

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014

Subject Code: 163601**Date: 26-05-2014****Subject Name: Medicinal 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)** (i). What are basal anaesthetics? Write the synthesis of one example belonging to this category with its structure. **04**
 (ii). How are local anaesthetics different from general anaesthetics. Give one example of local anaesthetic and write the synthesis of the same. **03**
- (b)** (i). Write the synthesis of Antiparkinson drug Levo dopa with brief description. **04**
 (ii). Write its metabolism and mechanism of action. **03**

- Q.2 (a)** (i). Differentiate between Pharmacokinetics and Pharmacodynamics? Explain the different mechanisms of drug action. **04**
 (ii). Define G-protein coupled receptors? Explain its mechanism of action with diagram. **03**
- (b)** (i). Give one example with structure each of (a). Second generation non sedating Antihistamine, (b). Phenothiazine derivative antihistamine. **03**
 (ii). Write the SAR (Structure Activity Relationship) of H₁-receptor antagonists. **04**

OR

- (b)** (i). Write the synthesis of Antipsychotic drug Chlorpromazine with brief description. Write its mechanism of action. **05**
 (ii). Write the SAR (Structure Activity Relationship) of Phenothiazine class of Antipsychotic drug **02**
- Q.3 (a)** (i). What are Antilipidaemic agents. Write the synthesis with brief description of one Fibric acid derivative class of Antilipidaemic agent. **04**
 (ii). Write the metabolism and mechanism of action of the above antilipidaemic drug. **03**
- (b)** (i). What do you mean by cholinergic drugs? Write the mechanism of action. **03**
 (ii). Write the SAR of cholinergic drugs and give example of the same with its structure. **04**

OR

- Q.3 (a)** (i). What are Anticoagulant drugs? Give one example with structure of one in vivo anticoagulant and write its mechanism of action. **03**
 (ii). Write a brief note on Thrombolytic drug with one example. Write its mechanism of action. **02**
 (iii). Write a brief note on Antiplatelet drug with one example. Write its mechanism of action. **02**
- (b)** (i). Explain the concept of enzymes. What is their role in pharmacodynamics? Give two relevant examples. **03**
 (ii). Draw the -Dose-response curve of any drug indicating the three different parameters: i. ED₅₀ ii. LD₅₀ iii. Therapeutic index. **04**

- Q.4 (a)** (i). What is an Anticonvulsant drug. Write the synthesis of anticonvulsant drug Phenobarbital. **04**
(ii). Write its mechanism of action of Phenobarbital and its use. **03**
- (b).** (i). Define: (a). Intrinsic activity .(b). Efficacy. (c). Inverse agonist. **04**
(d). Antagonist
(ii). Explain any three theories which explain drug-receptor interaction. **03**

OR

- Q.4 (a)** (i). What is an Antiarrhythmic drug. What are its classifications with one example each. **03**
(ii). Write the synthesis of any one Antihypertensive drug with brief description. Write the mechanism of its action. **04**
- (b)** (i). Write the synthesis of any one Salicylic acid derivative analgesics with brief description. **03**
(ii). Write the SAR of the above analgesic. Write its mechanism of action & metabolism. **04**
- Q.5 (a)** (i).What do you mean by enzyme inhibition. Explain the different types. Give details. **04**
(ii). Differentiate between competitive and non-competitive enzyme inhibition. **03**
- (i). What is Combinatorial Chemistry and mention its principles?
(b) (ii). Give a brief note on computer aided drug design mentioning the role of Bioinformatics Hub and the advantage of CADD (Computer Aided Drug Designing). **03**
04

OR

- (i). Write the method of action of Proton Pump inhibitor class Anti ulcer drugs. Write one example of this class with structure. **04**
- Q.5 (a)** (ii). Write a brief note on Antacid with one example. Write its mechanism of action and uses. **03**
- (i). What are Acidotic Diuretics. Write one example and its mechanism of action. **03**
(ii). Write the mechanism of action of Carbonic anhydrase inhibitor class of diuretics.
- (b)** Give one example with structure of Carbonic anhydrase inhibitor class of diuretics **04**
