

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER-3 EXAMINATION – WINTER -2024

Subject Code: BP303TP**Date: 23-12-2024****Subject Name: Biochemistry****Time: 10.30 AM TO 01.30 PM****Total Marks: 80****Instructions:**

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

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| Q.1 | (a) Define and classify carbohydrates with examples. Add a note on monosaccharides. | 06 |
| | (b) Discuss steps of aerobic glycolysis with energetics. | 05 |
| | (c) Define gluconeogenesis. Explain its steps. | 05 |
| Q.2 | (a) Classify amino acids based on structure, chemical nature, nutritional requirement and metabolic fate with examples. | 06 |
| | (b) Discuss transamination and deamination reactions of amino acids. | 05 |
| | (c) Explain urea cycle with its metabolic disorders. | 05 |
| Q.3 | (a) Define and classify enzymes with examples. | 06 |
| | (b) Discuss therapeutic and diagnostic applications of enzymes. | 05 |
| | (c) Write a note on coenzymes. | 05 |
| Q.4 | (a) Define replication of DNA. Explain the entire process with diagram. | 06 |
| | (b) Explain characteristics of genetic code. Define non sense codons and initiating codons. | 05 |
| | (c) Explain process of protein biosynthesis. What is post translational modifications. | 05 |
| Q.5 | (a) Discuss citric acid cycle with energetics. | 06 |
| | (b) Explain β -oxidation of fatty acids (palmitic acid) with energy generation. | 05 |
| | (c) Write biological significance of cholesterol. | 05 |
| Q. 6 | (a) Write about components and reactions of electron transport chain. | 06 |
| | (b) Classify high energy compounds. Define exergonic and endergonic reactions. | 05 |
| | (c) Explain steps of biosynthesis of purine nucleotides. | 05 |
| Q.7 | (a) Explain hormonal regulation blood glucose level. | 06 |
| | (b) Write about synthesis and significance of 5-HT, dopamine and noradrenaline. | 05 |
| | (c) Explain HMP shunt pathway along with consequences associated with deficiency of glucose 6 phosphate dehydrogenase. | 05 |
