

COURSE CODE (CREDITS): 21B1WBT531(3)

MAX. MARKS: 35

COURSE NAME: Industrial Plant Tissue Culture

COURSE INSTRUCTORS: Dr Hemant Sood

MAX. TIME: 2Hours

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

Q1. How interspecific hybrid of *Picrorhiza* and *Podophyllum* is produced carrying a good yield of medicinal compounds? Explain the methodology for the production of terpenoids under *in vitro* conditions. (3.5+3.5) CO4&CO5

Q2. Conceptualize the methodology for the production of the genetically modified plant of *Datura innoxia* having gene DR -1 of disease resistance from *Bacillus thuringensis*. Do you think the principles of bioethics need to apply before the release of these plants? (6) CO1&CO2

Q3. How you can upscale the production of phenolic compounds from *Vitis vinifera* at lab scale and also design a setup for its commercialization? Conceptualize a project for the same. (3+3) CO3 & CO4

Q4. How Plant stem cells are localized in the plant system? How you can classify their structures? Illustrate via diagrams. (2.5 +2.5) CO1&3

Q5. How you can quantify different secondary metabolites biosynthesized by plants? Which procedure would you like to follow? How and Why? (2.5+3.5) (CO3&5)

Q6. How you can extract volatile oils from rose petals? How different types of oils can be extracted from plants? Classify with examples (5) CO2&3