

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. Hons. (Agriculture) (Sem-2)
FUNDAMENTALS OF GENETICS

Subject Code : BSAG-201-19

M.Code : 77662

Date of Examination : 16-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) Repulsion linkage
- b) Nulisomics
- c) r RNA
- d) ZDNA
- e) Satellite DNA
- f) Homologous chromosome
- g) Episome
- h) Mutagenesis
- i) EMS as mutagen
- j) Sub lethal genes.

SECTION-B

2. What is epistasis? Differentiate between complementary and supplementary gene action.
3. Describe the CIB technique of mutation identification.
4. Describe the Messelson and Stahl experiment in support of DNA as a genetic material.
5. What is uniparental/maternal inheritance? How does it differ from nuclear inheritance? Give suitable examples of maternal inheritance.
6. What do you understand by structural chromosomal aberrations? What are their genetic consequences?

SECTION-C

7. Give features of different types of RNAs. Explain the transcription process in prokaryotes (Draw neat and well labeled diagrams too).
8.
 - a) What is linkage? How do we estimate linkage if three genes are linked?
 - b) Discuss the solenoid model of chromatin packaging in eukaryotic nucleus.
9.
 - a) Discuss lac operon system in detail.
 - b) How mutations can be induced in Drosophila? Discuss mode of action of various chemical mutagens.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.