KATHMANDU UNIVERSITY
ENVE 101 FM:20 Time: 1 hr
First Internal Examination
SET B

1) Define in a sentence. [5]
a) Disinfection b) grey water c) Weathering d) Catchment area e)Wholesome water

2) A kitchen with a volume 500m^3 operating for an hour is using 10 wood burning stoves, each using 2 kg of wood. 1 kg of wood emits 1.5 mg of harmful chemical (CO). The CO is converted to CO_2 with a reaction rate coefficient of 0.40/hr. Fresh air enters in the air with the rate of 500 m^3/hr and polluted air leaves at the same rate. For a completely mixed system, calculate the steady state concentration of harmful chemicals in the air using mass balance method.

3) The following is the population data of a city. [5]
Determine the population of the city in 2021 by (a) the arithmetical increase method (b) the geometrical increase method.

Year	1961	1971	1981	1991	2001	2021?
Population	48,000	78,000	90,000	100,000	150,000	

Using the population from the arithmetic method, determine (c) the total discharge in m^3/s of the city if the per capita demand is 115 lpd.

4) Short notes. [2.5*2=5]
(a) Separate sewer network
(b) Sedimentation