

5-2

[A-21]

SARDAR PATEL UNIVERSITY

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

Monday, 18 – 04 - 2016, Time: 02:30 pm to 05:30 pm

NAME OF COURSE – PLANT TISSUE CULTURE TECHNOLOGY

COURSE 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.is required for the synthesis of cellwall.
(A) Boron (B) Chlorine (C) Manganese (D) Zinc
2.is assumed to be important in nitrogen fixation.
(A) Cobalt (B) Phosphorus (C) Nitrogen (D) Chlorine
3. Androgenesis method of..... production is from the male gametophyte of an flowering plants
(A) Haploid (B) Diploid (C) Both A and B (D) None of them
4. Variability generated by the use of a tissue culture cycle is called.....
(A) Somaclonal variation (B) Gametoclonal variation (C) Both A and B (D) None of them
5. Which ex-plant is utilized for virus eradication?
(A) Shoot tip (B) Axillary bud (C) Intercalary meristem (D) Vascular tissue
6. enzyme is applied to isolate protoplast.
(A) Cellulase (B) Amylase (C) Phytase (D) Protease
7. T-DNA carries genes forsynthesis.
(A) Opine (B) Vir gene (C) Both A and B (D) None of them
8. Agrobacterium is capable of transferringfragments of DNA.
(A) Large (B) Small (C) Very small (D) None of them

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

1. What are the plant growth regulators uses in plant tissue culture?
2. Write the difference between direct and indirect organogenesis.
3. Write the application of somatic embryogenesis.
4. Define somaclonal variation.
5. Define the protoplast and cybrid.
6. Give the suitable examples of secondary metabolites.
7. What are the techniques used of virus eradication?
8. Write the application of transgenic plants.
9. What is Ti and Ri plasmids.

Q.3 A. Define the micropropagation. Explain the different stages of micropropagation. [6]

B. Enlist the component of culture media. Explain the role in plant tissue culture. [6]

OR

B. Explain different methods of explants sterilization. [6]

Q.4 A. Define the Haploid production. Enlist the different techniques of haploid plant production. Explain any one technique. [6]

B. Write short note on somatic embryogenesis. [6]

OR

B. Write short note on endosperm culture and its application. [6]

Q.5 A. Explain isolation methods of protoplast from leaf explants and their practical applications. [6]

B. Write short note on Virus eradication. [6]

OR

B. Write short note on Somatic hybridization. [6]

Q.6 A. Explain the different steps involved in the production of transgenic plants and role in plant tissue culture. [6]

B. Write short note on structure of Ti plasmid. [6]

OR

B. Discuss about the application of transgenic plants. [6]