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## April 2024

## <u>Time - Three hours</u> (Maximum Marks: 100)

- [N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.
  - 2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.]

## PART - A

- 1. Mention any three objectives of public water supply system.
- 2. What are the joints used in pipe line connections?
- 3. Mention BIS standards of drinking water for the following -Hardness, Chlorides and pH Value.
- 4. What are the methods of disinfection?
- 5. What are the purpose of providing service reservoir?
- 6. Write short notes on reconnaissance survey.
- 7. Define Dry weather flow.
- 8. Write short notes on man hole.
- 9. What are the classifications of primary treatment of sewage?
- 10. Write short notes on EIA.

## PART - B

11. (a) The following is the census data obtained from a town. By adopting Incremental increase method and Geometrical increase method in the year 2020, 2040 and 2060.

Year	1970	1980	1990	2000
Population	16000	27000	40000	55300

(Or)

- (b) Explain about various types of intake structure with suitable sketches.
- 12. (a) Explain about water treatment units with flow diagram.
  - (b) Explain with neat sketch about working procedure of slow sand filter.
- 13. (a) Explain about different layout of distribution systems with neat sketch.

(Or)

- (b) Explain about sources of water with neat sketch.
- 14. (a) Explain about laying and testing of sewer line.

(Or)

- (b) Explain about any seven sewer appurtenances.
- 15. (a) Explain about Trickling Filter.

(Or)

(b) Explain about various methods of solid waste disposal.

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185/19---2