

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.PHARM SEMESTER-IV- EXAMINATION – WINTER 2022****Subject code: BP403TP****Date:03/01/2023****Subject Name: Physical Pharmaceutics-II****Time: 02:30pm to 05:30pm****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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|-------------|---|-----------|
| <b>Q.1</b>  | (a) Describe the DLVO theory with energy curves.  | <b>06</b> |
|             | (b) Discuss the kinetic properties of colloids.   | <b>05</b> |
|             | (c) Explain: Kraft point and Gold number  | <b>05</b> |
| <b>Q.2</b>  | (a) Explain Non-Newtonian flow with rheograms.  | <b>06</b> |
|             | (b) Give factors influencing viscosity.   | <b>05</b> |
|             | (c) Define: Fluidity, Kinematic viscosity, Rheology, Thixotropy, Spurs,   | <b>05</b> |
| <b>Q.3</b>  | (a) Enlist physical instability markers of emulsion and discuss in brief.   | <b>06</b> |
|             | (b) Differentiate flocculated suspension and deflocculated suspension   | <b>05</b> |
|             | (c) Comment: Emulsions are thermodynamically unstable. Justify.<br>Define: Bancroft's rule and Emulsion                           | <b>05</b> |
| <b>Q.4</b>  | (a) Enumerate the methods for determination of particle size. Explain working principle of coulter counter with labelled diagram. | <b>06</b> |
|             | (b) Discuss the derived properties of powders.  | <b>05</b> |
|             | (c) Define: Surface Diameter, Volume Diameter, Projected Diameter, Angle of Repose, Stoke's Diameter                              | <b>05</b> |
| <b>Q.5</b>  | (a) What is first order kinetics? Derive equation with half life and shelf life for first order kinetics?                         | <b>06</b> |
|             | (b) Write a short not on accelerated stability study  | <b>05</b> |
|             | (c) Explain oxidative decomposition and write its preventive measures.  | <b>05</b> |
| <b>Q. 6</b> | (a) Describe the influence of temperature on the rate of reaction.  | <b>06</b> |
|             | (b) Explain: Sedimentation volume and degree of flocculation of suspension.   | <b>05</b> |
|             | (c) Write a note on negative Thixotropy.  | <b>05</b> |
| <b>Q. 7</b> | (a) Discuss photolytic degradation and its preventive measures.   | <b>06</b> |
|             | (b) Classify the methods used for determination of surface area. Explain air permeability method with diagram.                    | <b>05</b> |
|             | (c) Describe different types of emulsion.   | <b>05</b> |

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