



GAF-468

Seat No. _____

B. Sc. (Sem. V) Examination

November/December – 2015

Paper : CC-I-9 : Biotechnology

(Principles of Biotechnology Applied to Plants)

Time : 3 Hours]

[Total Marks : 70

1 (A) MCQ (10)

1. _____ is selectable marker gene.

- (a) Glucuronidase
- (b) Luciferase
- (c) npt II
- (d) all of above

2. Somatic embryogenesis is induced by presence of _____.

- (a) Auxin
- (b) Cytokinin
- (c) Both
- (d) None

3. Activated charcoal in the media inhibit _____ in plant tissue culture.

- (a) Solidification
- (b) Browning
- (c) Liquefaction
- (d) growth

4. _____ is used for preparation of artificial seed.
- (a) Ammonium chloride
 - (b) Silver chloride
 - (c) Potassium chloride
 - (d) None
5. _____ used for tissue disaggregation.
- (a) Collagenase
 - (b) Cellulase
 - (c) Lipase
 - (d) Protease
6. Haploid plants can be produced from _____.
- (a) Anther
 - (b) Pollen
 - (c) Emryo
 - (d) Both (a) & (b)
7. Protoplast fusion is achieved by
- (a) High Ca^+ & pH
 - (b) PEG
 - (c) Electrical impulse
 - (d) All of above
8. _____ is micronutrient required by plant
- (a) K
 - (b) P
 - (c) Cu
 - (d) Ca

9. _____ is required for growth of plant cell in the artificial medium.

- (a) auxin
- (b) agar
- (c) charcoal
- (d) all

10. _____ inhibit fungal growth.

- (a) Penicillin
- (b) Glyphosate
- (c) Streptomycin
- (d) None

(B) Fill in the blanks. (5)

1. _____ first coated the carrot embryoids to develop artificial seed.
2. _____ cause crown gall disease in plant.
3. Coconut milk is _____ media
4. _____ is the father of plant tissue culture.
5. Full form of CAT is _____.

2 Give the answer the question in short (Any five) 15

1. Give the full form of EPSPS, PEG & IEDC.
2. List out herbicides.
3. Define : callus, Totipotency, and dedifferentiation.
4. Name different stages of micropropagation.
5. Name atleast three vectors used for transgenesis of plants.
6. Write about auxins.
7. Name the available enzymes for protoplast isolation.

- 3 Write a short note on any four of the following : 20
1. Agarobacterium mediated gene transfer technique.
 2. Application of Secondary metabolite of plant and its production.
 3. Cell suspension culture.
 4. Define sterilization. Explain surface sterilization of explant in detail.
 5. Give the schematic representation of cytodifferentiation.
 6. Production of Herbicide resistant plant.
- 4 Write detailed note on any two of the followings : 20
1. Media of Plant tissue culture
 2. Laboratory requirement and Design for plant tissue culture
 3. BT Cotton
 4. Direct gene transfer technique for plant.
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