

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
MID SEMESTER EXAMINATION-2015

B.Tech (BT/BTDD) IV SEM

COURSE CODE: 10B11BT412

MAX. MARKS: 30

COURSE NAME: CELL CULTURE TECHNOLOGY

COURSE CREDIT: 04

MAX. TIME: 2 HRS

Section A (1X6= 6 marks)

- Q1. How the cell viability can be determined for carrying out protoplast culture?
- Q2. What is the contribution of Guha and Maheshwari in plant cell culture technology?
- Q3. How somatic embryos are different from zygotic embryos?
- Q4. What is the role of cytokinin in plant cell development?
- Q5. How you can justify that *ex vitro* rooting is cost effective than *in vitro* rooting?
- Q6. Which precautions should be taken to harden the tissue culture plantlets for their maximum survival under field conditions?

Section B (9 marks)

- Q1. For the production of virus free plants which technique is highly reproducible and which would you like to use? Explain by citing example why? (3)
- Q2. Explain the followings:
- Calliclones
 - Difference between androgenesis and gynogenesis
 - Hairy root cultures
 - Adventitious shoots (3)
- Q3. How you can produce anticancerous compound taxol via plant cell culture technology. Give brief outline about the procedure or steps you would like to follow for its production at commercial scale. (3)

Section C (15 marks)

- Q1. How would you carry out the cell suspension cultures of *Swertia*? Which mode of culture is advantageous to use and why? (3)
- Q2. Ram has received the order of producing one thousand clones of hybrid lily in three months. Which technique he should use to meet the demand and how? (3)
- Q3. Protoplast fusion is used for the production of intergeneric hybrids. Why and How? (3)
- Q4. Explain briefly the crucial factors which influence the induction of androgenesis? (3)
- Q5. Somaclones of *Datura* have developed for salt tolerance, which could be the cause of variation. Explain with justification. (3)