

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

Subject Code: BP403TP**Date: 02 - 06 - 2025****Subject Name: Physical Pharmaceutics II****Time: 10.30 AM TO 01.30 PM****Total Marks: 80****Instructions:**

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

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| Q.1 | (a) Enlist methods for particle size determination. Explain Coulter Counter. | 06 |
| | (b) Describe kinetic properties of colloids. | 05 |
| | (c) Explain the following terms: i) Kraft point ii) Gold number iii) Thixotropy iv) Elastic modulus v) Rheology | 05 |
| Q.2 | (a) Discuss flocculation in suspension. | 06 |
| | (b) Write a note on Non Newtonian fluid with example. | 05 |
| | (c) Explain the following terms: i) Dielectric constant ii) Dilatant Flow iii) Sieve Number iv) True Density v) Kinematic Viscosity. | 05 |
| Q.3 | (a) Describe accelerated stability study in detail. | 06 |
| | (b) Enlist types of emulsions. Discuss stability of emulsions. | 05 |
| | (c) Discuss in detail: Methods for Viscosity determination. | 05 |
| Q.4 | (a) Discuss hydrolytic degradation of pharmaceuticals and its prevention. | 06 |
| | (b) Elaborate derived properties of powders. | 05 |
| | (c) Write a note on HLB Scale and its use in formulating emulsion. | 05 |
| Q.5 | (a) Discuss methods for particle surface area determination. | 06 |
| | (b) Write a note: Size and shape of colloidal particles. | 05 |
| | (c) i) What is Plastic and elastic deformation? ii) What is yield point in stress-strain curve? | 05 |
| Q. 6 | (a) Give an overview of DLVO theory of colloidal dispersions. | 06 |
| | (b) Discuss Heckle equation. | 05 |
| | (c) Write a note on photolytic degradation and its prevention. | 05 |
| Q.7 | (a) What is rate constant? Derive an equation for first order reaction. | 06 |
| | (b) Explain air permeability method. | 05 |
| | (c) Elaborate Arrhenius plot and its importance in Pharmacy. | 05 |
