QM-5235

M. Sc. (Sem.-I) Examination,
December-2023

CHEMISTRY

Paper – 1.4

CHEM-514

Biology for Chemists

Time Allowed : **Three Hours**

Maximum Marks : **70**

Manimum Marks : **28**

Note : This question paper contains **two** sections as under :

SECTION – A

10×02=20

1 (i) Define Heterochromatin and Euchromatin.

(ii) Explain semiautonomous cell organellaes. also give an example.

(iii) Explain LDL and HDL.

(iv) Define essential fatty acids.

(v) Write the functions of Mucopolysaccharides in body.

(vi) Write the importance of sugar in biological cell-cell recognition.

(vii) Explain about the molecular structure of haemoglobin.

(viii) Name the 5 enzymes involved in prokaryotic DNA replication.

(ix) Explain Reverse transcription and central dogma.

(x) Define Gluconeogenesis.

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SECTION - B

UNIT - I

10×5=50

2 Write short notes on :

(a) Ribosomes

(b) Chemical evolution

5+5=10

OR

Describe in detail the ultrastructure of Nucleus, draw labelled diagram and write its importance in eukaryotic cell.

UNIT - II

3 Write a note on storage of polysaccharides with special reference to their properties and importance.

OR

Write short note on :

(a) Derivatives of monosaccharides.

(b) Diffrences between reducing and non-reducing sugars.

5+5

UNIT - III

4 What are biological membranes? Write about different models of cell membranes and their functions.

OR

Write a note on :

(a) β Oxidation

(b) Steroides : types and importance.

UNIT - IV

5 Write short notes on :

(a) Sequence determination of aminoacids

(b) Enzymatic hyerolysis of protein.

OR

Describe in detail the structural complexity of proteins with the help of diagramatic representation of various foldings and domain structures.

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UNIT - V

6 Explain Watson and Crick model of DNA. Discuss its special features and compare it with Z DNA.

OR

Describe in detail the chemical and enzymatic hydrolysis of Nucleic acids.

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