

9. What are cybrids? Discuss the method of their production. Also discuss the uses of cybrids in crop improvement programmes.

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Roll No. ....

M.Sc.(Biotech.)-II Sem.

NP-3336

M.Sc. (Biotech.) Examination, May-2018

BIOTECHNOLOGY IN CROP IMPROVEMENT

(H-203)

(M.Sc. Biotech.)

Time : Three Hours ] [Maximum Marks : 50

Note : Attempt questions from **all** sections as per instructions.

**Section-A**

**(Very Short Answer Questions)**

Note : Attempt **all** the **five** parts of this question. Each part carries **2** marks. Very short answer in required not exceeding 75 words.  $2 \times 5 = 10$

1. (a) Efficacy and environmental concerns

P.T.O.

- (b) Embryo rescue
- (c) Antisense RNA technology
- (d) Organ culture
- (e) Electroporation

### Section-B

#### (Short Answer Questions)

**Note :** Attempt any **two** questions from this section. Each question carries **5** marks. Short answer is required not exceeding 200 words.

- 2. Write a detailed note on micro-propagation and its uses in horticultural crops. 5
- 3. Write a note on biofertilizers. 5
- 4. Write a detailed note on "Genomic research in Agriculture and Biology". 5

### Section-C

#### (Detailed Answer Questions)

**Note :** Attempt any **three** questions. Each ques-

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tion carries **10** marks. Answer is required in detail.

- 5. Briefly describe the methods of production of haploid plants and their various applications in crop improvement. 10
- 6. Define somaclonal variation. Briefly describe their isolation, molecular basis and applications. 10
- 7. What are transgenic plants? Discuss their utility in basic studies and crop improvement. 10
- 8. Write short note on the following: 3+3+4
  - (a) Molecular farming
  - (b) Direct DNA delivery methods
  - (c) Barnase and Barstax for hybrid production.

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P.T.O.

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12. Discuss in detail the impact of genetically modified crops in agriculture.
13. What are the various concepts of Biofertilizers and discuss their role in Agriculture.

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M. Sc. (Biotech.)-II Sem.

Roll No. 169353202

**NP-3336**

**M. Sc. (Biotech.) Examination, May 2017**

**BIOTECHNOLOGY IN CROP IMPROVEMENT**

**(H-203)**

**(M.Sc. Biotech.)**

*Time : Three Hours]*

*[Maximum Marks : 50*

**Note :** Attempt questions from all Sections as per instructions.

**Section-A**

**(Very Short Answer Questions)**

Attempt all the *five* questions of this Section.

Each question carries 2 marks. Very short answer is required not exceeding 75 words.  $2 \times 5 = 10$

1. Describe very briefly protoplast fusion.
2. What are Cybrids?

( 2 )

3. What do you understand by 'Molecular Farming'?
4. Define very briefly the electroporation method of gene transfer.
5. Describe very briefly the types and functions of seed storage proteins.

**Section-B**

**(Short Answer Questions)**

This Section contains three questions, attempt any *two* questions. Each question carries 5 marks. Short answer is required not exceeding 200 words.  $5 \times 2 = 10$

6. What is Embryo Culture? Define the various culture strategies and environmental conditions for embryo culture.
7. Briefly describe the various methods of plant cell transformation and discuss their relative merits and demerits.

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( 3 )

8. What is Somatic Hybridization? Briefly describe the various steps in somatic hybridization with special emphasis on selection of hybrid cells.

**Section-C**

**(Detailed Answer Questions)**

This Section contains five questions, attempt any *three* questions. Each question carries 10 marks. Answer is required in detail.  $10 \times 3 = 30$

9. Briefly describe the organization of Ti plasmid with special reference to its T-DNA and VIR regulon. Explain the mechanism of T-DNA transfer into plant genome.
10. What are the various modes of production of Haploid plants and their application in crop improvement?
11. Describe in detail the process of micro-propagation and discuss the advantages and limitations of various approaches.

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M.Sc.(Biotech.)-II Sem.

**NP-3336**

**M. Sc. (Biotechnology)**

**Examination, May 2016**

**Biotechnology in Crop Improvement**

**(H-203)**

*Time : Three Hours]*

*[Maximum Marks : 50*

**Note:** Attempt questions from all Sections as per instructions.

**Section-A**

**(Very Short Answer Questions)**

Attempt all the *five* questions. Each question carries 2 marks. Very short answer is required not exceeding 75 words.  $2 \times 5 = 10$

Write short notes on the following :

1. YAC vector.
2. Electroporation.

(2)

3. Cybrids.
4. Biosafety regulations.
5. Edible vaccine.

**Section-B**

**(Short Answer Questions)**

Attempt any *two* questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words.  $5 \times 2 = 10$

6. Write a detailed note on seed storage proteins.
7. Write a detailed note on Barnase and Barster for hybrid seed production.
8. Write a detailed note on artificial seeds.

**Section-C**

**(Detailed Answer Questions)**

Attempt any *three* questions out of the following five questions. Each question carries 10 marks. Answer is required in detail.  $10 \times 3 = 30$

(3)

9. What is micro-propagation ? Discuss the importance of this technique in crop improvement.
10. What are biofertilizers ? Describe in detail about commonly used biofertilizers.
11. Write detailed notes on the following : 5 each
  - (a) Bioinsecticides
  - (b) Distant hybridization.
12. Discuss in detail about different gene transfer methods in plants.
13. What are transgenic plants ? Discuss the use of transgenics in crop improvement.