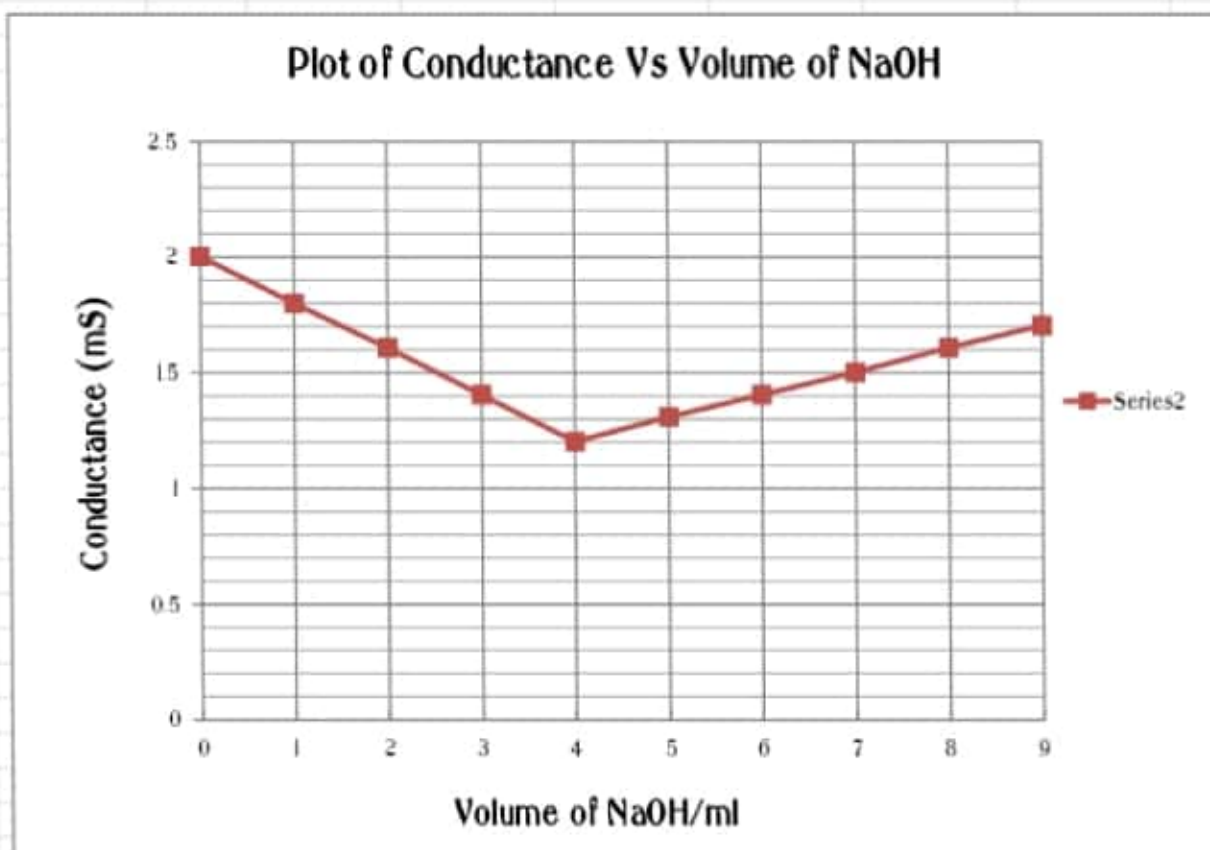


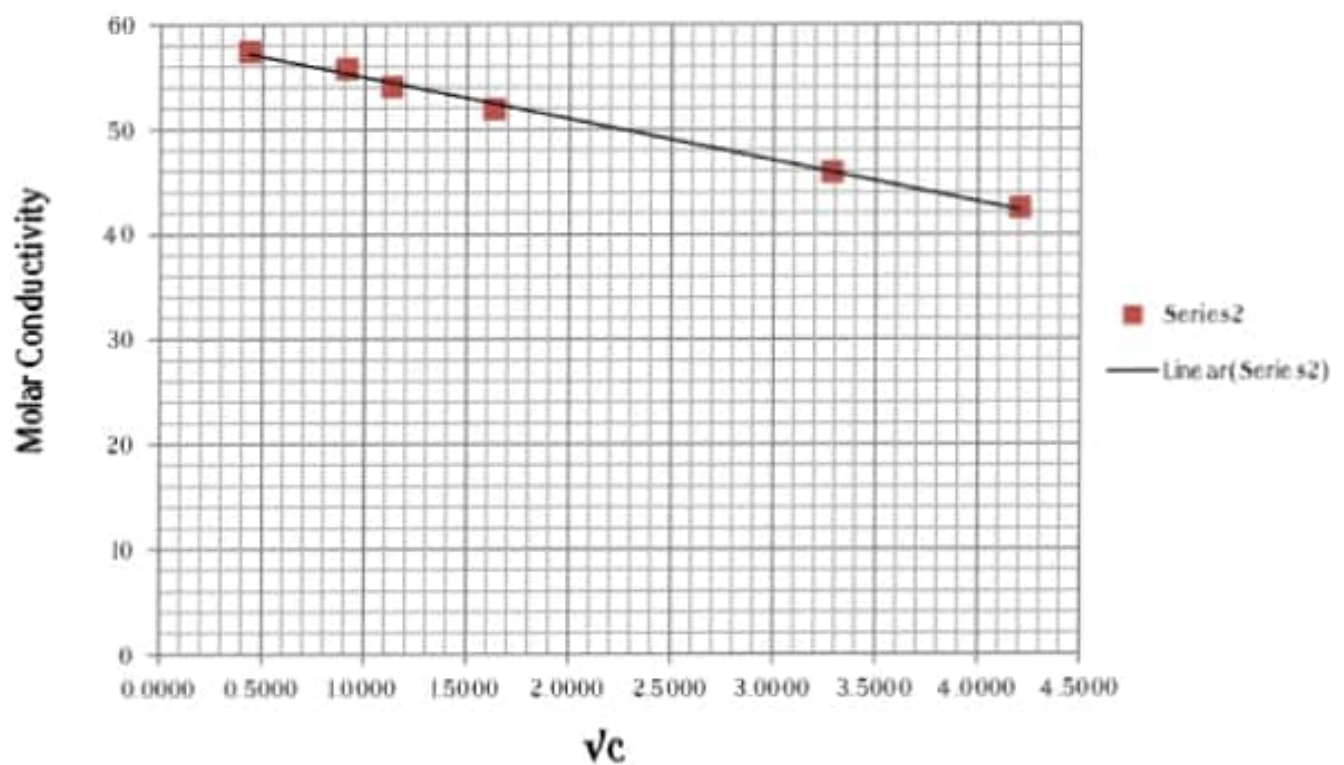
Conductometric Titrations Of HCl Vs NaOH

Volume of NaOH in ml	Conductance (mS)
0	2
1	1.8
2	1.6
3	1.4
4	1.2
5	1.3
6	1.4
7	1.5
8	1.6
9	1.7



