ET-507(A)

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

Term-End Examination

June, 2016

00180

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) Explain the principle of operation of a pressure filter with the help of a neat sketch. Also describe its merits and demerits. 7

   (b) Explain Break-point chlorination. Also explain the various mechanisms involved during the disinfection process. 7

2. (a) An artesian well has a diameter of 20 cm. The thickness of the aquifer is 30 m and its permeability is 36 m/day. Find its yield under a drawdown of 4 m at the well face. Radius of influence is 245 m. 7

(b) Differentiate between permanent and temporary hardness. How do you remove temporary hardness ?   7

3. (a) Calculate the diameter and depth of a settling tank to treat a flow of 25000 m^3/day. The maximum SOR is 15 m^3/m^2/day and detention period is 3 hours.   7

(b) Describe the principle of working of centrifugal pumps.   7

4. (a) Explain the working of a coagulation sedimentation tank with a neat sketch.   7

(b) Draw a neat sketch of a rapid gravity filter and describe its working.   7

5. (a) Explain the Ion Exchange process of permanent hardness removal.   7

(b) Describe, with the help of neat sketches, any two types of joints used in C.I. pipes.   7

6. (a) With the help of neat sketches, explain any two types of layouts used in water distribution system.   7

(b) Explain the following :   7

(i) Water meters

(ii) Stop cocks

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

   (a) Ozone Layer Depletion

   (b) Electrostatic Precipitator

   (c) Turbidity

   (d) Aeration

   (e) B.O.D.

   (f) Confined Aquifer

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