

TCE-405

40

Printed Pages : 4

Paper Code & Roll No. to be filled in your Answer Book

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B.Tech. (IV - Sem.)

Even Semester Examination - 2016

ENVIRONMENTAL ENGINEERING - I

[Time : 2 Hours]

[Maximum Marks :50]

Note: Attempt **All** Questions

Q.1 Attempt **any four** questions : (4x2.5=10)

- Describe in detail the various types of water demand.
- Distinguish between a Dead-end system and a Grid-iron system
- State various factors that affect the quantity of storm water for the design of a storm sewer.
- State the merits and demerits of (a) Separate system of sewerage (b) Combined system.
- Pressure in the distribution system.

TCE-405/1900

(1)

[P.T.O.]

Q 2. Attempt **any four** questions. : (4x2.5=10)

- (a) Assuming the geometric rate of growth of population of a town calculate the population of the town in the year 2011 with the help of the following census records of the population.

Year	1961	1971	1981
Population in thousand	111	132	161

- (b) What are the common sources of water for a water supply scheme? State the factors that govern the final selection.
- (c) Write short note on the following:
- (i) Fire demand
 - (ii) Surface reservoir
- (d) Draw a neat sketch showing the intake arrangements which you suggest for drawing water for a city water supply plant being fed directly from a river under sluices.
- (e) Write short note on Design period.

Q 3. Attempt **any four** questions. : (4x2.5=10)

- (a) Write short notes on the following:

- (i) Coincident Draft
- (ii) Metering in distribution systems
- (b) What do you understand by leakages and controlling of water?
- (c) Distinguish between the following:
 - (i) Pressure release valve
 - (ii) Check valves
- (d) State the comparative merits and demerits of the following materials used in the conveyance of water
 - (i) Cast iron
 - (ii) Concrete
- (e) Write short note on Manning's formula.

Q.4 Attempt **any two** questions: (2x5=10)

- (a) What do you understand by self cleansing velocity and limiting velocity in sewers?
- (b) Distinguish between the following:
 - (i) Expansion joint
 - (ii) Flanged joint

- (c) Discuss Explain the various shape of sewer sections. Under what circumstances do you prefer egg-shaped sewer?

Q 5. Attempt **any two** questions: (2x5=10)

- (a) Discuss the different types of water piping systems that may be employed in buildings for fulfilling the water demands of its residents, giving merits and demerits of each system.
- (b) Describe the salient characteristics of filter media used in :
- (i) Slow sand filter
 - (ii) Rapid sand filter.
- (c) Explain the sedimentation process for potable water treatment.

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