

**M. Sc. (Biotechnology) Sem-I / M. Sc. (Medical Biotechnology) Sem- I**  
**(CBCS 2018 Course) : SUMMER - 2019**

**SUBJECT: GENETICS**

**Day** : Tuesday  
**Date** : 02/04/2019

**Time:** 10.00 AM TO 01.00 PM  
**Max. Marks : 60**

**S-2019-1425**

**N.B.**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Answers should be written in **SAME** answer book.

**SECTION – I**

- Q.1** Attempt **ANY FIVE** of the following. (10)
- a) What are pseudoalleles?
  - b) Define the term 'epistasis'. Name two types.
  - c) What is meant by pleiotropy? Give one example.
  - d) Define centromere? Write its function.
  - e) Explain 'Turner's syndrome'.
  - f) What is prenatal diagnosis? Name one method.
  - g) What is a solenoid tube?
- Q.2** Attempt **ANY TWO** of the following. (10)
- a) Define genomic model organisms? Explain its characteristics with an example.
  - b) Explain law of independent assortment with a suitable example.
  - c) Define lethal allele. Explain 'conditional lethality' with an example.
- Q.3** Attempt **ANY TWO** of the following. (10)
- a) Describe the classification of human chromosome.
  - b) What is translocation? Explain Translocation Down Syndrome.
  - c) What is 'FISH'? Explain its application in Genetics.

**SECTION - II**

- Q.4** Attempt **ANY FIVE** of the following. (10)
- a) What is meant by 'Gene frequency'?
  - b) Define the concept of non-random mating.
  - c) What is kin selection?
  - d) Explain the term 'angiogenesis'.
  - e) Define term 'sub-fertility'?
  - f) What is amniocentesis?
  - g) Write the 'Hardy-Weinberg equation'.
- Q.5** Attempt **ANY TWO** of the following. (10)
- a) What is migration? Explain the effect of migration in the recipient population.
  - b) Define speciation. Explain allopatric speciation with a suitable example.
  - c) What is selection? Explain the term directional selection with an example.
- Q.6** Attempt **ANY TWO** of the following. (10)
- a) Write short note on IVF.
  - b) Explain the characteristics of a cancer cell.
  - c) Explain the importance of oncogenes in induction of tumor.

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