Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) EXAMINATION – WINTER 2018

Subject Code:2143601 **Date:05/12/2018**

Subject Name:Medicinal Chemistry & Physio-pharmacology

Time: 02:30 PM TO 05:00 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	**(a)**	What is Partition Co-efficient ? How is it determined ?	**03**
	(b)	What are the different types of receptors ? Discuss how the Nuclear Receptors work.	**04**
	(c)	Write the synthesis of any two drugs describing the manufacturing process: (i). Tripellanamine HCl, (ii). Antazoline HCl, (iii). Chlorcyclizine HCl, (iv). Promithazine HCl	**07**
Q.2	**(a)**	Draw a neat & labeled structure of Nephron. Mention the functions of kidney.	**03**
	(b)	Discuss Hammett Constant. pKa value of benzoic acid is 4.11, pKa value of 4-Nitrobenzoic acid is 3.41. Find the Hammett Constant (σ) for the 4-Nitro substituent.	**04**
	(c)	What is Fragment Based Drug Design (FBDD)? Explain why FBDD leads to drugs with least side-effects. Four fragments A,B,C and D on screening, yielded a HIT molecule C-A. Show the steps involved.	**07**
		OR	
	(c)	Define “solubility” and “rate of dissolution” of a substance. What are the factors affecting the rate of solubility of a drug ? What is “Maximum Absorbable Dose” (MAD) ?	**07**
Q.3	**(a)**	What are the characteristics of a “HIT” molecule ?	**03**
	(b)	Discuss Hansch first model and the improvement on the first model, for biological response.	**04**
	(c)	Discuss in brief the 04 types of Reversible Enzyme Inhibitors.	**07**
		OR	
Q.3	**(a)**	Explain the process of “Docking”	**03**
	(b)	Write a note on “Cell-based” assay in High Throughput Screening (HTS).	**04**
	(c)	Explain the SAR of Anilide class of Local anesthetics with suitable examples wherever necessary.	**07**

Q.4	**(a)**	Write a note on (i). Antacid, (ii). Antihelicobacter pylori drugs.	**03**
	(b)	What are Anticoagulants and what are their classifications? Give suitable examples. Write the MOA of Sodium citrate anticoagulant.	**04**
	(c)	Draw the schematic flow diagram for Drug Discovery Process and mark relevant stages.	**07**

OR

Q.4	**(a)**	Describe "Acidotic Diuretics" with suitable examples and MOA of any one drug.	**03**
	(b)	Write the synthesis of (i). Benzocaine, (ii). Lidocaine.	**04**
	(c)	What are the different types of forces involved in Drug-Receptor interactions ? Discuss the role of Hydrophobic Forces in the interaction	**07**
Q.5	**(a)**	What is the general equation for biological response of a 3D QSAR model ?	**03**
	(b)	Write a note on: (i). Anemia & Hematinics, (ii). Thrombolytics, (iii). Antiplatelet drugs. Give suitable examples	**04**
	(c)	Describe "Loop & High Ceiling" Diuretics. What are its disadvantages?. Give two examples. Write the synthesis of any one drug.	**07**

OR

Q.5	**(a)**	Discuss the filing of Abbreviated New Drug Application (ANDA).	**03**
	(b)	Write the synthesis of anticoagulant drug-Warfarin. Write its MOA.	**04**
	(c)	Write the SAR of H1 receptor Antihistamines. Give suitable examples wherever required.	**07**

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