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ET-507(A)

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B.Tech. Civil (Construction Management) / B.Tech. Civil (Water Resources Engineering)

Term-End Examination

December, 2010

ET-507(A) : POLLUTANTS AND WATER SUPPLY

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any Five questions. Each question carry equal marks.*

1. (a) What is meant by "Air Pollution" ? Describe the effects of various types of pollutants on human health and environment. 2+5

   (b) What are various devices used for control of gaseous pollutants? With the help of a neat sketch describe working of any one device. 2+5

2. (a) What are various methods commonly used for disposal of solid wastes ? Describe in detail the method of composting. 3+5

   (b) Explain the importance of recovery and recycling in solid wastes management. 6

3. (a) A stream of waste water containing 600mg/*l*. of chloride is discharged into a river containing 20mg/*l* of chloride. The flow in the waste water stream is $0.05 m^3/s$ and that in the river is $5 m^3/s$. Calculate the down stream concentration of chloride in the river. 5

(b) Describe about the significance of following water quality parameters. 3x3=9

(i) Alkalinity

(ii) Hardness

(iii) Chloride

4 (a) Describe various factors affecting the per capita requirement of water. 7

(b) Following is the population data of a town 7

Year	1961	1971	1981	1991	2001
Population	84,000	95,000	11,000	135,000	175,000

Determine the future population for the year 2031 using Geometric Increase Method.

5. (a) What do you understand by Aeration? Under what conditions it becomes necessary for water treatment. 3+4=7

(b) What are different types of Aerators ? With the help of neat sketch describe about any one type of aerator. 2+5=7

6. (a) What are the important types of joints which are commonly used in joining water mains? With the help of a neat sketch describe any one type of joint. 2+5=7

(b) Describe in detail various layouts of water distribution system. 7

7. (a) Write short notes on any four of the following : 4x3½=14

(i) Infiltration Gallery.

(ii) Pre-chlorination.

(iii) Sluice valve.

(iv) Fire hydrants.

(v) Water Meter.

(vi) Pyrolysis.

(vii) Water related diseases.