

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATIONS-2024

B.Tech-4 Semester (BT)

COURSE CODE: Cell Biology and Culture Technology (4)

MAX. MARKS: 25

COURSE NAME: 18B11BT411

COURSE Coordinator: Dr Hemant /Dr Udaybanu

MAX. TIME: 1 Hr 30 min

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Marks are indicated against each question in square brackets.

- Q1. Microtubules determine the position of membrane enclosed organelles and direct intracellular transport. Discuss the processes and mechanism involved in the polymerization and depolymerization of the microtubules. (5) (CO1,2)
- Q2. With a neat diagram explain how cells communicate with each other. Further deliberate the signal transduction process revealing the basic signaling cascade involved in the cell. (5) (CO1,2)
- Q3. Differentiate symporters and antiporters which assist in the transport of molecules across the lipid bilayer membrane. (2.5) (CO2)
- Q4. How you like to establish somatic embryogenesis in *Rhodiola rosea*? Design a complete protocol for the same along with its artificial seed production. (4.5) (CO3,4)
- Q5. Which technique would you like to use for the production virus virus-free plants of orchids and why? How would you like to carry out the indexing of viruses in the same? (5) (CO3,4)
- Q6. What is the advantage of growing plants by using following:
- Endosperm culture
 - Airlift bioreactors
 - Suspension cultures. (3) (CO5)