Q.P. Code :02131

[Time: Three Hours] **[Marks:75]**

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.

Q.1 Answer any **10** out of **12** question listed below. 20

1) Define Me-too drugs with two examples.
2) What is Scatchard plot?
3) Explain 'partial agonist' and 'inverse agonist' with suitable example?
4) Explain chain branching as method for lead modification?
5) Define the term IC 50 with reference to receptor binding assays and explain.
6) What is prodrug? Give its advantages.
7) What are different types of Classical Bioisosteres? Explain monovalent atoms of groups with suitable example.
8) State Lipinski' rule of five.
9) Give one carbon transfer reaction with suitable example.
10) What is the role of Coenzyme A and Vit.K?
11) Explain glucoronide conjugation with suitable example.
12) Give one example of reaction catalyzed by FMO enzymes.

Q.2 a) Comment on strategies of lead modification to increase potency and therapeutic index with example? 4

b) Enlist various reaction catalyzed by CYP450 enzymes. Explain oxidation with mechanism. 3

OR

Give two examples of reaction catalyzed by each of the following enzymes: Xanthine oxidase, Esterases.

c) Explain occupancy theory and state its limitations, If any 4

Q.3 a) Explain how aminotransferases and racemases catalyse reactions using brief. 4

b) Explain mutual prodrug concept with two examples and advantages of it. 3

OR

c) Give different types of prodrugs which can be prepared for drug containing $–NH_2$ group.

d) Explain the oxygen activation cycle of CYP 450. 4

Q.4 a) Explain decarboxylation and sulfation activation of bio precursor prodrugs. 4

b) Explain how decarboxylases and racemases catalyse reactions using coenzymes in brief. 3

OR

Write a note on one electron mechanism reaction with suitable examples.

c) Give two examples of prodrugs which can be prepared for drugs containing –COOH group. 4

Q.5 a) What are different goals to be achieved by using prodrug approach? Explain any such two goals with example. 4

b) What are receptor binding assays? Give an account of components of receptor binding assays. 3

OR

b) How Kd and B max are measured? Explain in details.

d) Describe any two linearized methods of plotting enzyme kinetic data? 4

Q.6	a)	Explain the various terms of the Michaelis-Menten equation and comment on their significance.	4
	b)	Explain signal transduction mechanism in receptor tyrosine kinase super family of receptors.	3
		OR	
	c)	Explain effect of geometrical isomerism on drug receptor interaction.	
	d)	Write a note on Ligand-gated ion channels superfamily of receptors.	4