



c09-c-405

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**BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2016
DCE—FOURTH SEMESTER EXAMINATION
ENVIRONMENTAL ENGINEERING—I**

Time : 3 hours]

[Total Marks : 80

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. Define the terms ecology and ecosystem.
2. What is design period? Give the general design period for a water supply scheme.
3. Draw the flow diagram of a typical water supply scheme.
4. Briefly explain the recuperation test to find the yield of a well.
5. Define an intake and list various components of an intake.
6. Briefly explain about free chlorine compounds and combined available chlorine compounds.

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7. Define hardness of water. What are the causes for different types of hardnesses?
8. State any six measures preventing leakages.
9. Sketch the layout of water supply arrangements for a single-storey building.
10. State the function and location of the following :
- (a) Goose neck
- (b) Tee
- (c) Elbow

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 process : 4+4=8

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

12. (a) Briefly explain about a drilled well. 3
- (b) State two merits and two demerits each of surface and subsurface sources. 4
- (c) Define aquifer and give the classification. Name the wells tapping each aquifer. 3

13. (a) What is the need for coagulation. 2
- (b) List any six requirements of good coagulant. 3
- (c) Explain the process sedimentation by coagulation. 5
14. Explain the construction, working and cleaning process of rapid sand filter with a neat sketch. 3+3+2+2=10
15. (a) List any four points to be considered while collecting samples. 4
- (b) State any three physical tests to be conducted on water and give the Indian Standards Limitations of the same for domestic water supply. 3
- (c) Briefly explain the confirmed test stage of *E. coli* test. 3
16. (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
17. (a) With the help of a sketch, explain the construction and working of (i) check valve and (ii) post fire hydrant. 4+4=8
- (b) State the function and location of (i) air valve and (ii) drain valve. 2
18. (a) With the help of a sketch, explain briefly about the dual system of distribution and list any four merits of dual system. 2+2+2=6
- (b) List any four merits and four demerits of intermittent system. 4
