

Roll No.....

Total No. of Sections : 03

Total No. of Printed Pages : 04

Code No. : 03/304(A)

Third Semester Examination, Dec. 2017

M.Sc. - BOTANY

Paper - III

**BIOTECHNOLOGY & GENETIC ENGINEERING
OF PLANTS**

Time : 3 Hrs.

Max.Marks : 80

Note : Section 'A' consists of 10 very short answer type questions, all of which are compulsory and should be attempted first. Section 'B' consists of four short answer type questions with internal options. Section 'C' consists of four long answer type questions with internal choice.

Section - 'A'

Answer the following very short-answer-type questions in one or two sentences : (2x10=20)

- Q.1 What is explants?
- Q.2 Who is considered to be the father of plant tissue culture and the concept was conceived in which year?
- Q.3 Write any two disadvantages of conventional plant tissue culture for clonal propagation.
- Q.4 What is organogenesis?
- Q.5 Write any two breeding methods used for breeding of two sexually incompatible species.
- Q.6 Which is known as India's first national park and when it was established?

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- Q.7 Define reforestation.
Q.8 Write the sequential steps of genetic engineering.
Q.9 Name the term used for plants that have been changed through genetic engineering.
Q.10 Write about the controversy regarding the use Bt corn.

Section - 'B'

Answer the following short-answer-type questions with word limit 200-250 : (5x4=20)

- Q.1 Write about the advantage of plant tissue culture.

OR

Describe different types of explants used in plant tissue culture.

- Q.2 What are secondary metabolites?

OR

Differentiate endangered & extinct species.

- Q.3 Describe parthenogenetic embryo.

OR

How is a somatic hybrid different from a normal hybrid? Explain.

- Q.4 Are GM foods safe? Explain.

OR

What is Agrobacterium and why it is used in genetic engineering of plants?

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Section - 'C'

Answer the following long-answer-type questions with word limit 400-450 : (10x4=40)

- Q.1 Describe the applications of biotechnology in agriculture & forestry.

OR

Write about the culture media used in PTC and their constituents.

- Q.2 Describe different methods of micro propagation.

OR

Describe different strategies used for Ex-situ plant conservation.

- Q.3 Give a detailed account of somatic androgenesis.

OR

Write an essay on Protoplast research and discuss its limitation.

- Q.4 Write an essay on transgenic plants and their advantages.

OR

How does genetic modification differ from conventional plant breeding?

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