

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2132

Roll No.

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B.Tech.

(SEMESTER-V) THEORY EXAMINATION, 2012-13

ENVIRONMENTAL ENGINEERING – I

Time : 2 Hours]

[Total Marks : 50

Section – A

1. Attempt **all** question parts. Each question carries equal marks. **1 × 10 = 10**
- (a) Mention the types of water demand.
 - (b) Name the different types of seasonal variations.
 - (c) What is the formula used for the firefighting demand ?
 - (d) What is infiltration gallery ?
 - (e) Define pipe materials.
 - (f) Write various types of conduits.
 - (g) Define Hardy cross method.
 - (h) What is plumbing system ?
 - (i) Write types of sewers.
 - (j) Define small bore sewer system.

Section – B

2. Attempt any **three** question parts. Each part carries equal marks. **3 × 5 = 15**
- (a) (i) Explain the various factors affecting the per capita demand.
 - (ii) Explain any two methods of forecasting the population of town.
 - (b) Explain the classification of wells.
 - (c) Explain water connections, different cocks and pipe fitting.
 - (d) Explain plumbing systems in buildings and houses.
 - (e) Briefly explain layout and construction of sewer lines.

Section – C

Attempt **all** questions. Each question carries equal marks.

5 × 5 = 25

3. Attempt any **one** part of the following :

(a) Population of a town as obtained from the Census report is as follows :

Year	1941	1951	1961	1971
Population (in thousands)	242	242	770	1090

Estimate the population of the town in the year 1981, 1991 & 2001 by

- (1) Arithmetic increase method
- (2) Geometrical increase method
- (3) Incremental increase method

(b) Explain the need for protected water supply.

4. Attempt any **one** part of the following :

- (a) Explain any one of intake structure with neat sketch.
- (b) What are points should be kept in mind while selecting a site for intake structure ?

5. Attempt any **one** part of the following :

- (a) Explain briefly about pressure and gravity distribution systems.
- (b) Explain water hammer and its control measures.

6. Attempt any **one** part of the following :

- (a) State and explain concept of service and balancing reservoirs.
- (b) Explain Newton-Raphson method and equivalent pipe method of pipe network analysis.

7. Attempt any **one** part of the following :

- (a) Explain the institutional and industrial waste water management.
- (b) Explain collection and estimation of storm water by different formulae.