Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER –3 EXAMINATION – SUMMER-2024

Subject Code: BP303TP **Date: 13/06/2024**

Subject Name: Biochemistry

Time: 02.30 p.m. to 5.30 p.m. **Total Marks: 80**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define and classify carbohydrates. Discuss the structure & functions of biochemically important disaccharides.	**06**
	(b)	Draw flow chart of glycolysis-pathway and discuss its energetic & significance.	**05**
	(c)	Enlist reaction of HMP shunt and explain in detail non-oxidative phase and write significances of HMP shunt.	**05**
Q.2	**(a)**	Define amino acid metabolism and enlist reaction of amino acid metabolism. Explain in detail transamination.	**06**
	(b)	Draw flow chart of tricarboxylic acid cycle with structure and enlist disorders of its cycle.	**05**
	(c)	Explain oxidative phosphorylation with its mechanism.	**05**
Q.3	**(a)**	Define lipid metabolism. Explain de novo synthesis of fatty acid.	**06**
	(b)	Explain following (any two) i) Hypercholesterolemia ii) Atherosclerosis iii) Hyperbilirubinemia	**05**
	(c)	Explain synthesis and significance of 5-HT & Melatonin.	**05**
Q.4	**(a)**	Explain in detail catabolism of phenylalanine & tyrosine with structur. Enlist their metabolisc disorders.	**06**
	(b)	Discuss waston and crick model of DNA structure.	**05**
	(c)	Explain biosynthesis of pyrimidine nucleotides.	**05**
Q.5	**(a)**	Define genetic code. Describe the characteristics of genetic code. Add note on the effect of mutation on genetic code.	**06**
	(b)	Define following term i) Biomolecules ii) bioenergetics iii) proteins iv) catabolism	**05**
	(c)	Explain relationship between free energy, enthalpy and entropy.	**05**
Q. 6	**(a)**	Define enzyme inhibitor. Classify enzyme inhibitor and explain its.	**06**
	(b)	What are enzymes? Describe their classification and nomenclature.	**05**
	(c)	Define following term i) coenzymes ii) allosteric enzymes iii) isoenzymes iv) deamination	**05**
Q.7	**(a)**	Explain reaction of urea cycle with structure.	**06**
	(b)	Define ketone bodies. Describe its formation and utilization.	**05**
	(c)	Explain electron transport chain and its mechanism.	**05**

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