Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Pharm - SEMESTER–VII • EXAMINATION – WINTER-2017

Subject Code: 2270001 **Date: 02-11-2017**

Subject Name: Dosage Form Design-I

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.**

Q.1	**(a)**	Explain the influence of chemical properties of drugs on formulation and stability of the products.	**06**
	(b)	Discuss theoretical aspects for determining solubility and permeability of the drug and its assessment.	**05**
	(c)	Enlist additives used in tablet dosages form. Discuss the anti frictional agents.	**05**
Q.2	**(a)**	Write a note on prodrugs.	**06**
	(b)	Effect of physical properties of drug like physical form, particle size and shape on formulation, stability and bioavailability.	**05**
	(c)	Write a note on Biodegradable polymers.	**05**
Q.3	**(a)**	Explain the role of biopharmaceutics in formulation development.	**06**
	(b)	Write a note on polymers used for achieving modified drug release.	**05**
	(c)	Explain various types of equivalence. How Latin square cross over design works?	**05**
Q.4	**(a)**	Write a note on factors affecting drug absorption.	**06**
	(b)	Discuss the regulatory requirements for conduction of bio-equivalence studies.	**05**
	(c)	Volunteer selection for bioavailability studies is a critical issue. Discuss the statement with examples.	**05**
Q.5	**(a)**	Enumerate the drug transport mechanisms. Discuss passive diffusion in detail.	**06**
	(b)	What is BCS classification? How does it affect development of dosage form?	**05**
	(c)	How temperature degradation study is applied to pharmaceutical formulations? Derive an equation for half-life and method to establish expiry date and overages in formulations.	**05**
Q. 6	**(a)**	Write in detail about facilitated diffusion and pinocytosis.	**06**
	(b)	Explain USP dissolution apparatus III, IV and V with diagram.	**05**
	(c)	Discuss the factors affecting stability of pharmaceutical formulation.	**05**
Q.7	**(a)**	What is the importance of protein binding of drugs? Describe tissue binding of drugs in detail.	**06**
	(b)	Storage conditions for stability testing as per ICH guidelines.	**05**
	(c)	What is matrixing and bracketing?	**05**

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