Plot of Molar Conductivity Vs Concentration

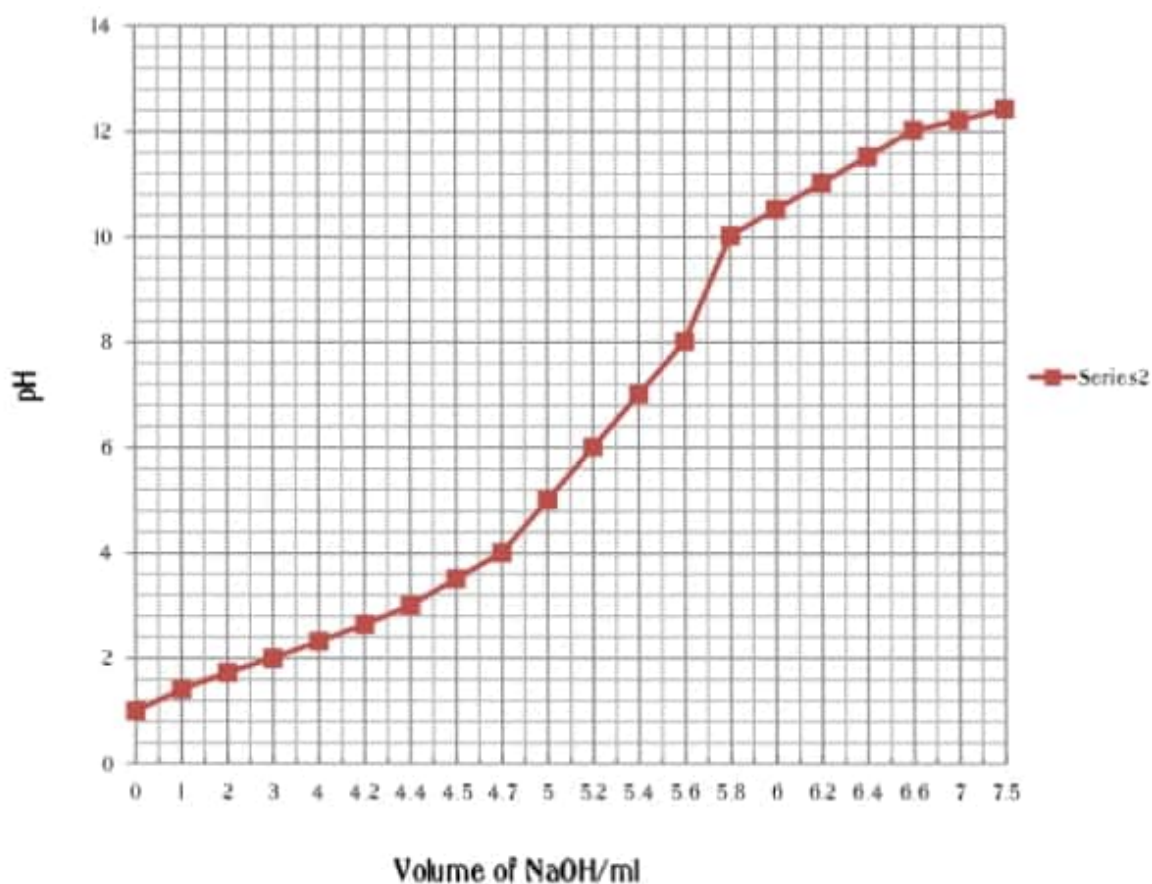
Concentration(M)	\sqrt{c}	Molar Conductivity
17.68	4.2048	42.45
10.8	3.2863	45.91
2.67	1.6340	51.91
1.28	1.1314	54.09
0.83	0.9110	55.78
0.19	0.4359	57.42

