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 :   ½×6=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. 1¼×8=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. 1¼×8=10

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