

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MSc
BRANCH: BIOTECH

SEMESTER : II
SESSION : SP/2024

SUBJECT: BT415 MOLECULAR BIOLOGY & RECOMBINANT DNA TECH

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
-

		CO	BL
Q.1(a)	Represent the structure of DNA polymerase and functions of different parts.	[5] 1	II
Q.1(b)	Define the process of RNA splicing in eukaryotic organisms.	[5] 1	I
Q.2(a)	Demonstrate the regulation of lactose and glucose metabolism in <i>E. coli</i> .	[5] 2	II
Q.2(b)	Demonstrate the molecular regulation of lytic induction in bacteriophage λ ?	[5] 3	II
Q.3(a)	Outline the criteria considered for designing PCR primers	[5] 3	II
Q.3(b)	Elaborate on the hot start PCR process and its advantages.	[5] 5	VI
Q.4(a)	Define a PHAGEMID Vector with diagram.	[5] 1	I
Q.4(b)	Explain the biogenesis of microRNAs and their modes of action in plants and animals with diagrams.	[5] 3	II
Q.5(a)	Illustrate the process of Recombinant protein production and purification.	[5] 4	II
Q.5(b)	Outline the working principle of Terminator Technology	[5] 5	II

::::::26/04/2025::::::E