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(Pages : 2)

Name.....

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Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, MARCH 2020

(CUCSS)

Botany

BO 04 ET 14 7—GENETICS AND CROP IMPROVEMENT

Maximum : 36 Weightage

Time : Three Hours

- I. Answer the questions very briefly. (Weightage $14 \times 1 = 14$, Grades A, B, C, D, E)
- 1 What is oligogenic resistance ?
 - 2 Enumerate the barriers for the production of distant hybrids.
 - 3 Describe the propagation methods in Vanilla.
 - 4 What are somaclonal variations ? Enumerate the reasons.
 - 5 Comment on organic farming.
 - 6 Write the two main varieties of Coffee.
 - 7 What is mass selection ?
 - 8 Comment on Farmer's rights
 - 9 Enlist the major physical mutagens employed in mutation breeding.
 - 10 Differentiate between vertical and horizontal resistance.
 - 11 What are the manifestations of hybrid vigour ?
 - 12 Comment on Boom and bust cycle.
 - 13 Write notes on nif genes.
 - 14 Comment on Vertifolia effect.
- II. Answer any *seven* questions in not more than 100 words. (Weightage $7 \times 2 = 14$, Grades A, B, C, D, E)
- 15 Write about the commodity boards in India.
 - 16 Describe the applications of embryo culture in crop improvement.
 - 17 Describe the process and phases of seed certification.
 - 18 Write a brief account on plant introduction agencies in India.
 - 19 Describe the applications of meristem culture in crop improvement.

Turn over

- 20 Comment on the use of CMS lines in hybrid seed production.
- 21 Describe the sources of disease resistance.
- 22 Describe the applications of Autopolyploidy in crop improvement.
- 23 Describe the procedure of mass selection in detail.
- 24 Describe the propagation methods, major pests and their management in Cashew. Enlist the varieties cultivated in Kerala.

III. Answer any *two* questions in 300 words each. (Weightage $2 \times 4 = 8$, Grades A, B, C, D, E)

- 25 Write an essay on the role, organizational setup and importance of ICAR.
- 26 What is salinity stress ? Discuss the breeding approaches for salinity resistance.
- 27 What is meant by plant genetic resources ? Write an essay on the conservation and utilization of crop genetic resources.
- 28 Write an essay on different types farming systems. Add a note on sustainable agriculture.