

Roll No.

2266

B.E. 5th Semester (Civil Engg.)

Examination, December, 2013

WATER SUPPLY & TREATMENT

'E' Scheme

Paper : CE-305E

Time : Three hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions in all. All questions carry equal marks.

1. (a) What are common sources of water for a water supply scheme ? State the factors that govern the final selection. 10
- (b) Compute the population of the year 2000 and 2006 for a city whose population in the year 1930 was 25,000 and in the year 1970 was 47,000. Make use of geometric increase method. 10
2. (a) What are the maximum acceptable limits of : 10
 - (i) Turbidity

(ii) Fluorides

(iii) Nitrates

(iv) Phenolic substances in drinking water. Also explain why is it required to maintain these limits.

(b) Explain the importance of chemical analysis of water used for domestic purpose and how is it done ? 10

3. (a) A circular sedimentation tank filled with standard mechanical sludge removal equipment is to handle 3.5 million litres per day of raw water. If the detention period of the tank is 5 hours, and the depth of the tank is 3m, what should be the diameter of the tank. 10

(b) Distinguish between slow sand and rapid sand filters. 10

4. (a) What is basic function of intake structure. Also, explain factors governing the location of an intake. 10

(b) Name various types of pressure pipes on the basis of construction material. Also mention advantages & disadvantages of cast iron pipes. 10

5. (a) What are various layouts of distribution networks ? Explain any one in detail. 10

- (b) What factors will you keep in mind while designing plumbing system for water supply to a house ? 10
6. Write short note on : $4 \times 5 = 20$
- (a) defluoridation
 - (b) Water softening
 - (c) Chlorination
 - (d) Aeration
7. (a) What are various water borne diseases and how are they controlled ? 10
- (b) Compare the merits and demerits of the continuous and intermittent system of water supply. 10
8. (a) What is the importance of public water supply scheme in the present day civil life ? 10
- (b) Explain theory of sedimentation in detail. 10