Somaiya Vidyavihar University
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Department of Science and Humanities
Applied Chemistry Laboratory

63

Subject: Engineering Chemistry

Observations:

No	Volume of KOH Solution (mL)	pH of solution	ΔpH	ΔV	ΔpH/ΔV
1	0.0	3.41	—	—	—
2	1.0	3.45	0.04	1	0.04
3	2.0	3.50	0.05	1	0.05
4	3.0	3.55	0.05	1	0.05
5	4.0	3.61	0.06	1	0.06
6	5.0	3.68	0.07	1	0.07
7	6.0	3.77	0.09	1	0.09
8	7.0	3.86	0.09	1	0.09
9	8.5	4.16	0.3	1.5	0.2
10	9	4.28	0.12	0.5	0.24
11	9.5	4.6	0.32	0.5	0.64
12	10	6.2	1.6	0.5	3.2
13	10.5	8.42	2.22	0.5	4.44
14	11	9.37	0.95	0.5	1.9
15	11.5	9.77	0.4	0.5	0.8
16	12	10.04	0.27	0.5	0.54
17	12.5	10.20	0.16	0.5	0.32
18	13	10.36	0.16	0.5	0.32
19	14	10.53	0.17	1	0.17
20	15	10.63	0.1	1	0.1
21	16	10.72	0.09	1	0.99

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CALCULATIONS

Use the relationship: $N_1V_1 = N_2V_2$ to determine the Normality of the base.

$N_1 = 0.1$, $V_1 = 10$, $N_2 = x$, $V_2 = 10.5$

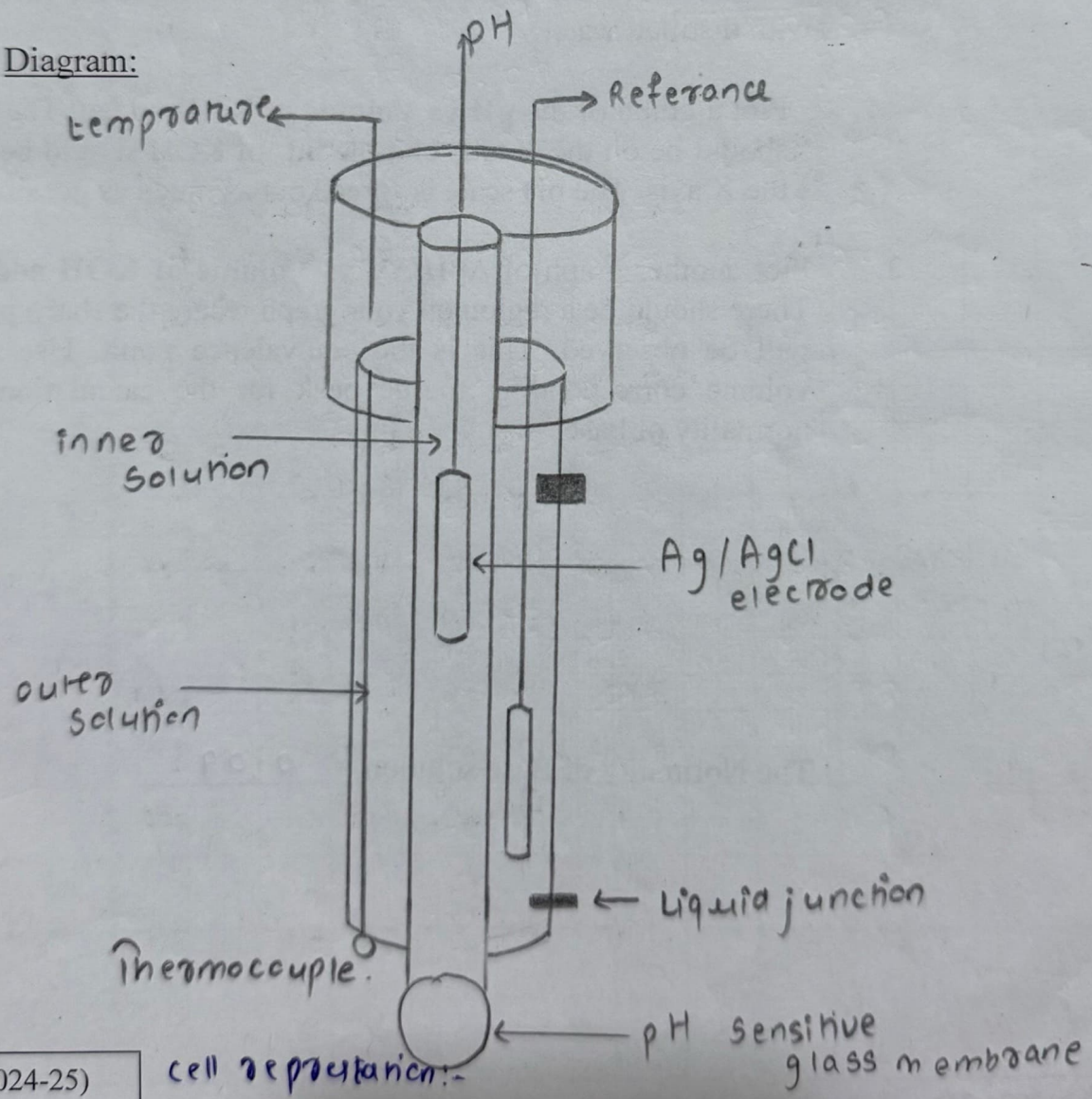
$0.1 \times 10 = x \times 10.5$

$x = \frac{0.1 \times 10}{10.5}$

$x = 0.095$

$\boxed{x = 0.09}$

Diagram:



