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

(ii) Questions : 9 Sub. Code : 2 9 7 6

Exam. Code : 4 3 5

M.Sc. 1st Semester

1125

BIOTECHNOLOGY

Paper–MBIO-102 : Biomolecules

Time Allowed : Three Hours] [Maximum Marks : 80

Note : Attempt **five** questions in all. Question No. 1 is compulsory. Select **one** question from each Unit. All questions carry equal marks.

1. (a) Define Anomers.

(b) What is substrate level phosphorylation ?

(c) Why is peptide bond rigid and planer ?

(d) Write the structure of parent phosphoglyceride.

(e) What are neutral lipids ?

(f) What is a motif in protein structure ?

(g) What are Chapronins ?

(h) What are Chargaff's rules ? 8×2

UNIT–I

2. (a) Discuss the different methods employed for the derivation of a metabolic pathway. 8

   (b) Discuss the mechanism for reversible regulation of glycogenesis and glycogenolysis. 8

3. (a) Discuss the reactions in glycolysis. 8

   (b) Discuss the role of chloroplast in energy transaction. 8

UNIT–II

4. (a) Discuss the basis and significance of Ramachandran plot. 8

   (b) Explain the dynamics of protein folding and role of chaperones in the process. 8

5. (a) Describe the structure and function of Collagen. 8

   (b) Discuss the forces stabilizing the structure of myoglobin and hemoglobin. 8

UNIT–III

6. (a) Describe the Beta oxidation pathway for palmitic acid and write the overall reaction. 8

   (b) Discuss the synthesis of triglycerides and their function. 8

7. (a) Explain the structure, classification and function of terpenes. 9

(b) Describe the different biological roles of steroids. 7

UNIT–IV

8. (a) Discuss the salvage pathway for the synthesis of purines. 8

(b) Explain the evidences for DNA as a genetic material. 8

9. (a) Discuss the salient features of Watson and Crick model for DNA. 10

(b) What is T_m ? How is it affected by GC content ? 6