

(A-34)

SARDAR PATEL UNIVERSITY

M. Sc Integrated Biotechnology – Seven (07) Semester Examination (NC)

Saturday, 18 – 04 - 2015, Time: 10:30 am to 01:30 pm

NAME OF COURSE – PLANT TISSUE CULTURE TECHNOLOGYCOURSE NUMBER-PS07CIGIB01

Maximum Marks:70

Note: (1) All questions are compulsory. (2) Figure to right indicate marks.

Q.1 Choose the most appropriate answer from the four alternatives givens. [8]

1. In Plant Tissue Culture, myo-inositol used as a precursor in the biosynthetic pathways leading to the formation of
(A) Pectin (B) Calcium (C) amino acid (D) Vitamin
2. Sugars represent the major component of plant tissue culture media.
(A) Plasmolysis (B) Osmotic (C) Diffusion (D) Imbibitions
3. Growth regulator 2, 4-D most frequently considered being responsible for. variability.
(A) Epigenetic (B) Somaclonal (C) Chromosome (D) Genetic
4. Cells of explants undergo direct embryogenesis from
(A) PECDc (B) IEDc (C) Both A & B (D) PEDc
5. Electroporation has been used for a long time for transient and integrative transformation of ...
(A) Protoplasts (B) Cytoplasm (c) Cell (D) Cellwall
6. Virus elimination required the size of apical meristem is
(A) 200mm (B) 50mm (C) 400mm (D) 500 mm
7. Vectors that recombine via DNA homology into a resident Ti plasmid are often referred to as vectors.
(A) Cointegrative (B) Noni-ntegrative (C) Integrative (D) None of them
8. Agrobacterium is capable of transforming fragment of DNA,
(A) very small (B) large (C) Vey large (D)) Small

Q.2 Answer the following (Any Seven). [14]

1. What are the micro and macro nutrient use in the plant tissue culture?
2. Define totipotency and callus.
3. Write the application of embryo culture.
4. What are the drawbacks of the somatic embryogenesis?
5. Define somatic hybridization and Cybrid.
6. Give the important examples of the secondary metabolites.
7. Write the application of the transgenic plants.
8. What are the limitations of natural plasmid transformation?
9. What are growth regulator uses in the plant tissue culture?

Q.3 A. Give the different example of the explants and its use and application in the plant tissue culture. **[6]**

B. Write the different step involved in the micropropogation. Explain the all the steps and its application. **[6]**

OR

B. Write a short note on components of culture media. **[6]**

Q.4 A. Write a short note on Androgenesis. **[6]**

B. Define somaclonal variation. Write the principle, method and its application to improve crop. **[6]**

OR

B. Discuss in brief somatic embryogenesis with its applications. **[6]**

Q.5 A. Write the method of somatic hybridization and its application. **[6]**

B. Write a short not on virus eradication. **[6]**

OR

B. Writethe method of isolation of protoplast. **[6]**

Q.6 A. What are the steps involved in the production of transgenic plants? Explain the all the steps. **[6]**

B. Write a short note on Ti plasmids. **[6]**

OR

B. Discuss the construction of binary vector and co-integrated vectors. **[6]**