R. K. GROUP OF COLLEGE

BEHIND KALWAR POLICE STATION, KALWAR, JAIPUR (RAJ.)

CHEMISTRY

INDEX

S. No.	Name of Experiment	Page No.	Date of Experiment	Date of Submission	Remarks
1	formation of $KgCr-C_2O_4$ CH_2O_2.				
2	Preparation of potassium di oxalato aqua chromate				
3	Tetra-amine copper sulphate				
4	nickel dimethyloxime formation.				
5	formation of diacetato ferate-II.				
6	Preparation of benzanilide				
7	Preparation of M-dinitrobenzene.				
8	Preparation of idoform				
9	Preparation of methyl orange.				
10	Preparation of Anilline from nitrobenzene				
11	To separate the organic compound.				
12	To know the compound A and B.				
13	given mixture to calculate naphthaline and diphenyl alkene.				

S. No.	Name of Experiment	Page No.	Date of Experiment	Date of Submission	Remarks
14	To find organic Compound				
15	to know the Semamid acid.				
16	To Identified the organic Compound.				
17	Measured NaOH in HCl and calculate conc. of NaOH				
18	In given acid sol. Identify the conductivity measurement method				
19	Conductivity measured the weak acid.				
20	Measured atomic weight and freezing point.				
21	calculate Conduct concentration.				
22	By the method of Kellary calc. of KMnO4.				
23	Calculate Conc. of $K_2Cr_2O_7$ Solution.				

PAGE NO. Exp't. no. 1

DATE .....

Object:- formation of potassium di-oxalato di aqua chromate (III) ($K[Cr(C_2O_4)_2H_2O_2]$).

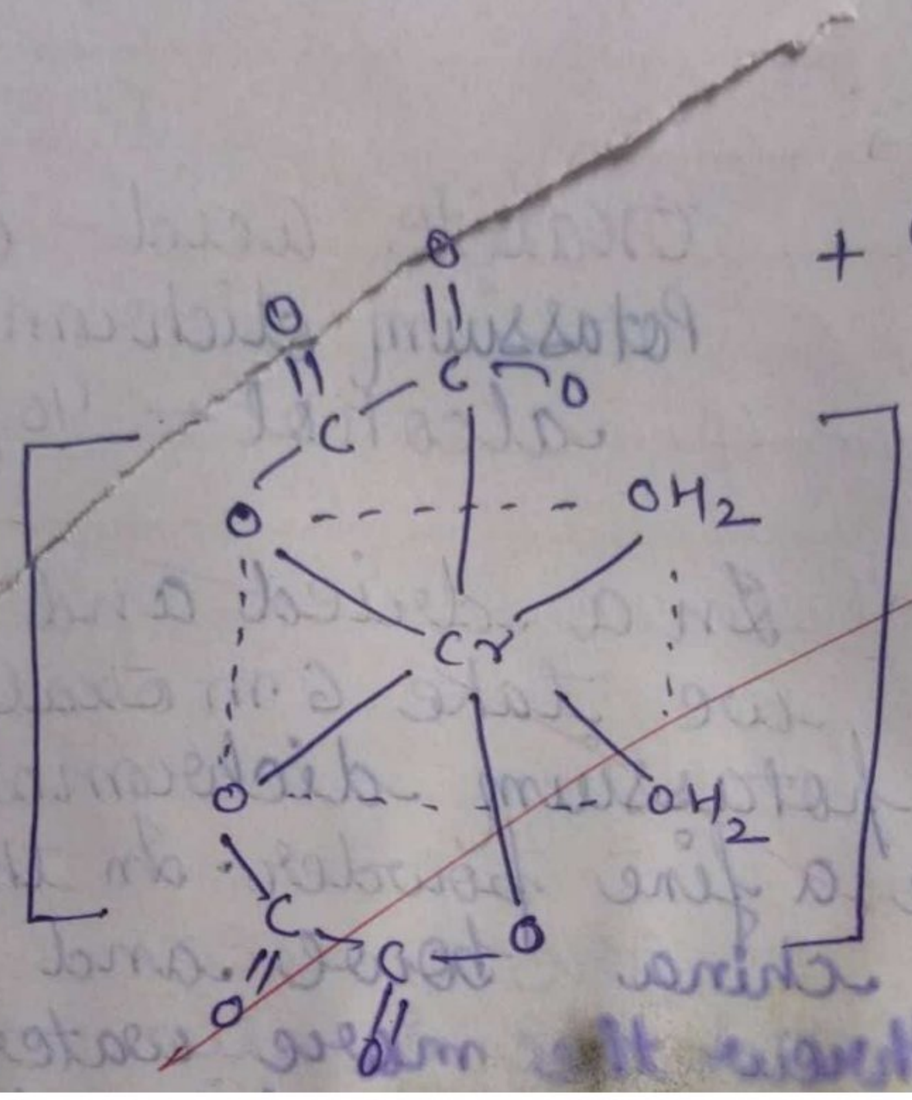
Reagent:→

Oxalite acid - 6gm
Potassium dichromate - 2gm
alcohol - 40 g'ml.

Method:→ In a dried and clean beaker we take 6 m oxalate and 2gm potassium dichromate and crushed to make a fine powder. In this powder take a china bowl and wet this. and threw the more water. now this water cover with watch glass and heat it with low. when it substance heat then reaction is fastly. and with high smell the Co2 gas removed. and this mixture converted into liquid dark colour. and this put out to burner and mix. 20ml alcohol the Spetulla then to move it makes a solid substance. if Solid substances are not formed then this maked liquid filtered and remaing solution put 2ml alcohol and mixed it in Spetulla. For this substance make Solid. and this moved and heat it.

Teacher's Signature.....

$$K_2Cr_2O_7 + 7 \begin{matrix} COOH \\ | \\ COOH \end{matrix} \cdot 2H_2O \longrightarrow 2K[Cr(C_2O_4)_2 \cdot (H_2O)]H_2O + 6CO_2 + 13H_2$$



PAGE NO. ..... DATE .....

In which crystals are formed. This crystals are dark pink black coloured.

Result :→

By above method the potassium dioxalato diaqua chromate (III) obtained.

→ This is black coloured solution.

3.2gm produced

Precautions :→ Beaker and flask both are dried and clean.

→ and heated the solution of china dish slowly. by which it does not blas

→

→ In hot solution the alcohol mixed time the burner should be closed By which there is no risk of burn.

12/04/2021

Teacher's Signature.....

PAGE NO. Expt -2.

DATE .....

Object :→

Opposition potassium di-oxalato aqua chromate (III) $K[Cr(C_2O_4)_2(H_2O)_2].2H_2O$ formation.

Reagent →

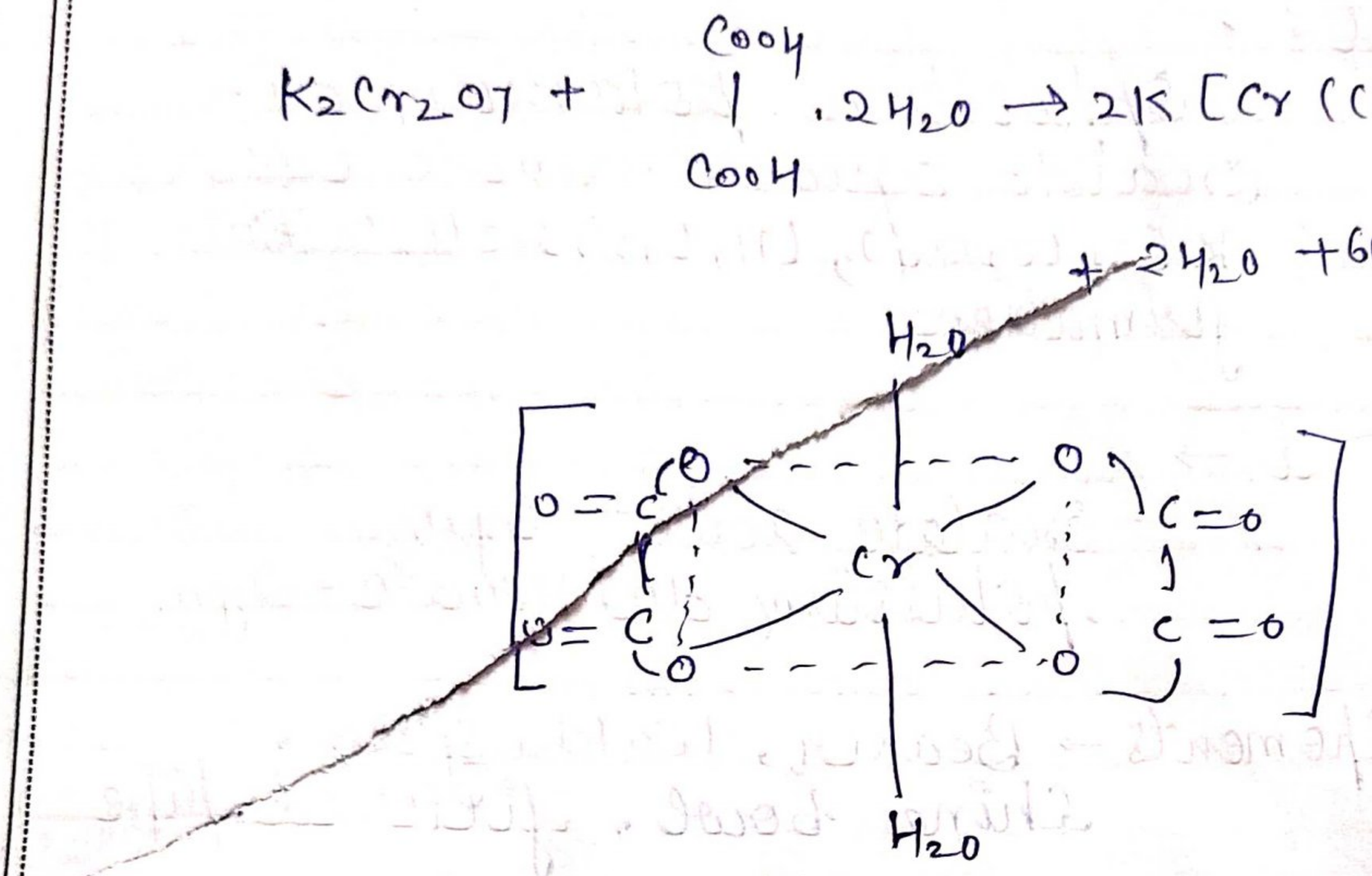
Oxalate acid - 6gm
potassium dichromate - 2gm

Equipements → Beaker, watch glass, China bowl, filtered pipe.

Method :→ In a 250gm beaker mixed 6gm oxalaic acid and mix it with lower amount and heat it. and by this method in filtered tube we take 2gm potassium dichromate put in and heat it. now this solution put it in beaker and cover with watch glass. because reaction is highly. now both solution then mixed and make dark colour liquid. and put it on china bowl then in One third heat it. and cold it on room temperature. and crystals are formed in china bowl. and wash this crystals with cold water. and in last alcohol

Teacher's Signature.....

Scanned with CamScanner



PAGE NO. .....

DATE .....

washed and crystals are formed of pink colour.

Result :→ above method the opposition potassium di oxalato di -aqua chromate (III) produced. which colour is pink and light brown.

brain :→ 5.3gm

Precaution :→ beaker is cleaned and dried.

→ china bowl substance heated with slow flame.

PAGE NO. .....

DATE .....

Expt.-No.-3

Object :→ tetra-amine coppersulphate $[Cu(NH_3)_4SO_4]$ formed.

Necessary Equipment →

(1) copper Sulphate - 5gm
(2) Ammonia beaker - 10ml
(3) alcohol - 40ml
(4) dilute H_2SO_4 - 1-2 drops

Equipments :→

beaker, watch glass.

Method :→ 3gm copper Sulphate powder take in beaker and solved in low amount of water. and Some drops mixed of H_2SO_4.

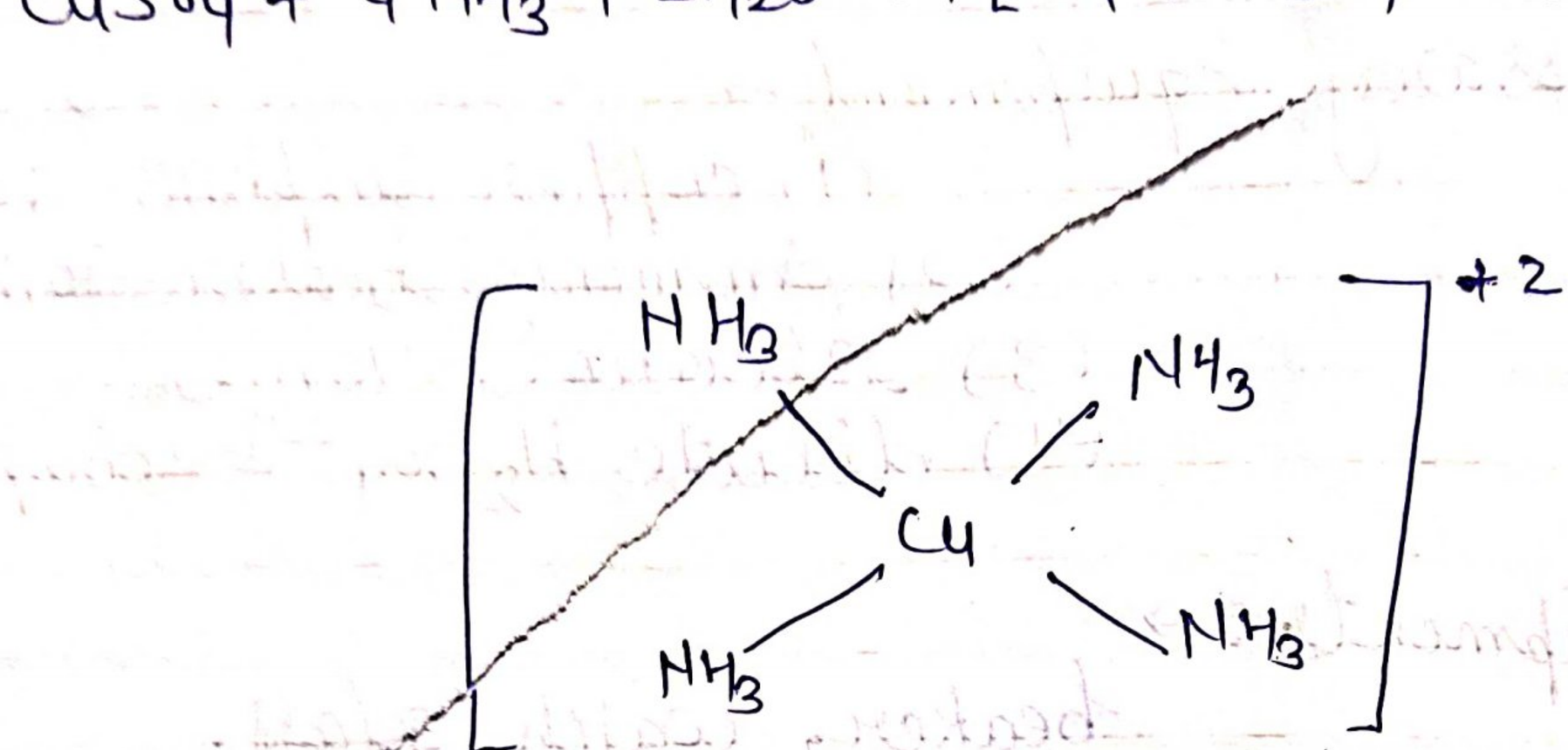
→ Now, In this NH_3 solution (:1) moved regularly because cupric hydroxide blue the solution becomes dark blue coloured. and Smell of NH_3 comes.

