

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 4 EXAMINATION – WINTER-2025

Subject Code: BP403TP**Date: 12-12-2025****Subject Name: Physical Pharmaceutics-II****Time: 02:30 PM TO 05:30 PM****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Differentiate Lyophilic colloids and Lyophobic colloids. Discuss association colloids. **06**
- (b) Enlist different properties of colloids. Explain kinetic properties. **05**
- (c) Describe the DLVO theory with energy curves. **05**
- Q.2** (a) Enumerate the methods for determination of particle size. Explain working principle of coulter counter with labelled diagram. **06**
- (b) Explain porosity. Derive its formula. Give its applications in pharmacy. **05**
- (c) Define and explain: Angle of repose and Carr's Index pharmacopoeial specification. **05**
- Q.3** (a) Define viscosity. Classify different viscometers with examples. Explain the principle and working of Cup & Bob Viscometer in detail. **06**
- (b) Define: Fluidity, Kinematic viscosity, Rheology, Thixotropy, and Spurs. **05**
- (c) Explain the plastic and pseudo plastic flow curves with example. **05**
- Q.4** (a) Discuss accelerated stability testing in expiration dating of pharmaceutical dosage forms. **06**
- (b) What is first order kinetics? Derive equation with half-life and shelf life for first order kinetics? **05**
- (c) Write about chemical factors influencing the chemical degradation of pharmaceutical product. **05**
- Q.5** (a) Enlist the physical instability markers of emulsion and explain any three. **06**
- (b) Classify suspension with examples. Differentiate between flocculated and deflocculated suspensions. **05**
- (c) Define thixotropy. Comment on thixotropy and antithixotropy. **05**
- Q. 6** (a) Define Arrhenius plot and give its significance in calculation of shelf life. **06**
- (b) Explain different methods of purification of colloid **05**
- (c) Discuss various mechanism of emulsifying agents. **05**
- Q.7** (a) Define suspension. Write a note on factors affecting stability of suspension. **06**
- (b) Discuss shear thinning and shear thickening system of flow with graph. **05**
- (c) Discuss in detail the identification tests of emulsion **05**
