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M.Sc.(BT) (2011 & Onwards) (Sem.-3)

Subject Code : MSBT-209

Paper ID : [F0265]

Max. Marks : 60

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

1. Answer briefly :

- State the differences between apoptosis and necrosis.
- What are the ethical issues in animal research?
- What is the source of HeLa and Vero cell lines?
- What is a cell bank?
- Define differentiation and de-differentiation.
- What are anchorage dependent and independent cells?
- Describe the growth kinetics of animal cells.
- Describe the advantages and disadvantages of supplementing serum in culture media.
- Who were the pioneers of animal cell culture?
- How can microbial contamination be detected in animal cell cultures?

SECTION-B

2. Describe the characteristics of cultured animal cells.
3. Describe biohazards in animal cell culture.
4. Write a note on tissue engineering in animal biotechnology.
5. What is the effect of environmental factors on cell cultures? Explain.
6. Write a note on stem cell cultures.

SECTION-C

7. Discuss the preparation of media for culturing animal cells. State the specific role of each of the constituent.
8. Describe the applications of animal cell cultures.
9. Write short notes on :
 - a) Cell signaling
 - b) Cell line preservation