Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – III • EXAMINATION – WINTER • 2015

Subject Code: 230001 **Date: 28-12-2015**

Subject Name: Physical Pharmaceutics - II

Time: 10:30 am - 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.**

Q.1	(a)	Define and explain: Gram equivalent, Normality and Transference number.	**06**
	(b)	Write a note on thermodynamics of osmotic pressure and vapour pressure lowering.	**05**
	(c)	Discuss raoult's law with regard to ideal solution and aerosols.	**05**
Q.2	(a)	Write a note on activity and activity coefficient of solutions of electrolytes.	**06**
	(b)	Define: equivalent conductance. What is the effect of dilution on equivalent conductance of strong electrolyte solution?	**05**
	(c)	Write and explain Faraday's laws.	**05**
Q.3	(a)	Derive an equation to show that the half life is independent of concentration, in a first order reaction.	**06**
	(b)	Differentiate between order and molecularity of a chemical reaction.	**05**
	(c)	Explain accelerated stability study method with the influence of temperature on the rate of reaction.	**05**
Q.4	(a)	Describe USP Type I dissolution apparatus with a labelled diagram.	**06**
	(b)	What is sink condition? Explain Noyes-Whitney equation and its importance in dissolution.	**05**
	(c)	Write a brief note on diffusion controlled release by referring higuchi's equation.	**05**
Q.5	(a)	Define: complex compound. Write a note on applications of complexes in pharmacy.	**06**
	(b)	Enumerate different methods of analysis of complexes and explain any one.	**05**
	(c)	Describe equilibrium dialysis and ultrafiltration method to study drug-protein binding.	**05**
Q. 6	(a)	Write a note on ICH guidelines.	**06**
	(b)	Discuss various degradation pathways of pharmaceutical products.	**05**
	(c)	What is hydrogels? Explain its role in drug delivery system.	**05**
Q. 7	(a)	Describe various methods to determine molecular weight of polymer.	**06**
	(b)	Write the applications of polymers in pharmacy.	**05**
	(c)	Discuss in brief any two of characterization techniques for polymer.	**05**

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