

D-6623

M.Sc. (IInd Semester) Examination, 2020

BOTANY

(Plant Biotechnology & Resource Utilization)

Time Allowed : Three Hours

Maximum Marks : 70

SECTION - A

Note : Attempt any ten questions. Each question carries one mark. **1×10=10**

Q. 1. Objective Type :

- (i) _____ is an excised piece of leaf or stem tissue used in micropropagation.
- (ii) Protoplasts are the cells devoid of _____.
- (iii) _____ plant hormone control fruit ripening.
- (iv) _____ is called the father of plant tissue culture.

(2)

- (v) The preservation of germplasm in frozen state is defined as _____.
- (vi) The carbon source used mainly in plant tissue culture is :
 - (a) Lactose
 - (b) Mannose
 - (c) Glucose
 - (d) Sucrose
- (vii) Evans blue dye stains only _____ cells :
 - (a) Dead
 - (b) Live
 - (c) Dividing
 - (d) Expanding

(3)

(viii) Nitrogen fixing blue green algae is :

- (a) Rhizobium
- (b) Ulothrix
- (c) Spirogyra
- (d) Anabaena

(ix) IPM stands for :

- (a) Integrated pest manufacture
- (b) Integrated pest management
- (c) Integrated plant management
- (d) All of these

(x) Which is the major component of Bordeaux

mixture ?

- (a) Copper Sulphate

(4)

(b) Sodium Chloride

(c) Magnesium Sulphate

(d) Calcium Chloride

(xi) Which of the following is not a plant growth regulator :

(a) Auxin

(b) Cytokinin

(c) Polyphenols

(d) Abscisic acid

(xii) The growth of plant tissues in artificial media

is called :

(a) Plant tissue culture

(b) Gene expression

(5)

(c) Transgenesis

(d) Cell hybridization

SECTION - B

Note : Attempt any five questions. Each question carries

2 marks.

5×2=10

Q. 2. Very Short Answer Type (25-30 words) :

(i) What is totipotency ?

(ii) What is gametic embryogenesis ?

(iii) What is somaclonal variation ?

(iv) Define callus.

(v) What are reporter genes ?

(vi) Define transgenic plants.

(vii) Define biodiversity.

(6)

SECTION - C

Note : Attempt any five questions. Each question carries

4 marks.

5×4=20

Q. 3. Short Answer Type (250 words) :

(i) Explain the structure of Ti plasmid.

(ii) Explain the importance of marker genes.

(iii) Explain recombinant gene.

(iv) Explain cryopreservation.

(v) Explain meristem culture.

(vi) Describe organogenesis with suitable examples.

(vii) Describe the world centres of primary diversity.

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(7)

SECTION - D

Note : Attempt any three questions. Each question carries
10 marks. **3×10=30**

Q. 4. Essay Type (more than 500 words) :

- (i) Explain protoplast isolation and somatic hybridization.
- (ii) Explain the role of biotechnology in forestry.
- (iii) What are biofertilizers ? Explain the types and importance of biofertilizers.
- (iv) Explain agrobacterium mediated gene transformation in detail.

Or

Explain the principles, methods and applications of genetic transformations.