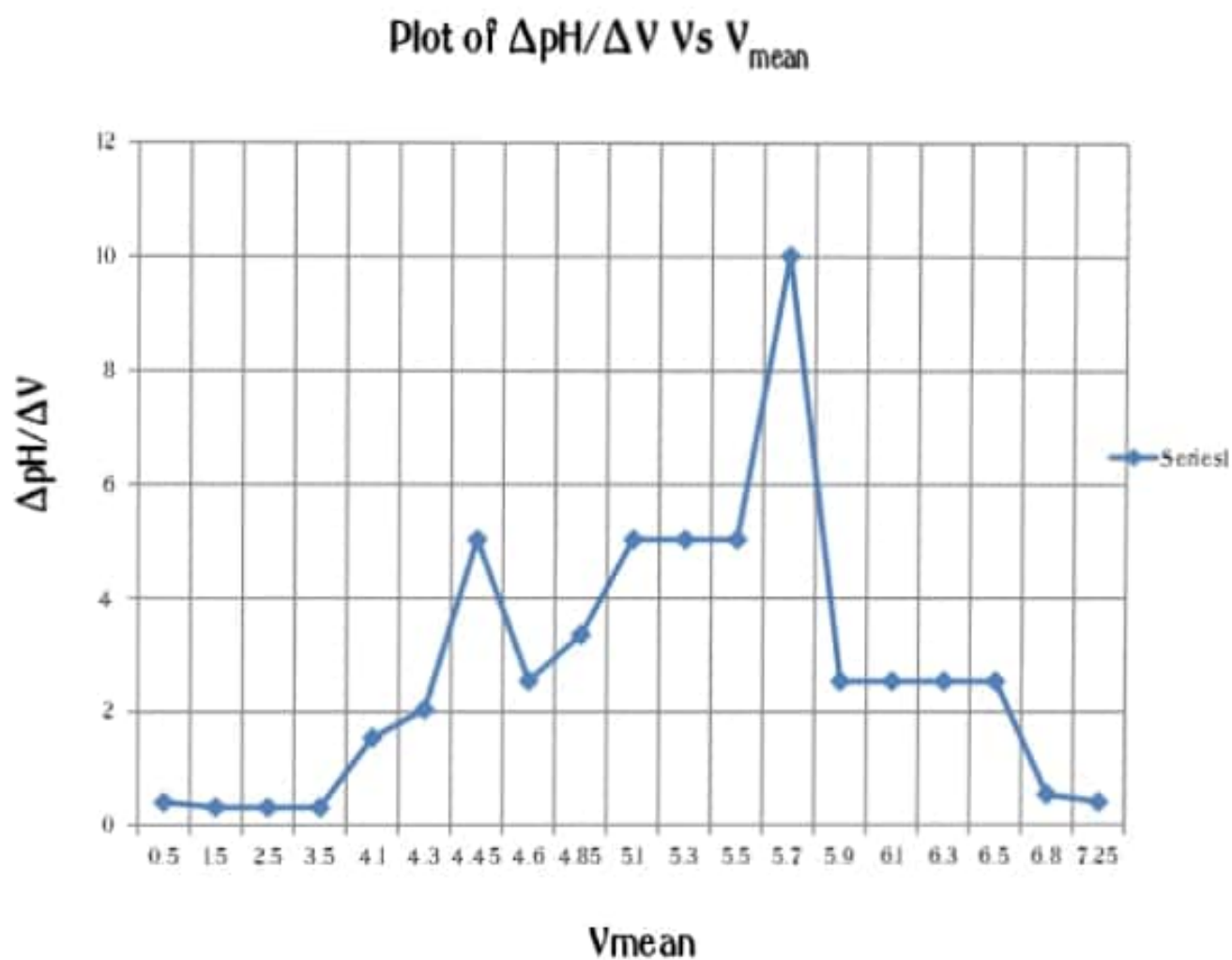
Plot of Molar Conductivity Vs \sqrt{c} 

Ph metric titration of HCl Vs NaOH

Volume of NaOH	pH	V_{mean}	ΔpH	ΔV	$\Delta\text{pH} / \Delta V$
0	1	0.5	0.4	1	0.4
1	1.4	1.5	0.3	1	0.3
2	1.7	2.5	0.3	1	0.3
3	2	3.5	0.3	1	0.3
4	2.3	4.1	0.3	0.2	1.5
4.2	2.6	4.3	0.4	0.2	2
4.4	3	4.45	0.5	0.1	5
4.5	3.5	4.6	0.5	0.2	2.5
4.7	4	4.85	1	0.3	3.333333333
5	5	5.1	1	0.2	5
5.2	6	5.3	1	0.2	5
5.4	7	5.5	1	0.2	5
5.6	8	5.7	2	0.2	10
5.8	10	5.9	0.5	0.2	2.5
6	10.5	6.1	0.5	0.2	2.5
6.2	11	6.3	0.5	0.2	2.5
6.4	11.5	6.5	0.5	0.2	2.5
6.6	12	6.8	0.2	0.4	0.5
7	12.2	7.25	0.2	0.5	0.4
7.5	12.4				

