

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2143601****Date: 06/06/2017****Subject Name: Medicinal Chemistry & Physio-pharmacology (Department Elective-II)****Time: 10:30 AM to 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.

		MARKS
Q.1	Short Questions	14
	1 What is the purpose of filing New Drug Application (NDA) ?	
	2 Name the 04 types of receptors.	
	3 What is an Antacid? Give one example.	
	4 What is an Acidotic Diuretic? Name one example.	
	5 Define Anemia & Hematinics	
	6 Define "Bioisosters".	
	7 Write one example of Anilide class of local anesthetic with its structure.	
	8 What are enzyme inhibitors ?	
	9 What are Antiplatelet drugs? Name one example.	
	10 What is a "Lead" molecule ?	
	11 What is "Docking" in Structure Based Drug Design ?	
	12 Which is the functional respiratory unit in the lungs where gases are exchanged?	
	13 What is the advantage of "Hologram QSAR" (HQSAR) in Ligand Based Drug Discovery (LBDD)?	
	14 Give one example with structure of any one Histamine agonist.	
Q.2	(a) Write a note on (1) Oral Iron therapy, (2). Parenteral Iron therapy	03
	(b) What are Diuretics? Classify the diuretics and write one example with its structure in each classification. Write the MOA of Mercurial diuretic.	04
	(c) Explain drug discovery process with the help of flow-diagram.	07
	OR	
	(c) Discuss any 03 types of forces involved in drug-receptor interaction.	07
Q.3	(a) Write the SAR of Thiazide diuretics.	03
	(b) Write a note on Loop & High ceiling class of diuretics. Give suitable examples with structures.	04
	(c) Write the SAR of Histamine-1 receptor antagonist.	07
	OR	
Q.3	(a) Explain briefly "Ferguson Principle".	03
	(b) Explain briefly the "Partition Coefficient" of a substance and its effect on biological activity.	04
	(c) What is "High Throughput Screening"? Explain how it is	07

made use of in drug discovery.

- Q.4** (a) Write the synthesis, MOA of any one “in vitro anticoagulant”. **03**
- (b) Describe Antiulcer drugs. Write a note on Proton pump inhibitor antiulcer drugs. Give suitable examples. **04**
- (c) Write the SAR of Benzoic acid derivative local anesthetics. **07**

OR

- Q.4** (a) Write the synthesis & MOA of any one “in vivo anticoagulant”. **03**
- (b) Write the synthesis, mechanism of action and uses of any one aminoalkyl ether class of antihistamine. **04**
- (c) Write the SAR of Anilide class of local anesthetics **07**

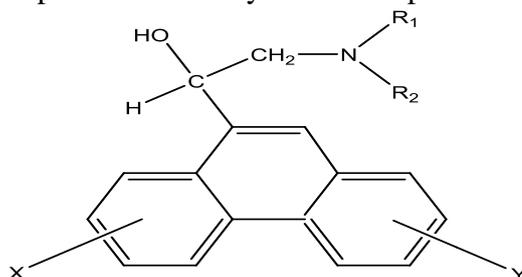
- Q.5** (a) What are the three types of drug discovery methods ? Explain briefly any one discovery method ? **03**
- (b) Which are the 04 activities coming under “Computer Aided Drug Design” ? Explain any one of them. **04**
- (c) Explain the 04 phases involved in clinical trials. **07**

OR

- Q.5** (a) Define “Quantitative Structure Activity Relationship”. Write the equation of response for a 3D-QSAR model and explain the terms used. **03**
- (b) What is “Hammett Constant” ? Explain how it can be used to find electronic effects of nuclear aromatic substituents. **04**
- (c) Explain “Hansch Model” to find biological response of a compound. The anti-malarial activity of a compound (structure given) is expressed as : **07**

$$\text{Log}(1/C) = -0.015 (\log P)^2 + 0.14 \log P + 0.27\pi_x + 0.40\pi_y + 0.65\sigma_x + 0.88\sigma_y + 2.34.$$

What suggestions will you give to a synthetic chemist to improve the activity of the compound ?



Phenanthrene aminocarbinol