→ Now, this blue colour solution moved regularly and put in beaker. after this heat for 10-15 minute on 60°c - 70°c. beaker cool and in this needle Shaped crystals are seperated.

and dried in the filtere paper and separated.

Teacher's Signature.....

$$CuSO_4 + 4NH_3 + 2H_2O \rightarrow [Cu(NH_3)_4SO_4] \cdot H_2O$$



tetramine Copper (II)

PAGE NO. .....

DATE .....

Result :→

By above method diamine copper Sulphate (II) obtained which colour is blue.

Yield :→ 4 gm.

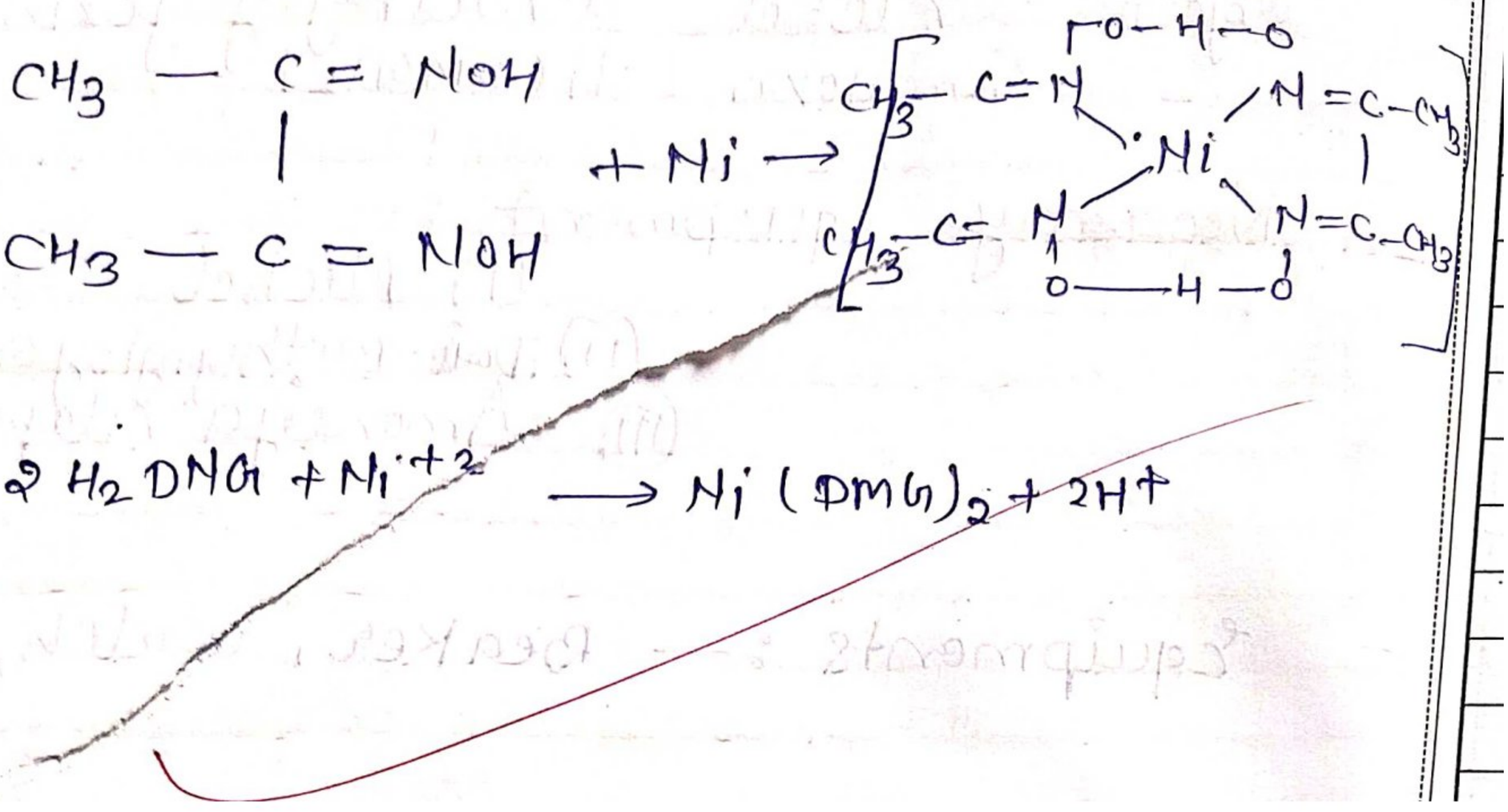
Precaution :→ beaker should be clean and dried.

Object :- nickel demethylglyoxine Complexn [Ni(DMG)$_2$]

Necessary Equipment :-
(i) Nickel Cloreed-6gr
(ii) Dai-methylgloyoxne -10%
(iii) Amoneiya Vilopen - 1:1

Equipments :- Beaker, watchglass

Method :-
One 400mil. Beaker given nikal sulphat 6 gm Heat at 72-80°C and this Solution put in 42-50mil.t. Dai-methylgloyoxLice. abter this S in Solution. 1:1 amoniyum solution Drop by drop in watch stick.
In Beaker the water. Heat at 20-30 the down droped read Clour Sum Di-methylgloyoxlek reagent mixed and testit. that the solution is Complet or not. Beaker put for Half-Houes. this is sepetrated by funnel and this is wased Could-water. two three time. and in last the Solution of wased 5 ~~militre~~ mL. alcohol



PAGE NO. .....

DATE .....

And dried - it.

Result :-

above method Ni(OH)2 prod used Red Colour Solution.

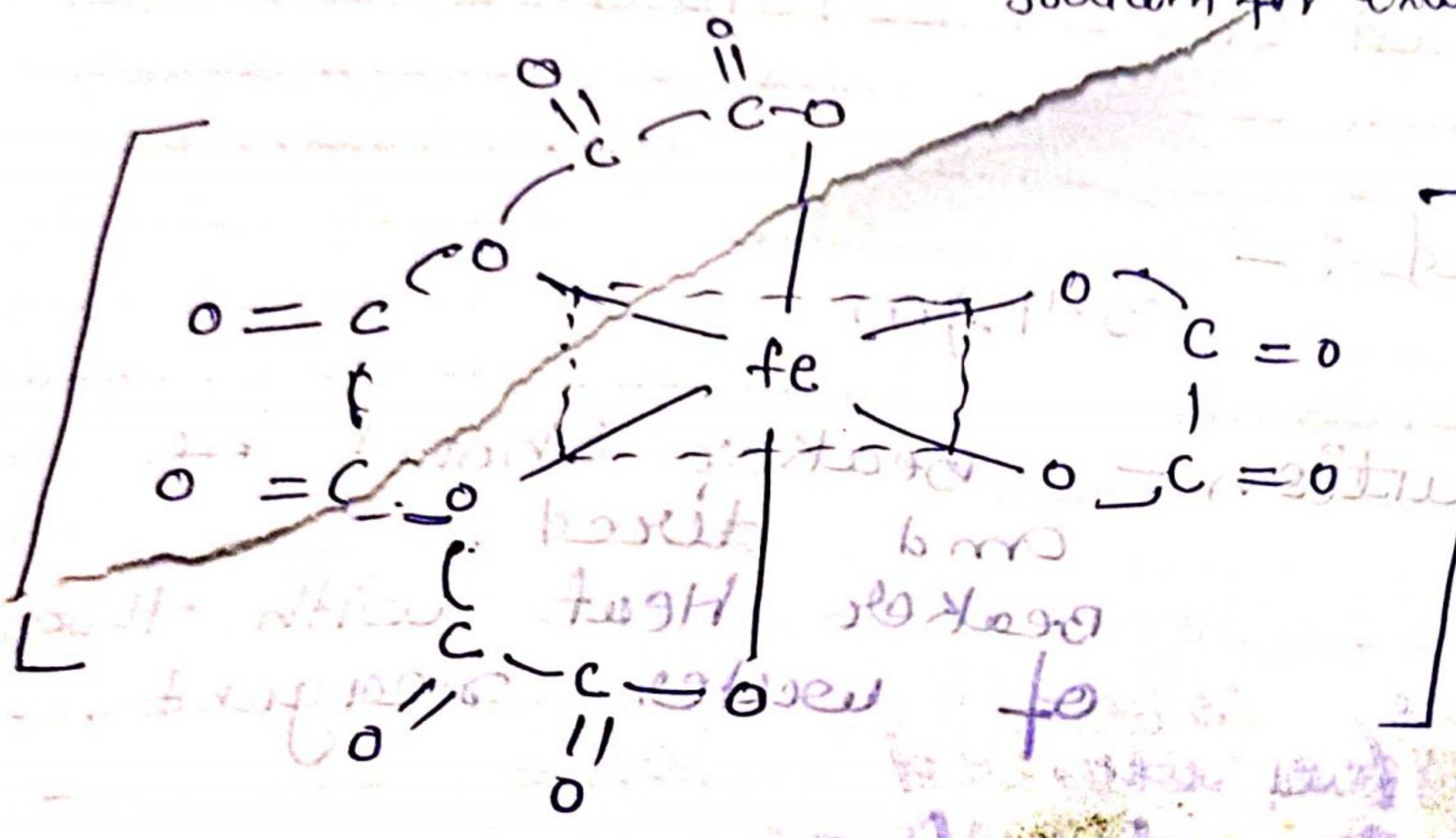
gained :-

3-4 gm

precaution - Beaker Shoud be clean and dired.
Beaker Heat with the Help of water reagent.

$$Fe_2O_3 + 6Na_2C_2O_4 \longrightarrow 2Na_3[Fe(C_2O_4)_3] + 3Na_2O$$

Sodium for oxalatoferrate(III)



$[Fe(C_2O_4)_3]^{-3}$ Don.

Expt – 5

PAGE NO. .... DATE ....

Object :- Sodicum dioxafafert (III) $Na_3[Fe(C_2O_4)_3]$ formation

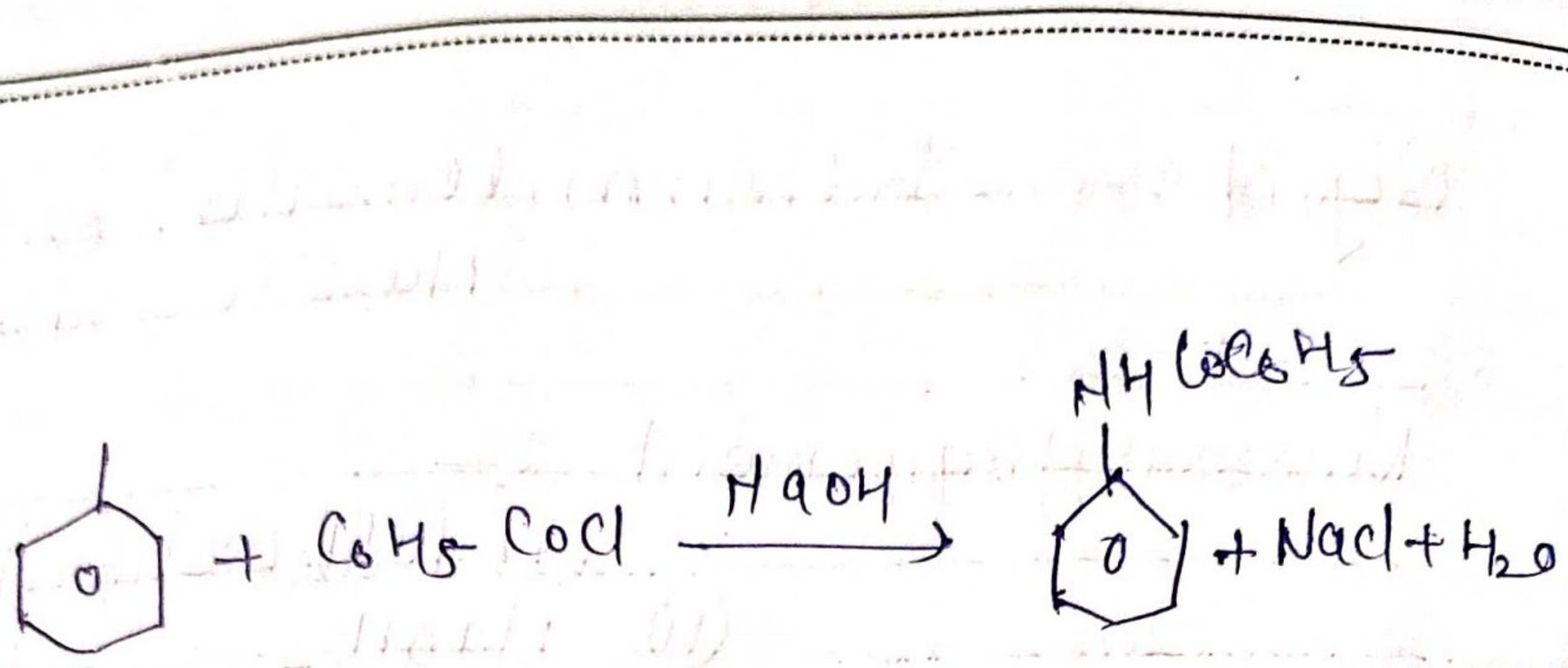
Necessary equipement :-

(1) ferricchloride 10gm
(11) NaoH – 12gm
(3) oxalicacide – 12gm

Necessary Equipement :- Beaker watch glass.

