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Total Number of Pages : 02

B.Tech
PBT51102

5th Semester Regular / Back Examination 2018-19
PLANT & ANIMAL BIOTECHNOLOGY
BRANCH : BIOTECH
Time : 3 Hours
Max Marks : 100
Q.CODE : E373

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- Define primary cultures and cell lines.
- What is the role of HAT medium in the selection of hybrid cells?
- What do you mean by molecular farming?
- What is cybrids?
- Define callus and suspension cultures.
- What do you mean by artificial seeds? How it can be produced?
- What is disarmed Ti plasmid?
- What do you mean by criss-cross inheritance?
- How protoplast fusion technology operate?
- What does GMO stands for and write its importance?

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any EIGHT out of TWELVE) (6 x 8)

- What are serum-free media? Discuss the advantages and disadvantages of such media.
- Describe the technique of somatic cell fusion and the development of hybridoma clones.
- Write the process and advantages of microinjection technology in tissue culture.
- What is somatic embryogenesis? Write its advantages.
- What is cryopreservation and how it is beneficial?
- What is micropropagation? Write its advantages and limitations.
- How Ti plasmid is organized in relation to T-DNA and vir regulon?
- Describe the production of insect resistant transgenic plants in relation to cry proteins of *B. thuringiensis*.
- Write the mechanism and applications of electroporation.
- Explain the mechanism of T-DNA transfer into plant genome.
- How secondary metabolites is produced through plant tissue culture and purified. Discuss with example.
- What do you mean by terminator seed technology? Write its applications.

Part-III

Long Answer Type Questions (Answer Any TWO out of FOUR)

- 210 **Q3** 210 Briefly describe the various types of culture media used for cell cultures. Explain the role of serum in the culture medium and discuss its disadvantages. **(16)** 210
- Q4** 210 What are embryonic stem cells and how are they derived? Describe the embryonic stem cell transfer technology for the production of transgenic mice. **(16)**
- Q5** 210 Define meristem culture. Briefly describe shoot meristem culture technique for the transfer of plantlets to soil. **(16)**
- 210 **Q6** 210 Define somaclonal variation. Briefly describe their isolation, characterization, molecular basis and applications. **(16)** 210