Q. Code:919365

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

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2023

Second Semester

BT22201– BIOORGANIC CHEMISTRY

(Biotechnology)

(Regulation 2022)

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

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Know in detail about the elements of atom, charges and their bonding rule	**2**
CO 2	Understand the various kinetic properties and types of reaction mechanisms	**2**
CO 3	Understand the possible bio-organic reactions involved in biosynthesis	**2**
CO 4	Analyze various bioorganic based productions	**3**
CO 5	Apply the concepts of Bioorganic reactions	**4**

PART- A (20 x 2 = 40 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Compare Cis-Trans isomerism.	**1**	**2**
2.	Apply valence bond theory in resonance.	**1**	**3**
3.	Outline on ionic bond formation.	**1**	**2**
4.	Illustrate the Tm curve of DNA.	**1**	**2**
5.	List the solvents that favors SN1 and SN2 reactions.	**2**	**2**
6.	Show the reaction of carbonyl group with ammonia to form amide.	**2**	**2**
7.	Outline the method of making soap by Phonecians.	**2**	**3**
8.	Relate positive and negative supercoiling.	**2**	**2**
9.	List the kinetic methods that obeys rate law mechanism.	**3**	**4**
10.	Summarize on equilibrium in Arrhenius equation of ΔG, ΔS and ΔH	**3**	**2**
11.	Show the derivation of rate law and rate constant equation from a reaction with example.	**3**	**2**
12.	Outline on Eyring equation with expansion of each of its constituents.	**3**	**2**
13.	Infer on cofactor.	**4**	**4**
14.	Which are the metal ions that cause chelation of thiol group.	**4**	**2**
15.	Give the components of holoenzyme.	**4**	**4**
16.	Demonstrate the relationship between BAL and Lewisite.	**4**	**2**
17.	What are the forces that stabilizes DNA structure?	**5**	**3**
18.	Summarize on Hoogsteen base pairing.	**5**	**2**
19.	Organize the methods in order to isolate and purify protein to carry out peptide sequencing by Sanger's method.	**5**	**3**
20.	Infer on DNP method of end group analysis.	**5**	**2**

PART- B (5 x 10 = 50 Marks)

		Marks	CO	RBT LEVEL
21. (a)	Apply the concept of order of stability in conformational analysis of butane in staggered and elliptical conformers.	**(10)**	**1**	**3**
	(OR)			
(b)	Make orbital of approximately equal energy between the orbital by mixing of energy between 2S and 2P.	**(10)**	**1**	**3**
22. (a)	Examine the DNA conformation for its suitability to enter into replication based on supercoiling and role of enzymes in relieving the strain.	**(10)**	**2**	**4**
	(OR)			
(b)	Inspect on use of which solvent favors the occurrence of SN1 and SN2 reactions?	**(10)**	**2**	**4**
23. (a)	Utilize rate law and rate constant principle in trapping the intermediate and arriving at final overall rate law.	**(10)**	**3**	**3**
	(OR)			
(b)	Experiment with microscopic reversibility for two step reaction kinetics.	**(10)**	**3**	**3**
24. (a)	How synthetic peptide vaccines is produced by interaction between organized aggregates and phases.	**(10)**	**4**	**3**
	(OR)			
(b)	Make use of concept of complexation due to reaction between groups of host and guest with an example.	**(10)**	**4**	**3**
25. (a)	Examine on how carbon-carbon bond formation leads to successful production of Terpene.	**(10)**	**5**	**4**
	(OR)			
(b)	Inspect on chain termination method of DNA sequencing using ddNTP's.	**(10)**	**5**	**4**

PART- C (1 x 10 = 10 Marks)

(Q.No.26 is compulsory)

		Marks	CO	RBT LEVEL
26.	Interpret the formation of an activated complex in a reaction by transition state theory.	**(10)**	3	**5**

****