Method :→ In a beaker 10gm $fecl_3$ 10mL water 3gm NaoH 5mL H_2O mixed now ferric.cloried solution mixed in few a borich of NaoH solution then farick Haidroxied is produce. Now one another Beakar mixed 12gm oxalic aceed in this solution two mixed 9gm NaoH oxielate solution produsey now with the Help of glasroad the water solution mixed in farick Haidro solution and heat-it. Now this solution filteard and cooled and filteard. the filteard cooled water and alocked put for 2-3 days.

Teacher's Signature..



AGE NO. ..... DATE .....

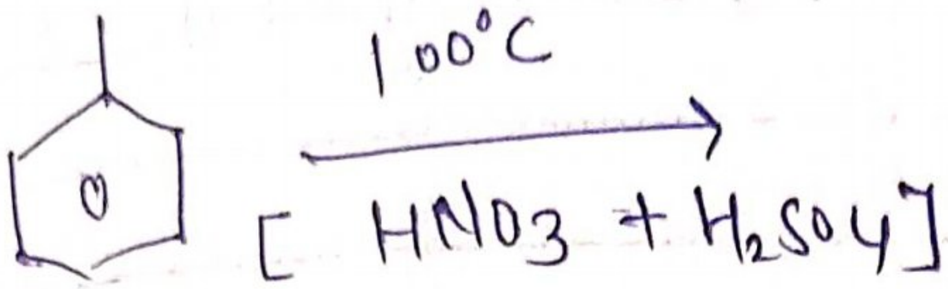
Result :-

Above method the crystal of Sodiumdioxilutoferat green colour produse.

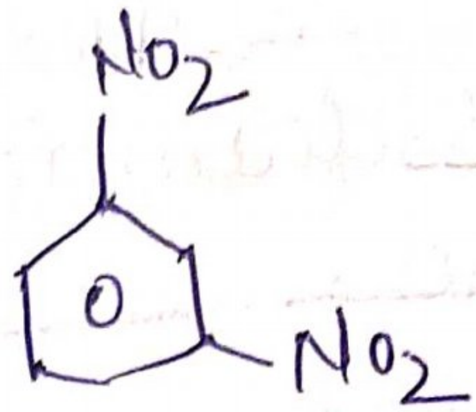
gaind :- 15 gm

precaution :-

The Beaker should be Cleen and dreai.



[Nitro Banzen]



[M-DiNitroBanzen]

EXpt - NO - 6

PAGE NO. .... DATE ....

Object :-

preparation of benzoniled from anilleana.

Necessaryreagent :-

(1) anniline - 5 mL
(2) 10% NaOH Solution 15 m
(3) ~~7~~ mL Benzoethylechloric

Equipement :- 250 mL Conical flex, Bekker keep.

Method :-

250 mL Conical flask mixed 5 mL alinel and 15 mL 10% NaOH Solution and 100 mL Bezoeth chorld. mixed on the flask the Croek more it for 15-20 mint. Bezoalde hyde wased with Could wateer and dried the product. after it Heat 100°C and mixed alcohal Cristel By this method pure benzeldehyed Be Sepreted.

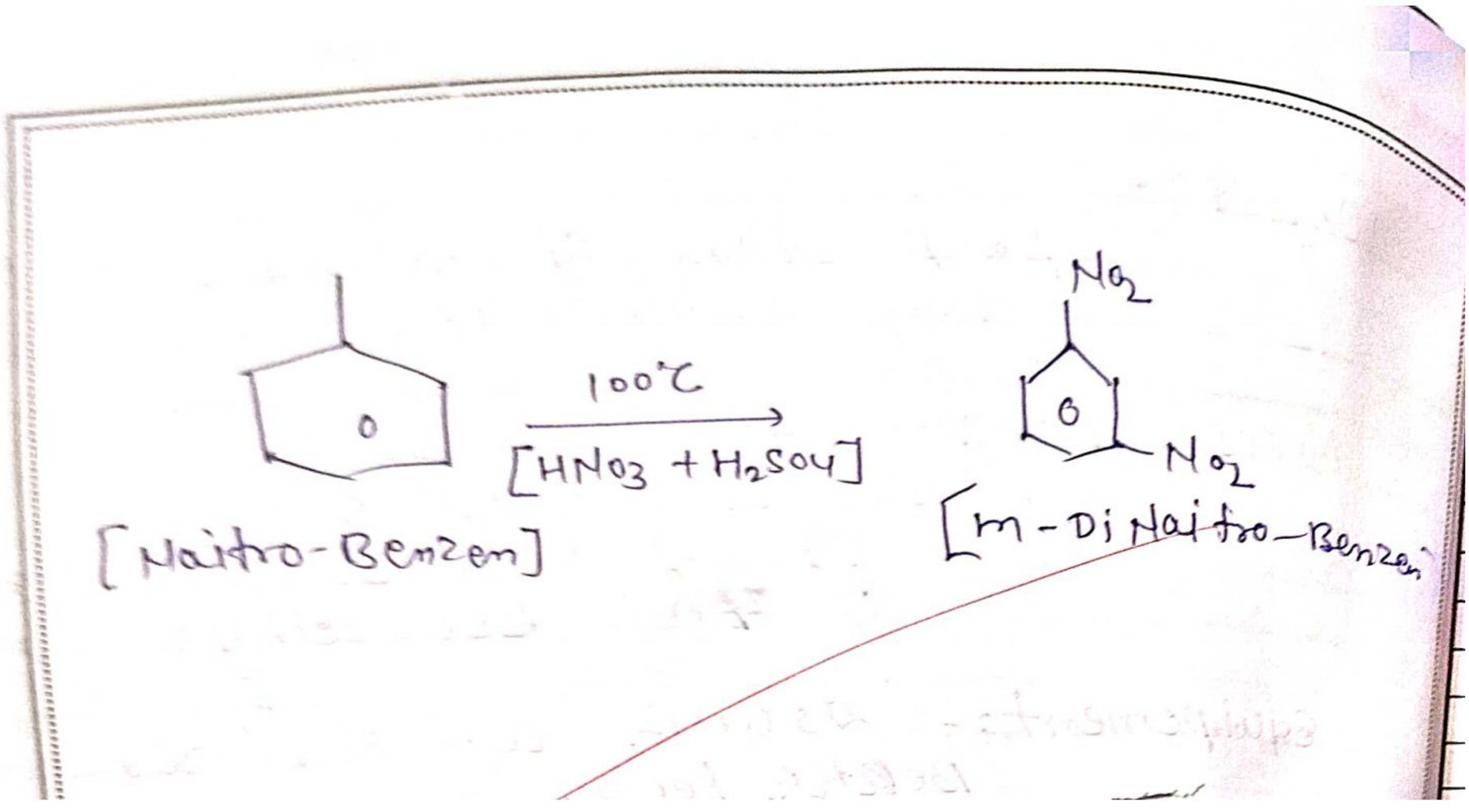
Result :- By this method Bezeldehyed prodused.

physcal Steat :- White Crictal Solid Subsant

gained :- 8 gm

miting point ~ 163°C

Teacher's Signature ....



Object :- prepasoion of M-dinitro Benzene from NitroBenzen

Usefull Reagent :-

Naitro-Benzen 5mL
Conc- H_2SO_4 - 15mL
Conc- HNO_3 - 15mL
Alchool

Equipment :- 10mL Raund Sted flask air mixed and 250mL Beakar

Method :- In 100mL Round flask Sheped Be teak 15mL Conc HNO_3. in this 15mL Conc- H_2SO_4 mixed and moved and the flask Be Cold in this Nitritication mixture the 5mL NitroBazen mixed in flask. after this in flask 4-5 small lesh of water arable mixed in 4 One Hours. Now flask mixcer Be Could and one to 250mL Beaker put Sum ice. M-DiNitroBenzeen is A yallow Sloid. and it Dried with the Help of filter paper and test milting-point

PAGE NO. .....

DATE .....

Result :- By above method M-Dinitro Benzene produced.

gained :- 6.0 gm

M.p :- 90°C

Teacher's Signature.....

$$NaCl + H_2O + 2KI \longrightarrow NaOH + KOH + I_2 + KCl$$

$$CH_3-\overset{\overset{O}{\|}}{C}-CH_3 + 3I_2 + 4NaOH \longrightarrow \underset{\text{[Iodoform]}}{CHI_3} + CH_3-\overset{\overset{O}{\|}}{C}-ONa + 3NaI$$

[Acetone]

Expt - No - 8

PAGE NO. ..... DATE .....

Object :- preparation of idoform from aceteone

Useful Reazent :- ① aceteone - 2ml
② ki - 6gm — 10ml
③ 5% Na-Hypochloried - Solu

Equipement :- 250ml flask, keep
method :- In a 250ml flask teak 2ml asiton 6gm potiom Cloried put and it mixed in 80-100ml Water. Now this moved Continu and 5% Na-Hypochloried - solution of 70m on this moved idoform make yello Cristal. in which Hypocloried Solution m and id oform yellow Cristert Be Separted the flask put for 15-20 mint. Now idofor Be Sepreted By funal and weased with water and Drei with filter paper this Solid yellow Sustemt Kristalfd By Ethano methilat Sprit.
Result :- About reasent make formateon of Idoform.
physical state :- Solid yellow Colour Solid Cristal.
gained :- 3-4gm
M.P → 120-122 °C

Teacher's Signature.....

Scanned with CamScanner

Expt. No. 9

PAGE NO. ..... DATE .....

Object :- preparation of methall orange from Sulphanic acid.

Useful Reagent :-

① Sulphanic acid - 5 gm ② Dehydrated HCl
③ Sodium nitrite - 2 gm ④ Dimethely Aniline - 3 ml
⑤ Conc - HCl ⑥ Dil - HCl - 15 ml
⑦ Sodium chloride ⑧ 20% NaOH Solution - 25 ml
⑨ ice ⑩ ~~useful~~

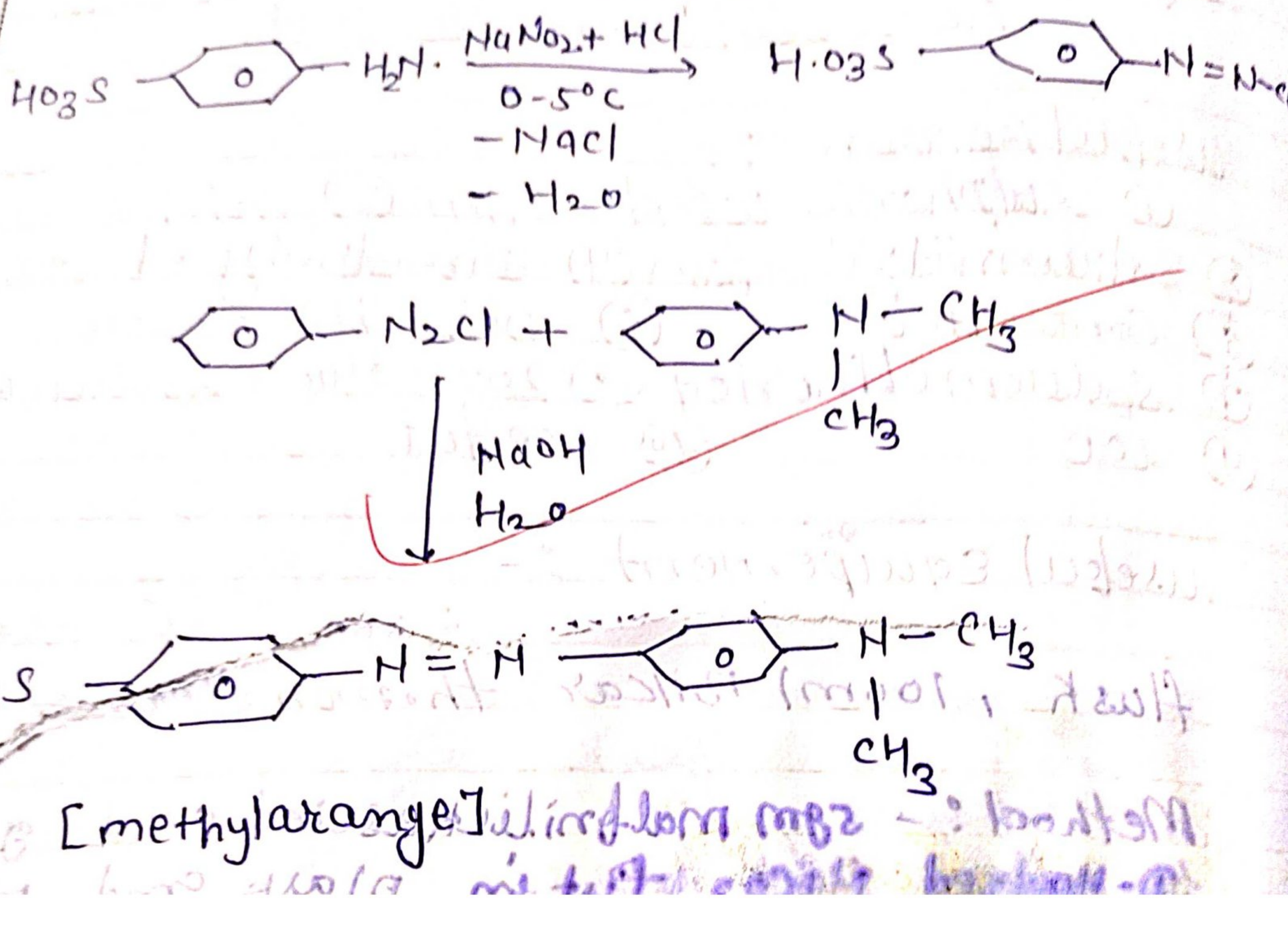
Useful equipement :-

200 ml Conical flask, 100 ml Beaker thermometer

Method :- 5 gm sulphanilic acid and 2 gm D-Hydrated Na_2CO_3 put in flask and make A Solution in 5 ml water. In this 2 gm Napthalene and 10 ml Solution in water By this method solution produced @ 25 °C Cold and put in flask in this 8 ml dil HCl mixed Slolie. the yellow clour Temperature 10°C Not be increased.

