

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY WAKNAGHAT

TEST -2 EXAMINATION-2026

B Tech BT -4th Sem (BT)

COURSE CODE(CREDITS): 18B11BT411 (4)

MAX. MARKS: 25

COURSE NAME: Cell Biology and Culture Technologies

COURSE INSTRUCTORS: Dr Hemant Sood &Dr Udaybanu M

MAX. TIME: 1hr30min

Note: a) All questions are compulsory.

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

	Question	CO	Marks
Q1	A) A researcher fails to induce callus from leaf explants. Suggest possible reasons and solutions. A callus culture turns brown after a few days. What could be the cause and how can it be prevented? B) .If the auxin concentration is very high in the medium, what type of growth would you expect? Explain. C) Design a protocol for large-scale production of secondary metabolites using plant cell culture.	CO4	1.5 +1.5+2.5
Q2	Draw and label a stirred tank bioreactor used for plant cell culture. Illustrate the working of an airlift bioreactor with a neat diagram.	CO3	(2.5+2.5)
Q3	a) Evaluate the significance of somaclonal variation in modern plant biotechnology. b) Compare meristem culture, chemotherapy, and thermochemistry for virus elimination.	CO2	2.5+2.5
Q4	A) Differentiate microtubules, microfilament and intermediate filaments. B) Justify that Microtubules form by the reversible polymerization of tubulin dimmers and explain the threadmilling of microtubules.	CO5	(2.5+2.5)
Q5	Explain the function of the following: a. Stathmin b. Profilin c. Thymosin	CO1	1.5*3= 4.5