

**Homework 4**

**Bio pharmaceutics & Pharmacokinetics/PHAR434**

**Instructor Abdullah Rabba**

**Student name and I.D Muhammad Musleh /1162595**

***Problem 1:-***

Plasma samples from a patient were collected after an oral bolus dose of 10 mg of a new benzodiazepine solution (F=1) as follows:  
Table1: Data of benzodiazepine solution

| | Time (hr) | Concentration (ng/mL) | | --- | --- | | 0.25 | 2.85 | | 0.50 | 5.43 | | 0.75 | 7.75 | | 1.00 | 9.84 | | 2.00 | 16.20 | | 4.00 | 22.15 | | 6.00 | 23.01 | | 10.00 | 19.09 | | 14.00 | 13.90 | | 20.00 | 7.97 | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |

**a.** Determine the elimination constant of the drug.

**b.** Determine *k* a by feathering.

**c.** Determine the equation that describes the plasma drug concentration of the new benzodiazepine.

**d.** the elimination half-life, *t* 1/2;

**e.** the *t* max, or time of peak drug concentration.

**f.** the volume of distribution of the drug.

Figures: Solution 





