

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2022

B.Tech-4 Semester (BT)

COURSE CODE: Cell Biology and Culture Technologies

MAX. MARKS: 25

COURSE NAME: 18B11BT411

COURSE CREDITS:04

MAX. TIME: 1Hr 30 min

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

- Q1. How upscaling of plant cell suspension is carried out for metabolite production? Which bioreactor setup you would like to use for the same and why? Cite example also. [2 + 2] (CO3)
- Q2. Explain the methodology for the production of artificial seeds of *Aconitum* sp. What are the bottlenecks of the technique and how would you overcome? [2 +1.5] (CO1 &2)
- Q3. For the production of seedless Papaya, which technology you would apply and how? Which different factors should be considered for the significant outcomes and why? [2.5+1.5] (CO3)
- Q4. Seeds of *Arisemia* are not germinated and direct organogenesis is not reproduced in this genus under in vitro conditions. How would you like to grow this plant under in vitro conditions and carry out its proliferation into plantlets? [2.5 Marks] (CO3 &4)
- Q5. Extracellular Signal Molecules Can Act Over Either Short or Long Distances. How the cell communication is classified based on the distance or mode of signals. [2 Marks] (CO1&2)
- Q6. Different Cells Can Respond Differently to the Same Extracellular Signal Molecule. Explain with an example. [2 Marks] (CO1&2)
- Q7. Based on the solute concentration of the solution outside the cell, three types of condition exist. What types of condition are they and explain them. [3 Marks] (CO1&2)
- Q8. "Performed signaling complex on scaffold" and "assembly of signaling complex following receptor activation". Diagrammatically explain the above concept. [2 Marks] (CO1&2)
- Q9. Amplifier proteins are involved in signal transduction during cell communication. What is the role of such amplifier proteins in cell signaling? [2 Marks] (CO1&2)