Name of the Candidate:

B.E. DEGREE EXAMINATION, 2012

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

CLEC-703. ENVIRONMENTAL ENGINEERING

(Old Regulation)

May]   [Time: 3 Hours

Maximum: 60 Marks

(For candidate joined during 2006-2007 and before)
Answer ONE full question from each UNIT   *(5×12=60)*
All questions carry equal marks

UNIT-I

1. a) Population of a locality as obtained from census report as follows:

Year	1911	1921	1931	1941	1955
Population	3,50,000	4,66,000	9,94,000	15,60,000	16,23,000

Estimate population of the locality in the year 2001 by using incremental increase method.

   b) List out the standards for water quality parameters.

2. Explain three different methods of forecasting the future population of a town, clearly brining out their relative merits.

UNIT-II

3. What is an intake structure? List out various types of intake and discuss in detail about submerged intake.

4. a) Distinguish between expansion joint and flanged joint.

   b) Explain how do you determine storage capacity of reserviour using mass curve method.

UNIT-III

5. List the merits and demerits of the following pipes over other materials.
   a) RCC pipes   b) Plastic pipes   c) CI pipes   d) AC pipes

6. a) Explain the method of lay pipes for water-supply scheme.

   b) State the causes of corrosion and methods by which corrosion can be prevented.

UNIT-IV

7. Design a rectangular sedimentation tank with the following data:

    Population   = 20,00,000
    Water supply allowed = 185 litres/capita.
    Detention period   = 2 hours
    Depth of tank   = 3m
    L:B   = 1:4

8. Compare slow sand and rapid sand filters with respect to rate of filtration, cleaning and removing of bacteria.

UNIT-V

9. a) Explain the general methods of distribution of water employed in municipal water supply scheme.

    b) Explain Hardy cross method.

10. A small town with a population of 1600 is to be supplied water at 150 LPCD. The demand of water during period is given in the following table. Determine the capacity of service reservoir if pumping is done 24th at constant rate.

Time (h):	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24
Demand (in 1000 lit):	20	25	30	50	35	30	25	25