- One another Beaker 3 ml Dimethel aniline and 15 ml Conc HCl Solution and Cobalt
- this Solution the above mixed movement is Slolie and mixture moved four ice

Teacher's Signature.....



PAGE NO. .....

DATE .....

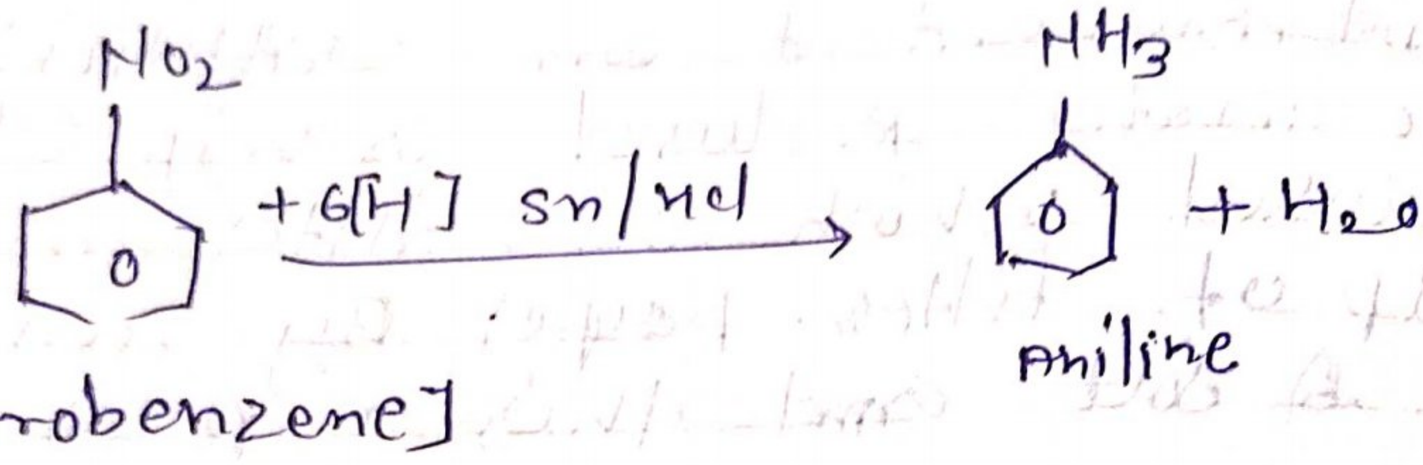
On this 25 ml 20% NaOH solution 6gm NaCl mixed and moved, solid solution filter and wash with cool water this solid substantent on crystilisaion the Hote water produsedd orange clour cristal produsedd which are filter and dry with the Help of filter-pauper By with metnel orange is a salt and this mp is not confirmed

Result :- By above method methiolorange produsedd.

physical State :→ Dark orange, read cloud cristal

gained :- 6.0 gm.

Rexn :-



[Nitrobenzene]

Expt - No - 16

PAGE NO. ..... DATE .....

Object :- preparation of Aniline from Nitrobenzene.

useful Reazant :- (i) NitroBenzene - 5 mL
(ii) Tartine 10gm
(iii) Conc-HCl - 20mL
(iv) Na Hydroxiel - 15gm

Equipment :- Round Conical flask 250 mL, point kep wetear and other necessary equipment.

method :-

In a flask 5mL Nitrobarzene and 10gm of Crystal tin took. Now in this move with fastley 5um 20mL Cone-Hcl mixed and Cool it after this mixture this Heat with one Hour. it Hitael while the small of NitroBarzene coming Now in this NaOH Solution and Cool-it and mixed water move it by which the aniline droplets Be Sepreted the point Sepreted by keep or Aniline also Sapreated.

Result :-

above method Aniline produsel.

physical state :-

Colourless liquied.

gained :-

0.4mL

M.P :- 183°C

Teacher's Signature.....

EXPT - No - 11

PAGE NO. ..... DATE .....

Object :→

In given Organic mixture separated the organic compounds and Identified the compound A and B and derived.

1. Starting Test :-

Physical state - Base
Colour - colourless
Smell - odourless smell
solubility - insoluble in water.

Testing Table :- Test for compound 'A'.

S.No.	Experiment	Test	Result
2.	Flame Test :- To burn the take small amount of Substance	It burns with Smog flame.	This is aromatic compound.
3.	Litmus Test :- Component + red litmus paper	No change	Compound is indifferent.

Teacher's Signature.....

PAGE NO. .....

DATE .....

4.	Element Test :-		
(i)	Red acetate Lemane Solution + $(CH_3COO)_2Pb$. (lead acetate).	Black colour is not pro. oluced.	Sulphur is absent.
(ii)	Sodium nitroside + lemanae solution $FNa_2[Fe(CN)_2NO$	Violet colour is not produced.	S - Absent.
(C)	Helogen Test :- lemane Solution + dil HNO_3 + and cool $AgNO_3$.	Yellow & white precipitate is not prod.	X - absent.
5.	Functional group Test :- Compound + dehydr -ate $AlCl_3$ + dried $CHCl_3$ + Δ.	green yello colour obtained.	$C_{10}H_8$ may be Kephthaline.
6.	M.P. ...	79°C Obtain	$C_{10}H_8$ maybe
7.	Special test of Compound :-		
(i)	Component + kmnoy Solid + Con. H_2SO_4 + Δ + Recocinol + Δ + NaoH + Sol^n.	green precipitate producerced	May be confirmed $C_{10}H_8$.

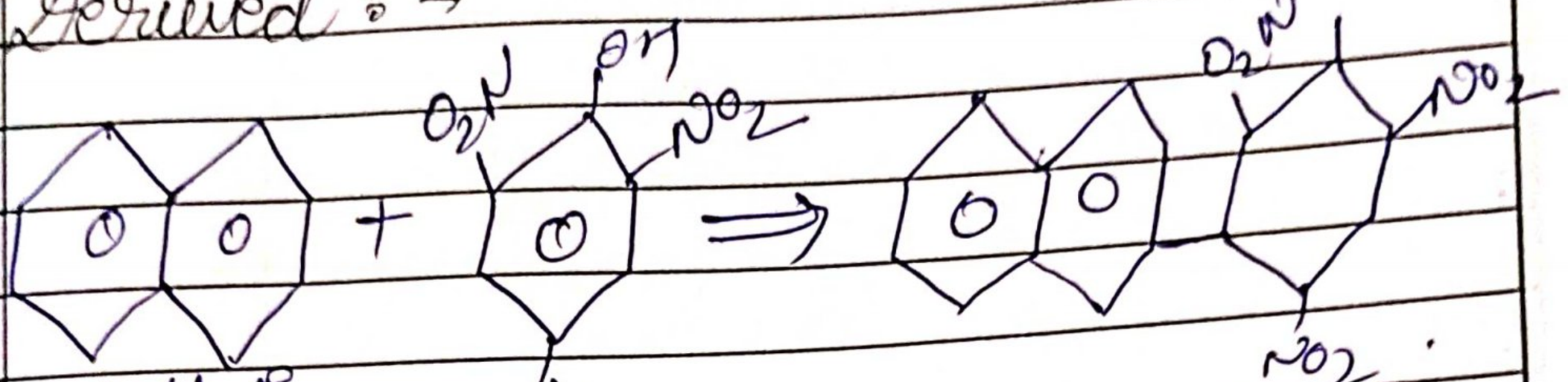
Teacher's Signature.....

PAGE NO. .....

DATE .....

(iv)	Compound + $CuCl_2$ + $AlCl_3$ dehydrate	green colour present	$C_{10}H_8$ confirmed.

Derived :→



Naphthalene → 2,4,6 trinitro phenol

Test for compound 'B'.

1. Primary Test :-

Physical state - Solid
Smell - Smelless
Colour - colourless
Solubility - Soluble in water.

Testing table :-

S.No.	Experiment	Test	Result.
2.	Flame Test :- The Small amount of Subst. taken in spatula & heat it	Organic comp. burn with smokeless flame	Organic compound is aliphatic

Teacher's Signature.....

PAGE NO. .....

DATE .....

3.	Litmus Test →		
	comp. + Red litmus - in Blue litmus	No changes	Compound is Ineliff - erent.
4.	Element Test →		
(a)	N_2 Test → Lamane Sol. + fe SO_4 (Pure) + $fecl_3$ + di Hcl.	produced blue colour Solution	Nitrogen absent.
(b)	Sulphur Test :- CH_3COOH + lamane Sol. + $(CH_3COO)_2Pb$	black preci - pitate obtained.	Sulphur is absent
(c)	Helogen Test :- Lamane Sol. + dil HNO_3 + Δ + cool + $AgNO_3$	white & yellow precl. Obtained.	
5.	Functional group Test :- Main Subst. + dil HCl + NaN_2 on mixed solution	more smell produced.	$NH_2 - \overset{\overset{O}{\|}}{C} - NH_2$ group.

Teacher's Signature.....

PAGE NO. .....

DATE .....

6.	Melting Point	130°C	$NH_2-\underset{\underset{O}{\|}}{C}-NH_2$
7.	Compound Test		
	Compound + NaOH + β-naph + dil $CuSO_4$	purple colour	$NH_2-\underset{\underset{O}{\|}}{C}-NH_2$ confirmed.

Derivate of Urea :-

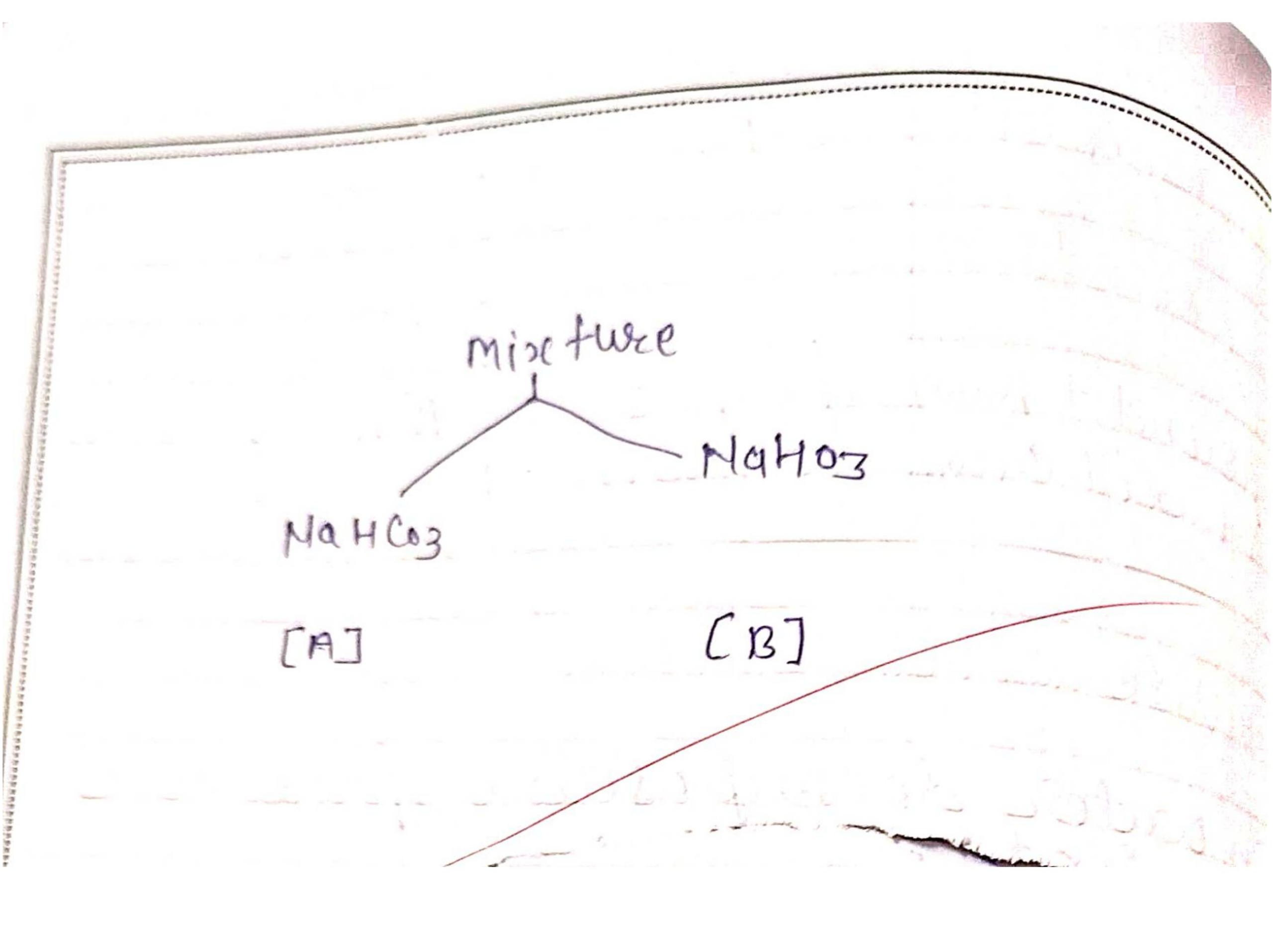
On water decomposition produced derivate :-

$$NH_2-\underset{\underset{O}{\|}}{C}-NH_2 + H-OH \xrightarrow{H^+} NH_2-\underset{\underset{O}{\|}}{C}-OH + NH_3$$

Result :→ In given organic mixture to separate organic compound the group A — Nephthaline B — Ured produced.

