

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

CLASS: MSc
BRANCH: BIOTECH

SEMESTER : III
SESSION : MO/2025

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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		CO	BL
Q.1(a)	Choose any <u>two</u> International Environmental Protection Laws and assess their significance. Evaluate the strategies of environmental planning for sustainable development	[5] CO1; CO5	1,4,5
Q.1(b)	Compare and explain the biodiversity conservation techniques giving two suitable examples in each case.	[5]	
Q.2(a)	Interpret the impact of 'Thermal pollution'. Justify the role of Bioindicators and Biomarkers in monitoring environmental pollutants, giving <u>one</u> example in each case	[5] CO2; CO5	3,5
Q.2(b)	Select and explain <u>one</u> aerobic and <u>one</u> anaerobic method used in biological treatment of wastewater	[5]	
Q.3(a)	Select and describe the physical characteristics of municipal solid waste important for the design of disposal facilities. Elaborate on the safety measures taken for transportation of Biomedical wastes	[5] CO2; CO5	2,3,4,5
Q.3(b)	Illustrate the objectives of 'R hierarchy' in E-waste management. Evaluate any <u>two</u> methods of plastic recycling which are in use for human benefit	[5]	
Q.4(a)	Distinguish between in-situ and ex-situ bioremediation giving <u>one</u> suitable example in each case. Assess the importance of 'Biosorption' in pollutant removal	[5] CO3; CO5	4,5
Q.4(b)	Illustrate the working of a 'Biosensor' in pollution monitoring and 'Superbug' in bioremediation with <u>one</u> example in each case	[5]	
Q.5(a)	Distinguish between the second and third generations of biofuels giving one suitable example in each case. Illustrate the working of 'Microbial fuel cell'	[5] CO4; CO5	4, 5
Q.5(b)	Evaluate the importance of 'vermiculture' in organic farming. Compare the types of Biopesticides.	[5]	

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