CBCS SCHEME

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BBT401

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024
Molecular Biology and Genetic Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	With a neat labeled diagram, highlight the significance of various proteins and enzymes occurring in prokaryotic replication fork.	10	L1	CO1
	b.	Explain in detail the mechanism of Transcription in Eukaryotes.	10	L1	CO1
		OR			
Q.2	a.	Describe the method of Post Translational Process.	10	L1	CO1
	b.	Mention the types of DNA damage observed in Eukaryotes.	10	L2	CO1
		Module – 2			
Q.3	a.	Define the Operon concept. Describe the process of regulation by Lactose Operon.	10	L2	CO2
	b.	Describe the regulation of gene expression in Eukaryotes.	10	L1	CO1
		OR			
Q.4	a.	What is Trp Operon Attenuation? Discuss how it is controlled based on tryptophan levels in cells.	10	L2	CO1
	b.	Describe the mechanism of antisense mediated gene silencing.	10	L2	CO1
		Module – 3			
Q.5	a.	Elucidate about plasmids with diagram indicating their selective markers.	10	L2	CO3
	b.	How does Restriction enzyme based cloning takes place in a cell?	10	L3	CO3
		OR			
Q.6	a.	Mention the events occurring during terminal transferase and explain about methylases.	10	L1	CO4
	b.	Summarize on any two type of Artificial Chromosomes.	10	L2	CO4
		Module – 4			
Q.7	a.	What is meant by Agrobacterium mediated gene transfer? Mention any of their applications.	10	L2	CO3
	b.	Write short note on particle acceleration method, with a neat diagram.	10	L2	CO4
		OR			

Q.8	**a.**	How do you isolate genomic DNA using microbial source?	**10**	**L2**	**CO2**
	b.	How is Non – radioactive method is used to detect nucleic acids?	**10**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	Write a detailed note on engineering microbes for production of monoclonal antibodies.	**10**	**L2**	**CO4**
	b.	What is Gene Knock – out? Mention its uses.	**10**	**L1**	**CO4**
		OR			
Q.10	**a.**	How is CRIPSPR used as simplest and precise way to manipulate DNA?	**10**	**L3**	**CO4**
	b.	Mention the applications of genome editing with specifying their techniques used.	**10**	**L3**	**CO4**

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