4.) Calculate the rate constant of a zero order reaction :-

```
#include <stdio.h>
#include <math.h>
// function to calculate the rate constant
   for a zero order reaction
float calculate rate constant (float c0, float ct, float t)
{
return (c0-ct)/t;
}
int main()
{
float c0, ct, t, k;
// input the initial concentration, concentration at
   time t and time
printf ("enter the initial concentration (c0):");
Scanf ("%f", &c0);
printf ("enter the concentration at time t (ct):");
Scanf ("%f", &ct);
printf ("enter the time elapsed (t):");
Scanf ("%f", &t);
// calculate the rate constant
k = calculate rate constant
//output the rate constant
```

```
printf("The rate constant (k) for a
zero order reaction is: %f mol/l*s\n", k);
}
```

output:

```
Enter the initial concentration (C0) = 0.0
Enter the concentration at time t (Ct) = 5.6
Enter the time elapsed (t) = 58
The rate constant (k) for a zero order reaction is = 0.096552 mol/l*s
```