

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: BTECH
BRANCH: BIOTECHNOLOGY

SEMESTER :
SESSION : MO/2023

SUBJECT: BE415 SYSTEMS BIOLOGY

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
-

		CO	BL
Q.1(a) Define the two types of operon.	[2]	2	1
Q.1(b) Discuss the Lac Operon in detail.	[3]	2	2
Q.2(a) State the Systems Theory. How is it applicable to Biology?	[2]	2	1
Q.2(b) Explain the concept of Gene Control.	[3]	2	2
Q.3(a) Define Michaelis constant and write its significance.	[2]	2	1
Q.3(b) Derive the Michaelis Menten equation.	[3]	2	3
Q.4(a) Illustrate the features of oscillatory dynamics using a labeled graph.	[2]	3	3
Q.4(b) Discuss Circadian genetic oscillator in brief.	[3]	3	2
Q.5(a) List the different sources of noise in biochemical systems.	[2]	2	1
Q.5(b) With two distinct examples describe the usefulness of noise.	[3]	2	2

:::27/09/2023 M:::