



c09-c-405

**3426**

**BOARD DIPLOMA EXAMINATION, (C-09)  
APRIL/MAY—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. What is acid rain? List any two adverse effects of acid rain.

1+2=3

2. Define the term 'per capita demand'.

3. What is design period?

4. Give any three merits and three demerits of cast iron pipes.

5. Define the terms :

(a) Cone of depression

(b) Yield of a well

(c) Specific yield

6. List any six requirements of good coagulant.

7. List any three methods of removal of hardness. State whether each method can remove temporary hardness or permanent hardness.

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8. State where the following are used :
- Reducer
  - Coupling
  - Dummy
9. List the various types of layouts in distribution system.
10. State any six requirements of a good distribution system.

**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. From the census data of a town given below, estimate the population of the town in the year 2021. Find the total water quantity required per day in the year 2021, if the per capita consumption is 180 lpcd : 10

Year	1941	1951	1961	1971	1981	1991	2001
Population	51600	64750	72800	81150	93550	115700	127450

12. Describe the construction and working of a canal intake with the help of a neat sketch. 5+5
- \* 13. Explain the construction and working of slow sand filter with the help of a neat sketch. 5+5
14. (a) List any six methods of disinfection. 3  
 (b) Explain about (i) pre-chlorination, (ii) post-chlorination, (iii) double chlorination and (iv) breakpoint chlorination. 1+1+1+4
15. (a) List any six chemical tests conducted on water. 3  
 (b) State the significance on any four of the above tests. 4  
 (c) Explain briefly about presumptive test on *E. coli*. 3

- 16.** (a) Define <sup>\*</sup> (i) service pipe, (ii) communication pipe, (iii) distribution pipe and (iv) air gap. 4  
(b) State any six principles and precautions to be taken in laying pipe lines within the premises of building. 6
- 17.** (a) What is meant by appurtenance in distribution system? 1  
(b) List any six appurtenances in distribution system. 3  
(c) Give the function and location of above appurtenances. 6
- 18.** (a) Explain briefly about the gravity distribution system. 5  
(b) Explain briefly about the direct-indirect method in distribution system. 5

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