

2012  
B.Sc. (Hons.) Biotechnology  
First Semester  
BIOT-103B-T: Life Sciences

Time allowed: 3 Hours

Max. Marks: 67

**NOTE:** Attempt five questions in all, including Question No. 9 (Section - C) which is compulsory and selecting two questions each from Section A-B.

x-x-x

**Section- A**

1. Draw well labeled diagram of T.S. of dicot stem.  
Tabulate difference between male and female gametophyte in plant. (6, 7)
2. What are different ways by which plant respond to environment stimuli.  
Explain starch hypothesis theory of ascent of sap. (5, 8)
3. Explain with example the process of ecological succession.  
What are ecological pyramids? Explain different types of ecological pyramids. (6, 7)
4. Explain various mode of nutrition in plants  
Discuss various ecological interactions (7, 6)

**Section- B**

5. Explain mechanism of blood circulation in human.  
How carbohydrate and proteins are digested in body. (6, 7)
6. Describe the structure of uriniferous tubules (nephron)  
What are different five sense organs in human beings? Give their functions. (6, 7)
7. Explain the mechanism of muscle contraction  
Give structure and function of central nervous system. (6, 7)
8. Differentiate between humoral and cell mediated immunity.  
Write brief outline of thyroxine (b) testosterone (c) calcitonin (d) antidiuretic (6, 7)

**Section- C**

9. Attempt the following:
  - a. What is triple fusion? (2)
  - b. Define food web. (2)
  - c. Name micro and macro nutrients present in plants (2)
  - d. What is hemoglobin oxygen dissociation curve (3)
  - e. What Are Plankton, Nekton, And Benthos? (2)
  - f. What is Homeostatic responses in temperature regulation (2)
  - g. What is sap and heart wood? (2)

x-x-x