

Roll No.....

Total No. of Units : 04

Total No. of Printed Pages : 03

Code No. : 03/308

Third Semester Examination, Dec. 2018

M.Sc. BIOTECHNOLOGY

Paper - III

PLANT BIOTECHNOLOGY

Time : 3 Hrs.

Max. Marks : 80

- Part A and B of each question in each unit consist of very short answer type questions which are to be answered in one or two sentences.  
Part C (Short answer type) of each question will be answered in 200-250 words.  
Part D (Long answer type) of each question should be answered within the word limit 400-450.

**Unit - I**

Q.1 A. Differentiate between Callus and Clone. (2)

Q.1 B. What is cell viability test? Give its one use. (2)

Q.1 C. Explain Somatic embryogenesis. (4)

**OR**

Write short notes on Clonal Propagation.

Q.1 D. Discuss the process and media composition for cell suspension culture. Write importance and application of cell suspension culture in Plant Biotechnology. (12)

**P.T.O.**

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**OR**

Write down the steps for Embryo culture and significance of Embryo rescue in plant breeding programs giving suitable examples.

**Unit - II**

Q.2 A. Differentiate between Gene and genome. (2)

Q.2 B. What is RNA interference? (2)

Q.2 C. Explain use of Ti Plasmid in plant transformation. (4)

**OR**

Describe production of haploid plants and its significance.

Q.2 D. Describe the prospects and protocols for Cryopreservation of plant cell culture. (12)

**OR**

What is Germplasm? Discuss various approach for Germplasm conservation.

**Unit - III**

Q.3 A. What is T DNA ? (2)

Q.3 B. Write about Ribozyme and its significance. (2)

Q.3 C. Write notes on antifungal protein. (4)

(3)

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**OR**

Comment upon Glyphosphate.

Q.3 D. Give detailed account of transgenic plants for herbicide tolerance in crop plants. (12)

**OR**

What is Bt Gene? How are they useful in producing insect resistance crops? Give suitable examples.

**Unit - IV**

Q.4 A. What are edible vaccines? Give examples. (2)

Q.4 B. What are secondary metabolites? (2)

Q.4 C. Define male sterility. How it can be useful in producing transgenic plants? (4)

**OR**

Explain Manipulation of Phenyl propanoid pathway.

Q.4 D. Explain the chloroplast transformation methods, its limitations and significance in detail. (12)

**OR**

Write detailed account of Transgenic plants for quality improvement.