



Seat No. _____

H-003-2016041

B. Sc. (Sem. VI) (CBCS) Examination

April - 2023

**Principles of Biotechnology Applied to
Plants and Animals : BT-601**

Faculty Code : 003

Subject Code : 2016041

Time : $2\frac{1}{2}$ / Total Marks : 70

- 1 (a) Objective type questions : 4
- (1) The first true plant tissue cultures were obtained by _____ from cambial tissue of *Acer pseudoplatanus*.
- (2) Collenchyma can be used as an explant. True/False.
- (3) What does 0(zero) indicate in MS0 ?
- (4) Full form of LS medium is _____.
- (b) Answer in brief : (any 1 out of 2) 2
- (1) What is PGRs ?
- (2) What is Tyndallization ?
- (c) Answer in detail : (any 1 out of 2) 3
- (1) What are the aseptic techniques of Plant tissue culture ?
- (2) Write the characteristics of Explant.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Brief out the history of plant tissue culture.
- (2) Describe the selection and sterilization of explant.
- 2 (a) Objective type questions : 4
- (1) _____ means the capability of a cell to form an individual plant.
- (2) Morphactins does not affect the cyto-differentiation. True/False.
- (3) Production of haploid plants from unfertilized egg cell is Anther culture. True/False.
- (4) Somatic embryogenesis is artificial process. True/False.

- (b) Answer in brief : (any 1 out of 2) 2
- (1) What is Bergmann's cell plating technique ?
 - (2) What is clonal propagation ?
- (c) Answer in detail : (any 1 out of 2) 3
- (1) What are the use of synthetic seeds ?
 - (2) Write the steps for protoplast fusion.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Describe the principle of plant tissue culture.
 - (2) Describe the principle of protoplast culture and methods of fusion.
- 3** (a) Objective type questions : 4
- (1) _____ induces hairy root disease in plants.
 - (2) Full form of Ti plasmid _____
 - (3) Full form of BT in BT Cotton is _____.
 - (4) Mechanical stirring bioreactor is not preferable for PTC because plants are sensitive to shear force. True/False.
- (b) Answer in brief : (any 1 out of two) 2
- (1) What are secondary metabolites? Give examples.
 - (2) Write the name of the vectors used for gene transfer in plant.
- (c) Answer in detail : (any 1 out of 2) 3
- (1) Draw the structure of Ti-Plasmid.
 - (2) Explain Bioreactors for cell culture techniques.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Describe the application of plant tissue culture.
 - (2) Describe the production of secondary metabolites.
- 4** (a) Objective type questions : 4
- (1) Which animal (mammal) was cloned first and what was his/her name ?
 - (2) _____ for the first time maintained embryonic chick cells in a cell culture.
 - (3) Enzymatic disaggregation is mostly used when high recovery of cells is not required from tissue. Tue/False.
 - (4) Bio safety cabinet is of utmost importance in animal tissue culture. True/False

- (b) Answer in brief : (any 1 out of two) 2
- (1) Define ATC.
 - (2) List out the cultures used for culturing Animal Tissues.
- (c) Answer in detail : (any 1 out of 2) 3
- (1) Write the importance of Animal Tissue Culture.
 - (2) Explain types of culture medium in ATC.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Laboratory requirements of ATC.
 - (2) Describe the history of ATC.
- 5** (a) Objective type questions : 4
- (1) _____ is a cell culture developed from a single cell and consists of cells with a uniform genetic make-up.
 - (2) _____ is the process of producing genetically identical individuals of an organism either naturally or artificially.
 - (3) Full form of IVF is _____.
 - (4) Full form of HeLa cell lines _____.
- (b) Answer in brief : (any 1 out of two) 2
- (1) What is primary culture ?
 - (2) Define : Clone
- (c) Answer in detail : (any 1 out of 2) 3
- (1) Biological method for gene transformation in animals.
 - (2) Selection of cell lines.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Application of transgenic animals.
 - (2) General methodology For IVF.
