

SARDAR PATEL UNIVERSITY
M.Sc. Integrated Biotechnology
GBT - 7th Semester Examination
Saturday, 22nd October, 2016
02:00p.m. to 05:00p.m.
PS07CIGGB3: Plant Biotechnology

Total Marks: 70

Note:(i) Figures to right indicate marks.
(ii) All questions are compulsory.

Q.1 Choose the most appropriate alternative for the following: (All are compulsory) [8]

1. _____ combination required for conjugative transfer of vector.
a. mob & tra b. mob, tra and nic-bom site c. nic-bom site, ori & tra d. mob, ori & tra
2. Ri plasmid contain gene for _____ plant hormone.
a. auxin b. cytokinins c. ethylene d. gibberalic acid
3. Chloroplast contain genes in _____ form.
a. small circular plasmid DNA b. large circular prokaryotic genomic DNA
c. eukaryotic chromosome DNA d. viral DNA with protein coat
4. EPSPS give resistance for _____ herbicide.
a. atrazine b. basta c. glyphosate d. all
5. _____ plants are having less chances of photorespiration.
a. Monocot b. Dicot c. Monocot and dicot both d. None of the
6. _____ enzyme is responsible to convert phosphorous in bioavailable form.
a. Nitrogenase b. Amylase c. EPSP synthase d. phytase
7. _____ chemical is utilized to convert haploid plant into diploid.
a. IBA b. Kinatin c. Colchicine d. Opine
8. _____ explain is utilized to produce seed less variety through PTC.
a. Pollen b. Endosperm c. Apical tip d. Hairy Root

Q.2 Attempt any seven of the following: [14]

1. Explain significance of somatic embryo to reduce chimarism in transgenic plant.
2. What *Agrobacterium* has advantage to transfer T-DNA into plant?
3. What is plastid engineering? Why only limited to two cell ogrenells?
4. Explain mechanism for targeting foreign protein into chloroplast form cytoplasm.
5. What are plantibodies? Explain its therapeutic applications.
6. What is hirudin? Explain its biological and transgenic source?
7. Production of biodegradable plastic through transgenic organisms.
8. Explain interaction of auxin and cytokinin to achieve different outputs of PTC.
9. What is cybrid? Give example with application.

Q.3 A. Enlist components of "Gene Cassette" and significance of vector. [6]

B. Explain the procedure of infection and transfer of T-DNA into plant cell. [6]

OR

- B. Enlist limitations of wild Ti plasmid and explain the modifications applied to use for DNA transfer. [6]

- Q.4 A. Explain construction of nitrogenase enzyme with involvement of genes. [6]
- B. Enlist different enzymes utilized to generate transgenic herbicide resistance plant. [6]

OR

- B. Discuss the types of vectors utilized to insert gene in chloroplast. [6]
- Q.5 A. Explain concept of edible vaccine and its production through genetic engineering. [6]
- B. Explain principle of RNA interference technology to produce late ripening tomato. [6]

OR

- B. Explain mechanism of action in BT cotton to kill pest. [6]
- Q.6 A. Enlist the different techniques of PTC and its applications. [6]
- B. Explain the application of embryo culture. [6]

OR

- B. Explain the method of virus eradication from mother plant. [6]

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