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Roll No. ....

B.Sc. (Biotech.)-III Year

**NS-3473 (CV)**

**B.Sc. (Biotechnology) Examination,**

**June - 2020**

**Plant Biotechnology**

**(B-301)**

*Time : Two Hours ]*

*[Maximum Marks : 75*

**Note :** Attempt any **four** questions. **All** questions carry equal marks.

1. How cloning of plant defence response genes are helpful in developing disease resistance in plants. Discuss in detail.
2. What is embryo culture? Discuss various methods available to rescue embryos as well as advantages of embryo culture.
3. Write notes on the following-
  - (a) Identification of hybrid cells using markers.

(b) Cybrids and their uses.

4. Discuss about following topics-

(a) Biotransformation

(b) Various stages of micropropagation

Describe various methods of isolation and fusion of protoplast.

5. Write detailed notes on following:

(a) Use of root initiation property of **Agrobacterium rizogene** in forestry.

(b) Various factors governing the success of androgenesis in Anther culture.

6. Evaluate various pathways to develop insect resistance in plants.

8. Write notes on the following-

(a) Factors affecting Gynogenic haploid plant production.

(b) Culture media used to develop haploid plants

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~~9.~~ Write short notes on the following:

- (a) In-vitro pollination and fertilization methods.
  - (b) Organogenesis and its practical application.
  - (c) Limitation of somatic hybridization.
10. Write short notes on following causes of Somaclonal variation :
- (a) Karyotype change
  - (b) Single gene Mutation
  - (c) Cytoplasmic genetic changes