Total number of printed pages: 2

UG/5th Semester/UCE504

2023

ENVIRONMENTAL ENGINEERING- I

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

1. a) Define per capita demand? What are the reasons for losses and wastes in a water distribution system? 2+3=5

   b) Why the population forecast is necessary in the design of public water supply scheme? Discuss in brief various methods adopted for population forecasting and their comparative merits and demerits. 3+12 = 15

2. a) The population of a town obtained from census report is given below in the Table. Find out the population of the town in the year 2011, by using arithmetic increase method and incremental increase method. 10

Year	1911	1921	1931	1941	1951
Population	3,50,000	4,66,000	9,94,000	15,60,000	16,23,000

   b) Explain the various layouts of water distribution system. 10

3. a) What are the differences between runoff and yield? How the storage capacity of a storage reservoir can be estimated? 2+8=10

   b) What are the methods available for estimating the yield of a well? How the yield of wells can be estimated under equilibrium condition? 3+7=10

4. a) Discuss minimum four methods of disinfection in brief. 4×2=8

   b) Define and discuss the purposes of plain chlorination, pre-chlorination, post chlorination, double chlorination, break point chlorination, super chlorination. 6×2=12

5. a) What is water softening? Why it is done? 1+1=2

b) What are the various types of hardness those are generally found in water? Define/discuss all the types along with their removal methods in detail. 2+8+8=18

6 a) Discuss the various important requirements of a good water distribution system. 05

b) What are the four different types of pipe networks those are in practice for the distribution of water supply? Discuss each of them in detail with proper schematic diagram for all the pipe networks. 3+12=15

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