BBF-003-001621 Seat No. _____

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

June / July – 2021

BT - 601 : Principles of Biotechnology Applied To Plant & Animal

(Old Course)

Faculty Code : 003

Subject Code : 001621

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

Instructions : (1) All questions are compulsory.

(2) Right side figures indicate marks of the question.

1 Answer all the questions : **20×1=20**

(1) Write name of the shooting hormone in plant cell culture.

(2) Give one application of suspension culture of plant cell.

(3) Mention sterilization technique to sterilize Growth regulator of plant.

(4) Show the name of hormone involve in maturation of cultured plant tissue.

(5) Which dye is used for respiratory efficiency test for the viability of protoplast?

(6) Mention name of one micronutrient used in plant tissue culture media preparation.

(7) Write function of vir gene.

(8) Define cybridization.

(9) What is protoplast ?

(10) Which tissue culture technique is used to produce synthetic seed?

(11) Define trypsinization.

(12) What is balance salt solution ?

(13) Show the one name of commonly used animal cell culture media.

(14) Why we prefer as possible as young organism for tissue sample in primary culture ?

(15) Write one advantage of serum.

(16) For sub culturing of animal cell which enzyme is generally preferred ?

(17) Give the name of gene used as a marker for selection of transformed animal cell.

(18) Define molecular farming.

(19) Give the name of virus used for transformation of insect cell.

(20) Which protein has been produced to generate a transgenic sheep that is used for replacement therapy for individuals at risk from emphysema?

2 (A) Answer any **three** out of six : **6**

(1) Explain about callus.

(2) What is clonal propagation ?

(3) Define secondary metabolite with examples.

(4) Briefly write on defined media.

(5) Write main purpose of tissue disaggregation.

(6) Define cell line with one example.

(B) Answer any **three** out of six : **9**

(1) Define explants.

(2) Explain one method for study of protoplast viability.

(3) Wrlte short notes on Biolistics.

(4) Discuss the buffering mechanism during animal cell culture.

(5) Give one method for tissue disaggregation.

(6) Write note on secondary culture.

(C) Answer any **two** out of five : **10**

(1) Give the detail account on history of plant tissue culture.

(2) Discuss method of somatic embryogenesis in detail.

(3) Illustrate *Agrobacterium* mediated gene transfer in plant.

(4) Discuss important component and its role during synthetic animal cell culture media preparation.

(5) Discuss need and steps of *in-vitro* fertilization.

3 (A) Answer any **three** out of six : **6**

(1) What is PGR ?

(2) Briefly write on totipotency.

(3) How BT-Cotton produced ?

(4) Discuss about electrofusion with suitable diagram.

(5) Write two major requirement of animal tissue culture laboratory and its role.

(6) Define continuous cell line.

(B) Answer any **three** out of six : **9**

(1) Discuss aseptic technique in plant tissue culture.

(2) Give the importance of Haploid culture.

(3) Discuss edible vaccine.

(4) 'Cell culture is a Bioreactor' Justify.

(5) Enlist application of animal tissue culture.

(6) Write procedure of cell cloning.

(C) Answer any **two** out of five : **10**

(1) Explain selection and sterilization technique of explants.

(2) Discuss different methods of protoplast isolation.

(3) Give the detail account on application of plant tissue culture.

(4) Describe maintenance and quantitation of cell during culture.

(5) Discuss the application of transgenic animal in detail.