

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATIONS-2025

B.Tech-4 Semester (BT)

COURSE CODE: Cell Biology and Culture Technology (4)

MAX. MARKS: 35

COURSE NAME: 18B11BT411

COURSE Coordinator: Dr Hemant /Dr Udaybanu

MAX. TIME: 2Hours

Note : (a) All questions are compulsory.

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

Q. No	Question	CO	Marks
Q1	Assess the key components required for the maintenance of animal cell lines in vitro and discuss the importance of each component?	CO1	5
Q2	Design a strategy to isolate single cell suspension of neurons from the cortex region of the rat brain.	CO6	5
Q3	Examine the treated cell samples which are undergoing cell death. Evaluate whether the cell samples are undergoing apoptotic or necrotic cell death. Further, how would you identify the signaling pathway of cell death?	CO3	5
Q4	Explain the cycle of structural changes used by myosin to walk along an actin filament.	CO2	2.5
Q5	How can you produce the hybrid of strawberry and mango having all characters of strawberry and yellow color of mango? Explain the methodology for the selection and production of hybrids having the mentioned characters.	CO3	5
Q6	Design the protocol for the production of fertile haploid plant of <i>Brassica napus</i> . How you can justify the advantage of this technology with the conventional bulbosum technique of haploid production?	CO4	5
Q7	Explain why and how: a. <i>Agrobacterium</i> is utilized in genetic transformation of plants. b. Cell cultures are utilized in terpenoids production in <i>Picrorhiza sp.</i> c. Gene gun is utilized for large scale transformation experiments in plant cells and tissues.	CO 5	3+2.5+2