

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION MO 2022)**

**CLASS: M.Sc.
BRANCH: BIOTECHNOLOGY**

**SEMESTER : III
SESSION : MO/2022**

TIME: 03 Hours

SUBJECT: BT502 ENVIRONMENTAL BIOTECHNOLOGY

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

		CO	PO	Bloom's Taxonomy	
Q.1(a)	Explain any two National and two International Environmental Protection Acts	[2]	CO1; CO5	PO2; PO3;	2,4,5
Q.1(b)	Determine the strategies of environmental planning for sustainable development	[3]		PO4	
Q.1(c)	Categorize and describe the biodiversity conservation strategies with suitable examples	[5]			
Q.2(a)	Summarize the features considered for 'sampling' of contaminated sites	[2]	CO2; CO5	PO1; PO2;	2,4,5
Q.2(b)	Classify and describe the steps of sewage treatment	[3]		PO3;	
Q.2(c)	Evaluate the significance of 'bioindicators' and 'biomarkers' in monitoring pollution with suitable examples	[5]		PO4	
Q.3(a)	Select the components of 'waste hierarchy' and describe its importance with a suitable example	[2]	CO2; CO5	PO1- PO5	4,5
Q.3(b)	Analyze the importance of any two methods of plastic recycling	[3]			
Q.3(c)	Classify and explain the steps adopted for Biomedical waste management	[5]			
Q.4(a)	Determine the role of GMOs in waste management giving two suitable examples	[2]	CO3; CO5	PO1- PO5	3,4,5
Q.4(b)	Evaluate the role of 'Biosensors' in pollution monitoring with examples	[3]			
Q.4(c)	Categorize and explain the bioremediation techniques with suitable examples	[5]			
Q.5(a)	Evaluate the significance of biopesticides with suitable examples	[2]	CO4; CO5	PO1- PO5	4,5
Q.5(b)	Illustrate the working of 'Microbial fuel cell' and assess its importance	[3]			
Q.5(c)	Compare and describe the different generations of biofuels with suitable examples in each case	[5]			

:::21/11/2022:::E