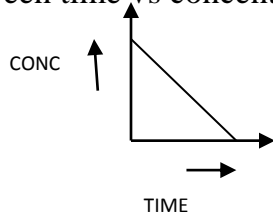# WORKSHEET

CHAPTER 4: CHEMICAL KINETICS

1 Following graph is between time vs concentration. What is the order of the reaction?

2 A first order reaction is 50% complete in 36 minutes at 300K. The same reaction is 50% complete in 9 min at 350K. Calculate the energy of activation of the reaction.

3 In a first order reaction a substance undergoes 75% decrease in concentration in 32 min. Calculate the half life.

4 Explain the following:

   i.   An increase of 10K in temperature really doubles the kinetics energy of particles but this increase in temperature may be enough to double the vote of reaction.

   ii.   One gram of pulverized wood burns faster than one gram of log of wood.

5 At 380^0C, the half life period for the first order decomposition of H_2O_2 is 360 min. The energy of the activation of the reaction is $200KJmol^{-1}$. Calculate the time required for 75% completion at 450^0C?

6 The population of India in 1998 was 800 millions. What will be the population in 2000 if there is no change in present growth rate which is 25 per thousand per year? It obeys first order kinetics.

7. At certain temperature the half life period for the catalytic decomposition of ammonia was found as:

Pressure (Pa)	6667	13333	2.6666
t1/2 (in hours)	3.52	1.92	1.0

Calculate order of reaction.