Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – 7- EXAMINATION –WINTER - 2018

Subject Code: 2270001 Date: 15/11/2018

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)**	Define Preformulation studies. Explain steps involved in Preformulation studies.	**06**
	(b)	How polymorphism and crystallinity influence performance of drug product. Explain in brief methods to identify polymorphism and crystallinity.	**05**
	(c)	Define diluents. Classify Diluents. Write a note on versatility of lactose as diluents in oral solid dosage forms.	**05**
Q.2	**(a)**	Define disintegrating agent. Give examples of commonly used disintegrating agents. Write mechanism of disintegration.	**06**
	(b)	What do you mean by polymer? Write a note on polymers used in different dosage forms with examples.	**05**
	(c)	Write short note on passive diffusion.	**05**
Q.3	**(a)**	Write a note on Prodrug. Discuss Prodrug approaches.	**06**
	(b)	Write a short note on Matrixing and Bracketing study design.	**05**
	(c)	Define bioequivalence. Write a short note on Latin-square cross-over design.	**05**
Q.4	**(a)**	Write a note on factors affecting on stability of pharmaceutical dosage form.	**06**
	(b)	Discuss in detail volume of distribution.	**05**
	(c)	How purity of API and drug degradation are studied in product development?	**05**
Q.5	**(a)**	Discuss Noyes Whitney equation for rate of dissolution. Discuss USP type I apparatus for dissolution.	**06**
	(b)	Define overages and discuss methods to determine overages.	**05**
	(c)	Discuss remedies to overcome degradation due to hydrolysis and oxidation in pharmaceutical dosage form.	**05**
Q. 6	**(a)**	Define biopharmaceutics. Enlist various mechanisms of drug transport. Discus active transport in detail.	**06**
	(b)	Draw a well labelled diagram of cell membrane and Discuss Endocytosis.	**05**
	(c)	Define relative and absolute bioavailability. Discuss plasma level time studies for measurement of bioavailability.	**05**
Q.7	**(a)**	Write a short note on “Plasma Protein Binding”	**06**
	(b)	Discuss tissue permeability of drug in distribution.	**05**
	(c)	Write a note on drug clearance.	**05**

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