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(A-36) No. of Printed Pages: 02

**SARDAR PATEL UNIVERSITY**

**M. Sc. (Integrated) Biotechnology – Seventh Semester Examination**

**Tuesday, 12th April, 2016.**

**2:30 p.m. to 5:30 p.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. Which laminar air flow unit providing sterilization to the operator while dealing with hazards materials.
   a) Horizontal b) Vertical
   c) Both of above d) None of above
2. Glucose is added to the tissue culture media as _____.
   a) growth regulator b) carbon source
   c) solidifying agent d) an antibiotic
3. Cells floating freely in the culture medium are known as _____ culture system.
   a) confluence b) suspension
   c) monolayer d) parallel
4. The cell line having limited life span is known as
   a) infinite cell line b) finite cell line
   c) transformed cell line d) cancerous cell line
5. The growth of _____ contaminant is not observed under microscope.
   a) fungal b) bacterial
   c) cross contamination d) mycoplasma
6. Monoclonal antibodies are usually produced from…
   a) myeloma cells b) hybridoma cells
   c) monocytes d) adipocytes
7. Which stem cells are known as pluripotent stem cells?
   a) Adult stem cells b) Somatic stem cells
   c) Embryonic stem cells d) All of above
8. Cells come from the body of a donor of the same species is known as
   a) Autologus b) Allogenic
   c) Xenogenic d) Syngenic

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

1. Enlist the applications of animal tissue culture.
2. Write the significance of $CO_2$ incubator in animal tissue culture.
3. Narrate about natural media.
4. Write the mechanical disaggregation techniques.
5. Write the criteria for sub-culture.
6. Enlist the cell viability and survival cytotoxicity assays.
7. Enlist the sources of contamination in animal tissue culture.
8. Enlist the applications of tissue engineering in brief.
9. Give a brief note on cryptic contamination.

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

**(b)** Explain the physico-chemical properties of culture media. **(06)**

**OR**

**(b)** Write a note on balanced salt solutions. **(06)**

**Q – 4** **(a)** Give a detailed account of trypsinization disaggregation techniques. **(06)**

**(b)** Define the term passaging and explain the sub culture method for monolayer cells. **(06)**

**OR**

**(b)** Write an explanatory note on organ culture. **(06)**

**Q – 5** **(a)** Explain the basic steps for cryopreservation and its applications. **(06)**

**(b)** Give a detailed account on cell separation methods. **(06)**

**OR**

**(b)** Define 'cytotoxicity'? Elaborate various cytotoxicity assays based on membrane integrity. **(06)**

**Q – 6** **(a)** Explain the hybridoma technology for Monoclonal antibody production and enlist various diagnostic and therapeutic applications of MABs. **(06)**

**(b)** Discuss the various materials used for preparation of scaffolds for tissue engineering. **(06)**

**OR**

**(b)** Write a short note on stem cell and its applications. **(06)**

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