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

Roll No .....

CE-603

B.E. VI Semester

Examination, December 2016

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 question 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) Compare quality of water from surface and sub-surface sources.
   b) Explain "Per Capita Demand".
   c) How "Fire demand" is calculated?
   d) Enlist different methods of forecasting population of a town. Explain "Incremental Increase method".

   OR

   Following data shows the variation in population of a town from 1962 to 2012. Estimate the population of the city in the year 2052, using Geometrical increase method.

Year	1962	1972	1982	1992	2002	2012
Population (In thousand)	70	85	110	145	185	220

2. a) What are different factors which govern the selection of site of a river intake?
   b) Why E-coli are tested for finding MPN in a water sample?
   c) Write short notes on "water-borne Diseases".

   d) Describe in brief various important tests conducted for chemical examination of water. Also give their permissible limit.

   OR

   Compare WHO standards of water quality with IS standards of drinking water.

3. a) Explain in short theory of filtration.
   b) What are modern techniques for sedimentation?
   c) List out different methods of disinfection of water.
   d) Describe the Jar test experiment to determine the optimum dose of coagulant. Also draw sketch.

   OR

   Compare slow sand filters with rapid sand filters.

4. a) List out different valves used in water distribution system and mention their respective functions.
   b) What is meant by "Appurtenances"?
   c) Explain leak detection method in pipe line.
   d) Explain mass curve method to find out service reservoir capacity.

   OR

   Compare merits and demerits of different materials used for conveyance mains.

5. a) List out different traps used in house drainage system and mention their respective function.
   b) Sketch domestic water supply service connection.
   c) What are merits and demerits of water carriage system of sanitation.
   d) Compare one-pipe and two pipe system of plumbing system in a building.

   OR

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

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