

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS-2022

M.Sc-I Semester (BT)

COURSE CODE (CREDITS): 20MS1BT113 (2)

MAX. MARKS: 15

COURSE NAME: Plant and Animal Biotechnology

COURSE INSTRUCTORS: Dr. Hemant Sood/Dr. Udayabanu, M.

MAX. TIME: 1 Hour

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

Q1. Animal Cell Culture maintenance, handling and evaluation.

a) Consider Trypan blue stain is used for the evaluation of cell viability. If total number of cells is 10^4 and the Number of unstained cells is 10^3 and the number of stained cells is 10^1 . Calculate the % of viable cells. [2 Marks]

b) Does MTT assay measure the dead cells or live cells? Explain the principle behind the MTT assay [2 Marks]

c) Cell surface changes can be used to assess whether the cells are drying. Justify [2 Marks]

d) Name a cryopreservant. How would you cryopreserve the animal cells? [2 Marks]

Q2. Which technology would be utilized for the production of clonal and high content genotype of *Swertia angustifolia*? Conceptualize the protocol for the production of plants. (1+2)

Q3 Explain with reasoning or mechanism :

a) Activated charcoal is required for root induction.

b) For precocious germination which technique is required? (1+1)

Q4. Mention two scientific discoveries in Plant biotechnology referred to Indian scientists. (2)