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ET-507(A)

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

Term-End Examination

December, 2015

ET-507(A) : POLLUTANTS AND WATER SUPPLY

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is allowed. Assume any missing data.*

1. (a) What do you understand by 'Design Period' in the context of water supply schemes ? Describe various factors affecting Design Period. 7

(b) Describe various sources of solid waste generation in a city. Also, describe the types of solid wastes from each of these sources. 7

2. (a) What is Greenhouse effect ? Discuss its effect on global environment. 7

(b) Describe the working of a Fabric Filter with the help of a suitable diagram. 7

3. (a) If 3·0 ml water has been diluted to 300 ml and the D.O. concentration of the diluted sample at the beginning of the B.O.D. test was 8 mg/*l* and 5 mg/*l* after 5-day incubation at 20°C, find the B.O.D. of the water. 7

(b) Explain various factors that affect water demand. 7

4. (a) Following is the population data of a city. Determine the population of the city in 2011 by arithmetical increase method : 7

Year	Population
1931	12000
1941	16500
1951	26800
1961	41500
1971	57500
1981	68000
1991	74100

(b) What do you understand by *E. coli* ? How do you determine its presence in water ? 7

5. (a) Explain the following : 7

(i) Detention period

(ii) Surface loading

(b) Find the dimensions of a rectangular sedimentation tank for the following data :

(i) Volume of water to be treated = 10^6 *l*/d

(ii) Detention period = 4 hours

(iii) Velocity of flow = 10 cm/min.

Assume the working depth = 3 m 7

6. (a) Describe a Slow Sand Filter with the help of a neat sketch. Explain its working. 7

(b) Explain the following water distribution systems : 7

(i) Grid-iron system

(ii) Radial system

7. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Water-borne diseases

(b) Break point chlorination

(c) Jet pump

(d) Service connection

(e) Alum

(f) Equivalent pipe