

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

**CLASS: MSc/Pre-PhD
BRANCH: BIOTECH**

**SEMESTER : III/I
SESSION : MO/2023**

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)	Select and assess the importance of any <u>two</u> Environmental Protection Acts implemented in India. Interpret the strategies of environmental planning for sustainable development	[5]	CO CO1; CO5	BL 1,4,5
Q.1(b)	Classify and evaluate the biodiversity conservation techniques	[5]		
Q.2(a)	Choose and explain the significance of <u>one</u> aerobic and <u>one</u> anaerobic method used in biological treatment of wastewater	[5]	CO2; CO5	3,5
Q.2(b)	Categorize the physical methods of analysis of environmental samples. Assess the significance of Bioindicators and Biomarkers in monitoring pollution giving one example in each case	[5]		
Q.3(a)	Justify the methods adopted for: Segregation of municipal solid wastes and transportation of Biomedical wastes	[5]	CO2; CO5	2,4, 5
Q.3(b)	Illustrate the objectives of 'R hierarchy' in waste management. Analyze any <u>two</u> methods of plastic recycling which are in use for human benefit	[5]		
Q.4(a)	Compare in-situ and ex-situ bioremediation giving suitable examples. Categorize Phytoremediation with suitable examples	[5]	CO3; CO5	3,4,5
Q.4(b)	Evaluate the role of 'Biosensors' in pollution monitoring and 'GMOs' in waste management with one example in each case	[5]		
Q.5(a)	Classify the different generations of biofuels giving suitable examples in each case. Illustrate the production of biodiesel	[5]	CO4; CO5	2,4, 5
Q.5(b)	Categorize 'biopesticides' and evaluate the importance of 'vermiculture' in organic farming	[5]		

::: 21/11/2023 :::