

**B.Pharm. Semester—V (C.B.S.) Examination**  
**PHARMACEUTICS—V (Physical Pharmacy)**  
**Paper—1**

Time : Three Hours]

[Maximum Marks : 80

**Note :—**(1) Question No. **1** is compulsory.

- (2) Attempt any **four** from remaining questions.
- (3) All questions carry equal marks.
- (4) Draw neat labelled diagrams wherever necessary.
- (5) Assume suitable data wherever necessary.
- (6) Discuss the reaction, mechanism wherever necessary.
- (7) Use of electronic calculator, excluding programmable calculator is permitted.

1. Attempt any **five** from following :

- (a) Why does microemulsion appear transparent to eyes ?
- (b) Why surface tension / interfacial tension exists ?
- (c) Define surfactant. Give various characteristics of surfactant.
- (d) Compare lyophilic and lyophobic colloids.
- (e) Disperse systems are thermodynamically unstable, justify.
- (f) Write in brief about evaluation of suspensions.
- (g) Define angle of repose. Explain effect of particle size on flowability of powders.

5×4=20

- 2. (a) Define adsorption isotherm. Explain various types of adsorption isotherms. 10
- (b) Explain electrical diffuse double layer. 5
- 3. (a) Describe mechanism of droplet stabilization of emulsion. 10
- (b) Explain various detection tests for type of emulsion. 5

4. (a) Discuss methods for determination of particle surface area. 8  
(b) Explain controlled flocculation in formulation and stabilization of suspension. 7
5. Describe viscosity, osmotic pressure and sedimentation properties of colloids and their applicability in molecular weight determination of colloidal material. 15
6. Define Critical Micelle Concentration (CMC). Explain phenomenon of micelle formation. Describe various factors affecting micelle formation. 15
7. Write short notes on any **two** :
- (a) Micellar solubilization
- (b) Assessment of shelf life of emulsion
- (c) Stability of colloidal system. 7.5×2=15