

B.Tech. Seventh Semester (Chemical Engineering) (CGS)

11660 : Elective - I : Industrial Waste Treatment : 7 CH 04

P. Pages : 2

Time : Three Hours

**AW - 3379**

Max. Marks : 80

- Notes :
1. All question carry marks as indicated.
 2. Answer **three** question from Section A and **three** question from Section B.
 3. Due credit will be given to neatness and adequate dimensions.
 4. Diagrams and chemical equations should be given wherever necessary.
 5. Illustrate your answer necessary with the help of neat sketches.
 6. Discuss the reaction, mechanism wherever necessary.

SECTION – A

1. a) What is localized pollution? Explain localized pollution effects with suitable example. 6
b) What are the global effects of Air pollution? Explain them in brief. 7

OR

2. a) What are the indicators of healthy environment? Explain them in detail. 6
b) What is Bioassay test? How will you conduct the Bioassay test? 7
3. a) When is Neutralisation necessary? What materials you will use to carry out the process of Neutralisation? 6
b) What are the advantages of sand filtration of drinking water? 7

OR

4. a) What is Inline equalization and offline equalization? Explain in detail the benefits of equalization. 6
b) What are the factors affecting the rate of sedimentation? Discuss in detail. 7
5. Discuss in detail a suitable process to obtain Bio Gas from organic waste. 14

OR

6. Discuss in detail different types of oxidation ditches used for treatment of liquid wastes. 14

SECTION – B

7. a) Why is the nitrate required to be removed from waste water? Discuss in detail. 5
b) Explain in detail the process of Nitrification and Denitrification. 8

OR

8. a) What are the different membrane processes used in desalination of water? Explain in brief. 5
- b) Explain in detail the process of Demineralization by Electrodialysis. 8
9. What are the different types of wastes produced in a petrochemical industry? Discuss in detail pollution control in petrochemical industry? 13

OR

10. What are the different types of wastes produced in a Pharmaceutical Industry? Discuss in detail pollution control in Pharmaceutical Industry. 13
11. What are the characteristics of waste from a Dairy industry? Explain in detail pollution control in dairy industry. 14

OR

12. What are the characteristics of waste from Food Industry? Explain in detail pollution control in Food Industry. 14
