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Reg. No. :

Name :



Fifth Semester B.Sc. Degree Examination, December 2024

Career Related First Degree Programme under CBCSS

Botany & Biotechnology

Vocational Course

BB 1573 : ANIMAL BIOTECHNOLOGY

(2019 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. Define a cell line.
2. Give one example of a cell line used in research.
3. Define monoclonal antibodies.
4. Name one type of contamination commonly encountered in animal cell cultures.
5. Name a commonly used substrate for anchorage-dependent cells.
6. Name one cryoprotectant used in cell culture.
7. What is the role of Factor VII in the human body?
8. What is the primary function of a laminar airflow hood?

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9. What is the purpose of trypan blue staining?
10. Name one commonly used cell culture media.

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. Each question carries **2** marks (Answer not to exceed 1 paragraph).

11. Define contact inhibition in cell cultures.
12. What is the purpose of glucose in cell culture media?
13. What is karyotyping used for in cell line characterization?
14. What is subculturing in cell culture?
15. What is pluripotency?
16. What is the purpose of buffering agents like HEPES in media?
17. Name one metabolic activity indicator used in viability assays.
18. What does the term "cell confluency" mean?
19. Define "batch culture" in bioreactor processes.
20. Comment on CO₂ incubator.
21. What is a spinner flask?
22. How does fetal bovine serum (FBS) contribute to cell growth?

SECTION – C

(8 × 2 = 16 Marks)

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

23. What is the difference between primary and secondary cell cultures?
24. Write a short note on animal bioreactors.

25. Explain the production and applications of insulin and growth hormones.
26. Discuss the principle and uses of Flow Cytometer.
27. Give a short note on the components of animal cell culture media.
28. Write a note on organ culture.
29. Write a note on DMEM.
30. Discuss the types and applications of basal media.
31. What is meant by immortalized cell culture and write a brief note on the adopted methods for immortalizing cell lines.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks. (Answer not to exceed **3** pages)

32. Discuss the methods and applications of large-scale cultivation of animal cells.
33. Give detailed note on virus cultivation and its applications.
34. What is meant by cell viability? Discuss different assays to estimate it.
35. Write an essay on Transgenic animals and its practical uses.

(2 × 15 = 30 Marks)

