

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B. PHARM SEMESTER – IV EXAMINATION – SUMMER 2020****Subject Code:BP403TP****Date: 28-10-2020****Subject Name: PHYSICAL PHARMACEUTICS - II****Time: 10:30 AM TO 1:30 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) Enlist methods for determination of particle size & explain coulter counter method in detail with neat sketch. **06**  
(b) Explain two methods in determining particle surface area in detail with necessary equations. **05**  
(c) Give factors affecting powder flow and methods to improve powder flow. **05**
- Q.2** (a) Classify various viscometers. Describe two viscometers with diagram to find out viscosity of Non-Newtonian fluids. **06**  
(b) What is thixotropy and antithixotropy? Draw different types of thixotropic and antithixotropy curves & explain the mechanism for their behavior with examples. **05**  
(c) Define Viscosity. Describe Newtonian and non Newtonian system. **05**
- Q.3** (a) Explain the theory of Compaction & compression. **06**  
(b) Describe the Kawakita and Heckle equations in regard to compression. **05**  
(c) Explain Angle of repose, Carr's Index and Hausner ratio with their pharmacopoeial specification. **05**
- Q.4** (a) Enumerate Properties of Colloids. Explain Kinetic Properties. **06**  
(b) Explain Purification method of colloidal solutions. **05**  
(c) Explain Applications of colloidal solutions. **05**
- Q.5** (a) What is second order kinetics? Derive equation with half life and shelf life for second order kinetics? **06**  
(b) How to determination of reaction order? Explain it. **05**  
(c) What is first order kinetics? Derive equation with half life and shelf life? **05**
- Q. 6** (a) Define emulsion. Explain different theories of emulsion. **06**  
(b) Differentiate flocculated and deflocculated suspension. **05**  
(c) Define Surfactant. Give the different formula for calculation of HLB value. **05**
- Q.7** (a) What is suspension? Explain interfacial properties of suspended particles. **06**  
(b) Explain identification test for emulsion. **05**  
(c) Explain accelerated stability testing in expiration dating of pharmaceutical dosage forms. **05**

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