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BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL - 2019

DIPLOMA IN CIVIL ENGINEERING

ENVIRONMENTAL ENGINEERING - I

FOURTH SEMESTER EXAMINATION

Time: 3 Hours **Total Marks: 80**

PART - A (10 x 3 = 30 Marks)

Note 1:Answer all questions and each question carries 3 marks

2:Answers should be brief and straight to the point and shall not exceed 5 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. Briefly explain the three main variations in the rate of demand.
4. Define the terms
   a) Aquifer
   b) Aquiclude
   c) Aquitard
5. Draw the sketch of a collar joint for cement concrete pipes and label the parts.
6. Briefly explain about free chlorine compounds and combined available chlorine compounds.
7. Define hardness of water. What are the causes for different types of hardnesses?
8. List any two merits and two demerits of pumping system.
9. State the function and location of the following.
   a) Ferrule
   b) Coupling
   c) Dummy
10. List any six principles to be observed while laying pipe lines in the premises of a building.

PART - B (5 x 10 = 50 Marks)

Note 1:Answer any five questions and each question carries 10 marks

2:The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. a) What is per capita demand? Explain any five factors affecting the per capita demand. 6 Marks
    b) Explain the need for protected water supply. 4 Marks
12. a) State any three causes of pipe corrosion. 3 Marks
    b) Describe the construction and working of a reservoir intake with the help of a neat sketch. 7 Marks
13. a) What are the points to be considered while collecting samples from (i) a surface source (ii) a tap (iii) a pump fitted to a well. 3 Marks
    b) Name the four physical tests and give their significance. 7 Marks
14. a) Explain different mechanisms of filtration. 6 Marks
    b) Draw the neat sketch of a rapid sand filter and label the parts. 4 Marks

15. a) Define aeration and list any three objectives of aeration. 4 Marks
    b) Explain the process of sedimentation in a radial flow circular tank with the help of neat sketch. 3+3= 6 Marks

16. a) List the four methods of layouts in water distribution system. 2 Marks
    b) List any two merits and two demerits of Grid iron system. 2 Marks
    c) With the help of a sketch explain about Dead end system of distribution. 3+3=6 Marks

17. a) Brielfy explain four methods used to detect leakage in a distribution system. 6 Marks
    b) State any eight measures to prevent leakage. 4 Marks

18. (a) With the help of a sketch explain the working of (i) Gate valve (ii) Check valve. (iii) Air valve. 6 Marks
    (b) State the function and Location of the above appurtenances. 4Marks

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