

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

Autonomous Institute Affiliated to VTU

## January / February 2025 Semester End Main Examinations

**Programme: B.E.**

**Semester: VII**

**Branch: Biotechnology**

**Duration: 3 hrs.**

**Course Code: 22BT7HSBFS**

**Max Marks: 100**

**Course: Biotechnology for Society**

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

			<b>UNIT – I</b>		
			<b>CO</b>	<b>PO</b>	<b>Marks</b>
<b>Important Note:</b> Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.	1	a)	Biotechnology has wide range of application if explored and applied in Unicellular organism. With suitable examples discuss the statement.	CO 1	PO 1
		b)	Genetic modification, is a controversial topic with both advantages and disadvantages. Debate with case studies.	CO 2	PO 1,6
<b>OR</b>					
	2	a)	Genetic engineering is the intentional manipulation of DNA to change or enhance its form or function using specific molecular tools and techniques. Discuss.	CO 2	PO 1,6
		b)	Biotechnology has been used for thousands of years, but its history has been marked by several major discoveries and breakthroughs. Validate the statement with at least 4 such inventions.	CO 1	PO 1
			<b>UNIT – II</b>		
	3	a)	How is biotechnology, a science-based industry that combines biology and technology to create products and services, useful in creating business opportunities?	CO 1	PO 1
		b)	Cryopreservation is used to freeze and store mammalian embryos, which can preserve the complete genomes of different species. Discuss the statement.	CO 2	PO 1,6
<b>OR</b>					
	4	a)	Discuss the criteria an invention should possess in order to have patent granted.	CO 2	PO 1,6
		b)	How does nutrition economics aid in identifying the healthy food patterns?	CO 2	PO 1,6

<b>UNIT - III</b>						
5	a)	With suitable example enumerate how has a set of beliefs and practices that aim to improve the genetic quality of a species significantly impacted human beings?	<i>CO 2</i>	<i>PO 1,6</i>	<b>10</b>	
	b)	The Human Genome Project has revolutionized the discoveries such as personalized medicine and accurate gene editing. Comment on the statement.	<i>CO 3</i>	<i>PO 2,7</i>	<b>10</b>	
<b>OR</b>						
6	a)	Genetic testing, helps in analyzing a person's DNA to identify changes in genes, chromosomes, or proteins. How can this technique help in improving quality of human life?	<i>CO 3</i>	<i>PO 2,7</i>	<b>10</b>	
	b)	Discuss the principles and applications of bioethics in health and medicine.	<i>CO 2</i>	<i>PO 1,6</i>	<b>10</b>	
<b>UNIT - IV</b>						
7	a)	Are Designer babies primarily a science fiction concept or reality? Deliberate.	<i>CO 3</i>	<i>PO 2,7</i>	<b>10</b>	
	b)	Draw a suitable diagram depicting various steps of cloning. With at least two examples, show how cloning comes with its own limitations.	<i>CO 3</i>	<i>PO 2,7</i>	<b>10</b>	
<b>OR</b>						
8	a)	IVF is one of the most successful and commonly used fertility treatments. Discuss the technique, advantages and complications or risk involved in the technique.	<i>CO 3</i>	<i>PO 2,7</i>	<b>10</b>	
	b)	Group of unspecialized cells can develop into different types of cells and tissues in the body. What are they called? Mention their types. How are they applied in tissue engineering?	<i>CO 3</i>	<i>PO 2,7</i>	<b>10</b>	
<b>UNIT - V</b>						
9	a)	Synthetic biology is a scientific field that uses engineering to create new biological systems, devices, and parts, or to change existing ones. Deliberate on the statement with at least two examples.	<i>CO 4</i>	<i>PO 3</i>	<b>10</b>	
	b)	What is bioterrorism? Examine the different types of biological agents used in bioterrorism, their impact on society, and preventive measures.	<i>CO 4</i>	<i>PO 3</i>	<b>10</b>	
<b>OR</b>						
10	a)	Discuss bio prospecting with examples. What are the benefit and challenges of bio prospecting?	<i>CO 4</i>	<i>PO 3</i>	<b>10</b>	
	b)	What is Bio colonialism? How does it impact the society by benefitting only the western biomedical industries and corporation?	<i>CO 4</i>	<i>PO 3</i>	<b>10</b>	

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