This question paper contains 2 printed pages.

M.Sc. (P)

Roll No. .....

5902

Bio. Mac. Enz. & Bio.

M.Sc. (Previous) EXAMINATION - 2022

BIO - TECHNOLOGY

Second Paper

[Biological Macromolecules Enzymology & Biotechnique]

Time Allowed: Three Hours

Maximum Marks: 100

The theory question paper will be divided into two parts A and B. Part A of question paper shall be compulsory and contain 10 (ten) very short answer type questions of 20 words. covering entire syllabus each carrying 2 (two) marks, with a total of 20 marks.

Part B of question paper will have 4 questions having 100% internal choice. Each question will carry 20 marks. with a total 80 marks.

No supplementary answer book will be given to any candidate. Hence the candidates should write the answer precisely in the main answer book only.

All the parts of one question should be answered at one place in the answer book. One complete question should not be answered different places in the answer book.

PART - A

1. Answer the following questions in brief - 10X2=20
   i. Give examples of any two acidic amino acids.
   ii. Mention the bonds which are required for formation of quaternary structure of proteins?
   iii. What is pKa?
   iv. Give the example of one aldopentose and one ketopentose sugar.
   v. What is the second law of thermodynamics?
   vi. Write any two differences between primary and secondary metabolites?
   vii. What is NMR?
   viii. What is allosteric enzyme?
   ix. Write the principle of electrophoresis.
   x. Mention any two applications of immobilized enzymes?

PART - B

2. Describe any two of the following in detail- 10+10

   (a) Classification and properties of amino acids

   (b) GS-GOGAT system

   (c) Yeast Monohybrid

OR

Describe any two of the following in detail- 10+10

(a) Isolation and estimation of proteins

(b) Isolation and estimation of DNA

(c) SDS-PAGE

3. Write a detailed note on alkaloids and flavonoids. 10+10

OR

Give a detailed account of the classification, structure and function of lipids. 20

4. Describe the following in detail- 10+10

   (a) Concept of free energy

   (b) Derivation of Michaelis-Menten equation and its significance

OR

Describe the following in detail- 10+10

(a) Mechanism of enzyme action

(b) Enzyme inhibition

5. Describe any two the following in detail- 10+10

   (a) Histochemical techniques

   (b) SEM

   (c) Gel filtration chromatography

   (d) Spectroscopy