

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2023

B.Tech-5th Semester (BT)

COURSE CODE(CREDITS):21BIWBT531(03)

MAX. MARKS: 25

COURSE NAME: Industrial Plant Tissue Culture

COURSE INSTRUCTORS: Dr Hemant Sood

MAX. TIME: 1 Hour30minutes

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1. Lily plants have good color variations and orchids have variability with petal shapes. For the production of a hybrid having both the characteristics mentioned, which technology would be the most appropriate for the production of the desired plants? Explain the complete methodology. (5) (CO1&3)

Q2. How can you produce lettuce by using a hydroponic system? Which different parameters are required to be considered for the cost-effective and highly reproducible system? Design the protocol and mention the details of the setup for the same. (2+2+2) (CO3&4)

Q3. How secondary metabolism of plants is utilizable for the production of medicinal compounds? Name the contributing biosynthetic pathways for the production of secondary metabolites. Which techniques are used in the production of these compounds? (1.5+1+1.5) (CO1&2)

Q4. For the development of a new wheat variety named PBW1 chapati which has 12.31% protein content? Which genetic modification technique you would like to use for its production? Explain it. (5) (CO3&4)

Q5. How meri cloning would be more effective for the production of disease-free *Dendrobium* sp.? Why thermotherapy and chemotherapy is not enough for it? How virus indexing can be pursued for the detection of virus-free plants? (5) (CO2)