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B.Sc. (Agriculture) (Sem.-7)
CYTOGENETICS OF CROP PLANTS
Subject Code : BSAG-PGB-702
M.Code : 77098

Max. Marks : 60

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.

1. Write briefly :

- a) Lysosomes
- b) Homologous and Homeologous Chromosomes
- c) Heterochromatin
- d) Non-disjunction
- e) G_0 phase
- f) Satellite DNA
- g) Paracentric Inversions and Pericentric Inversions
- h) Monoploid and Haploid
- i) Cytokinesis
- j) Functions of Golgi apparatus

SECTION-B

2. Discuss in details the structure, types and function of Endoplasmic reticulum in a cell.
3.
 - a) What is Chromosomal Theory of Inheritance and who proposed this theory?
 - b) Define Centromere. Classify different types of chromosomes depending upon centromere position.
4.
 - a) Define Synapsis, Chiasmata and Crossing Over. In which stage of prophase I, do these events take place?
 - b) What is the significance of Crossing Over in cell cycle.
5. Describe the relationship scheme between diploids and naturally occurring amphidiploid species of Brassica.
6.
 - a) What are histone proteins and their importance?
 - b) Describe briefly about differential staining of chromosomes.

SECTION-C

7.
 - a) What do you understand by position effect? Give example.
 - b) Discuss in details about the cytological and morphological effects of Duplications.
8. What do you understand by equational and reductional division? Describe diagrammatically different stages of Mitosis and enumerate its importance.
9. Discuss in details about *in situ* hybridization techniques and its applications.

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.