Melting Point :- 79°C and 13°C produced and derivate of Nephthaline is picate.

Teacher's Signature.....



PAGE NO. .....

Expt. No. – 12.

DATE .....

Object :→ In given Organic mixture be seperate the Organic compound and Identify the compound A and B and derivate One out of two.

Test for compound 'A'.

1. Primary State :–

Physical State – Solid
Colour – colourless
Smell – odourless Smell
Solubility → Insoluble in water

Table :–

S. No.	Experiment	Test	Result
2.	Flame Test :– Take compound on spetula and burn it.	compound burn with smoke flame.	Aeromatic compound.
3.	Litmus Test :– compound + Red / blue litmus paper	No Reaction	Compound is derived.

Teacher's Signature.....

PAGE NO. .....

DATE .....

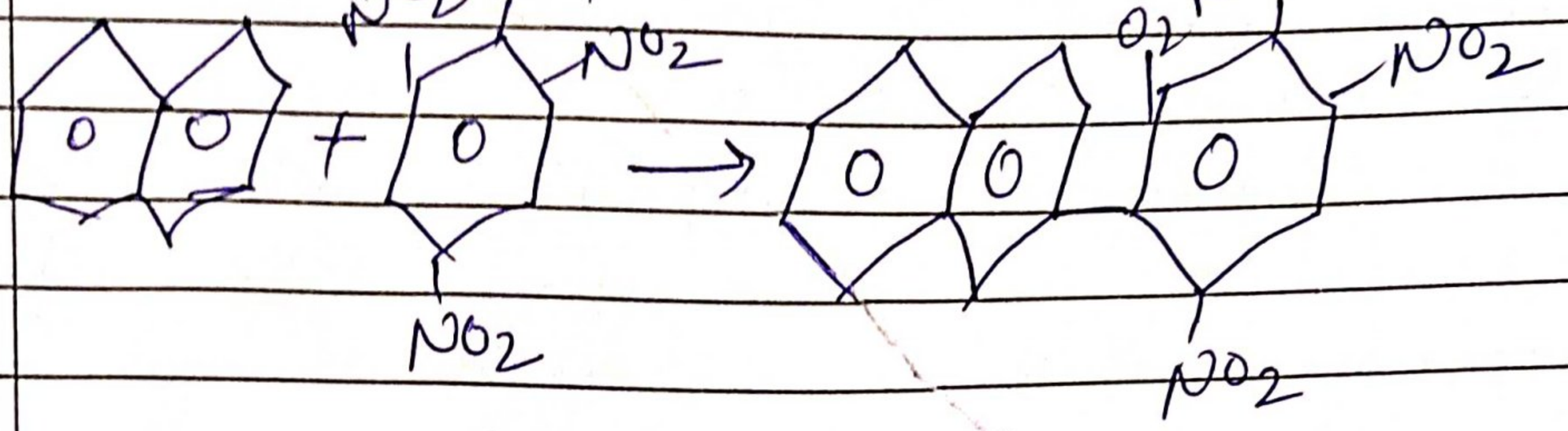
4.	Elementary Test		
(a)	N_2 - test + Lem - ane Solution + $fecl_3$ + dil HCl.	No Reaction	Nitrogen absent.
(b)	Sulphur test / Leadacetate test CH_3COOH + Lemane Solution + $[CH_3COO)_2 Pb$	No Reaction	Sulphur absent.
(c)	Helogen Test :- Lemane Sol. + dil HNO_3 A + cool + $AgNO_3$	No Rx^n.	X - Absent.
5.	Functional group Test :- Compound + dehy. Alcl$_3$ + $CHCl_3$.	green / yell - ow colour.	may be Nephthalin
6.	Special Test of compound :- Compound + KMnO$_4$ (solid) + Con. H_2SO_4 + Δ + NaOH Solution.	green precipitate obtained.	May be $C_{10}H_8$.

Teacher's Signature.....

PAGE NO. ..... DATE .....

ii'	Compound + $CHCl_3$ + $FeCl_3$	green colour produced.	$C_{10}H_8$ confirmed.

8. Derivate :→



Test for compound - "K"

1. Primary Test :→

Physical state — Solid
Smell — odourless
colour - colourless
Solubility - soluble in $NaHCO_3$.

Table :-

S.No.	Flame Test :	Test	Result.
	To burn Compound on Spetulla	Compound burn with smoke flame.	compound nature is aeromatic.

Teacher's Signature.....

PAGE NO. .....

DATE .....

	Litmus Test — Comp. + Red / Blue litmus paper.	Turns blue litmus into Red litmus.	may be carboxylic acid.
	Elementary Test :—		
4. (a)	Nitrogen Test → Lassane Sol. + pure fesoy + $FeCl_3$ + dil HCl.	No Rx^n	Nitrogen is absent.
(b)	Sulphur Test :— CH_3COOH + Lassane solution + $(CH_3(OO)_2Pb$.	No Rx^n.	Sulphur absent.
(c)	Helogen Test :→ Lemane Sol. + dil HNO_3 + Cool it + mixed $AgNO_3$.	No Rx^n.	X — Absent.
5.	Functional group Test :— Comp. + ethyl alcohol + Conc. H_2SO_4 + Δ + Cool + H_2O	Smell like fruits	may be carboxylic acid.

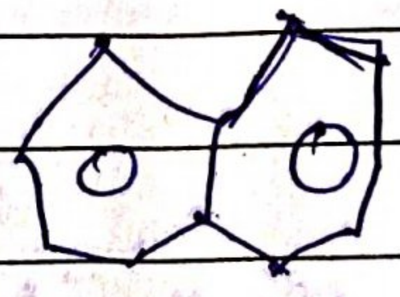
Teacher's Signature.....

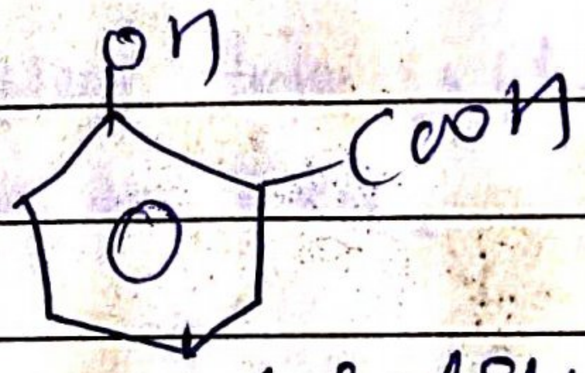
PAGE NO. .....

DATE .....

6.	Melting Point	159°C	
7.	Special test of compound →		
	Comp. + H_2O +	dark violet	HOC_6H_4COOH
	ferric	colour obt.	may be.
→	Compound + CH_3	Smell like	HOC_6H_4COOH
	$-OH$ + Conc. H_2SO_4	wintergreen	is confirmed.
	+ Δ + cooled +	oil.	(red colour).
	water.		

Result :→ In given organic mixture the compound A and B is obtained.

Compound A →  Nephthaline

Compound B →  (Saliphatic acid).

Teacher's Signature.....

PAGE NO. ..... Expt. No. - 13. DATE .....

Object :→

In given mixture Seprat Organic Compound and Identify A and B Compound and derivate One out of two Compound - "A"

primary test - physical state - Solid
Glowe - Colourless
Smell - Smell less
Solubility - NaOH solubial

Test table :-

S.N.	Expt.	Test	Result
2.	Flame test		
	Comp. take in Spe tulla and Heat in feit.	flame with Smoke.	Aromatic Compound.
3.	litmus test		
	Comp + Red/Blue litmus paper.	Blue litmus change into Red.	Compound is Acidic.
4.	Element test		
(a)	Nitrogen test		
	Lemang Salt pure + $FeSO_4$ + $FeCl_3$ soln + dil + HCl	Blue and green Colour not obtain	N- Absent

Teacher's Signature.....

	Halogen test		
	Lemana Soln + Dil + AgNo3 + Heat + Cool + AgNO3 mixed	Whit / yello precip. is Not obtain.	X⊖ Absent
5.	Functional group test-		
	(D) test of Phol		
	Alcoholic Solution + FeCl3	Violet Colour is produced.	OH group present.
→	Comp + Hydrazine acid + Conc. H_2SO_4	green Colour produced	B- Nephathline may be.
→	Comp + $NaNO_3$ + A + dil H_2SO_4	green Colour produced	B- Nephathaline may be.
6.	M.P	123°C	B- Nep. may be
7.	Spesia test of Comp.		
	Comp + H_2O + FeCl3	milky / whit	B- Nepthathine
	Com + KOH + $CHCl_3$	Blue Colour	is Confirmed
	Comp + I_2 + NaOH + Soln	violet Colour	B- Nephthalon
8.			
8	Derevate		

$$C_{10}H_7OH + (C_6H_{12}(OH)CNO_2)_3 \rightarrow C_{10}H_7C_6H_{12}(OH)(NO_2)_3$$

Teacher's Signature.....

PAGE NO. .....

DATE .....

Test Compund — "B"

1. primary test

physical state - Solid

Colour - colourless

Smeel - Alcoholic

Solubility - NaOH Solubial

Table

S.No.	EXPt.	Test	Result.
	Comp. take in Spetulla and Heat.	Buren with smoke flume	Aromatic Comp.
3.	litmus test		
	Comp + Read + Blue litmus paper	Red litmus Change in Blue.	Comp. is Base
4.	Elementary test		
(a)	N - test		
	Lemana soln + pure test + fecl3 + Dil HCl	Blue Colour obtain	N - present
(b)	Sulphur test		
	Lead acetate test	Black preci. Not	S - Absent.
	CH_3COOH + lemana soln	obtain	
	$CH_3COOX(PB$		
	M.P	536°C	
6.	Spe. test of compound	Dark Blue Colour	Di-phenyal Amine
	Comp + CONC. H_2SO_4 + Aq. $NaNO_2$	Soln + is produced	confirmed

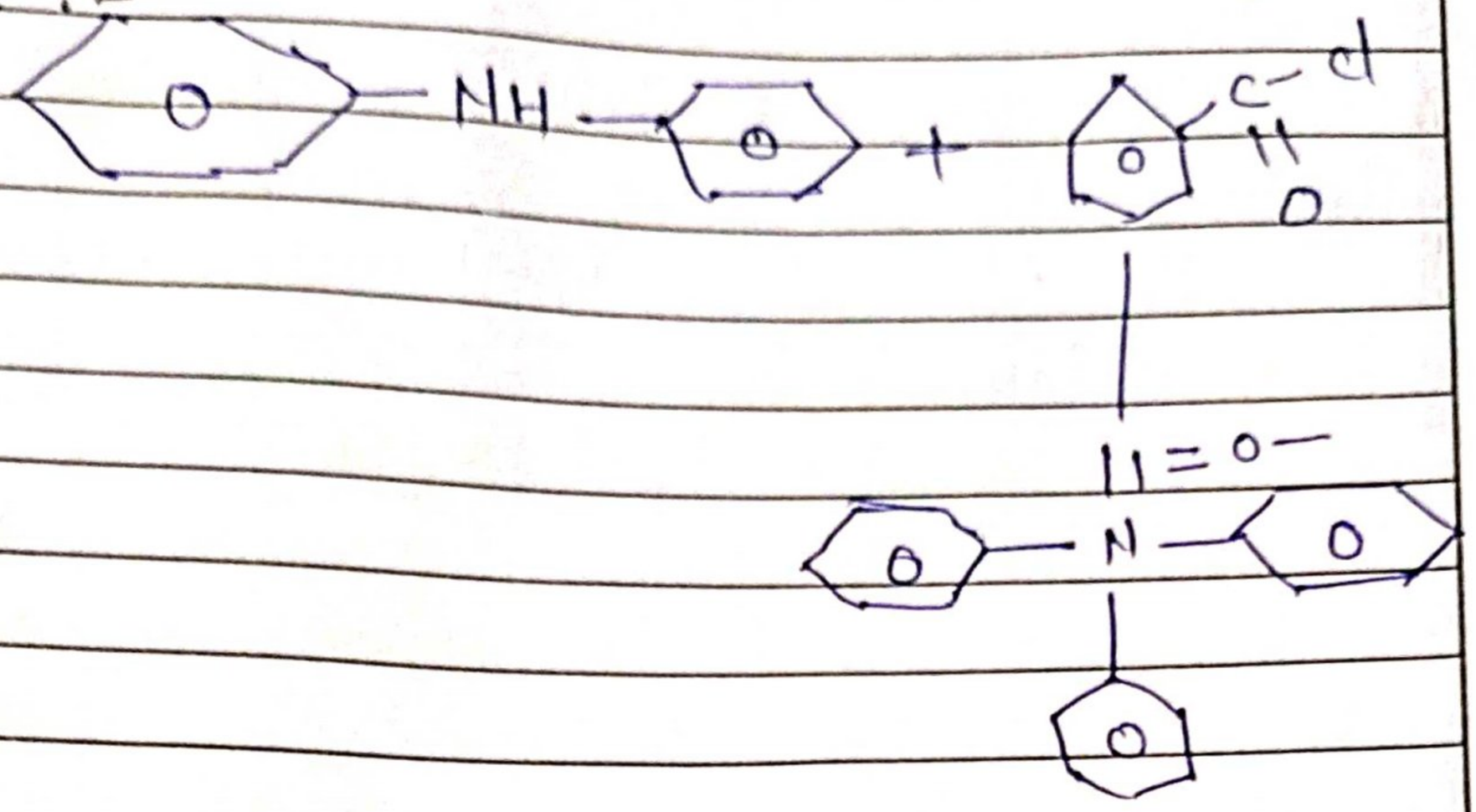
Teacher's Signature.....

