(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 1 3 8 0 1

Exam. Code : 5 0 5 1

B.Sc. (Hons.) (Bio-Technology) (FYUP) 1st Semester

(2124)

BIOMOLECULES

Paper : BIOT-103-T

Time Allowed : Three Hours] **[Maximum Marks : 68**

Note :— Attempt **FIVE** questions in all including Question No. **1** which is compulsory. Select **ONE** question from each Section.

I. (a) Why is water called universal solvent ?

(b) Define Storage polysaccharides. Draw their structure.

(c) What is the difference between glycoproteins and glycolipids ?

(d) What are non standard amino acids ? Name two such amino acids.

(e) What are the factors responsible for holding two strands of DNA together ?

(f) What do you mean by hypochromic shift ? What information does it provide ?

(g) Define essential fatty acids. Draw their structure.

(h) What is meant by Rancidity of Fatty acids ?

1.5×8=12

SECTION—I

II. (a) Give structure and biological significance of any two disaccharides. Describe in detail the reactions given by monosaccharides.

(b) Explain briefly the structure and functions of polysacchacides of bacterial cell wall. 8,6

III. (a) Explain Physicochemical properties of water. Describe the structure and dissociation of water.

(b) Explain the various types of Buffers. 8,6

SECTION—II

IV. (a) Describe the classification of fatty acids with examples. Explain the important reactions of functional groups of fatty acids.

(b) Define Saponification number and peroxide value. Give the significance of both. 8,6

V. (a) Write a short note on lecithins and cephalins by drawing their structures.

(b) Give characteristics and functions of triacyglycerols and prostaglandins. 6,8

SECTION—III

VI. (a) Discuss in brief the classification of amino acids based on their R groups with at least one example in each category.

(b) Explain α-helix and β- pleated structure. 8,6

VII. (a) Describe tertiary and quaternary structure of proteins.

(b) Explain the various forces responsible for stabilizing protein structure. 8,6

SECTION—IV

VIII. (a) What is the biological role of DNA ? Explain the double helical B-form of DNA structure.

(b) Describe the physical and chemical properties of DNA. 6,8

IX. (a) What are the various types of RNA ? Describe their various functions.

(b) Describe characteristic features of Watson and Crick model structure DNA. 8,6