



c09-c-405

**3426**

**BOARD DIPLOMA EXAMINATION, (C-09)**  
**OCT/NOV—2015**  
**DCE—FOURTH SEMESTER EXAMINATION**  
**ENVIRONMENTAL ENGINEERING—I**

Time : 3 hours ]

[ Total Marks : 80

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**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Briefly explain about 'greenhouse effect'.
2. Draw the flow diagram of a typical water supply scheme.
3. Compare the three systems of forecasting population regarding the computed values and their suitability for a town/city.
4. Give any three merits and three demerits of cast iron pipes.
5. Write any three causes of pipe corrosion.
6. Define sedimentation and give any four types of sedimentation tanks.
7. Compare slow sand and rapid sand filters in any three aspects.
8. State the function and location of (a) sluice valve, (b) check valve and (c) air valve.

- \* 9. State the function and location of the following :
- (a) Stop cock
  - (b) Bend
  - (c) Reducer
10. Sketch the layout of water supply arrangements for a multistoreyed building.

**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
 (2) Each question carries **ten** marks.  
 (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. (a) List any four variations in the rate of demand. 2  
 (b) Predict the population for the years 2021 and 2031 from the following census data of a town by Arithmetical and geometrical means : 4+4=8

Year	1951	1961	1971	1981	1991	2001	2011
Population	60000	68100	75200	86400	98800	115700	125900

12. (a) Define (i) ground water table, (ii) critical drawdown and (iii) cone of depression. 3  
 (b) Briefly explain about a driven well. 3  
 (c) Compare the surface and subsurface sources in any four aspects. 4
13. (a) Differentiate the two methods of sampling water. 3  
 (b) List any four points to be considered while collecting samples. 4  
 (c) What is turbidity and how is it measured? 3
14. (a) State any six requirements of a good disinfectant. 3  
 (b) Explain about the chlorination method of disinfection of water. 5  
 (c) List any four factors affecting disinfection. 2

- \* 15. (a) Differentiate between temporary hardness and permanent hardness. 2
- (b) Explain (i) lime soda process and (ii) base exchange process to remove hardness. 4+4=8
16. (a) With the help of a sketch, explain gravity method of distribution. 2+3=5
- (b) What do you understand by continuous and intermittent supply system of water? 2
- (c) Write any four merits and two demerits of continuous system. 3
17. (a) List any five merits and three demerits of dead end system. 4
- (b) Explain with the help of neat sketch about grid iron system of layout in distribution. 3+3=6
18. (a) Define (i) service pipe, (ii) communication pipe, (iii) distribution pipe and (iv) air gap. 4
- (b) How are the leakages detected in distribution system using a waste detecting meter? 3
- (c) List any six preventive measures to eliminate the leakages. 3

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