

Code No: 07A70105

R07

Set No. 2

IV B.Tech I Semester Examinations, May 2011
INDUSTRIAL WASTE AND WASTE WATER MANAGEMENT
Civil Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the Sugar Manufacturing process in detail.
(b) Describe the effects of effluent from sugar mill on receiving water. Also discuss Anaerobic treatment of the effluent. [8+8]
2. (a) Describe characteristics and disposal of distillery effluents.
(b) Explain the waste treatment of a Distillery unit. [8+8]
3. Explain the necessity of equalization and proportioning for industrial waste water treatment. [16]
4. (a) Describe wool wastes originate from different operations of a woolen textile mill.
(b) Explain the effects of Cotton Textile Woolen Textile and Synthetic Textile mills waste on receiving streams and sewers. [8+8]
5. Explain the general process of recirculation of industrial waste. [16]
6. Explain the suitability of discharge of industrial waste into natural streams. [16]
7. Explain briefly the methods of treating industrial waste water. [16]
8. Why pretreatment is necessary for an industrial wastewater? Discuss the various types or pretreatment methods of an industrial wastes. [16]

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R07**Set No. 4**

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Civil Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
 All Questions carry equal marks

1. Explain the necessity of Boilers and cooling water towers for textile waste water treatment. [16]
2. Write about Eutrophication problems in lakes due to Industrial waste water disposal. [16]
3. (a) Draw a neat manufacturing process of large scale pulp and paper. Indicate the sources and typical characteristics of combined waste water.
 (b) What are the various treatment processes available for pulp and paper mill effluents? Explain briefly each one of them. [8+8]
4. What is the necessity of joint treatment of Industrial waste water management? Also explain its advantages. [16]
5. (a) Discuss critically the treatment and disposal of oil refinery wastes.
 (b) Explain the basic refinery operations with the help of a flow diagram. [8+8]
6. (a) What are the various sources of waste water from a typical integrated dairy industry? Mention the typical characteristics of combined effluent.
 (b) Explain the impact of dairy waste water on aquatic environment if discharged without any treatment. [8+8]
7. Mention the tolerable limits of the following industrial effluent parameters to be discharged into inland surface waters, onland for irrigation, public sewers and marine environment
 - (a) Total suspended solids.
 - (b) BOD₅ at 20⁰C.
 - (c) Oil and Grease.
 - (d) Inorganic dissolved solids. [4+4+4+4]
8. Explain the methods of removal of Phosphorus and Nitrogen from industrial waste water recirculation treatment. [16]

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R07**Set No. 1**

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Civil Engineering

Time: 3 hours

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Answer any FIVE Questions
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1. (a) Indicate the sources of wastewater from a tanning industry by means of a neat process flow diagram. Mention the typical characteristics of wastewater from each source.
- (b) Explain the general treatment processes adopted for a chrome tanning industry with neat process flow diagrams. [8+8]
2. What are the main differences between volume reduction and strength reduction? [16]
3. What are the general uses associated with waste water reuse? [16]
4. (a) Mention the typical characteristics of distillery plant effluent.
- (b) Explain the different approaches available for the treatment of dairy waste water. [8+8]
5. (a) Explain Rolling mills and their wastes in the manufacture of steel. Also explain the characteristics of wastes.
- (b) Discuss the characteristics of a typical power plant waste. Also discuss the effects of steel plants waste on receiving water. [8+8]
6. Briefly discuss about Industrial waste characteristics. [16]
7. What are the different media's available for ultimate disposal of industrial waste waters ? Mention the typical tolerable limits of various physical and chemical parameters of effluent to be discharged in these media's. [16]
8. Find out dilution required for the disposal of industrial waste water into a stream given the following data:
 Sewage : Temperature = 30⁰C
 BOD at 30⁰ C = 3000 mg/lit
 DO = 0
 Stream : Temperature = 30⁰ C
 BOD at 30⁰ C = 3 mg/lit
 DO = 20% below saturation value of 7.6 mg/lit.
 Minimum DO to be maintained = 5mg/lit
 Assume $K_{30}=0.1585$, $r_{30}=0.235$ and Relative BOD at 30⁰ C =95% . [16]

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Set No. 3

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Civil Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
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1. Write about the waste strength reduction. [16]
2. What are the advantages and disadvantages of disposal of industrial waste into streams? [16]
3. (a) Explain the impact of the pharmaceutical waste water on aquatic environment.
(b) Briefly describe the different treatment processes available for pharmaceutical effluents. [8+8]
4. (a) Explain the two methods suggested for the recovery of Zinc from Viscose Rayon waste.
(b) Explain the types of wastes originate in a viscose Rayon plant and the sources of different wastes with the help of a flow diagram. [8+8]
5. Write about the origin and characteristics of Breweries waste water. [16]
6. (a) What are the various sources of waste water from a molasses based distillery. Mention the typical characteristics waste water from each source.
(b) Explain the various treatment process schemes of distillery effluent by means of neat process flow diagrams. [8+8]
7. (a) What are the advantages and disadvantages of reusing of waste water?
(b) Explain what measures are to be taken while reusing waste water. [8+8]
8. (a) Explain how to you select a site for construction of common effluent treatment.
(b) What are the hazards associated with discharge of treated of waste water from common effluent treatment plant into small streams? [8+8]
