

**SIXTH SEMESTER B.Sc. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
EXAMINATION, MARCH/APRIL 2017**

(UG—CCSS)

Microbiology

MB 6B 21(E2)—CELL AND TISSUE CULTURE

Time : Three Hours

Maximum : 30 Weightage

Part A

Answer all questions.

- 1 Organogenesis is _____.
 - (a) formation of callus.
 - (b) genesis of organ.
 - (c) formation of root and shoot on callus.
 - (d) none of these.
- 2 Protoplast are the cells devoid of :
 - (a) cell membrane.
 - (b) true nucleus.
 - (c) cell wall.
 - (d) both cell wall and cell membrane.
- 3 The process of reversion of mature cells to the meristamatic state leads to the formation of callus is called ____.
- 4 Hormone pair required for a cell to differentiate is _____.
 - (a) Auxin and cytokinin.
 - (b) Cytokinin and Gibberlins.
 - (c) Auxin and ethylene.
 - (d) Auxin and abscicic acid.
- 5 The production of secondary metabolites requires the use of _____.
 - (a) Protoplast culture.
 - (b) Meristem culture.
 - (c) Cell Suspension culture.
 - (d) Budding.
- 6 Synthetic seeds are produced with _____ chemical.

Turn over

- 7 DMSO is used as :
- (a) Gelling agent.
 - (b) Alkylating agent.
 - (c) Cryo protectant.
 - (d) Chelating agent.
- 8 An excised piece of leaf used in micro propagation is called _____.
- 9 Totipotency is the property of :
- (a) bacteria.
 - (b) plants.
 - (c) Animals.
 - (d) All of the above.
- 10 Name a vaccine prepared from animal cell culture.
- 11 The common bacterium used for gene transfer in plants is _____.
- 12 The ability of cells to take up naked DNA from their surrounding medium is called :
- (a) Transduction.
 - (b) Transformation.
 - (c) Conjugation.
 - (d) Competence.

(12 × ¼ = 3 weightage)

Part B (Comment on the following)

Each question carries 1 Weightage.

- 13 Cybrids.
- 14 Explant.
- 15 Gibberlins.
- 16 Name any two animal cell culture media.
- 17 Sterilization of medium.
- 18 Cell lines.
- 19 What is Somaclonal variation ?
- 20 What is Androgenesis ?
- 21 Cell markers.

(9 × 1 =9 weightage)

Part C

Write notes on any five of the following :

Answer not to exceed one page.

Each question carries 2 Weightage.

- 22 What are the sterilization methods used in tissue culture ?
- 23 What are the basic lab requirements for plant tissue culture ?
- 24 Explain the production of synthetic seeds.
- 25 Protoplast fusion.
- 26 Applications of stem cell culture.
- 27 Application of clonal propagation.
- 28 Pollen culture.

(5 × 2 = 10 weightage)

Part D

Write in detail about any two of the following.

Each question carries 4 Weightage.

- 29 Different types of plant cell culture methods and their advantages.
- 30 Different types of gene transfer methods in tissue culture.
- 31 Different types of media used in plant tissue culture, their formulations and also mention different hormones used.

(2 × 4 = 8 weightage)