Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. Tech

PEBT 5402

Seventh Semester Examination – 2013

ANIMAL AND STEM CELL TECHNOLOGY

BRANCH : BIOTECHNOLOGY

QUESTION CODE : C-136

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

   (a) What is serum free media ? Write one of its advantages ?

   (b) How the viable cells will be separated from non-viable cells during cell line development ?

   (c) Briefly differentiate between normal and transformed cells.

   (d) What is confluence stage ? How to calculate split ratio ?

   (e) Write the role of carbon dioxide in animal cell culture.

   (f) Write the name of two commonly used animal cell line.

   (g) Write the name of technology and medium used for the production of monoclonal antibody.

   (h) What is packed bed bioreactor system in animal cell culture ?

   (i) What is primary culture ? Which type of tissue generally preferred for primary cell culture ?

   (j) What is subculture ? What are the factors need to be considered for replacement of medium ?

2. Write short notes on : 5+5

   (a) Animal cloning

   (b) Methods of disaggregation of animal tissue used in primary cell culture.

P.T.O.

3. Briefly Explain : 5+5

(a) Micro carrier attached growth.

(b) Transfection of animal cells.

4. Write, in details, the components of animal cell culture media. Add a note on different methods of sterilization used in animal cell culture. 10

5. (a) What is Tissue Engineering ? What are the basic requirement for designing and engineering of tissue ? 5

(b) Differentiate between Finite and Continuous cell line. 5

6. (a) What are the tissue markers used for cell line identification ? 5

(b) What are the factors need to be considered for the routine maintenance of cell line ? 5

Q7. (a) Describe the working of a hollow fibre bioreactor for animal cell culture purpose. Give suitable diagram. 5

(b) What are various phases for cell growth in animal cell culture ? Mention the specific growth rate at each phase. 5

8. Write short notes on any **two** of the following : 5×2

(a) Monolayer culture

(b) Cell viability and cytotoxicity

(c) Embryonic stem cell

(d) Endogenous metabolism.