

2012
B.Sc. (Hons.) Biotechnology
Third Semester
BIOT-305T: Animal Cell Culture

Time allowed: 3 Hours

Max. Marks: 67

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Answer the following:-

- a) What is an explant? (2)
- b) What is the utility of a horizontal laminar air flow hood? (2)
- c) What is serum free medium? (2)
- d) What is passage number? (2)
- e) What is the use of a cryoprotectant? (2)
- f) What is a microtitration assay? (2)
- g) What is a hybridoma? (3)

UNIT - I

- II. a) Discuss how metabolic capabilities of cultured animal cells are different from those in natural surroundings.
- b) Discuss different types of cell adhesion molecules. (7,6)
- III. a) Discuss the mode of working and significance of CO₂ incubator in cell culture lab.
- b) Discuss differentiation in cultured cells. (7,6)

UNIT - II

- IV. a) Discuss the features of anchorage dependent animal cells.
- b) Discuss the process of establishing a primary monolayer culture. (7,6)
- V. a) Discuss role of serum in cell culture medium.
- b) Discuss the significance of balanced salt solution for cultured cells. (7,6)

(2)

UNIT - III

- VI. a) Describe growth characteristics of an infinite cell line.
b) Discuss the survival assay for cytotoxicity evaluation. (7,6)
- VII. Discuss the origin, characteristics and use of three common continuous cell lines. (13)

UNIT - IV

- VIII. a) Discuss the method for monoclonal antibody production.
b) Discuss two methods of cell line authentication. (7,6)
- IX. a) Discuss how cell lines are immortalized.
b) Give an overview of Bioethics. (7,6)

x-x-x