

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. / M. Ph. / D.Ph. - SEMESTER-I • EXAMINATION – WINTER-2016**

**Subject Code: 410004****Date: 25/10/2016****Subject Name: Biochemistry and Clinical Pathology****Time:10:30AM 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.

- |             |  |           |
|-------------|--|-----------|
| <b>Q.1</b>  | (a) Define Carbohydrates. Discuss Optical Isomerism and Mutarotation.  | <b>06</b> |
|             | (b) Discuss the biochemical functions and deficiency symptoms of Iron and Calcium  | <b>05</b> |
|             | (c) Define Proteins. Give detailed classification of proteins with examples.   | <b>05</b> |
| <b>Q.2</b>  | (a) Give classification of fatty acids. Describe $\beta$ -oxidation of fatty acids.  | <b>06</b> |
|             | (b) Define Lipids. Describe physical and chemical properties of lipids.  | <b>05</b> |
|             | (c) Discuss the biological significance of Nucleic acids.  | <b>05</b> |
| <b>Q.3</b>  | (a) Discuss the mechanism of enzyme action and its pharmaceutical importance.  | <b>06</b> |
|             | (b) Discuss deficiency symptoms of Vitamin D & Vitamin E.  | <b>05</b> |
|             | (c) Explain the synthesis of Catecholamine from Tyrosine.  | <b>05</b> |
| <b>Q.4</b>  | (a) Discuss the followings :-<br>i) Biological importance of lipids<br>ii) Ketone body formation   | <b>08</b> |
|             | (b) Give the principles and significance of the following qualitative tests :-<br>1) Barfoed's test                      2) Molisch's test                      3) Osazone test<br>4) Benedict's test                        | <b>08</b> |
| <b>Q.5</b>  | (a) Explain Kreb's cycle. Write its energetic and biological significance.   | <b>08</b> |
|             | (b) Discuss the following terms :- (Any FOUR)<br>i) Enzyme specificity                      ii) Optical activity<br>iii) Zymogen                                      iv) Acid value<br>v) Saponification value              | <b>08</b> |
| <b>Q. 6</b> | (a) Discuss Glycolysis process with chart.   | <b>08</b> |
|             | (b) Discuss the followings :-<br>I) Disorders of blood<br>II) Oxidative phosphorylation process  | <b>08</b> |
| <b>Q.7</b>  | Write short note on the followings :- (Any FOUR)<br>a) Vitamin A<br>b) Abnormal constituents of urine and their significance<br>c) Diabetes mellitus<br>d) Regulation of body water<br>e) Gluconeogenesis and Glycogenolysis | <b>16</b> |

\*\*\*\*\*