



CBCS SCHEME

BBT401

Fourth Semester B.E./B.Tech. Degree Supplementary 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.	Eukaryotic replication is error proof efficient. Explain.	10	L2	CO1
	b.	Write a note on the types of repair mechanisms of genetic material.	10	L1	CO1
OR					
Q.2	a.	Differentiate between the transcription initiation process in prokaryotes and eukaryotes.	10	L4	CO1
	b.	Write a short note on: i) Wobble hypothesis ii) Protein targeting	10	L1	CO1
Module – 2					
Q.3	a.	Explain the following : i) Positive and negative regulation of lac operon. ii) Attenuation of trp operon.	10	L2	CO1
	b.	Describe the RNA processing mechanism and add a note on its significance.	10	L1	CO1
OR					
Q.4	a.	Write a note on the gene expression control by : i) Steroid hormone ii) Gibberlic acid	10	L1	CO1
	b.	RNA interference and ribozymes. Differentiate and add a note on their applications.	10	L3	CO1
Module – 3					
Q.5	a.	What is genetic engineering? Explain its applications.	10	L1	CO1
	b.	Differentiate between each type of vector in relation to its application.	10	L3	CO2
OR					
Q.6	a.	Write short note on : i) Restriction modification system ii) Polymerases	10	L1	CO1
	b.	Explain the significance of cloning with a correlation to : i) Diagnostics ii) Research	10	L2	CO3
Module – 4					
Q.7	a.	Explain the different types of gene transfer techniques.	10	L2	CO2
	b.	Describe the methods of nucleic acid detection.	10	L1	CO1
OR					
Q.8	a.	Explain the construction of cDNA library.	10	L2	CO3
	b.	What is PCR? Write a note on its principles and mechanism.	10	L1	CO2
Module – 5					
Q.9	a.	Write a note on engineering of microbes for the production of : i) Antibiotics ii) Antibodies	10	L1	CO3
	b.	Explain about knock out/knock down studies and its applications.	10	L1	CO3
OR					
Q.10	a.	Describe the types of genome editing technologies.	10	L1	CO2