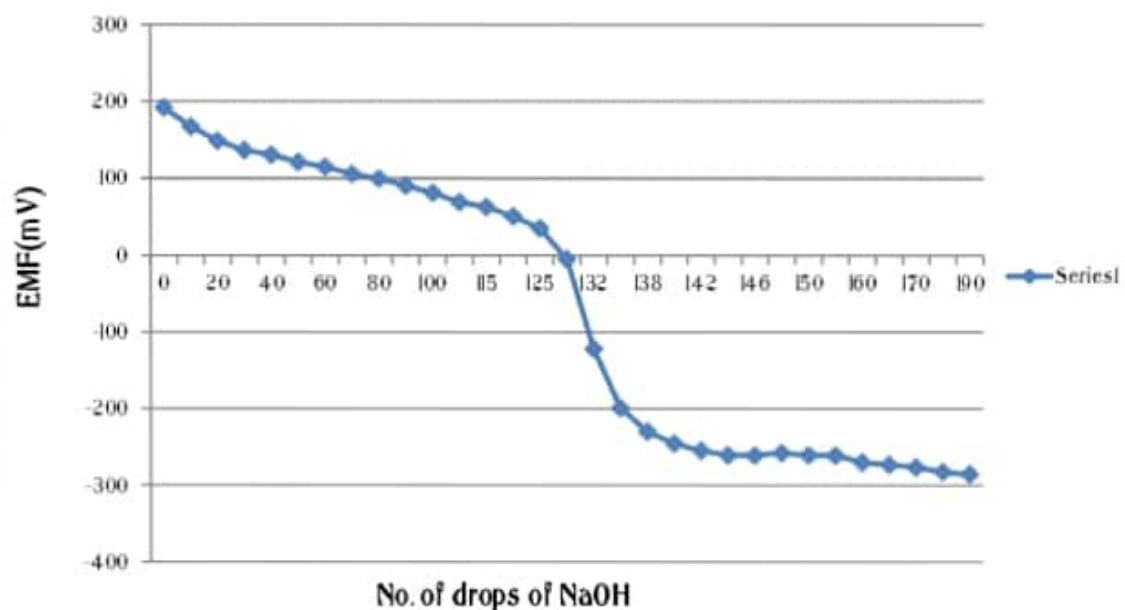
Plot of pH Vs Volume of NaOH

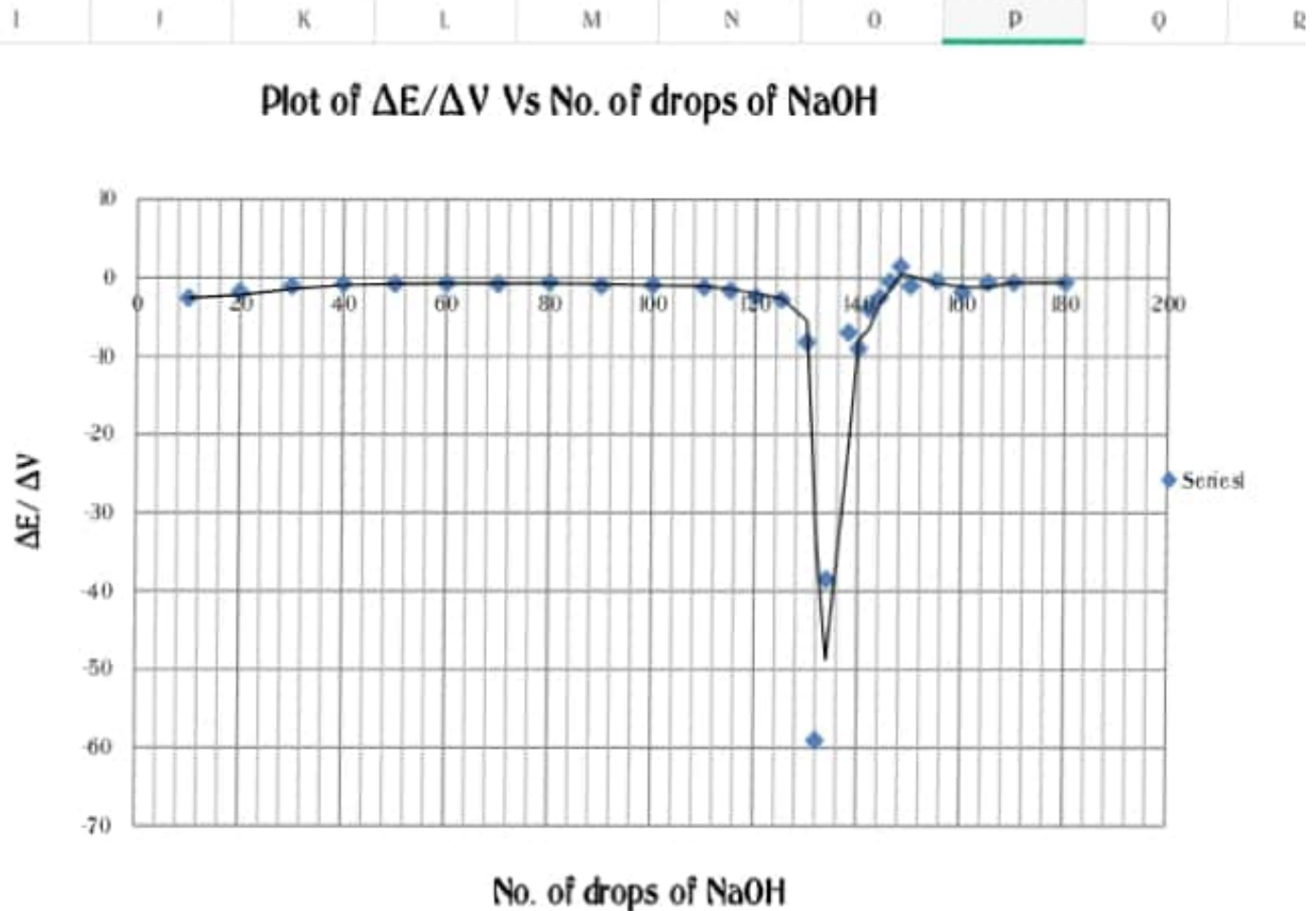




	B	C	D	E	F	G	H	I
3								
4		No of drops	EMF(mV)	ΔV	ΔE	$\Delta E/\Delta V$	V_{mean}	
5								
6		0	191					
7		10	165	10	-26	-2.6	5	
8		20	147	10	-18	-1.8	15	
9		30	136	10	-11	-1.1	25	
10		40	128	10	-8	-0.8	35	
11		50	120	10	-8	-0.8	45	
12		60	113	10	-7	-0.7	55	
13		70	105	10	-8	-0.8	65	
14		80	99	10	-6	-0.6	75	
15		90	89	10	-10	-1	85	
16		100	80	10	-9	-0.9	95	
17		110	68	10	-12	-1.2	105	
18		115	60	5	-8	-1.6	112.5	
19		120	48	5	-12	-2.4	117.5	
20		125	34	5	-14	-2.8	122.5	
21		130	-7	5	-41	-8.2	127.5	
22		132	-125	2	-118	-59	131	
23		134	-202	2	-77	-38.5	133	
24		138	-230	4	-28	-7	136	
25		140	-248	2	-18	-9	139	
26		142	-256	2	-8	-4	141	
27		144	-261	2	-5	-2.5	143	
28		146	-262	2	-1	-0.5	145	
29		148	-259	2	3	1.5	147	
30		150	-261	2	-2	-1	149	
31		155	-263	5	-2	-0.4	152.5	
32		160	-272	5	-9	-1.8	157.5	
33		165	-275	5	-3	-0.6	162.5	
34		170	-278	5	-3	-0.6	167.5	
35		180	-284	10	-6	-0.6	175	
36		190	-288	10	-4	-0.4	185	

