der Waals forces of dispersion
  - All of these
19. Picric acid reacts with ...to form molecular complex.
- Weak acids
  - Weak bases
  - Strong acids
  - Strong bases
20. Water soluble stable complexes are formed with
- Hydrophobic agents
  - EDFA
  - Organic solvents
  - All of these

**PART-B: Descriptive**

Time : 2 hrs. 30 min.

Marks : 35

*[ Answer any seven (7) questions ]*

- |   |   |
|---|---|
| 1. Explain about Drop weight method along with diagram.                     | 5 |
| 2. Explain about HLB scale.   | 5 |
| 3. Write a note on Protein binding.   | 5 |
| 4. Explain about Continuous Variation method in complexations.              | 5 |
| 5. Explain the mechanism of solute-solvent interaction.                     | 5 |
| 6. Discuss about the polymerism in different pharmaceutical compounds.      | 5 |
| 7. Explain the different methods used for the determination of pI.          | 5 |
| 8. Discuss the Fick's first and second law of diffusion.                    | 5 |
| 9. Discuss about the characteristic features of the three states of matter. | 5 |

**PART-C : Long type questions**

*[ Answer any two (2) questions ]*

1. Explain about principle and derivatives of ring detachment method along with diagram. 10
2. Explain the various phenomenon involved in changes in the states of matter. Discuss both the types of latent heat. 10
3. Explain the different factors affecting solubility. 10