PHA 5127 HW # 2 (Fall 2008) 10 Points

Please show your calculations and make sure your numerical answers have units!

Q1. The usual plasma protein binding of drug A is 98% and the plasma protein binding of drug B is 10%. Comparing to their usual levels, what will happen with Vds and free drug levels if the protein bindings of both drugs decrease 50% in this patient (Assume same dose application, fuT=0.1, Vp= 3L, VT=38 L for both drugs, and no clearance are considered)? What can you conclude from your calculation? (4 points)

Say True or False (0.5 points each) (3 points)

T F Drug A is lipophilic. The apparent volume of distribution of drug A cannot be greater than 38 L

T F Drug A is lipophilic and crosses membranes easily, while drug B is hydrophilic and crosses membranes poorly. At equilibrium, the free levels of drug B in tissue will always be higher than the free levels of drug B in plasma.

T F Drug A is lipophilic and crosses membranes easily, while drug B is hydrophilic and crosses membranes poorly. Drug A has lower clearance as compared to Drug B since there is very low amount of Drug A in plasma.

T F Drug A is lipophilic and crosses membranes easily, while drug B is hydrophilic and crosses membranes poorly. Drug A follows 2 compartment pharmacokinetics and hence has higher clearance as compared to Drug B

T F Of all the routes for a drug's clearance, only renal pathway determines the clearance for that drug.

T F The elimination half life of any drug depends on its clearance and the elimination rate constant.

Q3. Derive the half life equation for a first order elimination process (2pts)

Q4. Match the following (1pt)

a. Clearance	1. mg/hr
b. Half – life	2. mg*L/hr
c. AUC	3. hr
	4. mg*hr / L
	5. mg/ L
	6. L/ hr

a --- ?
b --- ?
c --- ?