Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – SUMMER 2013

Subject Code: 153601 **Date:** 02-12-2013

Subject Name: Pharmaceutical Chemistry

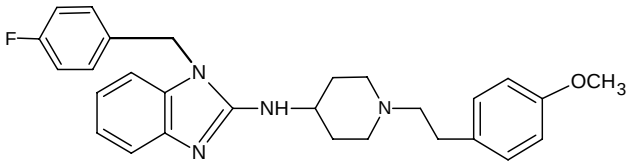
Time: 10.30 am - 01.00 pm **Total Marks: 70**

Instructions:

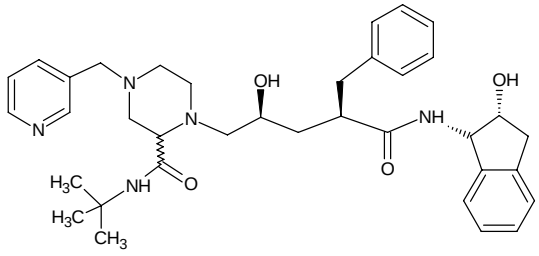
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Define : Synthon, Auxochrome, Molar absorptivity, Nujol, Adsorption, Peptide, Chromatography **07**

(b) Give reterosynthetic analysis of the following molecule using building block approach and suggest a reasonable route for synthesis giving approximate conditions: **07**



Q.2 **(a)** Give reterosynthetic analysis of the Indinavir (structure below) using building block approach and suggest a reasonable route for synthesis giving approximate conditions: **07**



(b) Write retrosynthetic analysis for the following : **07**
(i) Salbutamol (ii) Pirindol

OR

(b) Write retrosynthetic analysis for the following : **07**
(i) Phenaglycodol (ii) Dimedone

Q.3 **(a)** What is the difference between single beam and double beam spectrophotometer? Explain two fundamental laws related to absorption. **07**

(b) Explain principle and working of UV visible spectrophotometer? **07**

OR

Q.3 **(a)** What is HPLC ? Give the applications of HPLC in pharmaceutical industries? **07**

(b) Explain principle and working of UV visible spectrophotometer? **07**

Q.4 **(a)** (i) What do you mean by finger print region? Why salicylic acid and p-hydroxy benzoic acid give different IR peaks? **07**
(ii) Give the expected IR frequencies for C=O, C-H, N-H and Ar-H functional groups.

(b) Which are the applications of GC in industries? Write a note on TCD. **07**

OR

Q.4 **(a)** Explain the principle, construction and working of a Flame photometer? **07**

	(b)	(i) What do you mean by M18 peak in alcohols? Distinguish between Decane and 2,6 dimethyl octane on basis of Mass spectroscopy? (ii) Explain M+1 and M+2 peaks in mass spectroscopy?	**07**
Q.5	**(a)**	Give the synthesis of Riboflavin.	**07**
	(b)	How can you synthesize 1-hydroxy ethylene peptide using Wadsworth-Emmons reaction?	**07**

OR

Q.5	**(a)**	Give the synthesis of Biotin.	**07**
	(b)	Explain the synthesis of Peptide surrogate 1,3,4-oxadiazole derivative.	**07**

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