This question paper contains 4 printed pages]

Roll No. | | | | | | | | | | |

S. No. of Question Paper : **8302**

Unique Paper Code : **LSPT-101 : 216/223/151** **C**

Name of the Paper : **Introduction to Biology**

Name of the Course : **B.Sc. Life Science/Physical Science/B.Sc. (Hons.) Botany/Zoology**

Semester : **I**

Duration : **3 Hours** Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *Five* questions in all, including Q. No. **1** which is compulsory.

All parts of a question should be answered together.

Draw diagrams wherever necessary.

1. (A) Match the pH of the following

(*i*)	Blood	(*a*)	8
(*ii*)	Gastric juices	(*b*)	7.4
(*iii*)	Pure water	(*c*)	13
(*iv*)	Oven cleaner	(*d*)	2
(*v*)	Sea water	(*e*)	7

2½

(B) Define any *five* of the following terms :

(*i*) Atherosclerosis

P.T.O.

(*ii*) Anomeric carbon

(*iii*) Unsaturated fatty acids

(*iv*) Bioinformatics

(*v*) Biological species concept

(*vi*) Model organisms 5

(C) Fill in the blanks:

(*i*) A water strider is able to walk on water because of ..... .

(*ii*) Half life period of ^{14}C is ..... years.

(*iii*) *Pyrolobus fumarii* can tolerate ..... .

(*iv*) Evolution of meiosis correlates with a huge increase in the number of ..... on earth.

(*v*) The entire library of genetic information that an organism inherits is called its 2½

(D) Write the contribution of any *five* of the following :

(*i*) Frederick Sanger

(*ii*) Carl Woese

(*iii*) Roger Kornberg

(*iv*) James Watson & Francis Crick

(*v*) Thomas Cech

(*vi*) Lawrence Henderson 5

2. Write short notes on any *five* of the following :

   (*i*) Taxonomic hierarchy

   (*ii*) Chaperonins

   (*iii*) Pharmacological importance of enantiomers

   (*iv*) Applications of radioactive tracers in biology

   (*v*) Evolutionary novelties

   (*vi*) Protobionts 15

3. Differentiate between any *five* of the following :

   (*i*) Allopatric and Sympatric speciation

   (*ii*) Archaebacteria and Bacteria

   (*iii*) Genotype and Phenotype

   (*iv*) Ribose and Deoxy-ribose sugar

   (*v*) Cis and trans fats

   (*vi*) Starch and Cellulose 15

4. (*a*) What hypothesis did Miller and Urey test in their famous experiment ? 2

   (*b*) Discuss the impact of industrialization on the water quality on earth. 3

   (*c*) Trace the key events in life's history. 10

5. (*a*) Explain the various levels of protein structure. 10

   (*b*) Discuss the three main characteristics of the domain eukarya. 3

   (*c*) What is the importance of weak bonds in biological macromolecules ? 2

6. (*a*) Give the structural formula of any non-polar amino acid. 1

(*b*) Explain the role of water in the moderation of earth's temperature. 4

(*c*) Discuss the molecular basis of genetic information. 10

7. (*a*) What makes carbon so important for organism on earth ? 4

(*b*) Briefly describe the level of biological organization. 5

(*c*) Describe the role of mass extinction and adaptive radiation in changing life on earth. 6