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Question Paper Code:U2D05

B.E./B.Tech. DEGREE EXAMINATION, NOV 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. The organelle involved in protein synthesis CO1- U
(a) Nucleus (b) Ribosome (c) Lysozome (d) Chloroplast
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. Briefly explain 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) Elaborate the proximity effect in bioorganic chemistry CO2-U (16)
 Or
 (b) Explain the major three biomolecules, that are the basis of bioorganic chemistry CO2-U (16)
12. (a) Explore the possible chemical reactions involved in polypeptide chain elongation CO2 U (16)
 Or
 (b) Discover a method for effective synthesis of aminoacid and recovery of starting reactant using general reactions. 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) Mention the various metal ions linked to proteins. Predict the best metal ion suitable for oxygen transport with reasons CO2- U (16)
 Or
 (b) Show the reason why a model of energy transfer is required for detailed study of biological systems CO2- U (16)