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AU–149

B.Sc. Part—III (Semester—V) Examination

5S : BIOTECHNOLOGY (R/V)

(Animal Cell Biotechnology)

Time : Three Hours] [Maximum Marks : 80

Note :—(1) **All** questions are compulsory.
(2) Illustrate your answer with suitable diagrams.

1. (a) Fill in the blanks :

(i) _ _____ is a fluid connective tissue.

(ii) Erythrocytes are also called as ____ ___.

(iii) Neutrophill, Eosinophils and Basophils are _ _____.

(iv) The most abundant protein found in animals is __ _____. 2

(b) Choose the correct alternative :

(i) _____ developed Hybridoma technology in 1975.

(a) Kohler and Milstein (b) Jan Wilmut

(c) Miller and Uney (d) Alaxis Carrel

(ii) Production of monoclonal antibodies by hybrid cell is called :

(a) Cloning (b) Hybridization

(c) Hybridoma technology (d) Somatic cell fusion

(iii) _____ arrest the cells at metaphase.

(a) PEG (b) Dentran

(c) Colcemid (d) KCl

(iv) In enzymatic disaggregation _____ is used.

(a) BSS (b) Ligase

(c) Kinase (d) Trypsin 2

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1. Answer in one sentence :
   (i) What is HAT selection ?
   (ii) What is trypsinization ?
   (iii) What is microinjection transfection ?
   (iv) What is mechanical disaggregation ? 4

2. Write in detail about structure, function and locations of muscle and epithelial tissue. 12

OR

Explain in detail structure and function of extracellular matrix. 12

3. Describe :
   (a) Biosafety cabinets 4
   (b) Deionizers 4
   (c) Biohazards. 4

OR

   (d) CO_2 incubator 4
   (e) Ethics of laboratory 4
   (f) Refrigerators and freezers. 4

4. Explain in brief :
   (a) BSS 4
   (b) Serum free medium 4
   (c) Osmolarity of medium. 4

OR

   (d) Role of serum and its supplements 4
   (e) Metabolic functions of medium 4
   (f) Buffering of medium. 4

5. Explain the following in brief :
   (a) Primary explant technique 4
   (b) Cryopreservation 4
   (c) Plating efficiency. 4

OR

   (d) Enzymatic disaggregation 4
   (e) Karyotyping 4
   (f) Characteristics of cells in culture. 4

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6. What is transfection ? Explain in detail different techniques of transfection of mammalian cells. 12

OR

Why do we use selectable markers ? Write in detail different types of markers used in animal cells. 12

7. Explain the following in brief :

(a) Roller culture 4

(b) Monolayer culture 4

(c) Amniocentesis. 4

OR

(d) Micro carriers 4

(e) Synchronous culture 4

(f) Continuous culture. 4

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