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TI - EXAMINATION (February - 2020)

B.Tech. (VI- SEM)

COURSE CODE: 10B11CE613

MAX. MARKS: 15

COURSE NAME: Sewage Treatment and Disposal

COURSE CREDIT: 3

MAX. TIME: 1 HR

Note: Attempt all questions. Assume suitable data if required. Carrying of mobile phone during examinations will be treated as case of unfair means

1. What do you mean by variation in flow of sewage? Explain average flow, dry weather flow and maximum flow? [CO-1] (4 Marks)

2. The population of five decades from 1940 to 1980 is given below. Find out the population in decades 1990, 2000 and 2010 by using: Arithmetical increase method; Geometrical increase method; Incremental increase method and decrease rate of growth method? (5Marks)

[CO-1]

Year	Population
1940	250000
1950	480500
1960	550300
1970	638600
1980	695200

3. (a) Assuming that the surface on which the rain falls in a district is as follows: 20% of the area consists of roofs with runoff ratio as 0.9, 25% of the area consists of pavements for which the runoff ratio is 0.85, 50% of the area consists of lawns and gardens for which runoff ratio is 0.10, and the remaining 5% of the area is

wooded for which the runoff ratio is 0.05. Determine the runoff coefficient, if the total area of the district is 1.5 square km and the maximum rain intensity is taken as 60.5 mm/hour, what is the total runoff for the district using rational formula? [CO-2] (3 Marks)

(b) A population of 40,000 resides in a town covering an area of 75 hectares. Calculate the discharge for a combined system of sewers. Given:-

(1) Coefficient of run off=0.70

(2) Rain concentration=40 minutes

(3) Water consumption=120 l/d/ person

(4) 70% of wastewater reaches the sewers.

[CO-2] (3Marks)