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P-003-001621 Seat No. _____

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

March / April - 2020

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

(Old Course)

Faculty Code : 003

Subject Code : 001621

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 Objective type Questions : **20**

(1) C. Haberlandt attempted to culture isolated animal cells in-vitro on artificial medium. TRUE/FALSE.

(2) _____ is a ripening hormone.

(3) Who discovered the technique of pollen culture?

(4) _____ is a cell culture developed from a single cell and consists of cells with a uniform genetic make-up.

(5) _____ as a carbon source is most widely used in PTC media.

(6) Which plant hormone is produced in the stem tip that promotes cell elongation?

(7) _____ are extrinsic molecules associated with plant pests, diseases or synergistic organism.

(8) Chitinase is a polysaccharide degrading enzyme which can be used to make protoplast? TRUE/FALSE.

(9) Give the name of first mammal cloned _____.

(10) A plantibody is an antibody produced by genetically modified crops. TRUE/FALSE.

(11) In _____ technique the DNA is subjected to high voltage electrical pulse for introducing it in a cell.

(12) _____ is a process of fertilization where an egg is combined with sperm outside the body.

(13) Agarobacterium vector based method is commonly used in plant transformation. TRUE/FALSE.

(14) _____ is a use of sound to transfer a gene.

(15) _____ is an artificial process in which a plant or embryo is derived from a single somatic cell.

(16) _____ presented the first efficient tissue culture technique in the history of biology.

(17) In BT cotton, BT stands for _____.

(18) Full form of IVF is _____.

(19) _____ term is used when a cell has half the usual number of chromosomes.

(20) _____ is the process of producing genetically identical individuals of an organism either naturally or artificially.

2 (A) Answer the following : (Any **Three**) **6**

(1) What is Totipotency ?

(2) What can be used as a explant in PTC?

(3) What is the composition of MS media?

(4) Define : Transgenic plants.

(5) Define : Callus and give the examples.

(6) What is Microinjection?

(B) Answer the following : (Any **Three**) **9**

(1) What is Explant?

(2) What are plantibodies?

(3) Describe types of Natural media.

(4) What is clonal propogation?

(5) What is somatic hybridisation?

(6) Explain pollen culture.

(C) Answer the following : (Any **Two**) **10**

(1) Explain callus culture.

(2) Write a note on application of PTC.

(3) Explain vector mediated gene transformation in plant.

(4) Write a note on synthetic seed production.

(5) Explain Protoplast culture.

3 (A) Answer the following : (Any **Three**) **6**

(1) What is animal Tissue Culture?

(2) What are secondary metabolites?

(3) Define: Clone.

(4) Define: Bioreactors.

(5) Define cell lines.

(6) Enlist the examples of Transgenic animals.

(B) Answer the following : (Any **Three**) **9**

(1) Explain bioreactors in context with cell culturing.

(2) Explain the laboratory requirements for ATC.

(3) Explain non-enzymatic Disaggregation.

(4) Explain cell line selection.

(5) Explain quantitation in ATC.

(6) Explain surface sterilisation.

(C) Answer the following : (Any **Two**) **10**

(1) Give applications of Transgenic plants.

(2) Describe the culture media for ATC.

(3) Explain in general transformation methods in animals.

(4) Explain IVF.

(5) Discuss the history and importance of ATC.