Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. PHARM (SEMESTER-8) SUMMER-2015

Subject code: 280001 **Date: 28/04/2015**
Subject Name: Dosage Form Design - 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)	Mention the parameters and methods used for evaluation of microspheres.	**06**
	(b)	Describe in detail physicochemical factors affecting design of oral sustained release dosage forms.	**05**
	(c)	What are the important characteristics to be evaluated for design of parenteral suspensions?	**05**
Q.2	(a)	Describe solvent emulsification evaporation method for preparation of nanoparticles. Mention advantages and disadvantages of the method.	**06**
	(b)	Write in detail formulation design of transdermal drug delivery system.	**05**
	(c)	Classify the polymers used for preparation of matrix tablets. Give two names of each class.	**05**
Q.3	(a)	Enlist different pharmacokinetic models. What is compartment model? Mention advantages and disadvantages of the same.	**06**
	(b)	Discuss the properties of drug that can be enhanced by drug carrier delivery system for drug-targeting.	**05**
	(c)	What are the merits and demerits of using urinary excretion data for pharmacokinetic parameters?	**05**
Q.4	(a)	What properties are required for the drug to be a candidate for transdermal drug delivery system? Write evaluation method for adhesive properties of TDDS	**06**
	(b)	A physician administering a loading dose and simultaneously IV infusion to get C_{ss} (steady state concentration) of 2mg/L if drug has elimination rate constant K = $0.2hr^{-1}$.Vd=15L. Calculate the required loading dose and infusion rate.	**05**
	(c)	Explain the term “renal clearance”. Describe graphical method for determination of renal clearance.	**05**
Q.5	(a)	Describe in detail preparation of HBS for gastric retention of oral dosage forms. What is the method of evaluation of such dosage forms for gastric retention time?	**06**
	(b)	A long acting antibiotic has a half life of 14 days, how long will it take for the drug concentration in the blood to drop to 90% of its initial value?	**05**
	(c)	Write a note on osmotic ocular inserts. Mention the components of each part.	**05**

Q. 6	(a)	Write a note on Wagner Nelson method for pharmacokinetics of drug absorption.	**06**
	(b)	Mention the advantages and limitations of colon targeted drug delivery system	**05**
	(c)	What is the composition of liposome? Mention the therapeutic applications of liposome.	**05**
Q.7			
	(a)	What type of drugs can benefit from using gastric retentive devices? What are the limitations of these devices?	**06**
	(b)	Explain non-linear pharmacokinetics using Michaelis Menten equation	**05**
	(c)	A new antihypertensive drug was given to a patient in single I.V. dose of 200mg to a 60Kg male. After 6hrs the blood concentration of drug was found to be 2.0mg/100ml of blood. If the Vd is 10% of body weight, compute the total amount of drug in body fluids after 6hrs. What is the half-life of the drug?	**05**

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