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C09–C–405

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2017

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. How are the 'acid rain' formed?

2. List any three methods of forecasting the population of a town and write the formula for any one method. 1+2=3

3. Write any three empirical formulae for estimation of water required for firefighting.

4. State any three methods of preventing pipe corrosion.

5. Give the classification of surface water sources.

6. What is chlorination? List any four factors influencing its efficiency.

7. Define temporary hardness in water and list the methods to remove it.

8. List any two merits and two demerits of ring system.

9. Draw the sketch of an air valve and label the parts.

10. State the functions and locations 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)* What is per capita demand? Explain any five factors affecting the per capita demand. 6

(b) Explain the need for protected water supply. 4

12. *(a)* List any three merits and three demerits of cast iron pipes. 3

(b) Draw the neat sketch and explain the construction of a socket and spigot joint. 4+3=7

13. Explain the construction, working and cleaning process of slow sand filter with a neat sketch. 3+3+2+2=10

14. *(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

15. *(a)* List the zones of a sedimentation tank. 2

(b) Sketch and explain the process plain sedimentation. 3+3=6

(c) List any four coagulants in use. 2

16. *(a)* Briefly explain four methods used to detect leakage in a distribution system. 6

(b) State any eight measures to prevent leakage. 4

17. *(a)* List any ten principles and precautions to be observed while laying pipeline in a building. 5

(b) Draw a neat sketch of water supply arrangements in a single-storied building and name various components. 2½+2½=5

18. *(a)* With the help of a sketch, explain gravity method of distribution. 2+3=5

(b) What do you understand by continuous and intermittent supply system of water? 2

(c) Write any four merits and two demerits of continuous systems. 2+1=3

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