Total No. of Questions : 5] *[Total No. of Printed Pages :2*

Roll No .....

CE - 603

B.E. VI Semester

Examination, June 2015

Environmental Engineering - I

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
ii) All parts of each questions are to be attempted at one place.
iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.
iv) Except numericals, Derivation, Design and Drawing etc.

1. a) What do you understand by demand forecasts?
   b) What do you understand by per capita demand?
   c) Explain in brief various expressions used to determine the "fire demand".
   d) What is meant by the variations in the rate of demand? What are the effects of these variations on the design of various units of a water supply scheme?

   OR

   Estimate the populations for the years 2011, 2017, 2021 from the data given below by using geometric progression method:

Years	1961	1971	1981	1991	2001
Populations in thousands	274	285	299	307	324

2. a) What do you understand by E.Coli?
   b) Write the name of various water borne diseases.
   c) What are the requirements of pumping station?

   d) Enumerate the various physical characteristics of raw water supplies and discuss the following:
      i) Turbidity ii) Taste and odour.

   OR

   Describe in detail various test conducted for chemical examination of water. Also give their permissible limit.

3. a) What do you understand by water softening?
   b) What do you understand by plain sedimentation?
   c) What is the zeolite process?
   d) Enlist different coagulants generally used for water treatment. Explain the procedure for finding out the optimum dose of Alum by "Jar - Test".

   OR

   Explain the methods of removal of iron and manganese from water. Why is their removal necessary?

4. a) Explain the fire hydrants in briefly.
   b) Explain the term gate valve.
   c) Write short notes on maintenance of distribution system.
   d) Discuss the methods to determine the capacity of service reservoir? Explain in detail any one method.

   OR

   Explain the Hardy - Cross method used for pipe network analysis in water distribution system.

5. a) Explain the following term:
      i) Q -trap ii) S - trap
   b) Explain water pollution control act.
   c) What do you understand by plumbing operations?
   d) Describe conservancy and water carriage systems with their advantage and disadvantages. Explain how water carriage system has become popular in urban areas?

   OR

   Describe the method of financing and management of rural water supply projects.

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