

U.S.N.

**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>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.			<b>UNIT – I</b>	<b>CO</b>	<b>PO</b>	<b>Marks</b>
	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	10
		b)	Genetic modification, is a controversial topic with both advantages and disadvantages. Debate with case studies.	CO 2	PO 1,6	10
			<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	10
		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	10
			<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	10
		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	10
			<b>OR</b>			
	4	a)	Discuss the criteria an invention should possess in order to have patent granted.	CO 2	PO 1,6	10
		b)	How does nutrition economics aid in identifying the healthy food patterns?	CO 2	PO 1,6	10

		<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?	CO 2	PO 1,6	<b>10</b>
	b)	The Human Genome Project has revolutionized the discoveries such as personalized medicine and accurate gene editing. Comment on the statement.	CO 3	PO 2,7	<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?	CO 3	PO 2,7	<b>10</b>
	b)	Discuss the principles and applications of bioethics in health and medicine.	CO 2	PO 1,6	<b>10</b>
		<b>UNIT - IV</b>			
7	a)	Are Designer babies primarily a science fiction concept or reality? Deliberate.	CO 3	PO 2,7	<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.	CO 3	PO 2,7	<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.	CO 3	PO 2,7	<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?	CO 3	PO 2,7	<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.	CO 4	PO 3	<b>10</b>
	b)	What is bioterrorism? Examine the different types of biological agents used in bioterrorism, their impact on society, and preventive measures.	CO 4	PO 3	<b>10</b>
		<b>OR</b>			
10	a)	Discuss bio prospecting with examples. What are the benefit and challenges of bio prospecting?	CO 4	PO 3	<b>10</b>
	b)	What is Bio colonialism? How does it impact the society by benefitting only the western biomedical industries and corporation?	CO 4	PO 3	<b>10</b>

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