

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEB-2023

B.Tech-4th Sem (BT)

COURSE CODE(CREDITS): 18B11BT411

MAX. MARKS: 15

COURSE NAME: Cell Biology and Culture Technology

COURSE INSTRUCTORS: Dr Hemant & Dr Uday

MAX. TIME: 1 Hour

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

Q1. How do Plant Tissue Culture Technologies help in conserving endangered plants having sterile seeds? Cite with an example. (CO3) (2.5)

Q2. MS nutrient media is required for in vitro shoot proliferation of orchid plants. What could be the desired components of the media required for the same and what are their functional aspects? (CO2) (2.5)

Q3. Explain the steps for carrying out clonal propagation of Apple rootstock M11 by using shoot apices. How you can develop clones 500 in number in 3 months duration of time? (CO2 &3) (2.5)

Q4 Cell Biology is the study of the structure and function of cells (CO1 &2)

a. Differentiate the two major classes of cells based on the complexity of the intracellular organization. (2.5)

b. In the case of cylinder-shaped phospholipid molecules. What type of packing arrangement will it take in an aqueous atmosphere? (1)

c. Name any two phospholipids that are commonly present in mammalian plasma membranes. (1)

d. Are cholesterol amphipathic in nature? Explain. (1)

e. How do macrophages identify a dead cell and then phagocytose and digest the cell? (1)

f. You are given Sodium Chloride crystal. Calculate and prepare an isotonic solution and hypertonic solution. (1)