

(A-31)

No. of Printed Pages: 02

SARDAR PATEL UNIVERSITY
M. Sc. (Integrated) Biotechnology – Seventh Semester Examination
Wednesday, 22nd April, 2015.
10:30 a.m. to 1:30p.m.
PS07CIGIB2: ANIMAL TISSUE CULTURE TECHNOLOGY

Note : (i) Figures to right indicate marks.
(ii) All questions are compulsory.

Total Marks: 70

Q – 1 Choose the most appropriate alternative for the following: (08)

1. One of the following is not balanced salt solution
 - a) Hank's BSS
 - b) DMEM
 - c) Dulbecco's PBS
 - d) Earle's BSS
2. What is the concentration of CO₂ required for culturing animal cells?
 - a) 2-5%
 - b) 1-10%
 - c) 10-15%
 - d) 15-20%
3. _____ is used as a source of energy for cultured cells.
 - a) Ascorbic acid
 - b) Glucose
 - c) Vitamin B12
 - d) Biotin
4. Trypsin is a _____.
 - a) lipolytic enzyme
 - b) proteolytic enzyme
 - c) amylolytic enzyme
 - d) cellulolytic enzyme
5. One of the following is not a method to prevent contamination in animal cell culture.
 - a) autoclaving
 - b) incineration
 - c) use of antibiotics
 - d) passasing
6. The temperature of liquid nitrogen is _____.
 - a) -79°C
 - b) -80°C
 - c) -150°C
 - d) -196°C
7. Embryonic stem cells are derived from
 - a) umbilical cord
 - b) fetus
 - c) inner cell mass
 - d) placenta
8. One of the following is natural polymer, which is used for scaffold preparation.
 - a) polylactic acid
 - b) polyglycolic acid
 - c) cellulose acetate
 - d) chitin

Q – 2 Attempt ANY SEVEN from the following: (14)

1. Write the differences between vertical and horizontal laminar air flow units.
2. What is Balanced salt solution? Enlist the types of Balanced salt solutions.
3. Enlist the different techniques for scale-up of animal cell culture.
4. Write the criteria for sub-culture.
5. What is passaging of cell culture?
6. Enlist the sources of contamination in animal tissue culture.
7. What are the applications of MABs?
8. Explain the principle of cryopreservation.
9. Which stem cells are known as pluripotent stem cells? Why?

Q – 3 (a) Enlist and explain the significant role of essential instruments that are used in Animal tissue culture lab. (06)

(b) Write the disadvantages of serum and add an explanatory note on serum free media. (06)

OR

(b) Write a note on sterilization techniques used in animal tissue culture. (06)

Q – 4 (a) How can you establish a cell line starting from primary culture? Explain. (06)

(b) What is trypsinization? Give a detailed account on trypsinization. (06)

OR

(b) Define Organ culture, Histotypic culture, Organotypic culture and add a note on Histotypic culture techniques. (06)

Q – 5 (a) Explain the process of cryopreservation. (06)

(b) Enlist the cell viability and cytotoxicity assays and Elaborate MTT based cytotoxicity assay. (06)

OR

(b) Give a detailed account on any one cell separation method. (06)

Q – 6 (a) Discuss hybridoma technology for monoclonal antibody production. (06)

(b) What is stem cell? Write the types of stem cells on the base of potentiality with example. (06)

OR

(b) Discuss the applications of Tissue Engineering in detail. (06)
