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**M – 1811**

**Reg. No. :** .....

**Name :** .....

**Fifth Semester B.Sc. Degree Examination, December 2021**

**Career Related First Degree Programme under CBCSS**

**Group 2(a) Botany and Biotechnology**

**Vocational Course**

**BB 1573 ANIMAL BIOTECHNOLOGY**

**(2019 Admission)**

Time : 3 Hours

Max. Marks : 80

**SECTION – A**

Answer **all** questions in a **word** or **one** or **two** sentence. Each question carries **1** mark:

1. What is factor IX?
2. What is trypsinization?
3. Define organ culture.
4. What is Hayflick limit?
5. Define cell viability assay.
6. What is a stem cell?
7. What is meant by transformed cell lines?

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8. Which is the most commonly used animal in transgenic experiments?
9. Which is the most commonly used cryo-protectant?
10. Define bioreactors.

**(10 × 1 = 10 Marks)**

### SECTION – B

Answer any **eight** questions. Each question carries **2** marks. (Answer not to exceed one paragraph)

11. What are cryoprotectants?
12. Write the features of a spinner flask.
13. Write a brief note on passaging cells.
14. Differentiate between cell lines and cell strains.
15. Define gene therapy?
16. Define embryonic stem cells.
17. What are roller bottles?
18. What is the role of fetal bovine serum in cell culturing media?
19. What is a knockout animal?
20. What is hybridoma?
21. What you mean by senescence in animal cell culture.
22. Write a note on growth factors used in animal cell cultures
23. What is a hemocytometer?

24. Brief a note on primary cell culture.
25. Write a note on interferons.
26. What is meant by immortalized cell lines?

**(8 × 2 = 16 Marks)**

### SECTION – C

Answer any **six** questions. Each question carries **4** marks. (Answer not to exceed **120** words)

27. Write a note on trypan blue exclusion assay
28. What are the advantages and limitations of animal cell culture?
29. Differentiate between adherent and suspension cultures.
30. Differentiate between roller bottle and spinner cultures.
31. What are the methods for animal cell transformation?
32. Write a note on the instruments and equipments used in animal cell culture.
33. Write a brief note on transport of animal cell cultures.
34. Discuss the importance of ethical committee and their guidelines in animal research.
35. Write a brief note on morphology of cells in culture
36. Write briefly on virus cultivation.
37. Which are the different phases of a cell culture?
38. Describe the importance of antibiotics in cell culture.

**(6 × 4 = 24 Marks)**

## SECTION – D

Answer any **two** questions. Each question carries **15** marks. (Answer not to exceed **three** pages)

39. Describe in detail the methods for preservation and maintenance of animal cell cultures.
40. How the transgenic animals are being created? Write a note on the practical use of transgenic animals.
41. Discuss in detail the composition of animal cell culture media and the various physical parameters to maintain the culture.
42. Write an essay on stem cell technology and its applications in medicine.
43. Write an essay on the large-scale cultivation of animal cells.
44. Elaborate on the various products of animal cell cultures.

**(2 × 15 = 30 Marks)**

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