Scanned with CamScanner

PAGE NO. .....

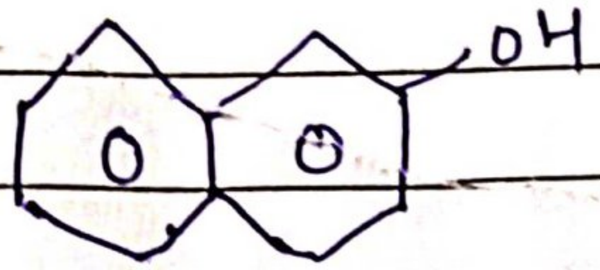
DATE .....

Derivate 1 –



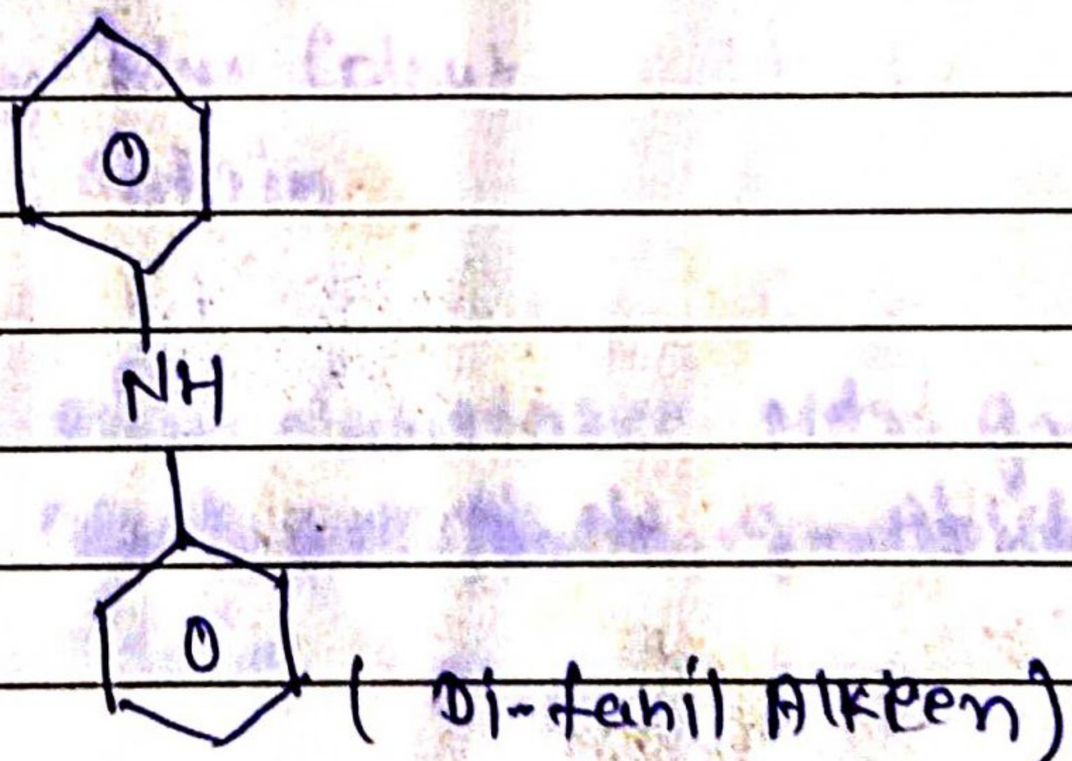
Result :-

Compound (A) –



Nipthaline

Compound B –



(Di-fenil Alkeen)

Teacher's Signature.....

PAGE NO. .....

DATE .....

Object :- In given mixture find organic Compound.

Equipement :-

Test tube, Bikar, Holder Conical flask etc.

Comp "A" →

Colour - light yellow colour

Smell - Bitter Almond like sm

Nature - Derivate

flametest Burn with Smoke so it is aromatic Com

Expt. table

S.No.	Expt.	Test	Result
1.	Nitrogen Expt.		
	lamen Soln + Esperanto	persian blue	N - Absent
Burn	feSoy + NaoH + HCl	Colour Not formed	
2.	functional test		
	Nitro compund test		
	two ml Alcohol took.	main Substance	Nitro group is
	in Compound + Some	is Black / Brown	present.
	drop of 10%. $CaCl_2$ +	Colour	
	Heat + Cool + Reagent		
3.	M.p.	114°C	M - Di-Nitro
			Benzen may
			Be.

Teacher's Signature.....

PAGE NO. ..... DATE .....

Organic Comp-test-

→ Comp + NaOH + Heat — Red Brown Colour produsedl — m-Di Nitro Benzen Compo

— Comp + Pil NaOH + Heat Glucose — Violet Colour — m-Di Nitro Ben

Comp - B

primary state.

Colour - Colour less

Smell - Smell less

Nature - Derivate

flame test - Burn Not with Soo

So it is Aliphatic Co

Table Test

S.No	Expt.	Test	Result
Sol.	Nitrogen group test		
	Lemona Soln + Esperam to Burn + fesoy Solubel + NaOH HCl	persian Blue Colour Not formed.	N - absent.
2.	functional test		
(a)	-COOH Group test		
	L.S Soln + Esperam Burn fesoy Soln + NaOH + HCl	Cog gas Not Removed	-COOH group Absent.
	5% NaOH Co3		
(b)	final group test		
	Comp - Cewkoholic soln. + fecl3 include	Vilotet Colour not produsedl	OH Group Absent.

Teacher's Signature.....

Scanned with CamScanner

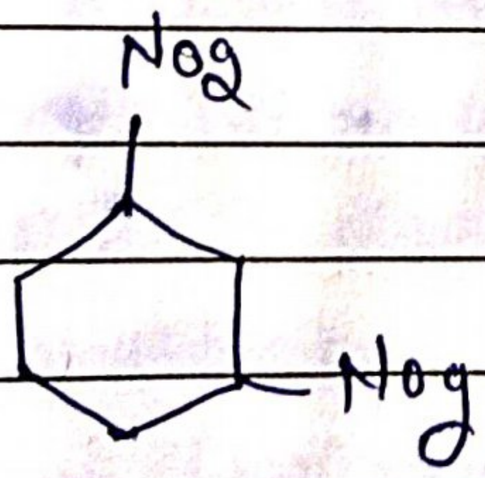
PAGE NO. .....

DATE .....

Carbonic Group Test		
two - four drop Di-Nitro fenil in Subsecentin Reagent	yellow prec. is Not produsel	Carbonile - Absent.
Carbohybrate test		
Comp. water Soln + 2ml + 0.5gm + lead + acetate + Heat + 5ml NH_4OH Soln + 2 min.	Pink Colour produsel	Carbhydred
M.p.	25°C	
Compound + fenil Soln + 2 min + Heat	25°C. Red Colour produsel	D-glucose is present.
Borfoid Reagent + 2min Heat	Red colour precipotein.	D-glucose is conformed.

Result :- In given mixture M-DiNitro Comp and B-glucose Comp. is present.

Comp "A" ... Comp "B"



... D-glucose

$C_6H_{12}O_6$

[M-DiBuiDiBenzen]

Teacher's Signature.....

PAGE NO. .....

DATE .....

Object :- Gn given mixtur identified organic compound.

Equipement :-

Test tube, Bikar, Holdear, Conical flask etc.

Comp "A"

1. primary test :-

physical state - Solied

Colour - Cream Colour

Smell - Smell less

Nature - Acidic

flame test - fungu Smoke Burn So it is aeromatic Comp.

Table Test

Expt. Test	Test	Result
N-Test		
lemanq Sol^{n} +	Blue / green	N - Absent
fesoy + NaOH + $CHCl_3$ +	prec. produsel	
Conc. H_2SO_4	not	
2. Functionat Group test		
Comp + NaHCon water Soln	Smell Co_2 gas Remove	- CooH group Are Aveleble
Astear test		
Comp + Conc. H_2SO_4 + C_2H_5OH + Δ	fruit like Smell	CooH group Apsent

Teacher's Signature.....

PAGE NO. .....

DATE .....

	m.p	133°C	Menamilec Acied present
	Acedic 2ml darivat Soln + 2ml Needlie kmnoy milating	Brown pre cipitate prodused	Hepte Acied are present
-	Comp. darivat Soln. kmnoy + Δ + filter cold	White kristal	menamic acid

Comp "B"

primary Expt. -

Physical State - Solid

Colour - Colourless

Smell - like smell

Solubility -

Table Test

S.No	Expt.	Test	Result
1.	Element observation		
	Lemana Soln + fesoy + NaOH + fecl3 + Conc. H_2SO_4	Blue/green Colour not prod.	N - Absent.
2	functional test		HydroCarbon
(a)	Comp. + Conc. H_2SO_4	Not Solube	are present

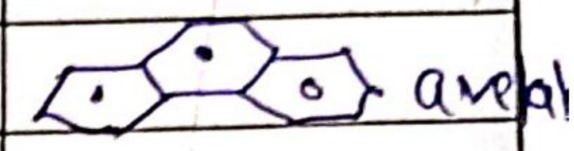
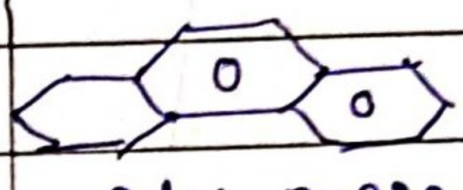
Teacher's Signature.....

PAGE NO. .....

DATE .....

b. Bayer Test

Comp + 2ml 2% of KMnO4 (Bayer Test) are soln mixed.

3.	m.p	143°C	 are
	special Test Comp + Benzen are mixed	Blue Colour are produced	 are present

Result :-

In given mixture

Comp "A"

$C_6H_5-CH=CH-COOH$

(Benamic Acied)

Comp "B"

Teacher's Signature.....

PAGE NO. .....

DATE .....

Object :- In given mixture identified organic Compound.

Equipement :- Test tube, Bikar, Holdear Conical flask

CompI physical state - Solid
Colour - Colourless
Smell - Smell less
Nature - Acidic.
Flame test - Not Burn with smoke. So it is Alephatic Comp.

Table Test

	Expt.	Test	Result
1.	N-Test - L.S. Soln. fresed FeSO4 Soln + NaOH + HCl	persian Blue Colour Not prodused	N- Absent
2.	functional group Test Carbocsalic Group Test. Comp. water Soln + 5% NaHSO3 Soln mixed	Co2 gase are prodused	-COOH group present
	M.P	101°C	oxalic acied
	Special Test Comp + Conc H2SO4 + Heat	Co + Co2 gase are prodused	oxalic acied are present

Teacher's Signature.....

PAGE NO. .....

DATE .....

• Comp. 2 ml peri. Soln + $CaCl_2$ Soln — White colour precip. — oxalic acied are present

Comp II

physical state - Solied

Colour - Colourless/

Smell -

flame Test - Not Burn with smoke So it Aromatic Comp.

Nature - Aciedic.

Table Test

	Expt.	Test	Result.
1.	N-Test	persion Blue Colour Not prodused.	N-absent
	L.S Soln + freshed fesoy Soln + NaOH + HU		
2.	functional group Test		
(a)	Carboesilic Group Test.- Comp. water Soln + 8% $NaHCO_3$ Soln ar emixed.	CO_2 gase ales prodused	- COOH group are absent.
3.	fenol group Test Comp. Aciedic Soln. + Some $FeCl_3$ Soln	vilolet Colour prodused.	fenol group are presen
4.	Carbanic Comp. Test		
	m.p	94°C	

Teacher's Signature.....

PAGE NO. .....

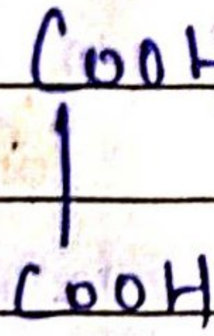
DATE .....

2-Naphthol comp + H_2O + $FeCl_3$	white ppt. obtain	α-Nepthaline present
Comp + water NaOH + CCl_4 + one drop + Cu powder + Δ	Blue clour obtain	α-Nepthol present

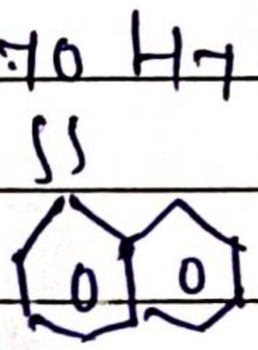
Result :-

In given mixture oxalic acid & α-Nepthaline are present.

