

## **BOT–551**

### **Cell Biology, Genetics, Biostatistics and Ecology**

M.Sc. Botany (MSCBOT-12/13/16/17)

Second Year, Examination, 2018

**Time : 3 Hours**

**Max. Marks : 80**

**Note :** This paper is of **eighty (80)** marks containing **three (03)** Sections A, B, C. Attempt the questions contained in these Sections according to the detailed instructions given therein.

#### **Section–A**

##### **(Long Answer Type Questions)**

**Note :** Section ‘A’ contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. Describe ultrastructure of plant cell.
2. Write a detailed note on genetic code.
3. Describe characteristics of plant community.
4. Write detailed notes on any *two* of the following :
  - (a) Variance
  - (b) Vegetation pattern of India
  - (c) Soil pollution

**Section–B****(Short Answer Type Questions)**

**Note :** Section ‘B’ contains eight (08) short answer type questions of eight (08) marks each. Learners are required to answer *four* (04) questions only.

1. Describe structure of chloroplast.
2. Write in short about apoptosis.
3. Describe functions of DNA.
4. Write in short on polyploidy.
5. Give method of calculation used in t-test.
6. Describe levels of ecology.
7. Describe soil porosity.
8. Describe greenhouse gases.

**Section–C****(Objective Type Questions)**

**Note :** Section ‘C’ contains ten (10) objective type questions of one (1) mark each. All the questions of this Section are compulsory.

Choose the correct option for each of the following questions :

1. Cyclosis refers to :
  - (a) Active movement of *Paramecium*
  - (b) The active movement of protoplasm in living cells
  - (c) The active movement of blood cells
  - (d) None of the above
2. Number of linkage groups corresponds to the :
  - (a) Haploid number of chromosomes

- (b) Diploid number of chromosomes
  - (c) Tetraploid number of chromosomes
  - (d) General structure of organism
3. Standard deviation expressed as a percentage of mean is called :
- (a) Mean deviation
  - (b) Standard error
  - (c) Coefficient of variation
  - (d) None of the above
4. Type of relationship in which one organism is benefitted while there is no effect on other is called :
- (a) Commensalism
  - (b) Symbiosis
  - (c) Mutualism
  - (d) Parasitism
5. Radioactive wastes cause :
- (a) Respiratory diseases
  - (b) Fluorosis
  - (c) Gene mutation
  - (d) Liver cirrhosis

Indicate whether the following are True *or* False.

6. Mitochondrion is a semi-autonomous organelle because it contains DNA, mRNA and ribosomes.

(True/False)

7. Allele is a pair of contrasting characters. (True/False)
8. Null hypothesis is a statistical hypothesis which is to be tested for the purpose of possible acceptance.  
(True/False)
9. Pyramid of biomass may be upright or inverted for different ecosystems. (True/False)
10. Ozone hole is caused by methane. (True/False)