U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

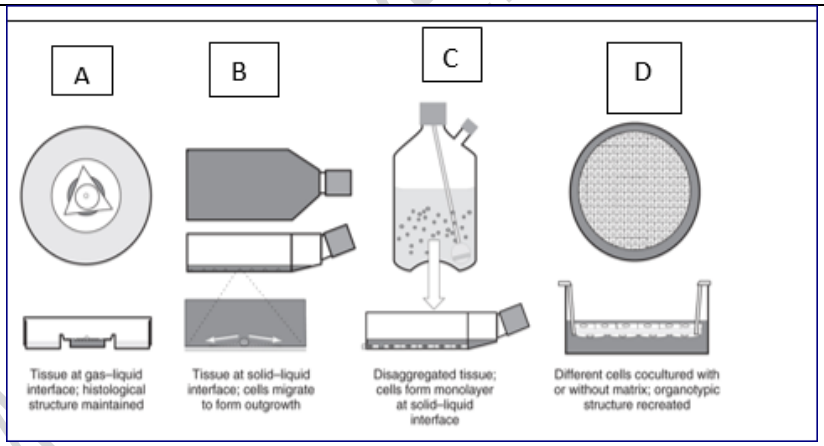
Autonomous Institute Affiliated to VTU

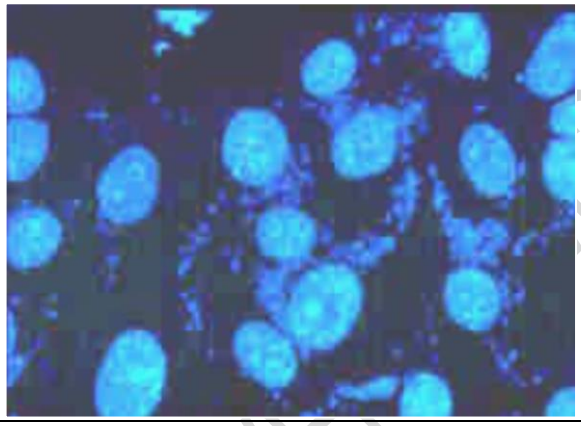
July 2023 Semester End Main Examinations

Program: B.E. **Semester: VI**
Branch: Biotechnology **Duration: 3 hrs.**
Course Code: 19BT6DE3ABT **Max Marks: 100**
Course: Animal Biotechnology **Date: 17.07.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as

		UNIT – I	CO	PO	Marks
1	a)	Design a layout for a small scale tissue culture laboratory for developing cell culture products for use by two or three persons highlighting the equipment needed.	*CO1*	*PO1* *PO3*	**08**
	b)	List any three advantages and disadvantages of cell culture.	*CO2*	*PO1* *PO3*	**06**
	c)	 Identify the types of tissue cultures A-D given above and list their salient features.	*CO1*	*PO1* *PO3*	**06**
		UNIT – II			
2	a)	Suggest the best method that can be adapted to eliminate serum variations during cell culture. Justify your answer citing any five advantages of this method.	*CO2*	*PO1* *PO3*	**10**
	b)	List any four disadvantages of adding antibiotics to animal cell culture media.	*CO2*	*PO1*	**04**
	c)	A researcher would like to develop a basal media for culturing of cells. List the essential components that need to be incorporated and their function /role.	*CO2*	*PO3*	**06**

			UNIT – III			
	3	a)	A researcher while carrying out routine maintainace of cells lines observed that some cell lines did not grow after passaging. i.e showed limited replication capability. i) What is this phenomena called (1M) ii) What type of cells exhibit this phenomena(1M) iii) Give a graphical representation depicting this phenomenon. (4M)	*CO3*	*PO1*	**06**
		b)	Give a flow chart for the development of primary cell cultures from embryonic tissue.	*CO3*	*PO1*	**08**
		c)	In the figure given below, identify the type of contamination and the method used for its detection. List the different tests that can be used to detect this type of contamination. 	*CO3*	*PO1*	**06**
			UNIT – IV			
	4	a)	"Characterization of a cell line is vital, not only in determining its functionality but also in proving its authenticity". Justify this statement citing any five reasons.	*CO3*	*PO1*	**05**
		b)	Telomerase induced immortalization is a promising technique for developing immortal, non-malignant cell lines. Justify this statement citing the principle of this technique.	*CO3*	*PO1*	**05**
		c)	What is a clonogenic assay? With the help of neatly labeled diagram explain the protocol of a clonogenic assay.	*CO3*	*PO1*	**10**
			OR			
	5	a)	Differentiate between survival assays and viability assays.	*CO3*	*PO1*	**06**
		b)	Differentaite between Labelling Index and plating efficiency?What do they determine ?	*CO3*	*PO1*	**04**
		c)	List and explain any five factors responsible for aberrant growth control in tumorigenic cells.	*CO3*	*PO1*	**10**
			UNIT – V			
	6	a)	Direct markers are more useful than linked markers for predicting phenotypic variation of target traits." Justify this statement.	*CO4*	*PO5* *PO6* *PO12*	**10**

		b)	What are Nunc Cell Factories? For what type of systems are they used?	*CO4*	*PO5 PO6 PO12*	**05**
		c)	What is molecular pharming? How is it carried out?	*CO5*	*PO1 PO12*	**05**
			OR			
	7	a)	List any four advantages of using transgenic goats for production of proteins of pharmaceutical importance.	*CO4*	*PO5 PO6 PO12*	**04**
		b)	Illustrate the working of a fluidized bed reactor for monolayer cultures.	*CO5*	*PO1 PO12*	**06**
		c)	List the parameters used in cellular toxicity testing of drugs.	*CO4*	*PO5 PO6 PO12*	**05**
		d)	List any five advantages of a perfusion culture.	*CO5*	*PO1 PO12*	**05**

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