

(i) Printed Pages : 2

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(ii) Questions : 9

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Exam. Code : 

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**B.A./B.Sc. (General) 2<sup>nd</sup> Semester**

**1059**

**BIO-TECHNOLOGY**

**Paper—BIOT-Elect-Sem-II-T Foundation of Biotechnology**

**Time Allowed : Three Hours]**

**[Maximum Marks : 67**

**Note :—** Attempt **five** questions in all, **two** questions each from Sections A and B. Section C is compulsory.

**SECTION—A**

1. (a) Write a note on economic importance of algae and fungi. 7  
(b) With the help of well labelled diagrams explain the structure of cell wall and flagella of Gram negative bacteria. 7
2. (a) Discuss briefly how Archaeobacteria are able to survive at high temperature conditions. 7  
(b) Draw a bacterial growth curve showing the various phases of growth. Discuss each phase in detail. 7
3. (a) Discuss the structure, function and properties of prostaglandins and steroids. 7  
(b) Describe the structure and functions of three biochemically important disaccharides. 7
4. (a) What are lipids ? Classify them with suitable examples. 7  
(b) Explain the structure, properties and function of starch. 7

## SECTION—B

5. (a) Explain the alpha-helical and beta pleated structure of proteins along with examples. 7  
(b) Giving examples discuss the role of enzymes in food processing. 7
6. (a) Define enzymes. Explain nomenclature and IUBMB classification with suitable examples. 7  
(b) Give the functional classification of proteins along with examples. 7
7. (a) Explain the principle and applications of Infrared (IR) spectroscopy. 7  
(b) Discuss the principle and applications of Southern blotting. 7
8. (a) Differentiate between neutron and electron diffraction. 7  
(b) What is the principle of autoradiography ? Discuss its applications also. 7

## SECTION—C

9. (a) Name two reducing sugars. 1.5  
(b) What are anomers ? 1.5  
(c) What are terpenes ? 1.5  
(d) Give the function of gas vesicles in case of bacteria. 1.5  
(e) Which type of microorganisms are known as alkalophiles ? 1.5  
(f) Write the full form of ELISA, SEM. 1.5  
(g) Which region of enzyme is known as its catalytic site and why ? 2.0