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Name.....

Reg. No.....

SECOND SEMESTER M.A./M.Sc./M.Com. DEGREE EXAMINATION
JUNE 2020

(CBCSS)

Botany

BOT2C05—CYTOGENETICS, GENETICS, BIostatISTICS PLANT BREEDING AND
EVOLUTION

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

Part A

I. Answer any *four* questions. Each question carries 2 weightage :

- 1 What is Robertsonian translocation ?
- 2 Describe the significance of chi square test in data analysis.
- 3 What do you mean by IPR ? How can plant varieties be protected by IPR ?
- 4 How does reproductive isolation lead to origin of species ?
- 5 With an example, discuss cytoplasmic male sterility.
- 6 How are genetic resources conserved in *in situ* conditions ?
- 7 What is a karyotype ? How is it useful in analysing genetic disorders ?

(4 × 2 = 8 weightage)

Part B

II. Answer any *four* questions. Each question carries 3 weightage :

- 8 What are polytene chromosomes ? What is its cytogenetic significance ?
- 9 Give an account on mobile genetic elements in *Drosophila*.
- 10 Describe two statistical software that are used in research.
- 11 Discuss the steps in hybridization and list out the major achievements.
- 12 How is sampling done for research purposes ?

Turn over

- 13 What is linkage? How can it be used for gene mapping? Explain with an example.
- 14 Discuss the ethical issues related to the development of transgenic plants.

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(4 × 3 = 12 weightage)

Part C

III. Answer any *two* questions. Each question carries 5 weightage :

- 15 Give a detailed account on resistance breeding techniques with special reference to disease resistance. List out the major achievements.
- 16 Describe the concept of evolution. Give an account on the various theories of evolution.
- 17 Discuss the different types of numerical aberrations in chromosomes.
- 18 What are the steps to be followed in designing an experiment? Emphasize on CRD, RBD and LSD.

(2 × 5 = 10 weightage)