(i) Printed Pages : 3

(ii) Questions : 9

Roll No. .....

Sub. Code : 0165

Exam. Code : 0002

B.A./B.Sc. (General) 2nd Semester

(2053)

BIO-TECHNOLOGY

Paper : BIOT–Elect-Sem-II-T Foundation of Biotechnology

Time Allowed : Three Hours] **[Maximum Marks : 67**

Note :— Attempt **five** questions in all, selecting **two** each from Units I and II. Question Number **1** is compulsory.

1. Answer the following briefly :

   (a) Alkalophiles

   (b) Chemostat

   (c) T2-Bacteriophage

   (d) Primary metabolites

   (e) Hydrolases

   (f) Principle of X-Ray diffraction

   (g) Pyranose and furanose ring structure

   (h) Amylose and amylopectin

   (i) Mesosomes

   (j) Sphingolipids. $10\times1\frac{1}{2}=15$

UNIT–I

2. (a) Describe the structure of the Lambda phage. How viruses are different from other microorganisms ?

   (b) Which primary metabolites are recovered from microorganisms ? Give examples and write about the commercial uses of any two products. 7+6=13

3. (a) Draw the structure of a bacteria and describe its important organelle.

   (b) What are the current methods of microbial identification ? Describe any one method in detail. 7+6=13

4. (a) What are storage molecules ? Explain their types and structure.

   (b) Give the nomenclature and chemical properties of fatty acids. 7+6=13

5. (a) Explain the structure and functions of complex lipids.

   (b) Discuss the characteristics, chemical reactions and functions of monosaccharides. 6+7=13

UNIT–II

6. (a) Describe the types of proteins on the basis of their structural organization.

   (b) Give the principle and applications of ELISA. What is the role of enzymes in this technique ? 6+7=13

7. (a) Give the classification and nomenclature of enzymes. Give their characteristics and functions.

(b) Write about the various biological functions performed by proteins in an organism. 7+6=13

8. (a) What is the concept of Hybridization techniques ? Explain any one of the techniques you have studied.

(b) Describe the electron and neutron diffraction techniques. What are their major applications ? 7+6=13

9. (a) What are the benefits of Electron microscopy ? What are the major differences in SEM and TEM ?

(b) Explain the principle and applications of UV spectroscopy. 7+6=13