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Total Number of Pages: 01

B.Tech.
PEBT5402

7th Semester Regular / Back Examination 2017-18
ANIMAL AND STEM CELL TECHNOLOGY

BRANCH: Biotech

Time: 3 Hours

Max Marks: 70

Q.CODE: B329

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

- Q1** Answer the following questions: (2 x 10)
- a) What do you understand by disaggregation of cells? Which are the most common enzymes used for disaggregation cells in a given cell culture?
 - b) What is MTT-based cytotoxicity assay?
 - c) What is the optimum pH and temperature required for animal cell culture?
 - d) Write two important application of animal cell culture?
 - e) What is natural media?
 - f) Derive an expression for specific growth rate in animal cell culture?
 - g) What is sub culture? How to calculate split ratio?
 - h) What is senescence? How to measure the number of senescent cells in a culture?
 - i) What are the advantages and disadvantages of adding serum in the animal culture medium?
 - j) Differentiate between organotypic and histotypic culture.
- Q2** Differentiate between the following :
- a) Embryonic and adult stem cells (5)
 - b) Monolayer culture and suspension culture (5)
- Q3** What is cell line? Briefly explain the maintenance and characterization of different cell line? (10)
- Q4**
- a) Briefly describe the various transfection techniques for animal cells and discuss their advantages and limitations? (5)
 - b) Write notes on organ culture technology (5)
- Q5**
- a) Briefly describe the history and scope of cell and tissue culture of animals? (5)
 - b) Explain in detail the synthetic media? (5)
- Q6** What is hybridoma technology? Briefly explain the strategies used for the production of monoclonal antibody? Write important applications of monoclonal antibody? (7+3)
- Q7**
- a) What is tissue engineering? Describe about the various application and scope of tissue engineering? Write a note on future of tissue engineering. (5)
 - b) Briefly explain measurement of parameters of growth of animal cell. (5)
- Q8** Write short note on (*any TWO*): (5 x 2)
- a) Micro-carrier attached growth.
 - b) Mass transfer in mammalian cell culture
 - c) Cell cytotoxicity
 - d) Animal cloning