

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

M.Sc-I Semester (BT/BI)

COURSE CODE (CREDITS): 20MS1BT113 (2)

MAX. MARKS: 25

COURSE NAME: Plant and Animal Biotechnology

COURSE INSTRUCTORS: Dr. Udayabanu & Dr. Hemant

MAX. TIME: 1 Hour 30 min

Note: (a) All questions are compulsory.

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

Q.No	Question	Marks
Q1	Zygotic embryos of <i>Gentiana kurroo</i> do not survive at 30 degrees, so no seeds are available for propagation under this type of temperature setup. How would you like to produce the artificial seeds of this herb in order to propagate the plants? Explain the complete process stepwise.	(2.5+2.5)
Q2	Which mode of suspension culture would you like to follow at the bioreactor level for the production of large amount of root biomass of <i>Hypericum perforatum</i> ? Design an experiment to get good biomass for the same.	(2+2)
Q3	Write short notes on; a. Virus-free plants b. Somaclones	(2+2)
Q4	Evaluate the role of superovulation in enhancing the efficacy of Embryo Transfer Technology (ETT). Explain the physiological mechanisms driving superovulation and the hormonal techniques utilized, highlighting how these processes strategically contribute to the success of ETT in achieving efficient breeding outcomes.	4
Q5	In the context of improving genetic diversity in livestock populations, describe the key steps involved in the process of Artificial Insemination (AI) and explain major advantage of this technique contributes to the success of modern animal breeding programs	4
Q6	Design a experimental study to analyze an environmental toxic substance. How would you analyze the mechanism of cell death?	4