

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

CLASS: MSc/PRE-PHD
BRANCH: BIOTECH

SEMESTER : II/I
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.
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Q.1(a)	Enlist the different enzymes that constitute the replisome and their functions.	[5]	1 II
Q.1(b)	Define process of RNA editing 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 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 the process followed in touchdown and hot start PCR.	[5]	5 VI
Q.4(a)	Define central dogma of molecular biology	[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 IMAC process.	[5]	4 II
Q.5(b)	Outline the working principle of Terminator Technology	[5]	5 II

:::24/04/2024:::E