

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

**CLASS: BTECH
BRANCH: BIOTECH**

**SEMESTER: VII
SESSION: MO/2022**

SUBJECT: BE412 PROCESS BIOTECHNOLOGY

TIME: 03 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. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates.

S. No.	Questions	Marks	CO	PO	BL
Q1	(a) Define the role of C and N on the growth of living system?	[2]	1	a,c	1
Q1	(b) Analyze the mechanism of microbial product formation?	[3]	3	a,c,f	2
Q1	(c) Relate the different types of yield prediction?	[3]	5	f,h	5
Q2	(a) Define the properties of biological catalyst?	[2]	2	b,d,e	3
Q2	(b) Mention the significance Michaelis-Menten Equation?	[3]	4	f,l,j	5
Q2	(c) Demonstrate the significance of immobilization?	[5]	5	f,h	6
Q3	(a) Examine the regulation of carbohydrate metabolism?	[2]	1	a, c	5
Q3	(b) Explain the process of deamination	[3]	3	a,c,f	3
Q3	(c) Elucidate the mechanism of urea detoxification?	[5]	5	f,h	4
Q4	(a) Differentiate between primary and secondary metabolites?	[2]	2	b,d,e	1
Q4	(b) State the limiting conditions in Penicillin-G fermentation process?	[3]	4	f,h	2
Q4	(c) Design a process for citric acid fermentation mentioning all the factors involved in the system?	[5]	5	d,g,j,l	4
Q5	(a) Provide the insight in bioreactor design?	[2]	3	a,c,f	1
Q5	(b) Analyse the different stages of fermentation process?	[3]	4	f,l,j	5
Q5	(c) Differentiate between batch and fed-batch cultivation systems?	[5]	5	d,g,j,l	6

:::21/11/2022 M:::