Time: 2:30 hours **Total Marks: 75**

(1) All questions are compulsory.

(2) All questions carry equal marks.

(3) Figures to the right indicate marks.

(4) Draw neat labelled diagrams / structures wherever necessary.

(5) Use of log table and non-programmable calculator is allowed.

Q.1. Do as directed: **(Any fifteen)** (15M)

Define the following terms-

i) Carbohydrate

ii) Saponification number

iii) Zwitter ion

iv) Pitch of the helix

Fill in the blanks-

v) Proteins are the polymers of --------.

vi) The three-letter symbol for Glycine is ----------.

vii) The phospho-protein found in milk is ----------.

Give examples of

viii) Amino acids with hydroxyl group.

ix) Storage proteins.

x) Keto Sugar

xi) Essential fatty acid

xii) Lipoprotein

Enlist one function of

xiii) hnRNA.

xiv) Glutathione

Draw structure of

xv) Triacylglycerol

xvi) D – Ribulose

xvii) Pyrimidine base.

State true or false

xviii) rRNA carries information from DNA for protein synthesis.

Name the following

xix) Sugar present in DNA.

xx) Type of bond present between base pair.

Q.2. a) Explain the structure and function of cholesterol in detail. (08M)

b) Explain the structure and function of cellulose. (07M)

OR

Q.2. c) What are carbohydrates? Give its classification in detail. (08M)

d) Distinguish between unsaturated fatty acid and saturated fatty acid. (07M)

Q.3. a) Discuss classification of amino acids based on the structure. (08M)

b) Write a note on denaturation of proteins. (07M)

OR

Q3. c) Enlist the properties of proteins. (08M)

d) Write a note on β pleated sheet structure of proteins. (07M)

Q4. a) Diagrammatically explain Watson-Crick model of DNA. (08M)

b) Give detailed account of the components and functions of nucleotide. (07M)

OR

Q.4. c) Explain clover leaf structure of tRNA using a suitable diagram. (08M)

d) Compare and contrast the A and B form of DNA (07M)

Q5. Write a note on **<u>any three</u>** of the following. (15M)

a) Types of triacylglycerol.
b) Compare and contrast between maltose and lactose.
c) Peptides and their importance.
d) Ribosomal RNA.
e) Chargaff's rule.

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