2018

BIOTECHNOLOGY

BIT 301

PLANT BIOTECHNOLOGY

Full Marks: 80

Time: 3 hours.

The figures in the margin indicates full marks for the questions :

All questions are compulsory

Q1 Define the following: (1×10=10)

a. Binary vector

b. Micropropagation

c. Callus

d. Embryo Rescue

e. Protoplast

f. Cybrid

g. Synkaryon

h. Quantitative trait loci (QTL)

i. Germplasm

j. Abiotic Stress

Q2. Answer the following questions: (2×5=10)

a. Draw a schematic diagram of a Ti-plasmid.

b. Name four plant secondary metabolites.

c. Differentiate between symmetric and asymmetric hybrid.

d. Name four techniques for obtaining virus free plants.

e. Define foreground and background selection.

Q3. Write short notes on *any four* of the following: (5×4=20)

a. Male sterility in plants and their application

b. Vector-less or direct DNA transfer

c. Techniques for cloning single cell

d. Post-harvest loss

e. Oleosin partitioning Technology

Q4. Answer *any two* of the following questions: (8×2=16)

a. Describe the stages of Micropropagation. (8)

b. Describe the *Agrobacterium* mediated gene transformation. (8)

c. What is Barnase-Barstar system? Explain with a suitable example. (8)

Q5. Answer elaborately to *any two* of the following questions: (12×2=24)

a. Explain any four marker system used in plant breeding. (3×4=12)

b. Illustrate with suitable diagrams the mechanism of DNA transfer in plants using Ti-plasmid. (3+9=12)

c. Describe three methods used for plant germplasm conservation. (4×3=12)

d. Explain four strategies to introduce herbicide resistance. What are Cry proteins? Explain their use in insect/pest resistance in plants. (6+1+5=12)

****