F 3331 (Pages : 2) Reg. No.....

Name.....

# B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

**Seventh Semester**

Branch : Civil Engineering

CE 010 702—ENVIRONMENTAL ENGINEERING—I (CE)

(New Scheme—2010 Admission onwards—Regular/Supplementary)

Time : Three Hours Maximum : 100 Marks

## Part A

*Answer* **all** *questions.*
*Each question carries* 3 *marks.*

1. List notes on urban water supply systems.
2. Explain about classification of pumps.
3. Explain about purpose of aeration.
4. List out requirements of a good disinfectant.
5. Briefly explain pipe corrosion.

(5 × 3 = 15 marks)

## Part B

*Answer* **all** *questions.*
*Each question carries* 5 *marks.*

6. Explain (a) Percapita demand ; (b) Coliform index.
7. Explain about effect of storage on quality of water.
8. Explain about coagulants and dosage of coagulants.
9. Explain about theory of filtration.
10. Explain about storage capacity of balancing reservoir.

(5 × 5 = 25 marks)

## Part C

*Answer* **all** *questions.*
*Each question carries* 12 *marks.*

11. The population figures of a town during four decades in 1960, 1970, 1980 and 1990 are 39,500, 48,000, 60,000 and 69,000 respectively. Predict its population in year 2010 by geometrical progression and incremental increase method.

*Or*

**Turn over**

12. Explain :

    (a) Impurities in water and their importance.

    (b) Turbidity and its measurement in laboratory.

13. Explain about various appurtenances in the distribution system.

*Or*

14. Estimate hydraulic gradient in a 2 m. diameter smooth concrete pipe carrying a discharge of 4 $m^3/s$ at 12° C.

15. Explain about plain sedimentation and theory of sedimentation.

*Or*

16. Explain (a) Theory of flocculation ; (b) Clariflocculations.

17. Explain operation of rapid sand filters and slow sand filters.

*Or*

18. List notes on :

    (a) Chlorination and its action.

    (b) Super chlorination and break point chlorination.

19. Explain following treatment methods (a) Deflouridation ; (b) Iron and manganese removal ; (c) Removal of hardness.

*Or*

20. Explain about detection and prevention of leaks in distribution system.

(5 × 12 = 60 marks)