Plot of Emf Vs No. of drops of NaOH





CALCULATION PART

Normality of NaOH Solution $N_1 = 0.067N$

Volume of Acetic acid taken $V_2 = 30ml$

Drop Value = 0.05ml

Drops of NaOH from graph = 135 drops

Volume of NaOH = 6.75ml

$$N_1 V_1 = N_2 V_2$$

$$0.067 \times 6.75 = N_2 \times 30$$

$$N_2 = 0.15N$$

$$\text{Strength} = \text{Normality} \times \text{Equivalent mass}$$

$$= 0.015 \times 60$$

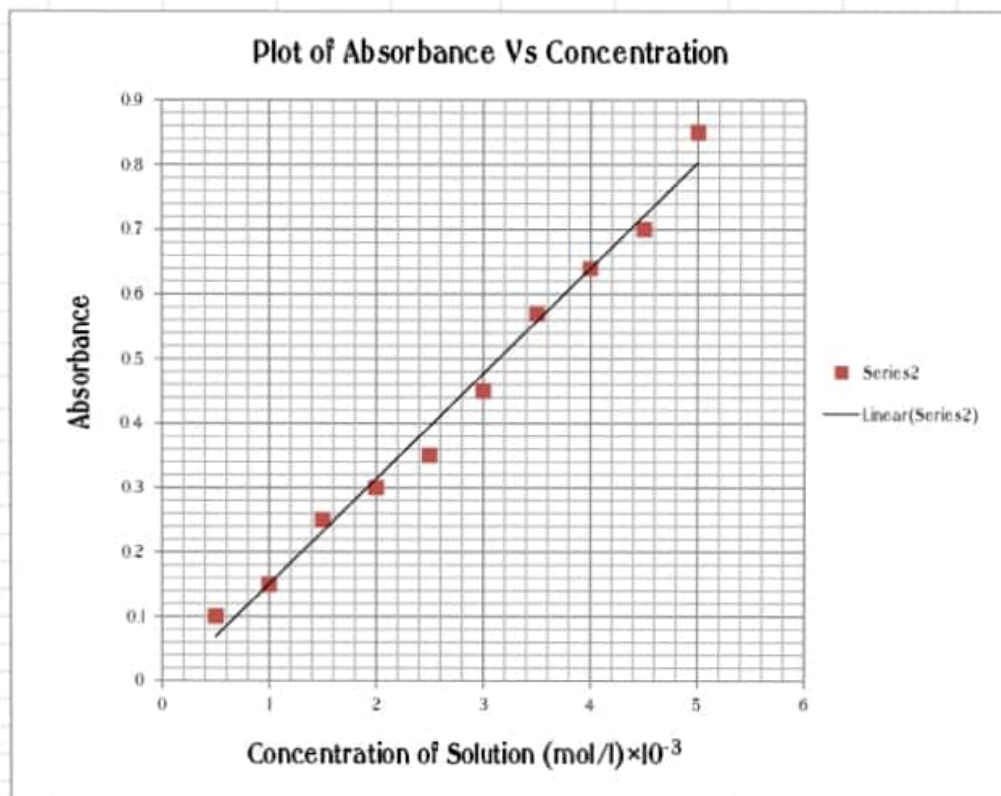
$$= 0.045g/l$$

$$\text{Molarity} = \text{Strength} / \text{Molecular mass}$$

$$= 0.045 / 60$$

$$\text{Molarity} = 0.00075M$$

Concentration of K ₂ Cr ₂ O ₇ acidic solution (mol L ⁻¹) × 10 ⁻³	Absorbance
0.5	0.1
1	0.15
1.5	0.25
2	0.3
2.5	0.35
3	0.45
3.5	0.57
4	0.64
4.5	0.7
5	0.85
Given solution	0.4



Absorbance of given solution

0.4

Concentration of given solution

2.5321

Absorbance = 0.40

Concentration from graph = 2.5×10^{-3} mol/l

Diameter of Cuvette = 1cm

 $A = \epsilon C L$ where ϵ is molar extinction coefficient $0.40 = \epsilon \times 2.5 \times 10^{-3} \times 1$ $\epsilon = 0.16 \times 10^3 \text{ mol}^{-1} \text{ cm}^{-1}$