

**M. Sc. (Biotechnology) Sem-III (2012 Course)(Choice Based Credit System) : WINTER - 2018**

**SUBJECT : ANIMAL TISSUE CULTURE**

Day : Saturday  
Date : 27/10/2018

**W-2018-1212**

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 60

**N.B.:**

- 1) **Q.No.1 and Q.No.5 are COMPULSORY.** Answer **ANY TWO** from questions 2, 3, 4 and 6,7, 8.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

**SECTION – I**

- Q.1** Answer **ANY FIVE** of the following questions in brief: [10]
- a) Define : i) cell culture      ii) Cell strain.
  - b) What is contact inhibition?
  - c) State the method and conditions for sterilization of glass pipettes.
  - d) State the significance of Earle's balanced salt solution in ATC.
  - e) Give the significance and use of Leibovitz medium in tissue culture.
  - f) What is generation number and why it is important?
- Q.2** a) Why it is important to maintain sterile conditions in ATC laboratory? How are they maintained? [05]
- b) Explain the advantages and limitations of serum in tissue culture medium. [05]
- Q.3** a) Describe the growth characteristics of normal diploid cell line growing in culture. [05]
- b) Define Confluency. How confluent stage of cell culture is identified? Outline the steps involved in subculturing of cell line. [05]
- Q.4** Write short notes on **ANY TWO** of the following: [10]
- a) Inverted microscope
  - b) Cell Bank
  - c) ATC lab design

**SECTION – II**

- Q.5** Answer **ANY TWO** of the following questions: [10]
- a) Explain dye exclusion and dye uptake assays.
  - b) Describe cold trypsin method for preparation of primary culture.
  - c) What is continuous cell line? Explain the sources and applications of continuous cell line.
- Q.6** a) What is steady state culture? How it can be used for continuous production of cultured cells? [05]
- b) Describe the principle and design of fixed bed bioreactor. [05]
- Q.7** Write short notes on **ANY TWO** of the following: [10]
- a) Inactivated vaccines
  - b) HAT medium
  - c) Therapeutic proteins
- Q.8** Give an account on applications of animal tissue culture in **ANY ONE** of the following: [10]
- a) Biotechnology industry
  - b) Stem cell therapy

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