PD-373-S.E.-CV-19

M.Sc. CHEMISTRY (3rd Semester)

Examination, Dec.-2020

Paper-II

CHEMISTRY OF BIO-INORGANIC & BIO-ORGANIC

Time : Three Hours] **[Maximum Marks : 80**

[Minimum Pass Marks : 29

Note : Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

Section-A

1. **Answer the following questions:-** **1x10=10**
   (a) **Write the name of two iron containing oxygen carrier metallo-biomolecules.**
   (b) **Write the name of mineral element occur in larger amount than any other mineral element.**
   (c) **Which biomolecule is known as "energy carrier" in biological system.**
   (d) **What are endergonic process in organism.**
   (e) **The process of glucose storage is called.....**
   (f) **Which pigment is found in blue blood of arthopodes.**
   (g) **Write the full name of NADP+.** (h) **What is the function of enzyme Nitrogenase.**
   (i) **What are Apo-enzymes?** (j) **What are synenzymes?**
2. **Answer the following questions:-** **2x5=10**
   (a) **Discuss in brief the role of calcium in biological system**
   (b) **Explain the ATP cycle** (c) **What is molecular adaptation.**
   (d) **Write the biological functions of coenzyme-A** (e) **What is enzyme therapy?**

Section-B **12x5=60**

Answer all questions.

UNIT-I

3. **Discuss the DNA polymerization.**

OR

Discuss the photosystem-I and photosystem-II.

UNIT-II

4. **Explain the structure and functions of Hemoglobin and Myoglobin.**

OR

Write short notes on following:-
(a) Cytochrome and iron-sulpher protein **(b) Biological nitrogen fixation**

UNIT-III

5. **Explain the remarkable properties of enzymes with special reference to catalytic power, specificity and regulation.**

OR

Write short notes on following:-
(a) Fisher's lock and key hypothesis **(b) Reversible and irreversible inhibition**

UNIT-IV

6. **Discuss the multiple displacement reactions and the coupling of ATP cleavage to energetic process.**

OR

Write short notes on following:-
(a) Beta cleavage and condensation **(b) Enzyme catalysed carboxylation and decarboxylation.**

UNIT-V

7. **Write short notes on following:-**
   (a) Chiral recognition and catalysis **(b) Cyclodextrin based enzyme model**

OR

Write short notes on following:-
(a) Techniques and methods of immobilization of enzymes **(b) Clinical uses of enzymes**