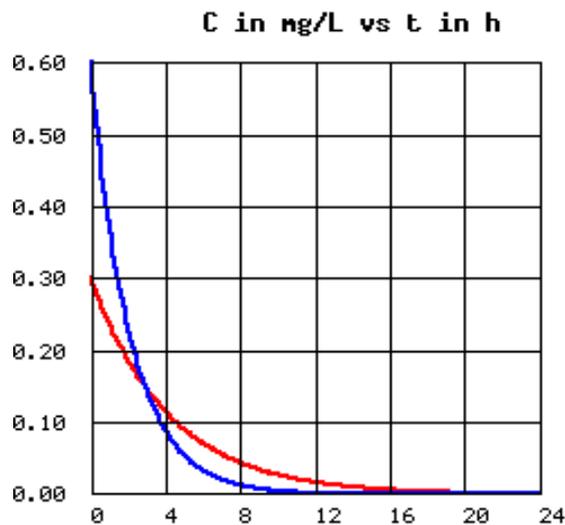


Due Date: 8th October, 2010

Do not forget the units of the results. 0.1 points will be deducted for each time an answer is provided without the appropriate unit. If you do not show your work and your answer differs from the right solution, no points will be given. Assume that all elimination processes are first-order.

- 1) The same dose (500 mg) of drug A was administered to two distinct patients via IV-bolus. The following plasma-concentration-time profiles were obtained. The blue line is Subject 1 and the red line is subject 2. Answer the questions below.



True or False: (Mark whether True or False and **Explain**) [4 points]

- The clearance of subject 1 is higher to the clearance in subject 2. (T/F)
- The AUC_{0-t} of the subject 1 is higher to the AUC_{0-t} of subject 2. (T/F)
- The V_d of the subject 2 is higher to the V_d of subject 1. (T/F)
- The tissue binding in subject 1 is higher to the tissue binding in patient 2. (T/F)

2) The table below shows the concentration time data after IV bolus administration of a 500mg dose of drug X. Assume that there is only renal elimination. Calculate the rate of excretion at time 2hr and 8 hr. Do they differ? If yes, can you conclude that the clearance changes with time?

[4 points]

time(hr)	conc (mg/l)
0	14.29
1	12.38
1.5	11.53
2	10.74
4	8.07
6	6.06
8	4.56
10	3.42
12	2.57

True or False: [2 points]

- 1) Linear Pharmacokinetics assumes that the plot of clearance vs dose is a flat line parallel to the dose axis i.e. the clearance stays constant with change in dose. (T/F)
- 2) The change in clearance will not necessarily result in a change in V_d . (T/F)