

GUJARAT TECHNOLOGICAL UNIVERSITY**B.PHARM – SEMESTER – 3 EXAMINATION – SUMMER-2025****Subject Code: BP303TP****Date: 02 - 06 - 2025****Subject Name: Biochemistry****Time: 02.30 PM TO 05.30 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) Classify amino acids. Discuss the function of protein in biological system. | 06 |
| | (b) Explain electron transport chain and its mechanism. | 05 |
| | (c) Discuss Aerobic Glycolysis with its energetic. | 05 |
| Q.2 | (a) What is bioenergetics? Discuss in detail concept of free energy. | 06 |
| | (b) Define and classify Carbohydrates. Describe the functions of polysaccharides. | 05 |
| | (c) Explain HMP shunt pathway. | 05 |
| Q.3 | (a) Write a note on citric acid cycle & explaining its amphibolic nature. | 06 |
| | (b) Write a note on Glycogen storage disease. | 05 |
| | (c) Explain β -oxidation of palmitic acid. | 05 |
| Q.4 | (a) Explain following:
i) Atherosclerosis ii) Hypercholesterolemia iii) Hyperbilirubinemia | 06 |
| | (b) Write a detail note on translation process and its inhibition. | 05 |
| | (c) Describe significance of Dopamine and 5-HT. | 05 |
| Q.5 | (a) Write a detail note on catabolism of purine nucleotide along with the disorders related to it. | 06 |
| | (b) Give biological significance of Cholesterol. | 05 |
| | (c) Describe the Watson and Crick Model of DNA Structure. | 05 |
| Q. 6 | (a) Explain role of hormones in blood glucose level maintenance. Discuss in brief about diabetes mellitus. | 06 |
| | (b) Define genetic code. Describe the characteristics of genetic code. | 05 |
| | (c) Describe in brief DNA replication. | 05 |
| Q.7 | (a) Write a brief on Enzyme kinetics. Explain Michaelis–Menten equation. | 06 |
| | (b) Define following term:
i) Biomolecules ii) bioenergetics
iii) proteins iv) catabolism | 05 |
| | (c) Explain diagnostic applications of enzyme. | 05 |
