VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Continuous Assessment Test – I

Programme Name & Branch: B Tech in Civil Engineering

Course Name & Code: Environmental Engineering (CLE1006)

Class Number: 5168 **Slot:** E1 **Exam Duration:** 90 Mins **Maximum Marks:** 50

General instruction(s): Answer all the questions given

Section – A (10 x 5 = 50 Marks)

1. A single pipe of diameter 600 mm is to be replaces by 4 pipes of same material, same length of equal diameter, to convey the same total discharge under the same head loss. Find the diameter of the smaller pipes.

2. (a) The present population of a city is 1.75 million and the decadal growth rate is of 15%. How many year will it take to double the population at that growth rate?

   (b) The population of a city in three consecutive decades of 1991, 2001 and 2011 are 14, 19, and 22 million respectively. Find the predicted population for 2025 as per the Logistic Curve Method.

3. Develop the mass balance equation of three Continuous Mixed Batch Reactors (CMBR) in series for first order reaction.

4. (a) Explain the Grid Iron method of distribution network with their relative advantages and disadvantages.

   (b) Write short note on decentralized water treatment and supply.

5. (a) What are the different sources of freshwater? How much of that amount we can practically use it for our purpose?

   (b) What is the fire demand of a city of population 25 thousand as per Kuiching's formula?