

Exam. Code : 107405

Subject Code : 1853

B.Sc. Biotechnology 5th Semester

BT-3 : ANIMAL TISSUE CULTURE

Time Allowed—3 Hours] [Maximum Marks—40

Note :— All the questions in Section A are compulsory (maximum length **half** page). Attempt any **five** questions from Section B (maximum length **two** pages) and **two** questions from Section C (maximum length **five** pages).

SECTION—A

1. How liquid waste is discarded from ATC lab ?
2. How non-viable cells are removed from the primary cell culture ?
3. What is cross contamination and how can it be removed ?
4. What is the role of refrigerator and -20°C deep freezer in culture lab ?
5. Write a note on adherent type cell culture.
6. How is cell population doubling time counted ?
7. What is filter sterilization ?
8. Mention the role of liquid nitrogen in ATC. $1 \times 8 = 8$

SECTION—B

1. Draw a well labeled diagram of an inverted microscope. Mention the role of each part.
2. Mention any ten aseptic techniques/candidates to be followed in ATC lab.
3. What are the advantages and limitations of primary culture ?
4. Draw a well labeled diagram indicating different parts of CO_2 incubator.
5. What are the major sources of contamination in ATC lab and how these are removed ?
6. Make well labeled diagram indicating different phases of cell cycle.
7. Describe the methodology for continuous cell line culture.
8. Mention any ten historical events in the development of cell culture. $4 \times 5 = 20$

SECTION—C

1. Give a comparative account of the P2 and P3 facility.
2. Describe direct and indirect methods for the quantification of cells in cell culture.
3. (a) How are the following determined :
 - (i) Calculation of *in vitro* age
 - (ii) Multiplication ?(b) Give a comparative account of characteristics of the normal and transformed cells.
4. What are the constituents of serum ? Mention the advantages and disadvantages of serum supplemented media. $6 \times 2 = 12$