

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 65

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Your Roll No.....

Unique Paper Code : 216/223/151

Name of the Paper : Biology – I (Introduction to Biology) (LSPT-101)

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

Semester : I / III

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Five** questions in all including Q. No. 1 which is compulsory.
3. Attempt different parts of the same question one after the other, (not necessarily in the same order).

1. (i) Define the following (**any five**) : (5)

- (a) Buffer
- (b) Renaturation
- (c) Reverse genetics
- (d) Phylogeny
- (e) Dehydration reaction
- (f) Chitin

P.T.O.

(ii) Differentiate between the following : (12)

- (a) Starch & Cellulose
- (b) Archaea & Eukarya
- (c) Saturated & Unsaturated fatty acids
- (d) Acid & Base
- (e) Cohesion & Adhesion
- (f) Nucleoside & Nucleotide

(iii) State whether the following are True or False : (5)

- (a) Ribulose is a 6-C Sugar.
- (b) Water is a universal solvent.
- (c) Carbon forms the backbone of biological molecules.
- (d) Starch has 1-4 glycosidic linkage of β -glucose monomers.
- (e) Amylopectin is a unbranched polymer.

(iv) Write about contribution of the following scientists :- (5)

- (a) Charles Darwin
- (b) Watson & Crick
- (c) G Mendel
- (d) Miller Urey
- (e) Marshall Nirenberg

2. Discuss "Proteins include a diversity of structures, resulting in a wide range of functions." (12)
3. (a) Discuss the major components & working of a Pond Ecosystem. (8)
(b) Draw a well labeled diagram of an Eukaryotic Plant Cell. (4)
4. (a) Discuss the Darwin's theory of Natural Selection. (4)
(b) Discuss briefly the Emergent properties of water. (8)
5. (a) Outline the flow of genetic information in living organisms. (8)
(b) Give example of the following : (4)
(i) Plant storage polysaccharide
(ii) An enzyme catalyzing unwinding of DNA helix
(iii) A sulphur containing amino acid
(iv) A prokaryotic model organism for genetic studies
6. (a) Write short notes on **any four** of the following :- (8)
(i) Sickle cell disease
(ii) Model organism
(iii) Chaperonins
(iv) Speciation
(v) Protocells

- (b) Write short note on Developmental Noise. (4)
7. (a) What are genetic variations. Discuss continuous and discontinuous genetic variation. (6)
- (b) Discuss the conditions that were present on early earth that made the origin of life possible. (6)