



K22U 1914

Reg. No. : .....

Name : .....



**V Semester B.Sc. Degree (CBCSS – Supplementary)  
Examination, November 2022  
(2016 – 18 Admissions)  
CORE COURSE IN BIOTECHNOLOGY  
5B10BTC : Animal Cell Biotechnology**

Time : 3 Hours

Max. Marks : 40

**SECTION – A**

Write about **each** of the following in **2 or 3** sentences. **Each** question carries **1** mark. **(6×1=6)**

1. What is a xenotransplant ?
2. Why is 5% CO<sub>2</sub> required for culturing animal cells ?
3. Comment on cell synchronization.
4. Briefly explain the role of FGF in animal cell culture.
5. Comment on the role of balanced salt solution in animal cell culture.
6. How are cell lines immortalized ?

**SECTION – B**

Write short notes on **any three** of the following. **Each** question carries **2** marks. **(3×2=6)**

7. Briefly explain enzymatic tissue disaggregation in cell culture.
8. What are transformed cell lines ? And what are the characteristics of transformed cells ?
9. What are monoclonal antibodies ? Briefly describe the applications of monoclonal antibodies.

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10. Write a brief note on biological products produced by recombinant DNA (rDNA) technology in animal cell cultures.
11. Discuss briefly regarding the key ethical issues in animal cloning.

SECTION - C

Write short essay on **any three** of the following. **Each** question carries **4** marks. **(3×4=12)**

12. Comment on the physico-chemical properties of culture media used for animal cell culture.
13. Explain the growth kinetics for cell culture with detailed explanation on each growth phase along with growth curve.
14. Elaborate on expression systems utilizing mammalian cells for recombinant proteins.
15. Transgenic animals, especially mice, have been used quite extensively as models for various human diseases. Explain why mice is most commonly used as the model of choice for studying various human diseases.

SECTION - D

Write essay on **any two** of the following. **Each** question carries **8** marks. **(2×8=16)**

16. Comment on the growth culture conditions and types of growth medias for animal cell culture. Also comment on various growth limiting factors that affects cell proliferation during the different stages of cell culture.
17. Describe the various chemical methods used for the transferring genes into animal cells. Also comment on gene transfer as a potentially powerful tool for the treatment of a wide variety of diseases.
18. Describe the role of bioreactors in animal cell cultures. Also provide details of various types of bioreactors and culture systems suitable for suspension cultures.
19. Explain the applications of cell lines in biomedical research. Also emphasise on the role of cell lines in vaccine production.