

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. - SEMESTER- 3 EXAMINATION – WINTER -2022**

**Subject Code: BP303TP**  
**Subject Name: Biochemistry**  
**Time: 10:30am to 01:30pm**

**Date: 17/02/2023**

**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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|-------------|--|-----------|
| <b>Q.1</b>  | (a) What is bioenergetics? Discuss in detail concept of free energy.   | <b>06</b> |
|             | (b) Write a note on high energy compounds & add a note on ATP –ADP cycle.  | <b>05</b> |
|             | (c) What are proteins? Give classification of proteins.  | <b>05</b> |
| <b>Q.2</b>  | (a) Explain tricarboxylic acid cycle.  | <b>06</b> |
|             | (b) Write a note on Oxidative phosphorylation. Add a note on inhibitors of Oxidative phosphorylation                         | <b>05</b> |
|             | (c) Write a note on Glycogen storage disease.  | <b>05</b> |
| <b>Q.3</b>  | (a) Explain $\beta$ -oxidation of palmitic acid.   | <b>06</b> |
|             | (b) Explain ketone bodies formation with its regulations.  | <b>05</b> |
|             | (c) Draw the Krebs-Henseleit cycle and enlist disorders of the cycle.  | <b>05</b> |
| <b>Q.4</b>  | (a) Write a detail note on catabolism of purine nucleotide along with the disorders related to it.                           | <b>06</b> |
|             | (b) Write a detail note on translation process and its inhibition.   | <b>05</b> |
|             | (c) Write a note on gout.  | <b>05</b> |
| <b>Q.5</b>  | (a) What is Replication? Explain the role of DNA polymerase, DNA ligase and DNA helicase in the replication of prokaryotics. | <b>06</b> |
|             | (b) Describe the Watson and Crick Model of DNA Structure.  | <b>05</b> |
|             | (c) Explain electron Transport Chain with neat & clean diagram.  | <b>05</b> |
| <b>Q. 6</b> | (a) Explain factors effecting enzyme activity.   | <b>06</b> |
|             | (b) Explain diagnostic applications of enzyme.   | <b>05</b> |
|             | (c) Explain Michaelis–Menten equation.   | <b>05</b> |
| <b>Q.7</b>  | (a) Explain role of hormones in blood glucose level maintenance. Discuss in brief about diabetes mellitus                    | <b>06</b> |
|             | (b) Write a short note on following metabolic disorders: Phenylketonuria, Black urine disease and albinism.                  | <b>05</b> |
|             | (c) Discuss defective metabolism of lipids.  | <b>05</b> |

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