



c09-c-405

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BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2021

DCE - FOURTH SEMESTER EXAMINATION

ENVIRONMENTAL ENGINEERING - I

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

4×5=20

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **four** marks.  
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. How is the ozone layer depleted by CFC's?
2. What is peak demand?
3. List any six factors which affect the per capita demand of water.
4. State any three preventive measures of pipe corrosion.
5. Draw the sketch of collar joint for cement concrete pipes and label the parts.
6. Explain about free chlorine compounds and combined available chlorine compounds.
7. Define hardness of water. What are the causes for different types of hardness?
8. List any two merits and two demerits in pumping system.
9. State the classification of Service reservoirs.
10. Define (a) distribution pipe and (b) supply pipe.

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**PART—B**

15×4=60

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

- 11.** From the census data given below, estimate the population of the city for the year 2031 AD by (a) arithmetical increase method and (b) geometrical increase method.

Year	1931	1941	1951	1961	1971	1981	1991
Population	25000	27000	38000	50000	67000	82000	100000

- 12.** Write the requirements of a good pipe joint and explain socket and spigot joint.
- 13.** Write short notes on dissolved oxygen and residual chlorine.
- 14.** List the requirement of good coagulant and state why alum is most widely used as a coagulant.
- 15.** Write the difference between slow sand filters and rapid sand filters.
- 16.** Explain grid iron system with a neat sketch and mention advantages and disadvantages.
- 17.** Explain the following with neat sketch :  
(a) Fire hydrant  
(b) Check valve
- 18.** What are the different types of soils available in India?

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