

Code No: 07A52303

R07

Set No. 2

III B.Tech I Semester Examinations, May 2011
BASIC INDUSTRIAL AND ENVIRONMENTAL BIOTECH
Bio-Technology

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. What are secondary metabolites. Explain in detail of any secondary metabolite you studied. [2+14]
2. What is bioremediation? Differentiate between intrinsic and engineered bioremediation. [16]
3. What are the biological agents used in hazardous waste management? Explain. [16]
4. Comment on the following:
 - (a) Semi-solid culture process of enzymes.
 - (b) Submerged culture process of enzymes. [16]
5. Write a detailed account of antiviral agents used to treat viral infections in human beings. [16]
6. Discuss the production of Lactic acid highlighting the following steps in an elaborated manner
 - (a) Organisms used.
 - (b) Theoretical aspects.
 - (c) Fermentation medium
 - (d) Extraction and recovery. [4+4+4+4]
7. Write short note on:
 - (a) Biopolymers
 - (b) Natural biopreservatives. [8+8]
8. Explain anaerobic digestion and discuss the digestion process. [16]

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Set No. 4

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Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short note on any two:
 - (a) Algal fuel
 - (b) Oil industry in india
 - (c) Gasohol programme. [8+8]
2. What are the biofertilizers that can be developed from bioresources? Discuss. [16]
3. With the help of suitable example give an account on the production of Aminoglycosides. [16]
4. Discuss the production of isomerases highlighting the following aspects:
 - (a) Steps in the production of isomerases.
 - (b) Fermentation medium.
 - (c) Extraction and recovery.
 - (d) Industrial applications. [6+3+5+2]
5. Write short note on the following:
 - (a) Biological filters
 - (b) Oxidation ditch
 - (c) Aeration
 - (d) Sludge disposal. [4+4+4+4]
6. Explain in detail the 2,3 Butanediol production and various by products produced from glucose. [16]
7. Describe in detail the production of Recombinant Vector vaccines. [16]
8. Compare how different toxic compounds can be degraded using different strains of microbes. [16]

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Set No. 1

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Time: 3 hours

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Answer any FIVE Questions
All Questions carry equal marks

1. Give an account of microbial production of Aromatics. [16]
2. Write down the importance of vaccines and viral vaccines production. [16]
3. Explain in detail the solid state fermentation process of cellulose by fungal strains. [16]
4. Explain about the production of citric acid using the following microorganisms.
 - (a) Aspergillus niger.
 - (b) Yeast. [8+8]
5. Explain how bacteria, fungai and algae are useful in Biosorption process. [16]
6. What are the functions of the following units in sewage treatment:
 - (a) Septic tank
 - (b) Imhoff tank. [8+8]
7. Discuss the stimulation factors for indigenous microbial growth in bioremediation. [16]
8. Write detailed account on hazards caused by following Chemicals and their detoxification methods:
 - (a) Phenols
 - (b) Urea
 - (c) Oxalates. [6+6+4]

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Set No. 3

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Bio-Technology

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Discuss the production of citric acid and its applications in food & beverage industries. [16]
2. Write in detail about microbial enhancement of oil recovery. How microbes are useful in the extraction of metals from various sources? Explain. [16]
3. What is sedimentation and what is its significance in sewage treatment. [16]
4. Write short note on:
 - (a) Cyanide detoxification
 - (b) Phenols-biodegradation. [16]
5. Explain the down stream processing of Penicillin with the help of flow sheet. [12+4]
6. Explain in brief the bioremediation strategies for soil. [16]
7. Comment on the following:
 - (a) Polysaccharide Vaccines.
 - (b) DNA Vaccines. [8+8]
8. Give an account of industrial production of enzymes used in treatment of waste waters. [16]
