



C14-C-502

4619

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2016

DCE—FIFTH 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 ecosystem and list the components of ecosystem.
2. List out the objectives of a water supply scheme.
3. State any six factors affecting per capita demand.
4. Define the terms cone of depression and drawdown.
5. State the requirements of a good joint of water pipes.
6. List six water-borne diseases.
7. Write the objectives of filtration.
8. State any three physical tests to be conducted on water and give their Indian standards for drinking water.
9. Write any six requirements of good distribution system.
10. What is the function of sluice valve? Draw the sketch.

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**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 2050. Find the total quantity of water required per day in the year 2050, if the per capita consumption is 180 LPCD. Use geometrical increase methods : 10

Year	1980	1990	2000	2010	2020	2030	2040
Population	31000	45000	57000	64000	72000	87000	100000

- 12.** (a) Explain the construction of infiltration gallery with sketch. 7  
(b) Define spring. State the types of spring. 3
- 13.** (a) State any four points to be considered in locating and designing intake structure. 4  
(b) Briefly explain the constant pumping test to find the yield of a well. 6
- 14.** (a) Explain the principle of plain sedimentation and list out the factors influencing the settling velocity. 6  
(b) State the need for coagulation and list any four coagulation methods. 4
- 15.** (a) With the help of sketch, explain the break-point chlorination. 5  
(b) List any three methods of removal of hardness. When do you use each method? 5
- 16.** (a) Write short notes on the following : 6  
(i) Ferrule  
(ii) Goose neck  
(iii) Reflux valve  
(b) When grid iron system is adopted? List merits and demerits of grid iron system. 4

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- 17.** (a) How are the leakages detected in distribution system? 6  
(b) Draw a neat sketch of general layout of water supply arrangement for single-storeyed building and write the details. 4
- 18.** With the help of sketch, explain gravity method, pressure system and combined system of distribution. 10

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