

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY WAKNAGHAT

TEST -3 EXAMINATION- JUNE-2024

M.Tech -2nd Sem (BT)

COURSE CODE(CREDITS):21MI WBT231(3)

MAX. MARKS: 35

COURSE NAME: Plant Biotechnology

COURSE INSTRUCTOR: Dr Hemant Sood

MAX. TIME: 2Hrs.

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1. Which technology would be utilized by you for the production of secondary metabolites of *Picrorhiza kurroa* ? How you can carry out the elicitation of marker compounds and extraction of phytochemicals from its tissues for quantification? (3.5+3.5)

Q2. For the production of high-yielding variety, the HY -1 gene was identified in local variety Tomatoes. Conceptualize a complete protocol for the production of high-yielding potatoes. What kind of transgenesis took place here and how it is carrying out the successful development of transgenic plants? (3.5+3.5)

Q3. How would you like to produce hybrids from Apricot and Cherry for color and flavor with chloroplast transformation? Do you think chloroplast transformation is more advantageous than nuclear and how? (3.5+3.5)

Q4. Mention two commercial products and the technologies used for their production via Biopharming. What are the negatives and positives of this technology? Do you think that biosafety and bioethical code should be used before the release of products?(3.5+3.5)

Q5. How terpenes are biosynthesized in plant cells? Draw the outline and explain some examples with their pharmacological significance. Do some of these justified their role in growth and development ? Explain (3.5+3.5)