

Exam.Code:0033

Sub. Code: 0961

1099

B.Sc. (Hons.) Biotechnology

First Semester

BIOT-Sem-I-III-T (b): Life Sciences

Time allowed: 3 Hours

Max. Marks: 67

**NOTE:** Attempt five questions in all, including Question No. IX (Unit-III) which is compulsory and selecting two questions each from Unit I -II.

x-x-x

### UNIT – I

- I. a) Explain atleast two different pathways for water uptake by plants.  
b) How life originated on earth? Explain major theories that are proposed to explain origin of life on earth. (7,6)
- II. a) Explain various internal and external growth factors that affect plant growth.  
b) Discuss the structural components of plant cell wall and membrane. (7,6)
- III. a) Describe basic differences between ecosystem, community and biome.  
b) List some manmade ecosystems and describe any one of them (7,6)
- IV. a) Differentiate autotrophs and heterotrophs. How they influence energy flow in ecosystem.  
b) Explain the mechanism of ecological succession using hydrosere model. (7,6)

### UNIT – II

- V. a) What are feedback systems in animal body? Explain its types.  
b) What are the different components of blood? Give functions of each component. (7,6)
- VI. a) What is immunity? Differentiate active and passive immunity.  
b) What is digestion? Explain different steps of digestion in higher vertebrates. (7,6)
- VII. a) Diagrammatically explain different parts of human brain.  
b) Name a defect of an eye which is known as near sightedness and how it is corrected. (7,6)
- VIII. a) Diagrammatically explain the mechanism for muscle contraction.  
b) Enlist and explain the accessory glands of the male reproductive system. (7,6)

P.T.O.

(2)

**UNIT - III**

IX. Define the following:-

- a) Aquaporins
- b) Tracheary elements
- c) Vernalisation
- d) Edge effect
- e) Limiting factor
- f) Blind spot
- g) Rennin
- h) Apolar neuron
- i) Angina
- j) Antagonistic hormone

(10x1½)

x-x-x