

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

CLASS: MSC  
BRANCH: BT

SEMESTER : III  
SESSION : MO/19

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) i. Identify at least **four** Environmental Protection Acts implemented in India and assess their significance. [2+3]  
ii. Select the strategies of environmental planning for sustainable development.
- Q.1(b) Distinguish between *in-situ* and *ex-situ* biodiversity conservation strategies and explain giving suitable examples. [5]
- Q.2(a) i. Outline the features considered for 'sampling' to analyze any kind of environmental pollutant. [2+3]  
ii. Distinguish between biomarkers and bioindicators citing **one** suitable example in each case.
- Q.2(b) Identify and describe **one** aerobic and **one** anaerobic method for secondary treatment of wastewater. [5]
- Q.3(a) i. What is the aim of 'waste hierarchy'? Identify its components. [2+3]  
ii. Categorize and explain the steps adopted for solid waste management.
- Q.3(b) i. Select any **two** methods by which plastic recycling can be used effectively for human benefit. [3+2]  
ii. Identify the methods of transportation and disposal of Biomedical wastes.
- Q.4(a) Categorize and explain the techniques adopted for microbial bioremediation of contaminants. [5]  
Q.4(b) i. Evaluate the importance of 'Superbug' [2+3]  
ii. Identify the components of a biosensor. Assess its significance in pollution monitoring giving an example
- Q.5(a) Identify the types of biofuels. Evaluate the production of algal biodiesel. [5]  
Q.5(b) i. Categorize the types of 'biopesticides' and evaluate their significance giving suitable examples [3+2]  
ii. Assess the importance of Microbial fuel cell.

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