B.Tech. Civil (Construction Management) / B.Tech. Civil (Water Resources Engineering) Term-End Examination

June, 2019

00692

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.*

1. (a) List the most commonly employed methods for solid waste disposal. Discuss the importance of recovery and recycling of the components of solid waste.   7

   (b) Explain the Gaussian model for dispersion of air pollutants. Give its limitations.   7

2. (a) What is river intake ? Discuss the factors which govern the location of an intake.   6

   (b) A city has a population of 3,00,000. Calculate the amount of water required for an average consumption of 150 lit per capita per day.   8

3. (a) With the help of neat sketch, describe the working of Pressure Filter. 7

(b) Differentiate between coagulation and flocculation process. Also discuss the importance of Jar test in water treatment. 7

4. (a) What is water softening ? Name the methods commonly employed for water softening and discuss the merits and demerits of any one of the methods. 7

(b) How does ozone disinfect water ? Discuss its limitations. 7

5. (a) Design an earthen trapezoidal channel with velocity of flow 1 m/sec and to discharge 3 m^3/sec, having side slope 1 in 2. Take C = 55. 9

(b) Name different types of pumps normally used for water supply. Discuss any four advantages of centrifugal pumps over reciprocating pumps. 5

6. (a) Explain the Hardy-Cross method used for pipe network analysis in water distribution system. 7

(b) Explain the following : 7

   (i) Testing of mains

   (ii) Water hammer

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

   (a) Greenhouse Effect

   (b) Electrostatic Precipitator

   (c) Fire Hydrant

   (d) Water Meter

   (e) Break Point Chlorination

   (f) Waterborne Disease

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