

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B. Pharm. – SEMESTER – V • EXAMINATION – SUMMER • 2014**

**Subject Code: 250003****Date: 09-06-2014****Subject Name: Pharmaceutical chemistry-V (Bio-chemistry)****Time: 10:30 am - 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.

- Q.1** (a) Define homo and hetero-polysaccharides. Describe the structure of three homo-polysaccharides. **06**  
(b) Write notes on Mutarotation, Osazone formation. **05**  
(c) Define: Iodine number, Saponification number, Acid number, Rancidity, Sphingomyelins. **05**
- Q.2** (a) Describe the classification of proteins with suitable examples. **06**  
(b) Describe the structure of steroids. Write a note on the functions of cholesterol. **05**  
(c) Define: Peptide bond, Essential amino acid, Isoelectric point, Denaturation, Secondary structure of protein. **05**
- Q.3** (a) Discuss the factors affecting enzyme activity. **06**  
(b) Discuss the role of enzymes in disease diagnosis and therapeutics. **05**  
(c) Define: Active site, Ligases, Reaction specificity, Allosteric regulation, Latent enzymes. **05**
- Q.4** (a) Explain the mechanisms of transport across cell membrane. **06**  
(b) Write the structure and biochemical functions of thiamine pyrophosphate. **05**  
(c) Define: Free energy, Redox potential, P:O ratio, High energy bonds, Uncouplers. **05**
- Q.5** (a) Describe enzyme inhibition with suitable examples. **06**  
(b) What are bioenergetics? Discuss their biochemical importance. **05**  
(c) Describe the role of hormones in maintenance of blood sugar levels. **05**
- Q.6** (a) Write reactions of gluconeogenesis and state its biochemical importance. **06**  
(b) Discuss biochemical importance of fructose and galactose metabolism. **05**  
(c) Define: Glycolysis, Glycogenesis, Glycogenolysis, Lactic acidosis, Pasteur effect. **05**
- Q.7** (a) Describe TCA cycle and add a note on energetics of complete oxidation of glucose. **06**  
(b) Describe glycogen storage diseases. **05**  
(c) Write a note on HMP shunt. **05**

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