

Exam. Code : 210001
Subject Code : 4897

M.Sc. Botany 1st Semester (Batch 2021-23)
GENETICS & EVOLUTION

Paper : BOT-C517

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Attempt FIVE questions in all, selecting at least ONE question from each section. The **fifth** question may be attempted from any section. All questions carry equal marks.

SECTION-A

1. Give a detailed account of Classical versus Molecular concept of Gene. 10
2. Write notes on any two of the following : (5 marks each) 10

- (a) Proof that genetic material is stored in DNA
- (b) DNA double helix
- (c) Rolling circle replication of phage phi X124

SECTION-B

3. Write notes on any two of the following : (5 marks each) 10
- (a) Homologous chromosomes
 - (b) Genetic disorders
 - (c) Molecular biology of cancer

2399(221)/IZ-8990

1

(Contd.)

4. Give an account of DNA repair mechanisms. 10

SECTION-C

5. Give an account of Transposable elements in bacteria. Support your answer with labelled diagrams. 10
6. Write notes on any two of the following (5 marks each) 10

- (a) Gene conversion
- (b) Somatic cell hybridization
- (c) Inducible operon

SECTION-D

7. What do you understand by polyploids ? Give an account of inheritance pattern in autopolyploids. 10
8. Write notes on any two of the following (5 marks each) 10

- (a) The evolutionary time scale
- (b) Origin of unicellular and multicellular organisms
- (c) Speciation

2399(221)/IZ-8990

2

100