Comp - I

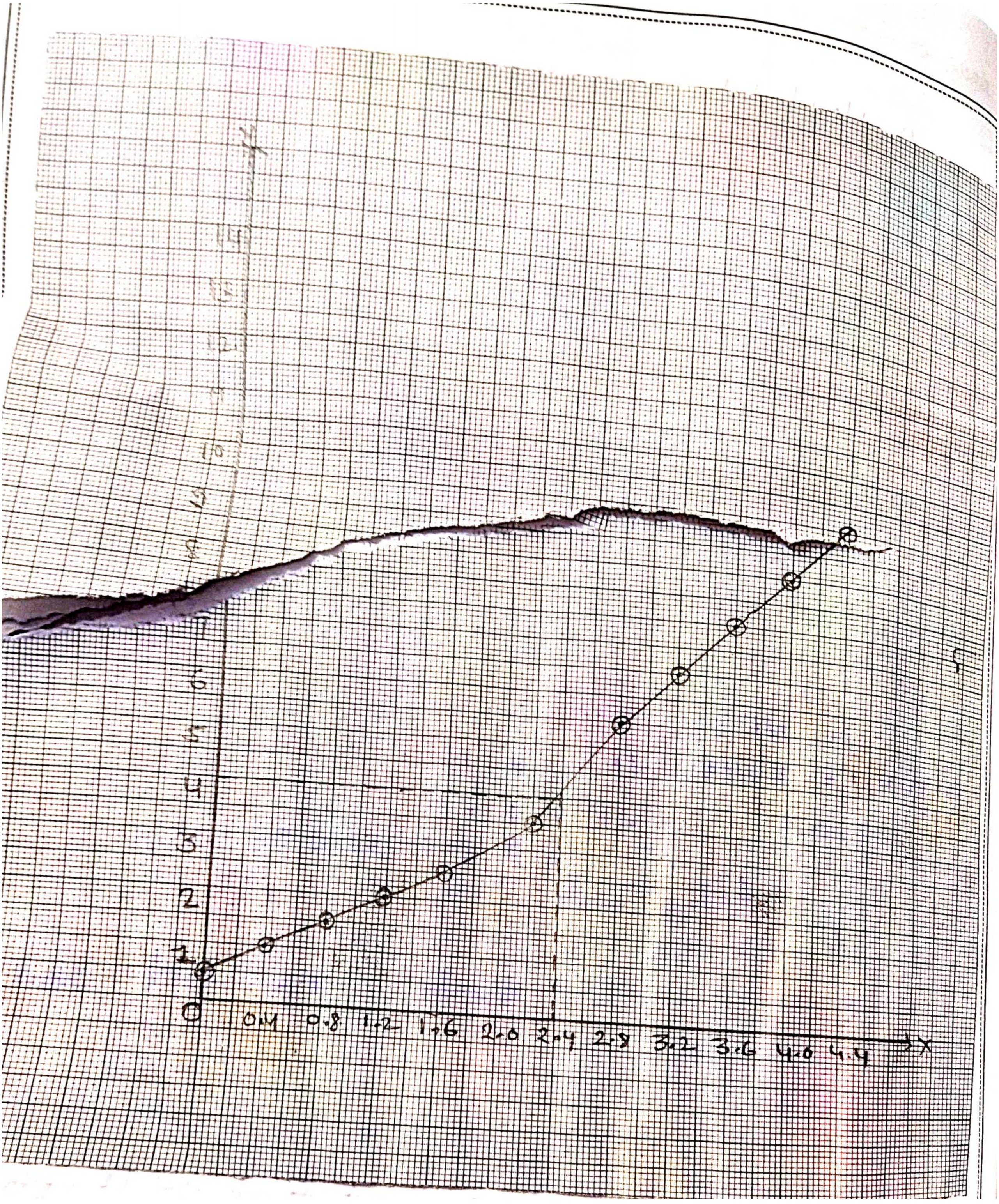


Comp - II



(α-Nepthol)

Teacher's Signature.....


Y
7
6
5
4
3
2
1
0
0.4
0.8
1.2
1.6
2.0
2.4
2.8
3.2
3.6
4.0
4.4
X

Expt No - 17

PAGE NO. ..... DATE .....

Object :- NaOH masured in HCl and Calculate Concentration.

Equipement :- Measured Conductivti, measured Cell, Pipetted, Burcate, Beaker.

Comical :- (i) NaOH Solution.
(ii) Hcl Solution.

principle :- $N_1V_1 = N_2V_2$ N_1 = Normality of Acid
V_1 = Volume of Aeied soln
N_2 = Normality of Basic Soln.
V_2 = Volume of Basic soln.

$N_1V_1 = 0.1N \times$ Volume of Ba... at mazer p...

$N_1 = 0.1N \times$ Volume of Bas at mazer point
And it Concentration.

= $N_1 \times$ measured weight.

Test :-

(i) measurment of Hcl = 36.5 gm

(ii) Volume of Aeied soln. = 10mL

Teacher's Signature.....

Scanned with CamScanner

Calculation:-

$N_1V_1 = N_2V_2$ $\quad N_1 = ?$

$V_1 = 10mL$

$V_2 = 7mL$ $\quad N_2 = 0.1N$

$N_1 \times 10 = 0.1N \times$ Soln. of Base at maswrepoint

$N_1 = \frac{0.1N \times \text{Soln. of Base of masure}}{10}$

$N_1 = \frac{7 \times 7}{100}$

$N_1 = 0.07N$

HCl measure weight of Acid

Concentration = $N_1 \times$ measure weight

$= 0.07 \times 36.5$

$= 2.555 gm/liter$

PAGE NO. .....

DATE .....

Expt. Table

S.No	NaOH Volume of Sol^n	Conductivity of Sol^n
1	0.0	26.60
2	1	24.00
3	2	20.00
4	3	17.210
5	4	14.210
6	5	11.210
7	6	8.20
8	7	5.40
9	8	6.00
10	9	7.10
11	10	7.80
12	11	8.40
13	12	8.80
14	13	9.40
15	14	10.00
16	15	10.00
17	16	10.00
18	17	11.60
19	18	12.20
20	19	12.80
21	20	13.40
22	21	13.80

Result :- In given acied Concentration is 2.56 gm/liter.

Teacher's Signature.....

Expt No - 10

PAGE NO. .....

DATE .....

Object :- In given Acied Soln Salt identify the Soln by Conductivity measurement method.

Equipement :-

measured Conductivity, measured Solied

In given Solb. the measured conductivity Can be given $I_V = K \times V$ — (1)

$$dV = \frac{K \times 1000}{C} \text{ — (2)}$$

The acidic Soln. Have the mount of salt soln is low, So it is fuly in-Soluble & in Soluble salt

$$dV = 100 \text{ — (3)}$$

Kolrouse pricipal

$$d_{\infty} = d_{\infty}^{\oplus} + d_{\infty}^{\ominus} \text{ — (4)}$$

$$C = \frac{K \times 100}{d_{\infty}^{\oplus} + d_{\infty}^{\ominus}}$$

while the in Soluble salt Solubleity is less soluble So

$$K_{Soln} = K_{Soln} - K_{H_2O} \text{ — (6)}$$

So Solublety in less Soluble salt.

$$C = \frac{(K_{Soln} - K_{H_2O}) \times 100 \text{gm/liter}}{d_{\infty}^{\oplus} + d_{\infty}^{\ominus}}$$

Teacher's Signature.....

Scanned with CamScanner

Calculation:-

$$K = K_{sol} - K_{H_2O}$$

$$K = 1.200 - 0.954$$

$$K = 0.246\ \Omega^{-1} m^{-1}$$

But room on Conductivity

$$K = 0.00246\ \Omega^{-1} m^{-1}$$

So:- $$S = \frac{0.00246 \times 1000}{143.4 \times 200} \times 116.70$$

$$S = \frac{0.246 \times 116.70}{143.4 \times 200}$$

$$S = 0.001 gm/lit.$$

PAGE NO. ..... DATE .....

Test Table :-

Temperature = 20°C Cell measured = 1cm

Condictivity of water = $\frac{0.93 \times 0.947 \times 0.976}{3}$

= 0.954

Condictivity of specific water = 0.954 x 1

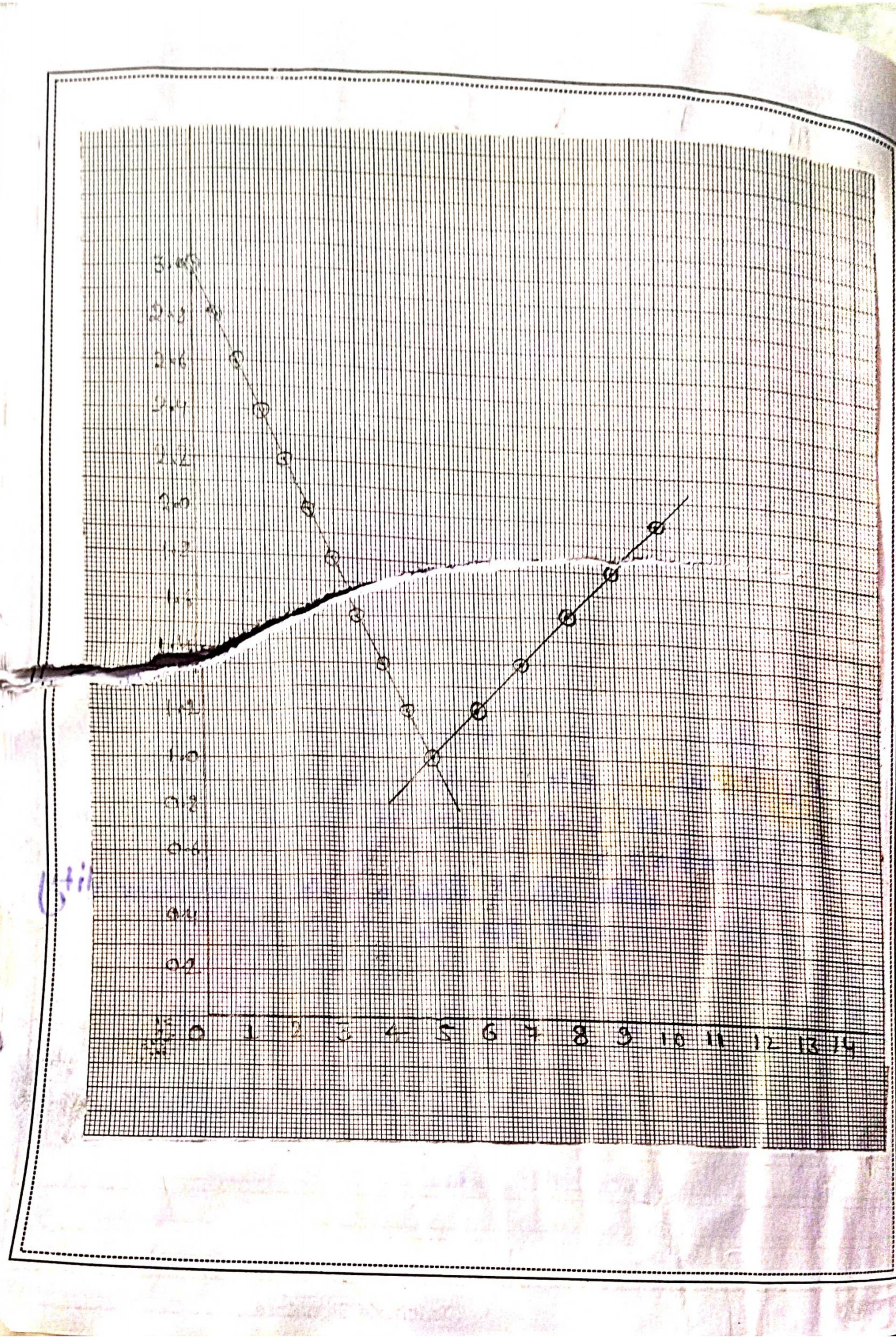
= 0.954

S.No	Basoy Sol^{n} Test	Basoy specific Condictivity	medium $\Omega^{-1} m^{-1}$
1.	1.194	1 x 1.94 x 1.194	
2.	1.200	1 x 1.200 x 1.200	1.200
3.	1.206	1 x 1.206 x 1.206	

Result :-

On 20°C Teme. The less solubility of salt Basoy = 0.001 gm/Ut.

Teacher's Signature.....


3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

PAGE NO. .....

object :-

On given Condictivity measure week acied (CH_3COOH) Calculate Consentation of NaOH (Base)

useful Equipement :- measured Condictivity measure cell pipette, micro tube, Beaker

Cahmical :- NaOH, (11) CH_3COOH

pricipal :- $N_1V_1 = N_2V_2$

N_1 = Normality of acied soln.

N_2 = Normality of Base soln.

V_1 = Volume of acidic soln

V_2 = Volume of Base soln.

N_1V_1 = 0.1N x Volume of Base on measure point

$N = \frac{0.1N \times \text{Volume of Base on measure point}}{V}$

N_1 = Concentration = N x measure weight

Test :-

(1) CH_3COOH measure weight of

(11) Volume of acied soln. = 10ml

Teacher's Signature.....

Calculation :-

$$N_1V_1 = N_2V_2$$

So $V_1 = 10mL$

$V_2 = 2.4mL$

$N = 0.1N$

So $N_1 \times 10 = 0.1N \times$ Volume of Base at measure point

$$N = \frac{0.1N \times \text{Volume of Base at measure point}}{100}$$

$$N_1 = \frac{2.4}{100} = 0.024$$

CH_3COOH Acidic measure weight = 60.06 gm

Concentration = $N_1 \times$ measure weight

$= 0.024 \times 60.06$

$= 1.1441$ gm/ liter

PAGE NO. .....

DATE .....

Table Test

S.N	Volume of mixed Basic Soln (ml.)	Conductivity of Soln
1.	0.0	0.42
2	0.4	0.82
3	0.8	1.24
4	1.2	1.68
5	1.6	2.12
6	2.0	2.48
7	2.4	4.01
8	2.8	5.50
9	3.2	6.51
10	4.0	7.42
11	4.4	8.62
12	4.8	9.42
13	4.8	10.91

Result:-

In given Soln Concentration is 1.44 gm/liter

Teacher's Signature.....

EXPT-No-20

PAGE NO. .... DATE ....

Object :-

In a water Sol^n By the methue of Himant mesuered Substance by atomic wgh

Equipment :- Thermomater, Bikar.

Cahmieal :- Ice, salt paure of Susent.

principle :- Any unvapourisation the Solub el. Substant sollubline wgm which Show in Δtf

$$\Delta tf = \frac{1000 \times Kf \times w}{m \times W} \quad OR \quad \frac{1000 \times Kf \times w}{\Delta Tf \times W}$$

Tf = Could measurment

W = wight of Sol^n

w = wecght of soluble

kf = Coled measured

m = atomic weight of Sol^n.

