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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY WAKNAGHAT

T3 Examination

B.Tech Biotechnology/BTDD (7th & 9th Semester)

COURSE : Industrial Plant Tissue Culture /Plant Tissue Culture Technologies MARKS:35

COURSE CODE: 10B1WBT725/18M1WBT132

TIME: 2HRS

Q1. How you can identify novel secondary metabolites from *Gentiana* sp. and quantify the marker secondary metabolites from it? Explain the complete methodology for identification, extraction and quantification of marker secondary metabolites. (5) CO2

Q2. How you can develop genetically modified corn crop for disease resistance? Explain all the steps involved for the development and authentication of genetically modified corn. (6) CO4

Q3. What are hydroponics? What are the modes of establishing hydroponic cultures systems? Draw diagram of the most appropriate culture method for Lettuce with explanation carrying pros and cons of soilless plant culture system. (6) CO5

Q4. Explain the followings with examples:

- a. Applications of plant stem cells
- b. Ethical arguments for transgenic plants
- c. Biodiversity Act and its applications
- d. Advancements in industrial plant tissue cultures (12) CO1 and CO3

Q5. How plant stem cells are different from callus cells? Explain along with diagram representing their origin and mode of development showing distinction in their classifications. (6) CO6