Q. Code:835177

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

B.E / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Third Semester

BT18301 – BIOORGANIC CHEMISTRY

(Biotechnology)

(Regulation 2018/2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

CO 1	To know in detail about the elements of atom, charges and their bonding rule	**2**
CO 2	To understand the various kinetic properties and types of reaction mechanisms	**2**
CO 3	To understand the possible bio-organic reactions involved in biosynthesis	**2**
CO 4	To analyze various bioorganic based productions	**4**
CO 5	To apply the concepts of Bioorganic reactions	**3**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Outline on how Electronegativity influence the course of reaction.	**1**	**2**
2.	Explain acid base equilibria in resonance reactions.	**1**	**1**
3.	Illustrate steric effects with example.	**2**	**2**
4.	Summarize on nucleophiles in substitution reactions.	**2**	**2**
5.	Explain microscopic reversibility in one step and two step reaction.	**3**	**2**
6.	Give the role Transition state theory with respect to life of intermediate.	**3**	**1**
7.	What is British anti Lewis?	**4**	**4**
8.	Why coenzymes are required for catalytic activity?	**4**	**4**
9.	Show alkyl group transfer with an example.	**5**	**3**
10.	How C-C bond formation and fission occurs in reactions of bioorganic chemistry?	**5**	**3**

PART- B (5 x 14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	Experiment with the principle of staggered and eclipse for conformations analysis of butane and cycloalkane.	**14**	**1**	**2**
	(OR)			
(b)	Construct how energies undergo sort of intermixing in SP3 hybridization to form hybrid orbitals.	**14**	**1**	**2**

12. (a)	Explain how Nucleophilic addition on aldehyde and ketone results in acetals and ketals formation.	**14**	**2**	**2**
	(OR)			
(b)	Describe the possibilities of inversion and retention of configuration in S_N1 and S_N2 reactions.	**14**	**2**	**2**
13.	How ΔG, ΔS, ΔH helps to know the Kinetic, thermodynamic reversibility, and thermodynamics of coupled reactions.	**14**	**3**	**2**
	(OR)			
(b)	Make use of rate law and rate constant for sequential reaction to trap the intermediate.	**14**	**3**	**2**
14. (a)	Simplify on catalysis by organized aggregates and phases.	**14**	**4**	**4**
	(OR)			
(b)	Infer on mechanistic aspects of Intra molecular reactions.	**14**	**4**	**4**
15. (a)	How the template DNA sequence can be known with chain termination method of DNA sequencing and report the sequence.	**14**	**5**	**3**
	(OR)			
(b)	Explain the synthesis of synthetic peptide by solid phase peptide synthesis.	**14**	**5**	**3**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Assess the stereochemical activity around the tetrahedral carbon in various bioorganic compounds or elements	**10**	**1**	**4**

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