

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B. Ph. - SEMESTER– III • EXAMINATION – WINTER-2020**

**Subject Code: 230001****Date: 08/03/2021****Subject Name: Physical Pharmaceutics-II****Time: 10:30AM TO 12:30PM****Total Marks: 54****Instructions:**

1. Attempt any **THREE** questions from Q-1 to Q-6.
2. **Q.7** is compulsory to attempt.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) Enlist colligative properties and explain any two properties in detail. **06**
- (b) Define and explain: Gram equivalent and Normality. **05**
- (c) Enlist various methods to determine molecular weight of substance and explain any one in detail. **05**
- Q.2** (a) Explain Arrhenius theory of electrolytic dissociation. **06**
- (b) Explain theory of strong electrolyte. **05**
- (c) Write and explain Faraday's law. **05**
- Q.3** (a) Discuss Raoult's law with respect to ideal solution. **06**
- (b) Derive equation of half life of first order kinetics. **05**
- (c) Explain various factors affecting rate of reaction. **05**
- Q.4** (a) Give ICH guidelines of carrying our stability study. **06**
- (b) Explain accelerated stability study method with the influence of temperature on rate of reaction. **05**
- (c) Describe the methods used to determine the order of a reaction. **05**
- Q.5** (a) Write a not in brief on various applications of complexes in pharmacy. **06**
- (b) Describe the methods for determination of protein binding. **05**
- (c) Write Pharmaceutical applications of polymers with examples. **05**
- Q. 6** (a) Enlist properties of polymers. And explain in one property in detail. **06**
- (b) Describe the different methods for analyzing complexes. **05**
- (c) Explain Fick's first law of diffusion. **05**
- Q.7** (a) Discuss the various factors affecting rate of dissolution. **06**

**OR**

- (a) Write a short note on USP dissolution (Type I and Type II) test. **06**

**OR**

- (a) What is hydrogel? Explain its role in drug delivery system. **06**