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Reg. No. : | | | | | | | | | | | | |

Question Paper Code:U2D05

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

First Semester

Biotechnology

R21UBT105- PRINCIPLES OF BIOORGANIC CHEMISTRY

(Regulations R2021)

Duration: Three hours | Maximum: 100 Marks

Answer All Questions

PART A - (5 x 1 = 5Marks)

1. ATP has_____ phosphate groups. CO1- U

(a) 0 (b) 1 (c) 2 (d) 3

2. In Kagan's method_____ is the reactant. CO2- U

(a) Crown ether (b) Amino alcohol (c)Glucose (d) Amino acid

3. Hydroxyl ion is _____. CO2- U

(a) General acid (b) General base (c)specific acid (d) Specific base

4. _____ Discovered that crown ethers have the unique ability to form stable complexes with metal ions. CO2- U

(a) F. H Westheimer (b)D.S Kemp (c)C.J. Corey (d) C.J. Pedersen

5. _____ ions appear to stabilize walls of certain blood vessels. CO1- U

(a) Co (b)Cu (c)Zn (d) Ni

PART – B (5 x 3= 15Marks)

6. Give the importance of proximity effect in organic model development. CO2-U

7. Mention the role of zeigler – Natta catalyst in protein synthesis. CO1-U

8. What are enzymes? Give examples. CO1-U

9. Expand the term NAD and FAD. CO2-U

10. List out the photosynthetic events in plants. CO1-U

PART – C (5 x 16= 80 Marks)

11.	(a)	Predict the involvement of crown ether in adding aminoacids to peptide chain.	CO2-U	(16)
		Or		
	(b)	Summarize molecular recognition in biological systems with an example.	CO2-U	(16)
12.	(a)	Relate the glycolysis and TCA cycle in generating ATP.	CO2 U	(16)
		Or		
	(b)	Summarize the major concepts in Kagan's method of amino acid synthesis.	CO2 U	(16)
13.	(a)	Summarize the reaction steps of breaking protein by chymotrypsin.	CO1- U	(16)
		Or		
	(b)	Explain the various types of catalysis with examples.	CO1-U	(16)
14.	(a)	'Oxidoreduction is a reversible reaction and need nicotinamide coenzyme'. Predict the coenzyme and its action through an example.	CO6- App	(16)
		Or		
	(b)	'Many hydrogenation-dehydrogenation processes are mediated by FAD coenzyme' Present the possibility of the involvement of FAD with another coenzyme NAD in biochemical reactions.	CO6- App	(16)
15.	(a)	Explain in detail the hydrolysis of amino acid esters and amides.	CO2- U	(16)
		Or		
	(b)	Explain the role of Metal ions in proteins.	CO2- U	(16)