

YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD

M.Sc. 4th SEMESTER (UNDER CBCS)

Organic Chemistry Special - IV (CH-414)

Time: 3 Hours

Max. Marks:60

- Note: 1. It is compulsory to answer the questions of Part -1. Limit your answers within 20-40 word in this part.
2. Answer any four questions from Part -2 in detail.
3. Different parts of the same question are to be attempted adjacent to each other.
4. Use of simple calculator is allowed but exchange of calculator is not allowed
5. Assume suitable standard data wherever required, if not given.

PART -1

Q1	(a) Define apoenzyme and explain its role in catalyzing the reactions.	(2)
	(b) Briefly explain the allosteric regulation of enzymatic activity.	(2)
	(c) Give the name and structure of amino acid involved in the activity of chemotrypsin.	(2)
	(d) Write a short note on lock and key hypothesis.	(2)
	(e) Write down the structure of PLP (Pyridoxal phosphate).	(2)
	(f) What do you understand by narrow spectrum antibiotics?	(2)
	(g) Differentiate between hard and soft drug.	(2)
	(h) What do you understand by LD ₅₀ and ED ₅₀ ?	(2)
	(i) Write down the structure of ddC and reflect upon its medicinal uses.	(2)
	(j) Explain in brief the medicinal uses of paclitaxel.	(2)
Q2	(a) Give a brief discussion on mechanism based inhibitors.	(3)
	(b) Explain how strain or distortion is helpful in enzyme catalysis?	(4)
	(c) Describe the terms "bond specificity" and "kinetic specificity" of enzyme.	(3)
Q3	(a) Giving the structure of NAD ⁺ and NADP ⁺ , discuss the mechanism of reaction catalyzed by them.	(5)
	(b) How does the preparation of cephalosporins differ from penicillin?	(5)
Q4	(a) Briefly explain the screening of plants in finding the lead compound for drug development.	(3)
	(b) Describe how a neurotransmitter induces a receptor to change its shape?	(4)
	(c) Define prodrugs and give their utility.	(3)
Q5	(a) Describe the general mode of action of various alkylating anti-neoplastic agents.	(4)
	(b) Give the structure and synthesis of following drugs; (i) Mefanamic acid (ii) Atendol	(3x2)
Q6	(a) How Line Wearer - Burk plot helps in distinguishing between competitive and non-competitive inhibition?	(6)
	(b) Why doxacillin is resistant to β -lactamases while benzylpenicillin is not?	(4)
Q7	(a) Discuss the binding role of an important functional group in structure activity relationship for drug discovery.	(5)
	(b) Give the general mode of action of antimalarial drugs	(5)
