

**III B.Tech I Semester Regular Examinations, November 2005**  
**ENVIRONMENTAL BIOTECHNOLOGY**  
**(Bio-Technology)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. What is sewage? Explain in detail the various processes that are employed in the treatment of municipal sewage. [3+13]
2. Discuss about anaerobic wastewater treatment. [16]
3. Write short notes on: [8+8]
  - (a) Clean up of oil polluted sites by microorganisms.
  - (b) Eutrophication.
4. Explain the different methods of sludge disposal and the role of sludge as fertilizer. [16]
5. What are the advantages and disadvantages of using microbes in metal recovery? [16]
6. What are the non conventional renewable energy sources? Why it is necessary to find new energy sources? Explain. [4+5+7]
7. Write a detailed account on biodegradation of Xenobiotics? [16]
8. Enumerate on degradative plasmids? Write their importance in pollution control? [8+8]

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1. Discuss the characteristics of wastewater? Explain the various biological processes used in the treatment of wastewater. [8+8]
2. Distinguish between aerobic and anaerobic wastewater treatment. [8+8]
3. Write a note on bioremediation of polluted sites. [16]
4. What are the biofertilizers that can be developed from bioresources. Discuss. [16]
5. What are the advantages and disadvantages of using microbes in metal recovery? [16]
6. Write short notes on any two: [8+8]
  - (a) Natural gas.
  - (b) Solar energy.
  - (c) Biogas .
7. Industrial effluents are the cause of health hazards. What are the biological ways of controlling them? [16]
8. Explain the various methods of producing genetically modified microbes for degradation of toxins? [16]

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1. Name and explain, with examples, the classification of treatment processes in waste-water treatment. [16]
2. Distinguish between aerobic and anaerobic wastewater treatment. [8+8]
3. Explain the various methods of in situ and ex situ bioremediation, giving suitable examples. [16]
4. Write short notes on: [8+8]
  - (a) Soil piles.
  - (b) Prepared beds.
5. Write notes [8+8]
  - (a) Direct leaching
  - (b) Indirect leaching
  - (c) Microbes in mining.
6. Write short notes on any two: [8+8]
  - (a) Natural gas.
  - (b) Solar energy.
  - (c) Biogas .
7. Write a detailed account on biodegradation of Xenobiotics? [16]
8. Detoxification of xenobiotics is achieved by using biological methods what are the methods. [16]

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1. What is sewage? Explain in detail the various processes that are employed in the treatment of municipal sewage. [3+13]
2. Write short notes on (any two): [8+8]
  - (a) Primary treatment of wastewater.
  - (b) Secondary treatment of wastewater.
  - (c) Tertiary treatment of wastewater.
3. Write short notes on: [8+8]
  - (a) Ex-situ bioremediation.
  - (b) Bioaugmentation.
4. What are the biofertilizers that can be developed from bioresources. Discuss. [16]
5. How microbes are useful in extraction of iron, copper and uranium. Explain in detail. [6+10]
6. What are Biofuels? How these are produced? Explain with examples. [3+8+5]
7. What is biological detoxification? Explain its significance with examples? [4+12]
8. Enumerate on degradative plasmids? Write their importance in pollution control? [8+8]

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