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**COURSE: CHM210**

**DEPARTMENT: BIOCHEMISTRY**

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**ASSIGNMENT TITLE**

**ORDER OF REACTIONS**

1. With the aid of a relevant chemical and mathematical equation, show whether the half life of a second order reaction is concentration dependent or not.

ANSWER

The total time for a second order reaction is

1/At = 1/Ao + kt………………(1)

For the half life, t=t1/2 and A=Ao/2

Substituting the values into equation (1)

1/Ao/2 = 1/Ao + kt1/2

2/Ao = 1/Ao + kt1/2

Kt1/2 = 2/Ao – 1/Ao

Kt1/2 +1/Ao

t1/2 =1/k[1/Ao]

t1/2 = 1/k[A0]……………..(2)

From the equation above, it can be concluded that the half life of a second order reaction is concentration dependent.