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**c16-c-503**

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**BOARD DIPLOMA EXAMINATION, (C-16)**

**AUGUST/SEPTEMBER—2021**

**DCE - FIFTH SEMESTER EXAMINATION**

**ENVIRONMENTAL ENGINEERING**

*Time : 3 hours ]*

*[ Total Marks : 80*

**PART—A**

- 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. List any three objectives of a protected water supply scheme. 3
2. List the sources of water for a water supply scheme. 3
3. Define coagulation. List any two coagulants. 2+1
4. Define hardness of water. List different types of hardness. 2+1
5. Write the general acceptable limits of the following impurities for domestic water :  $\frac{1}{2} \times 6 = 3$ 
  - (a) Fluorides
  - (b) pH
  - (c) Hardness
  - (d) TDS
  - (e) Chlorides
  - (f) Iron

6. What is the function of fire hydrant? Draw a neat sketch indicating parts. 1+2
7. State any three objectives of sewerage work. 3
8. Define sewer appurtenances. List any two sewer appurtenances. 2+1
9. Write any one function of screens; skimming tanks and grit chamber. 3
10. Define soil pipe, waste pipe and vent pipe. 1+1+1

### PART—B

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

11. Write in brief about infiltration wells and galleries with a neat sketch. 5+5=10
12. Explain construction and working of slow sand filter with the help of a neat sketch. 10
13. State any eight principles to be followed in laying pipelines within the premises of a building.  $1\frac{1}{4}\times 8=10$
14. Write about various types of sewerage systems. 10
15. Mention any four materials used for sewers and write two merits and demerits of each. 2+8
16. Design a septic tank for a group of houses with a population of 500 persons. The rate of water supply is 100 lpcd. Assume detention period as 24 hrs, effective depth of tank is 1.5 m. Take L/B =2.5, use detention period method. 10
17. Draw the flow diagram of conventional sewage treatment plant and write the main function of each unit. 5+5
18. State any eight requirements of good drainage in buildings.  $1\frac{1}{4}\times 8=10$

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