

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020

Subject Code:3153601

Date:01/02/2021

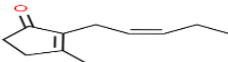
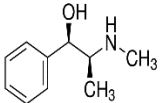
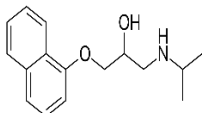
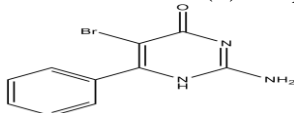
Subject Name:Pharmaceutical Chemistry

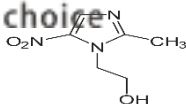
Time:10:30 AM TO 12:30 PM

Total Marks: 56

Instructions:

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

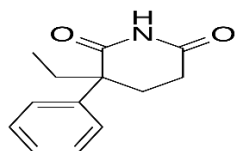
		MARKS
Q.1	(a) Define (1). Hyperglycemia, (2). Type-1 diabetes, (3). Type-2 diabetes	03
	(b) Write notes on (1). Oral Iron therapy, (2). Parenteral Iron therapy	04
	(c) Write the chemical degradation of Penicillin with structures	07
Q.2	(a) What are hormones? Write the classification of hormones.	03
	(b) Discuss any four guidelines for choosing a disconnection in Retrosynthesis. Give suitable examples wherever required	04
	(c) Write the MOA, SAR of Sulphonyl urea class of antidiabetic drug. Give one example and write the synthesis of it.	07
Q.3	(a) Write the general structure of (1).Penicillin,(2) Cephalosporin	03
	(b) Write the disconnection of Cis(Z)-Jasmone (only disconnection). Write the steps to get the correct regiochemistry & cis stereochemistry(structure given)	04
		
	cis(Z) Jasmone	
	(c) What are (1). Synthons, (2). Retrosynthesis ? By disconnection approach, suggest a scheme for synthesis of antituberculosis drug- para amino salicylic acid	07
Q.4	(a) Write the MOA of Penicillin antibiotics	03
	(b) By disconnection method write the synthesis of (1R, 2S)-(-)- Ephedrine. Write the resolution procedure to get (1R, 2S)-(-)- Ephedrine(structure given)	04
		
	(1R,2S)-(-)-Ephedrine	
	(c) By disconnection method, write the synthesis of (1). Propranolol, (2). Bropirimine. (structures given)	07
		
	(1).Propranolol	
		
	(2). Bropirimine	
Q.5	(a) Write the structure of Cholestane template and show how it is numbered	03
	(b) Write the synthesis of Metronidazole- a drug molecule containing imidazole heterocycle. (structure given)	04



(c) Write the biosynthesis of sex hormones from Cholesterol **07**

**Q.6** (a) Write the structure (1). Pregn-4-ene-3,20-dione, (2). 17-beta hydroxy- androst-4-ene-3-one **03**

(b) Write the synthesis of sedative Glutethimide- a drug molecule containing piperidine heterocycle derivative. (structure given) **04**

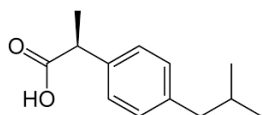


(c) Write the SAR of Oestrogens **07**

**Q.7** (a) Define Hypothyroidism. Write one example with structure of thyroid drug. Write its MOA **03**

(b) Describe the roles of the three hormones in Calcium homeostasis **04**

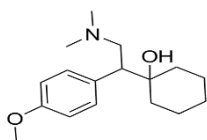
(c) By disconnection approach, write the synthesis of NSAID- Ibuprofen. (structure given) **07**



**Q.8** (a) Define antithyroid drugs. Give two examples with structure. **03**

(b) What are hormonal contraceptives? Write a note on oral contraceptives **04**

(c) By disconnection approach, write the synthesis of antidepressant- Venlafaxine. (structure given) **07**



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