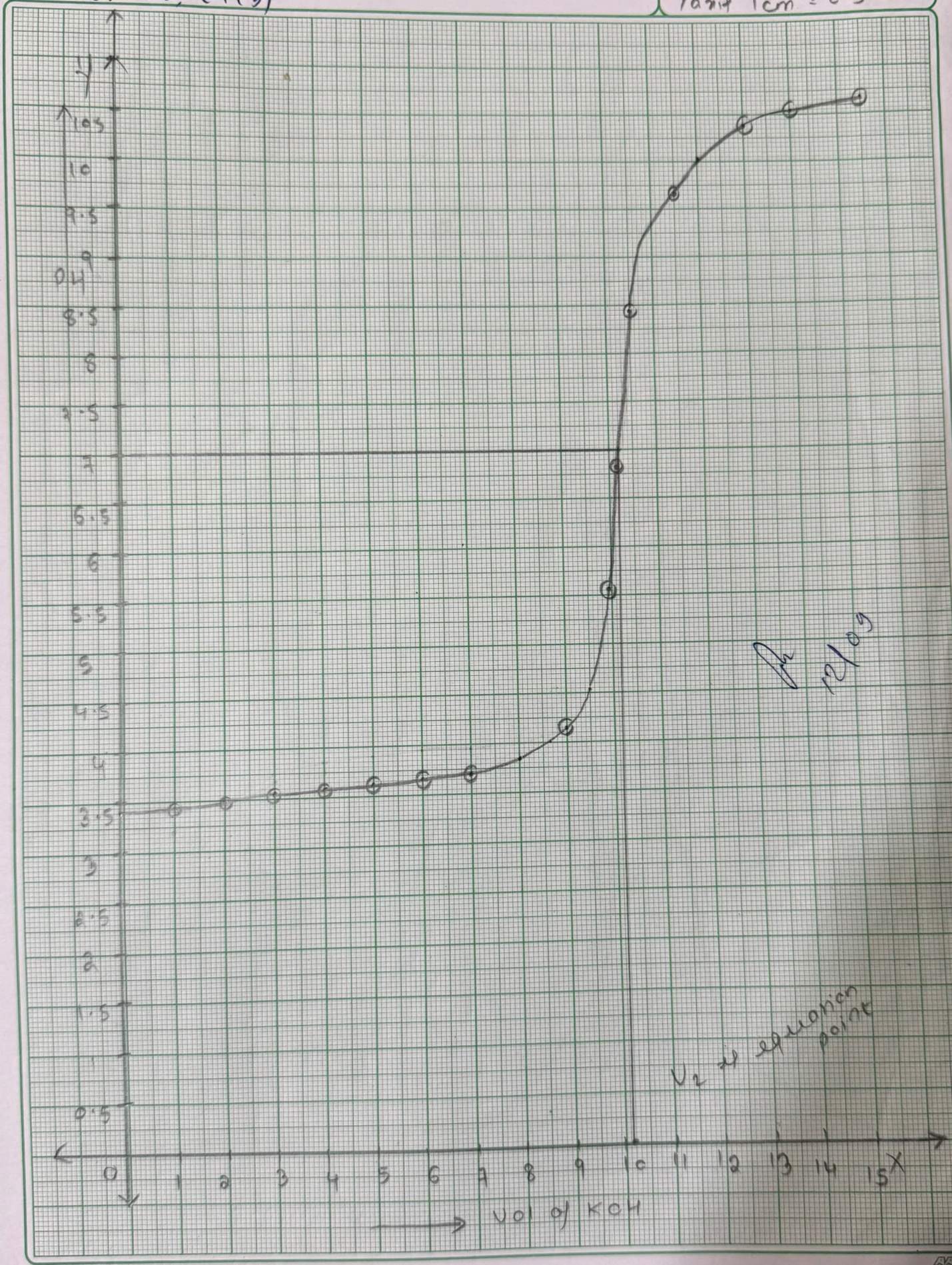
cell representation:-

$Ag(s) \mid AgCl(s) \mid Cl^-(aq) \,||\, H^+(aq, unknown) \,||\, H^+(aq), Cl^-(aq) \mid AgCl(s) \mid Ag(s)$

outer ref electrode. internal ref electrode

Name :-
Sai Shivani Maddala
Rollno :- 63, (7(3)

SCALE :- X axis
1 cm = 1 ml
Y axis 1 cm = 0.5



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Roll no:- 63 , C7(3)

$\frac{\Delta pH}{\Delta V}$ vs volume.

SCALE :- X axis = 1cm = 1 unit
Y axis = 2cm = 0.5 units