

**M. Sc. (Biotechnology) Sem-IV (2012 Course)(Choice Based Credit System) : SUMMER - 2019**

**SUBJECT : SPECIALIZATION : b) ANIMAL CELL CULTURE APPLICATIONS**

Day : Tuesday  
Date : 09/04/2019

Time : 02.00 PM TO 05.00 PM  
Max. Marks : 60

**S-2019-1417**

**N.B.**

- 1) Q.1 and Q.5 are **COMPULSORY**. Out of the remaining questions attempt any **TWO** questions from Section – I and Section – II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer Section – I and Section – II on **SAME** answer book.

**SECTION – I**

- Q.1** Answer the following questions in brief: **(10)**
- a) Enlist different types of media used in animal tissue culture.
  - b) State the special features of inverted microscope.
  - c) What is a feeder layer? What is its use?
  - d) Give the role of trypan blue in tissue culture medium.
  - e) Define i) passage number and ii) generation number.
  - f) How cell lines are preserved?
- Q.2** a) What is enzymatic disaggregation? Describe any one method for enzymatic disaggregation. **(05)**  
b) Write in detail the method and applications of organ culture. **(05)**
- Q.3** a) Define cell line and describe growth characteristics of finite cell line. **(05)**  
b) Explain the types and role of balanced salt solution in tissue culture medium. **(05)**
- Q.4** Write short notes on Any **TWO**: **(10)**
- a) Connective tissue
  - b) Good laboratory practices
  - c) MTT assay

**SECTION – II**

- Q.5** Attempt any **TWO** of the following: **(10)**
- a) What are anchorage independent cells? Describe a method for its scale up.
  - b) What are micro carriers? Explain their applications.
  - c) Describe the source, properties and culture of mesenchymal stem cells.
- Q.6** a) How tissues are bioengineered? Comment on its advantages and limitations. **(05)**  
b) Explain the significance of substrate used for preparation of bioconstruct.
- Q.7** a) Describe methods for characterization of stem cells. **(05)**  
b) How does nutritional media of stem cells culture differs from the conventional media. **(05)**
- Q.8** Write short notes on any **TWO**: **(10)**
- a) Monoclonal antibodies
  - b) Embryonic stem cells.
  - c) Transplantation of engineered cells

\* \* \*