5TH SEM./ CIVIL/2024(W)

TH4 Water Supply & Waste Water Engineering

Full Marks: 80 **Time- 3 Hrs**

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
   a. What is aquifer and their types?
   b. Define BOD and COD.
   c. What is meant by disinfection?
   d. What do you mean by cone of depression?
   e. Define Flocculation.
   f. What is screening?
   g. Define slow sand filter and rapid sand filter.
   h. What are the most common impurities mostly found in natural water.
   i. What are the different methods of calculating population growth?
   j. Explain the term per capita demand.

2. Answer **Any Six** Questions 5 x 6
   a. Write the physical test of water supply.
   b. Discuss "Roof top rain water harvesting". What are the advantages from this technique?
   c. Explain the types of water demand.
   d. Explain the break point chlorination.
   e. Sketch and describe in details the working of slow sand filter.
   f. Describe the process of primary treatment of sewage with help of flow diagram.
   g Explain method of fore casting population.

Answer **Any Three** Questions

3. The census records of a small town is as follows. 10

Year	Population
1940	5,400
1950	6,000
1960	8,000
1970	10,000

Calculate the probable population in 1980, 1990, 2000, 2010 by arithmetic increase method.

4. Determine the velocity of flow in a circular sewer of diameter 150cm laid on slope of 1 in 500 while running full by using Chezy's formula. 10
   The value of C=70.
5. Draw the treatment process of each unit with flow diagram. 10
6. Write the comparison between conservancy and waste carriage system. 10
7. Draw and describe the terms of coagulation tank. 10