

Roll No. ....

**91049**

**B. Sc. (Bio-Technology) 1st Semester  
(w.e.f. 2012-13)  
Examination – November, 2023**

**BIOCHEMISTRY & METABOLISM**

Paper : BT-104

*Time : Three Hours ]*

*[ Maximum Marks : 40*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

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

1. Write note on the following :  $1 \times 8 = 8$

- (a) Apoenzymes
- (b) Nucleosides
- (c) Gluconeogenesis
- (d) TCA cycle

- (e) Forces stabilizing protein structure
- (f) Denaturation of proteins
- (g) Bacterial cell wall
- (h) Renaturation of proteins

**UNIT – I**

- 2. What are proteins ? Briefly explain their properties and classification. 8
- 3. Write a brief note on structure and function of various types of carbohydrates. 8

**UNIT – II**

- 4. (a) Briefly describe structure and function of lipids. 4
- (b) Classify different types of fatty acids. 4
- 5. Write note on :  $4 \times 2 = 8$ 
  - (a) Structure of DNA.
  - (b) Physical and chemical properties of nucleic acids.

### UNIT – III

6. Write note on : 4 × 2 = 8

(a) Nomenclature and classification of enzymes.

(b) Cofactors in enzyme catalysis.

7. Briefly describe : 4 × 2 = 8

(a) Enzyme specificity

(b) Activation energy of enzymes

### UNIT – IV

8. Describe ETC in detail. 8

9. Describe Pentose phosphate pathway and explain its significance. 8

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