Registration no: | | | | | | | | | | |

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B.TECH
PEBT5402

7th Semester Regular / Back Examination 2015-16
ANIMAL AND STEM CELL TECHNOLOGY
BRANCH: BIOTECH
Time: 3 Hours
Max Marks: 70
Q.CODE: T649

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) Derive an expression for specific growth rate in animal cell culture?
b) Write the name of commonly used synthetic media in animal cell culture?
c) Write the name of first vaccine developed from animal cell culture?
d) Write two important application of animal cell culture?
e) What is senescence? How to measure the number of senescent cells in a culture?
f) What is immobilized cell culture?
g) What is confluence stage? How to calculate plating efficiency?
h) Differentiate between finite cell lines and continuous cell lines?
i) What is the importance of pH While culturing animal cells? How is the pH maintained in culture media?
j) Differentiate between roller bottles and spinner bottles.

Q2 **a)** Briefly describe the various transfection techniques for animal cells and discuss their advantages and limitations? **(5)**

b) Write short notes on organ culture technology? **(5)**

Q3 What is tissue engineering? Describe about the various application and scope of tissue engineering? **(2+8)**

Q4 What is hybridoma technology? Briefly explain the strategies used for the production of monoclonal antibody? Differentiate between monoclonal and polyclonal antibody? **(2+4+4)**

Q5 Write short notes on

a) Biology and characterization of the cultured cells **(5)**
b) Mass transfer in mammalian cell culture **(5)**

Q6 **a)** Describe about the various application and scope of tissue engineering? **(5)**

b) Briefly describe the equipments required for animal cell culture. **(5)**

Q7 Differentiate between

a) Normal cells and transformed cells **(5)**

b) Monolayer culture and suspension culture **(5)**

Q8 Write short notes on any two: **(5 x 2)**

a) Culture media and growth conditions.

b) Cell culture in hollow fibre reactor.

c) Cell transformation.

d) Embryonic stem cells and their applications.