

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. - SEMESTER-III • EXAMINATION – WINTER -2019**

**Subject Code: BP303TP****Date: 19/11/2019****Subject Name: BIOCHEMISTRY****Time: 10:30AM TO 01:30PM****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) | Define and classify carbohydrate with suitable examples. Also explain biological role of carbohydrates.     | <b>06</b> |
|             | (b) | Define bioenergetics and give relationship between free energy, enthalpy and entropy and redox potential.   | <b>05</b> |
|             | (c) | Draw flow chart of Glycolysis – Pathway and discuss its energetics and significance                         | <b>05</b> |
| <b>Q.2</b>  | (a) | Write a note on Electron transport chain (ETC) and its mechanism                                            | <b>06</b> |
|             | (b) | Explain Oxidative phosphorylation & its mechanism.                                                          | <b>05</b> |
|             | (c) | Give brief note on $\beta$ -Oxidation of saturated fatty acid.                                              | <b>05</b> |
| <b>Q.3</b>  | (a) | Discuss Biological significance of cholesterol and conversion of cholesterol into bile acids and vitamin D. | <b>06</b> |
|             | (b) | Give a brief note on De novo synthesis of fatty acids                                                       | <b>05</b> |
|             | (c) | Give a detail note on urea cycle and its disorders                                                          | <b>05</b> |
| <b>Q.4</b>  | (a) | Write a brief note on catabolism of heme and discuss hyperbilirubinemia                                     | <b>06</b> |
|             | (b) | Give brief note on Protein synthesis and inhibitors                                                         | <b>05</b> |
|             | (c) | Draw the Structure of DNA and RNA and discuss their functions.                                              | <b>05</b> |
| <b>Q.5</b>  | (a) | Give detail on regulation of enzymes.                                                                       | <b>06</b> |
|             | (b) | Define and classify enzyme.                                                                                 | <b>05</b> |
|             | (c) | Discuss Enzyme inhibitors with examples                                                                     | <b>05</b> |
| <b>Q. 6</b> | (a) | Give Therapeutic and diagnostic applications of enzymes                                                     | <b>06</b> |
|             | (b) | Give hormonal regulation of blood glucose level.                                                            | <b>05</b> |
|             | (c) | Write in brief Gluconeogenesis- Pathway.                                                                    | <b>05</b> |
| <b>Q.7</b>  | (a) | Define energy rich compounds and give its classification and biological significance.                       | <b>06</b> |
|             | (b) | Give a brief note on Uncouplers.                                                                            | <b>05</b> |
|             | (c) | Write a brief on Enzyme kinetics                                                                            | <b>05</b> |

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