5TH SEM./CIVIL / 2022(W)

Th-4 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 per capita demand ?

   b. Define sewage and sewer.

   c. What is yield of a well ?

   d. What is pre-chlorination and post chlorination ?

   e. Write the short notes on sluice valve and scour valve.

   f. What is aquifer and their types?

   g. Write down the PH value of drinking water.

   h. Write down Darcy's formula for discharge of water.

   i. Write down the cause of blue baby disease?

   j. What is flocculation?

2. Answer **Any Six** Questions 6 x 5

   a. Find the diameter of an open well to give the discharge of 5 lit/sec. The depression head is 5 m and specific yield 2 $m^3/hr/m^2$.

   b. Describe the biological characteristics of drinking water .

   c. Write the types of hardness. Write necessity of water softening .

   d. Describe skimming tank with sketch.

   e. Write the short notes on 1)Manhole 2)Gully trap.

   f. Describe the methods of distribution with neat sketch.

   g Explain the various methods of sludge disposal.

3 Differentiate between water carriage system and conservancy system of collection of wastes. 10

4 Explain the principle of rapid sand filter. 10

5 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.

6 Write the necessity of secondary treatment of sewage. Sketch the flow diagram of secondary treatment & write the function of each unit. 10

7 Describe the different types of pipes as per material? 10