

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

CLASS: MSc
BRANCH: BIOTECH

SEMESTER : III
SESSION : MO/2024

SUBJECT: BT502 ENVIRONMENTAL BIOTECHNOLOGY

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)	Describe any <u>one</u> National and <u>one</u> International Environmental Protection Act. Assess the environmental planning strategies for sustainable development	[5]	CO CO1; CO5	BL 2,4,5
Q.1(b)	Categorize and evaluate the biodiversity conservation strategies giving suitable examples	[5]		
Q.2(a)	Classify the stages of anaerobic digestion. Select and describe any <u>one</u> method used for biological treatment of wastewater	[5]	CO2; CO5	2, 3,4
Q.2(b)	Categorize the 'Sampling' methods used for environmental samples. Distinguish between bioindicators and biomarkers used to monitor pollution citing one suitable example in each case	[5]		
Q.3(a)	Identify the physical characteristics of solid waste. Illustrate the steps followed in solid waste management.	[5]	CO2; CO5	1,3, 5
Q.3(b)	Assess the methods adopted for transportation of Biomedical wastes and any <u>one</u> method of plastic recycling useful for humans	[5]		
Q.4(a)	Classify the bioremediation techniques giving <u>one</u> suitable example in each case. Illustrate the working of a 'Biosensor'.	[5]	CO3; CO5	3,4,5
Q.4(b)	Evaluate the role of 'Nanoscience' and 'GMOs' in waste management with <u>one</u> example in each case	[5]		
Q.5(a)	Compare and describe the different generations of biofuels with suitable examples in each case. Assess the importance of 'Microbial fuel cell'	[5]	CO4; CO5	2,4, 5
Q.5(b)	Classify 'biopesticides' and evaluate the importance of 'biofertilizers' in organic farming	[5]		

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