M. SC. (BIOTECHNOLOGY) SEM-III (2012 COURSE)(CHOICE BASED CREDIT SYSTEM) : SUMMER - 2018

SUBJECT: ANIMAL TISSUE CULTURE

Day: **Thursday**

Date: **05/04/2018**

Time: **10.00 am to 01.00 pm**

Max Marks. 60

S-2018-1088

N.B.

1) Question No. 1 and Question No. 5 are **COMPULSORY**. Attempt Any Two from the remaining questions in Section - I and Section - II.
2) Figures to the right indicate full marks.
3) Attempt Section - I and Section – II on **SEPARATE** answer books

SECTION - I

Q.1 Answer the following in brief (Attempt **ANY FIVE**) (10)
- **a)** State the role of HEPA filters in animal tissue culture.
- **b)** Give important features of inverted microscope.
- **c)** State the role of phenol red in tissue culture medium.
- **d)** What is senescence of a cell line?
- **e)** Why EDTA is used in dissociation of cells?
- **f)** Give significance of Hanks Balanced Salt Solution.

Q.2 a) Define explant culture. Explain the method for preparation of explant culture. (05)
b) What is split ratio? Why normal diploid cell lines are subcultured using split ratio? (05)

Q.3 a) Why tissue culture medium turns yellow during log phase of culture? How its pH is maintained? (05)
b) Describe the role of serum in tissue culture medium. (05)

Q.4 Write short notes on **ANY TWO** of the following. (10)
- **a)** Mechanical disaggregation
- **b)** Organ culture
- **c)** Continuous cell line

SECTION - II

Q.5 Attempt **ANY TWO** of the following. (10)
- **a)** Draw a neat diagram of Neubaur's chamber. Explain the method for enumeration of cells and estimation of viability using Neubaur's chamber.
- **b)** What are anchorage independent cells? How are they cultured?
- **c)** Describe any one method for determining cytotoxicity to cells.

Q.6 a) What are microcarriers? What is its role in tissue culture? (05)
b) Explain the design of Biostat bioreactor. (05)

Q.7 a) What is HAT medium? What is its use in tissue culture? (05)
b) State the advantages of tissue culture over animal experiments. (05)

Q.8 Write short notes on **ANY TWO** of the following. (10)
- **a)** Live attenuated vaccines
- **b)** Hollow fiber reactor
- **c)** Recombinant proteins

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