Reg. No. : | | | | | | | | | | | | |

Question Paper Code:UC601

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

Professional Elective

21BTV601 – ANIMAL BIOTECHNOLOGY

Biotechnology

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Identify the disadvantages which you could come across in the study of continuous cell culture.	CO2-App	
2.	Mention the ways to preserve animal cells without compromising on their viability	CO2- App	
3.	A researcher wants to separate live from dead cells—name one suitable method.	CO2-App	
4.	A culture of fibroblasts is sub cultured several times. What type of culture does it represent?	CO2-App	
5.	What are the physical and chemical parameters which can affect the scale-up of animal cell culture?	CO1-U	
6.	What is mean by microcarrier technology?	CO1-U	
7.	What is the role of stem cells in production of transgenic animals?	CO1-U	
8.	Define the term artificial insemination.	CO1-U	
9.	How tissue culture is used in animal cell culture?	CO1-U	
10.	What is mean by scaffolds?	CO1-U	

PART – B (5 x 16= 80 Marks)

11.	(a)	An experiment requires long-term preservation of mammalian cells. Describe suitable methods and principles that you adopt to preserve the cells for longer period.	CO2-App	(16)

Or

	(b)	During mammalian cell culture, cells fail to attach to the surface. Explain what is meant by anchorage dependence and substrate requirements to explain this.	CO2-App	(16)
12.	(a)	A biotechnology company needs large-scale monoclonal antibody production. Apply your understanding to explain why suspension cultures and continuous cell lines are used.	CO4-Ana	(16)
		Or		
	(b)	Cell separation can be achieved by density gradient centrifugation, magnetic sorting, and flow cytometry. Analyze these methods and evaluate why flow cytometry is considered the most powerful tool.	CO4-Ana	(16)
13.	(a)	What do you mean by scale up? Discuss various criteria and factors affecting scale up in detail.	CO1-U	(16)
		Or		
	(b)	Why do we need to scale up the culture system? Discuss in detail the scale up methods for suspension cells.	CO1-U	(16)
14.	(a)	Explain the strategies for the production of transgenic animals and their importance in biotechnology.	CO1-U	(16)
		Or		
	(b)	How stem cell cultures are used in the production of transgenic animals?	CO1-U	(16)
15.	(a)	If you are a manufacturer of attenuated vaccines, Outline the process involved in it.	CO2-App	(16)
		Or		
	(b)	In your college, the final year students of biotechnology department are planned to going an internship to the manufacturing unit of vitaminB12 production. As a final year student you have to submit the report of your learnings in internship.	CO2-App	(16)