KUMARAGURU
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Register Number: …….

B.E DEGREE EXAMINATIONS: APRIL/MAY 2016

(Regulation 2013)

Sixth Semester

CIVIL ENGINEERING

U13CETE14: Industrial Waste Management

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The first step in minimizing the effect of industrial waste on receiving streams is to

   a) Decrease waste b) Reduce the volume

   c) Increase velocity d) Decrease velocity

2. The compassion of the waste water depends on .....

3. Reduction of harm full substances is achieved through

   a) Volume reduction b) Strength reduction

   c) Production modification d) Material modification

4. Transforming waste in to useful by product is called .....

5. Spent wash (waste water) is equal to ..... times the total alcohol production

   a) 20 b) 15

   c) 10 d) 5

6. ..... is the method of passing an electric current through a solution containing dissolved metal ions

7. The control fluctuations in waste water characteristics and flow rate is achieved in ..... treatment technology

   a) Neutralization b) Equalization

   c) Oxidation d) Absorption

8. ..... technique has been used extensively to remove hardness , iron and manganese salt.

9. Which is used to destroys the toxic organic constituents in hazardous waste?

   a) Ball mill b) Incinerator

   c) Fluidizing bed d) Packed bed adsorption

10. ..... is the type of equipment used to dispose the liquid waste and sometimes slurries

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11. State population equivalent.
12. Why industrial waste are to given a special significance?
13. What is segregation of waste?
14. Give two examples for equipment modification resulting strength reduction.
15. Express the characteristics and features of typical dairy waste.
16. What are the major pollutants in tannery waste water?
17. State the purpose of equalization of waste.
18. Define chemical oxidation.
19. What is the secured land fill?
20. What do you mean by solidification?

PART C (5 x 14 = 70 Marks)

(Answer not more than 400 words)

Q.No. 21 is Compulsory

21. Explain in detail the effect of industrial effluents on steams, lands and human health.

22. (a) (i) What do you mean by waste Auditing? Explain. (7)

(ii) How could the strength reduction of waste be achieved? (7)

(OR)

(b) What are the objectives of recycling and reusing of waste? Discuss.

23. (a) (i) Explain with a help of a flow diagram the different sources of waste in a distillery. (7)

(ii) Discuss the possible way of treating a tannery waste with the help of a flow chart. (7)

(OR)

(b) What are the different types of waste generated from various operations of a steel plant? Suggest a suitable treatment.

24. (a) What are the factors to be considered when neutralizing the waste? Explain the methods adopted for the neutralization of acid waste.

(OR)

(b) Discuss in detail the different methods available for removal of dissolved impurities

25. (a) With a help of a neat sketch, explain the process of incineration in the treatment of hazardous wastes and discuss the merits and demerits.

(OR)

(b) (i) How secured land fill method is employed hazardous waste disposal? Explain with sketch. (7)

(ii) Explain the features of activated sludge process for waste treatment. (7)

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