

**Exam.Code:0907**  
**Sub. Code: 6693**

**1078**  
**B.E. (Biotechnology)**  
**Third Semester**  
**BIO-313: Biochemistry**

Time allowed: 3 Hours

Max. Marks: 50

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.*

*x-x-x*

I. Answer the following:-

- a) Define the term monosaccharide. Give example.
- b) Write the structure and names of two hydrophobia amino acids.
- c) What is a reducing sugar? Write the structure of a pentose.
- d) Write the structure and biochemical role of pantothenic acid?
- e) Write the name and structure of an unsaturated fatty acid.
- f) Write the structure of aglycosaminoglycan and its name.
- g) Discuss the function of transaminases.
- h) Write the structure of a sphingolipid ,
- i) Which enzyme deficiency causes Lesch Nynhan syndrome?
- j) Write the structure of AT?

(10x1)

**UNIT - I**

- II. a) Describe the pathway of glycogenesis and its regulation.
- b) What do you understand by the term "amphoteric"? Explain in context to amino acids. (7,3)
- III. a) Elaborate on the secondary and tertiary structures of proteins. Give examples.
- b) Describe the structure and functions of a heteropolysaccharide. (7,3)
- IV. a) Describe the pathway of glycolysis. Write the products formed under anaerobic conditions in glycolysis.
- b) Write the structure of 5'-ATGC-3' and its complementary strand. (7,3)

P.T.O.

(2)

UNIT - II

- V. a). Describe Urea cycle in detail with structures of intermediates.  
b) Write general reactions of amino acid metabolism? (6,4)
- VI. a) Describe the *denovo* pathway of purine biosynthesis.  
b) What are ketone bodies? (8,2)
- VII. Write short notes on:-  
a) Ketogenesis  
b) Photosynthesis (5,5)

x-x-x