DCCB – 101

First Semester B.Sc. Degree Examination, February/March 2023
(NEP Scheme)
BIOCHEMISTRY
Chemical Foundation of Biochemistry – I

Time : 2½ Hours | Max. Marks : 60

Instructions : 1) ***All*** *Sections are* ***compulsory.***
2) *Section –* ***A*** *: Answer* ***any five.***
3) *Section –* ***B*** *: Answer* ***any five.***
4) *Section –* ***C*** *: Answer* ***any three.***

SECTION – A

Answer **any five** of the following : **(5×2=10)**

1. a) What is normality of a solution ?
   b) State Hund's rule of maximum multiplicity.
   c) What are hypotonic solutions ?
   d) State Van't Hoff Boyle's law.
   e) What is meant by reverse osmosis ?
   f) Write a short note on stock's notation.
   g) State first law of thermodynamics.

SECTION – B

Answer **any five** of the following : **(5×4=20)**

2. Illustrate Pauli's exclusion principle.
3. Explain the types of hydrogen bondings with a suitable example.
4. Describe Lewis concept of acids and bases.
5. Explain the structure of water molecule on the basis of VSEPR theory.
6. Distinguish between primary and secondary batteries.
7. What are the active form of molybdenum and cobalt ? Mention their biological significance.

P.T.O.

SECTION – C

Answer **any three** of the following : **(3×10=30)**

8. Draw a neat labelled diagram of Golgi complex and Ribosomes and mention their functions. **10**

9. a) Write the postulates of valence bond theory.

   b) With a suitable diagram, differentiate between prokaryotes and eukaryotes. **(5+5)**

10. a) Define the terms :

    i) Atomic weight

    ii) Density

    iii) Mole.

    b) Explain experimental determination of osmotic pressure by Berkeley - Hardley's method. **(6+4)**

11. a) Explain the terms dipole-dipole and electrostatic interactions.

    b) Write a note on the role of iron in hemoglobin. **(6+4)**
