Sewage disposal

Assignment I

Problem 1: The BOD$_5$ of a waste water is 150 mg/L at 20$^0$ C. The k value is known to 0.23 per day. What would BOD$_8$ be, if the test was run at 15$^0$ C?

Problem 2: In a test conducted for determining the relative conductivity at 20 $^0$C, the period of incubation was found to be 12 days. Calculate the percent of relative stability.

Problem 3: Design an aerated grit chamber for treating municipal waste water with average flow rate of 0.5 m$^3$/s (43.2 MLD). Assume the peak flow rate to be 3 times the average.

Problem 4: Design a circular settling tank unit for a primary treatment of sewage at 12 MLD. Assume suitable values of detention period (presuming that trickling filters are to follow the sedimentation tank), and surface loading.

Problem 5: (a) Design a septic tank for the following data:

No. people = 100

Sewage/capita/day = 120 litres

De-sludging period = 1 year

Length: Width = 4: 1

(b) What would be the size of its soak well if the effluent from this septic tank is to be discharged in it? Assume percolation rate through the soak well to be 1250 l/m$^3$/d.