

2016

(6th Semester)

BOTANY

TWELFTH PAPER

(Plant Biotechnology and Experimental Embryology)

Full Marks : 55

Time : 2½ hours

(PART : B—DESCRIPTIVE)

(Marks : 35)

The figures in the margin indicate full marks for the questions

1. What are cloning vectors? Give an account of important cloning vectors used in genetic engineering. 2+5=7

*Or*Write notes on the following : 3½+3½=7

- (a) Ligases
(b) Polymerase chain reaction

2. Briefly describe the concept of gene gun. 7

*Or*Write notes on the following : 3½+3½=7

- (a) Transgenic plants
(b) Transformation through *Agrobacterium*

3. What is nutrient media? Describe the major components of a nutrient media. 2+5=7

*Or*Write notes on the following : 3½+3½=7

- (a) Totipotency
(b) Sterilization methods

4. Give an account of transgenic cotton with special emphasis on Bt cotton. 7

*Or*Write notes on the following : 3½+3½=7

- (a) Genetically modified tomato
(b) Golden rice

5. Describe the procedure of protoplast fusion. 7

*Or*Write notes on the following : 3½+3½=7

- (a) Somatic embryogenesis
(b) Embryo culture

Subject Code : BOT/VI/12

Booklet No. **A**

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Date Stamp

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce /
.....) Exam., **2016**
Subject
Paper

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To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce /
.....) Exam., **2016**
Roll No.
Regn. No.
Subject
Paper
Descriptive Type
Booklet No. B

INSTRUCTIONS TO CANDIDATES

- 1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.
- 2. This paper should be ANSWERED FIRST and submitted within 45 minutes of the commencement of the Examination.
- 3. While answering the questions of this booklet, any cutting, erasing, overwriting or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.

Signature of
Scrutiniser(s)

Signature of
Examiner(s)

Signature of
Invigilator(s)

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(6th Semester)

BOTANY

TWELFTH PAPER

(Plant Biotechnology and Experimental Embryology)

(PART : A—OBJECTIVE)

(Marks : 20)

The figures in the margin indicate full marks for the questions

Answer **all** questions

SECTION—A

(Marks : 5)

- 1.** Put a Tick (✓) mark against the correct answer in the brackets provided : 1×5=5

(a) Recombinant DNA technology is used to produce

(i) haploid plants ()

(ii) explants ()

(iii) transgenic plants ()

(iv) homozygous plants ()

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(2)

(b) The only genetically modified crop grown commercially in India is

(i) Bt cotton ()

(ii) Bt brinjal ()

(iii) Flavr Savr ()

(iv) Golden rice ()

(c) The temperature of liquid nitrogen used for cryopreservation is

(i) - 100 °C ()

(ii) - 150 °C ()

(iii) - 169 °C ()

(iv) - 196 °C ()

(d) The undifferentiated mass of cells in tissue culture is known as

(i) explant ()

(ii) callus ()

(iii) somatic embryo ()

(iv) artificial seed ()

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(3)

(e) Cybrids have

- (i) nucleus from one parent, cytoplasm from both parents ()
- (ii) nucleus from both parents, cytoplasm from one parent ()
- (iii) no nucleus, cytoplasm from one parent ()
- (iv) no nucleus, cytoplasm from both parents ()

(4)

SECTION—B

(Marks : 15)

2. Write notes on the following : 3×5=15

(a) Restriction enzymes

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(5)

(b) Reporter genes

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(6)

(c) Synthetic seed

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(7)

(d) Plantibodies

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(8)

(e) Micropropagation

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