No. of Printed Pages : 03 **Roll No. .....**

AA-223

M. Tech. EXAMINATION, Dec. 2017

(First Semester)

(B. Scheme) (Main & Re-appear)

(BT)

BT-505-B

ANIMAL CELL CULTURE TECHNOLOGY

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. How will you plan construction of a animal cell culture laboratary ? What are the services required, precautions taken and managerial set up for mass cultivation of animal cells ? **15**

2. What are the common sterilization methods for both equipment/media and cells and how will you optimize them. **15**

Unit II

3. (a) How will you procced for development, characterization and maintenance of animal cell lines ?

(b) Write about steps taken for preservation of animal cell lines under cryogenic conditions. **10+5=15**

4. Write chronological of historical developments which led to the animal biotechnology to current level of transgenic animals. **15**

Unit III

5. Write notes on the following : **5+5+5=15**

(a) Hybridoma Technology

(b) Micro and Macro-Carrier Culture

(c) Kinetics of cell growth (under invitro conditions).

6. How metabolic and regulatory conditions of cells effects in determination of their nutritional requirement under mass invitro culture conditions. **15**

Unit IV

7. (a) What is stem cell culture, how embryonic stem cell culture is transforming modern animals biotechnology ?

(b) Describe gene knockout procedures. **6+9=15**

8. Write notes on the following : **5+5+5=15**

(a) Gene Therapy

(b) Transfection methods

(c) Objective of gene transfer.