

1128  
B. Engg. (1<sup>st</sup> Year) –Biotechnology  
1<sup>st</sup> Semester  
BIO-101: Basic Biology

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Q. No. 1 which is compulsory and selecting atleast two questions each from Unit I-II.

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- I. (a) Write the names of two micro-organisms used as tools in biotechnology.
- (b) What do you understand by the term 'evolution'?
- (c) Which organelle is called power house of the cell?
- (d) What is an  $\alpha$ -amino acid? Give example.
- (e) Define monosaccharides. Give examples.
- (f) Write the names of two organisms causing spoilage of the food.
- (g) What is the Coenzyme form of Vitamin B<sub>6</sub>? (1+2+1+1+2+2+1)

**UNIT-I**

- II. (a) Elaborate on Oparin-Haldane hypothesis.
- (b) Discuss the scope of biotechnology. (5+5)
- III. (a) Describe the various stages of mitosis with the help of diagram.
- (b) Write the names of two pathogenic organisms and the diseases caused. (7+3)
- IV. (a) Write a note on "Beneficial organisms".
- (b) Describe the structure of a eukaryotic cell. Illustrate with a labelled diagram. (4+6)

**UNIT-II**

- V. (a) Describe the double helical structure of DNA.
- (b) Write the molecular structure of hemoglobin and discuss its role/function in mammals.
- (c) Write the function of glycogen in the body. What is the monomer of glycogen? (4+3+3)

**P.T.O.**



(2)

- VI. (a) Write a note on role of water in biological system.  
(b) Describe the role of enzymes in food industry.  
(c) What is mutarotation? Give example. (4+4+2)
- VII. (a) Describe the secondary and tertiary structures present in proteins.  
Give examples.  
(b) Write a note on "Bioremediation". (6+4)

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