

B.Sc. Semester-III Examination, 2022-23**BOTANY [Honours]**

Course ID : 31313 Course Code : SH/BOT/303/C-7

Course Title : Genetics

Time : 1 Hour 15 Minutes Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***UNIT-I**1. Answer any **five** from the following questions:

1×5=5

- How penetrance differs from expressivity of genes?
- What is role of centromere in crossing over ?
- What is wild type allele?
- Cite an example of a base analogue.
- What are IS elements?
- How does 'recon' differ from 'muton'?
- What do you mean by genetic drift?
- What is tandem duplication in chromosome?

[Turn Over]

UNIT-II2. Answer any **two** from the following questions:

5×2=10

- Distinguish between Monogenic and Polygenic inheritance of characters with examples.
- Briefly describe the process of reciprocal translocation with suitable example.
- In a linkage map distance between gene **a** and **c** is 10mu; distance between gene **c** and **b** is 5mu. If the interference is **-1.5** then what percentage of DCO is expected?
- Point out the mode of action of UV ray and an intercalating agent as mutagens.

UNIT-III3. Answer any **one** from the following questions:

10×1=10

- What is pedigree analysis? Discuss with examples the differences between incomplete dominance and codominance. What is pleiotropic effect? 2+7+1=10
- What is gene concept? Write down an explanatory account of molecular concept of gene with appropriate examples. Mention the importance of cis-trans complementation.

2+6+2=10