

**M. SC. (BIOTECHNOLOGY) SEM-III (2012 COURSE)(CHOICE
BASED CREDIT SYSTEM) : WINTER - 2017**

SUBJECT: ANIMAL TISSUE CULTURE

Day: **Saturday**
Date: **11/11/2017**

W-2017-0973

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

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
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SECTION - I

- Q.1** Answer the following in brief (Attempt **ANY FIVE**) **(10)**
- a) State the applications of horizontal and vertical laminar flow hoods in tissue culture.
 - b) How tissue culture reagents are sterilized?
 - c) Give names of any two tissue culture media and state their use.
 - d) How does DPBS-A formulation differs from DPBS?
 - e) Define i) Contact inhibition and ii) Density dependent inhibition of mitosis.
 - f) Name the antibiotics used in growth medium. State there advantages and disadvantages in tissue culture medium.
- Q.2** a) Compare the characteristics of anchorage dependent and independent cell lines. **(05)**
- b) Why tissue culture medium is supplemented with serum? **(05)**
- Q.3** a) How sterile conditions in tissue culture laboratory are maintained? **(05)**
- b) What is CO₂ incubator? Why cell cultures are incubated in CO₂ incubator? **(05)**
- Q.4** Write short notes on **ANY TWO** of the following. **(10)**
- a) Serum free media
 - b) Explant culture
 - c) Enzymatic dissociation

SECTION - II

- Q.5** Attempt **ANY TWO** of the following. **(10)**
- a) Define primary culture. How it is prepared?
 - b) Explain any two assays used for determination of viability of cells.
 - c) Describe the growth characteristics of normal diploid cell line.
- Q.6** a) Explain the design and applications of fixed bed bioreactor. **(05)**
- b) What is microencapsulation? State its advantages in scale up of cells. **(05)**
- Q.7** a) What are stem cells? Explain their properties **(05)**
- b) Define organ culture. Describe its advantages and limitations. **(05)**
- Q.8** Write short notes on **ANY TWO** of the following. **(10)**
- a) Monoclonal antibodies
 - b) Recombinant vaccines
 - c) Cell banks

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