

B.Sc. (Part—III) Semester—V Examination
BIOTECHNOLOGY (R/V)
(Animal Cell Biotechnology)

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory.

(2) Illustrate your answers with suitable diagrams.

1. (A) Fill in the blanks :

- (i) The virus used to induce somatic cell fusion is _____.
- (ii) _____ is a hormone produced by kidney that stimulates RBC production.
- (iii) During hybridoma technology, B-Lymphocyte fuses with _____.
- (iv) In case of cryopreservation, samples are stored at _____ temperature. 2

(B) Choose correct alternative :

- (i) BSS stands for :
 - (a) Basal Salt Solution
 - (b) Basic Sucrose Salt
 - (c) Balanced Salt Solution
 - (d) Basic Salt Solution
- (ii) Disaggregation of animal cells can be achieved by :
 - (a) Mechanical disruption
 - (b) Enzymatic disruption
 - (c) Treating cells with chelating agents
 - (d) All of the above
- (iii) HAT selection medium is used for the selection of :
 - (a) B-Lymphocytes
 - (b) Myeloma cells
 - (c) Hybrid cell
 - (d) All of these
- (iv) The study of size, shape and number of chromosomes in a cell is called as :
 - (a) Karyotype
 - (b) Cryopreservation
 - (c) Isozyme
 - (d) Cytotoxicity 2

(C) Answer in **one** sentence :

- (i) What are interferons ?
 - (ii) Tight junction.
 - (iii) What is adherent culture ?
 - (iv) Subculture. 4
2. (a) Explain extracellular matrix. 4
- (b) Describe gap junctions and desmosomes. 4
- (c) Explain the contribution of Ian Wilmut. 4
- OR**
- (p) Explain proteoglycans in detail. 4
- (q) What are adherens junctions ? 4
- (r) Describe blood tissue. 4

3. (a) Explain the principle of biosafety cabinet. 4
(b) Describe the use of inverted microscope in animal cell culture. 4
(c) Write about good laboratory practices. 4
- OR**
- (p) Explain Biosafety and Biohazards. 4
(q) Describe the use of refrigerator and deep freezers in animal biotechnology. 4
(r) Describe colony counters used in animal cell culture. 4
4. Explain in detail. chemical, physical and metabolic functions of different constituents of culture media. 12
- OR**
- Describe the role of Balanced Salt Solution and serum in the culture of animal cells. 12
5. (a) Explain the primary explant technique. 4
(b) Write note on enzymatic disaggregation. 4
(c) Describe the technique of cryopreservation. 4
- OR**
- (p) Give the characteristics of cells in culture. 4
(q) What is isozyme analysis ? 4
(r) Explain mechanical disaggregation. 4
6. Explain the different transfection methods of animal cells in detail. 12
- OR**
- Describe the procedure of somatic cell fusion and IAT selection in detail. 12
7. (a) Explain the methods of monolayer culture. 4
(b) How will you go for culture of animocentesis ? 4
(c) Describe continuous culture. 4
- OR**
- Explain the following :
- (p) Synchronous culture. 4
(q) Suspension culture. 4
(r) Spiral propagator. 4