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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

June, 2011

ET-507(A) : POLLUTANTS AND WATER SUPPLY

Time : 3 hours *Maximum Marks : 70*

*Note : Answer **any five** questions. Each question carry **equal** marks. Assume any data suitably, if necessary only.*

1. (a) What are various devices for control of Particulates in air ? Describe any one in detail. 2+5

   (b) Explain in detail the method of land filling for disposal of solid wastes. 7

2. (a) Differentiate between grab and composite sampling. 6

   (b) What is meant by "Intake" ? What are various components of intake ? Describe the factors governing the location of an intake. 2+2+4

3. (a) Determine the settling velocity of a discrete spherical particle with specific gravity 2.6 and diameter 0.08 mm. The kinematic viscosity is 1.02×10^{-6} m^2/s. 8

(b) What is meant by coagulation ? What are various coagulants commonly used in water treatment ? Describe. 3+3

4. (a) With the help of a neat sketch explain the working of Rapid Sand Filter. 7

(b) A filter bed 0.75 m deep is composed of uniform size spherical particles of sand with diameter 0.5 mm and specific gravity 2.65. The porosity of the bed is 40%. Calculate the head loss through the bed if clean bed is operated at 5 m/h. Kinematic viscosity of water is 1.02×10^{-6} m^2/s. 7

5. (a) What do you understand by Distribution Reservoir ? Describe various types of Distribution Reservoirs. 7

(b) With the help of neat sketch explain the principle of working of a Centrifugal Pump. 7

6. (a) Describe in detail various methods of water distribution. 7

(b) Describe various layouts of Water Distribution System. 7

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

(a) Electrostatic Precipitator

(b) Fabric Filter

(c) Break point chlorination

(d) Water Hammer

(e) Water Meter

(f) Service Connection

(g) Filter Back Washing