Test :-

(i) Volume of water sol^n

(ii) Dencity on Room Tem. of water = 1gm/lit.

(iii) given weight of water (V×d)

15×1 = 15gm

(iv). Coling point of water

Teacher's Signature......................................

Calculation:- Cobling point of water soln.

$$T_0 = \frac{T_1 + T_2 + T_3}{3}$$

$$T_0 = \frac{(-6) + (-6) + (-6)}{3} = -6°C$$

Q. Cooling Stady of soln

$$T = \frac{(-4) + (-4) + (-4)}{3} = -4°C$$

3. Cooling points $= w$

$$\frac{kf \times 1000 \times w}{877 \times w}$$

$$m = \frac{1.86 \times 1 \times 1000}{15 \times 2} = \frac{1860}{30}$$

$$m = 62 gm.$$

PAGE NO. .....

DATE .....

Tabular Table:-

S.No.	weight of soln	Tem. of soln.	Tem of soln.	Tem of soln.	freezing point	atomic weight
				10°C	Tf(T0-1)	Wight(m)
1	1	-4				
2	1	-4	-4	-6	-4-(-6)	62gm
3	1	-4			=2	

Result :-

Gn given Subsentent of atomic wight is 62 gm.

Teacher's .....

EXPT NO. 21

PAGE NO. .....

DATE .....

Object :- By Condictivity method given HCl Soln. Calculate Conduct Concentration.

Equipment :- mesure condictivity, condictivity Cell, pepute microburet, Biker Etc.

Cahmical :- (i) NH4OH Soln HCl
(ii) HCl Soln.

pricipal :- On HCl Soln mixed NH4OH Soln the last point Condictivity is dicreed. on alter this NH4OH Have no changeg.

$N_1V_1 = N_2V_2$

where N_1 = normalitity of acied Soln.
V_1 = volume of acied soln.
N_2 = normality of Basic Soln.
V_2 = volume of Basic soln.

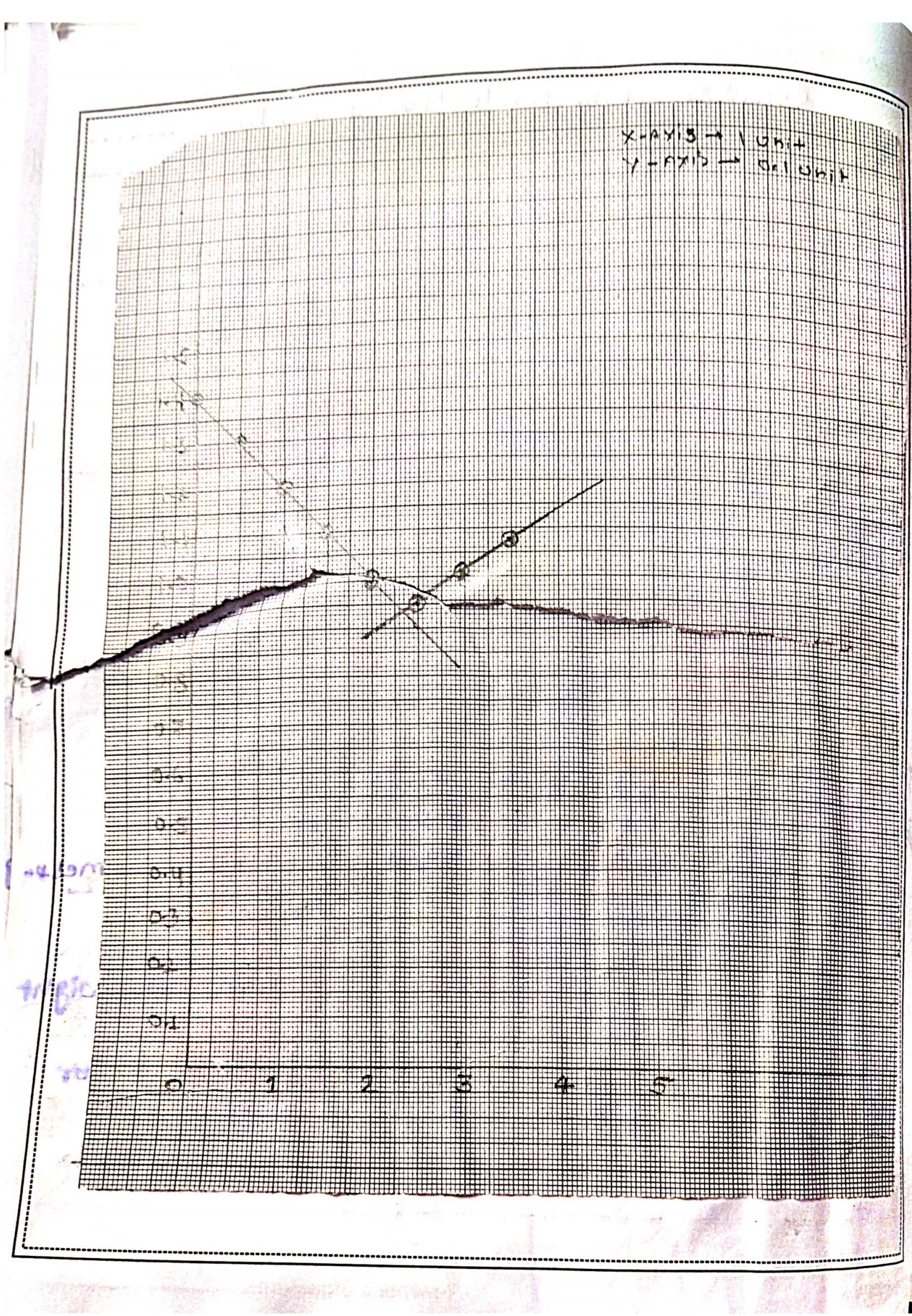
So $N_1V_1 = \frac{0.1N \times \text{volume of Basic at mesp}}{N_1}$

Con Centration. = $n_1 \times$ mesure weight

Test. → Above HCl Soln the Constr. is 40.0mL

Teacher's Signature.....

x-axis → 1 unit
y-axis → 0.1 unit



PAGE NO. .....

DATE .....

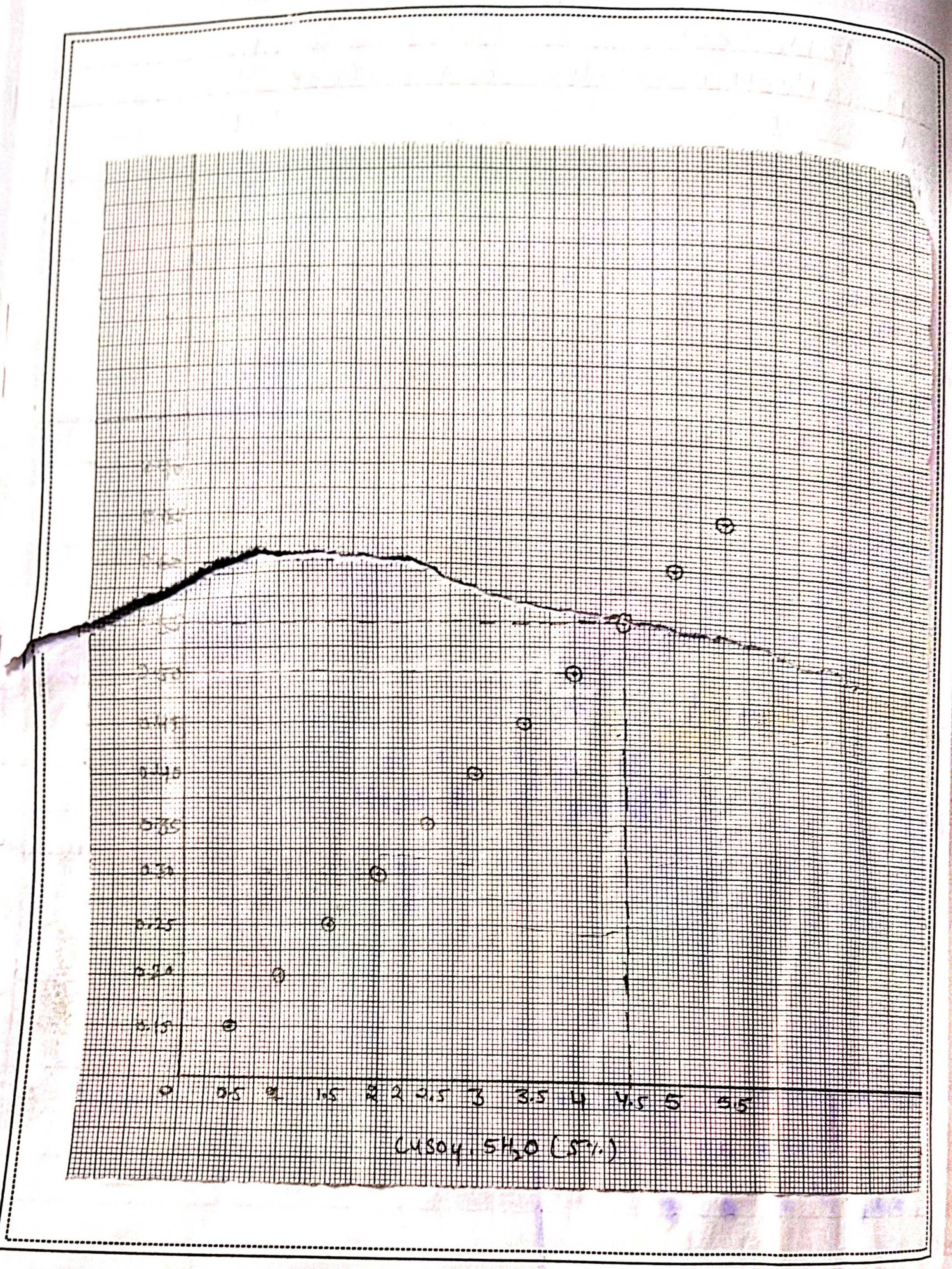
Table Test

S.No	NaOH mixed volume (mL)	Conductivity
1	0.0	1.48
2	0.5	1.30
3	1.0	1.20
4	1.5	1.12
5	2.0	1.04
6	2.5	0.98
7	3.0	0.97
8	3.5	0.986
9	4.0	0.986
10	4.5	1.986
11	5.0	1.00
12	5.5	1.00

Result :-

In given unknown HCl Soln.
Conc. is 0.2824 gm/lit.

Teacher's Signature.....


0.45
0.40
0.35
0.30
0.25
0.20
0.15
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
CuSO4.5H2O (5%)

EXPT NO- 22.

PAGE NO. .... DATE ....

Object :- By the method of Kellrary to Calculate Construction of unknown Kmo4 soln.

Equipment :- flask, Bikar, Buret, test Buret.

Soln. :- potassium per magnate 0.001N Soln.

pricipal :- The pink Colour of potassiom permagnate by the water persent of mn+2 ion. So with the Help of Colour be Calculate Conc. of Hm+2 in soln. in this difernt Conc. of magny gons are wistend all soln. d max. in or pomcity) (o masured or the graf of this is toll the Conc. of soln.

Test :- Temp. = 25 °C

Calculation:-

(1) $N_1 = 0.001$ $V_1 = 1ml$ $V_2 = 10ml$ $N_2 = ?$

$$N_2 = N_1V_1 = N_2V_2$$

$$N_2 = \frac{N_1V_1}{V_2} = \frac{0.001 \times 1}{10} = 1 \times 10^{-4} N$$

$N_2 = 0000$1, $V_1 = 2ml$, $V_2 = 10ml$ $N_2 = ?$

$$N_2 = \frac{0.001 \times 2}{10} = 2 \times 10^{-4} N$$

3) $N_2 = \frac{0.001 \times 3}{10} = 3 \times 10^{-4} N$

4) $N_2 = \frac{0.001 \times 4}{10} = 4 \times 10^{-4} N$

5) $N_2 = \frac{0.001 \times 5}{10} = 5 \times 10^{-4} N$

6) $N_2 = \frac{0.001 \times 6}{10} = 6 \times 10^{-4} N$

7) $N_2 = \frac{0.001 \times 7}{10} = 7 \times 10^{-4} N$

8) $\frac{0.001 \times 8}{10} = 8 \times 10^{-4} N$

9) $N_2 = \frac{0.001 \times 9}{10} = 9 \times 10^{-4} N$

10) $N_2 = \frac{0.001 \times 10}{10} = 10 \times 10^{-N}$

KMnO4 = 158

Wight = 31.6

Molarity = Normality x mesaured w

$= 3 \times 31.6 \times 10^{-4}$

$= 94.8 \times 10^{-4}$ m/Lit.

PAGE NO. .....

DATE .....

S.No.	Conc. of soln	absorption
1	1×10^{-4}	1.19
2	2×10^{-4}	1.09
3	3×10^{-4}	1.05
4	4×10^{-4}	0.96
5	5×10^{-4}	0.73
6	6×10^{-4}	0.84
7	7×10^{-4}	0.76
8	8×10^{-4}	0.61
9	9×10^{-4}	0.92
10	10×10^{-4}	0.55
11	11×10^{-4}	
	Result:-	
	On given unknown known solution the Conc. of is 94.8 m/lit.	

Teacher's Signature.....


0,5
0,4
0,3
0,2
0,1
0
1
2
3
4
5
6
7
8
9
10
x
$K_2Cr_2O_7$ Viligen bestimmt

Expt No-23

PAGE NO. .....

DATE .....

Object :- By the method of Kellary calculate the Conc. of $K_2Cr_2O_7$ soln.

Equality :- meter, flask, Biker, Buret Test tube.

Solution :- 0.1N soln. of $K_2Cr_2O_7$

principle :-

Because of Di-hydre water of Cr_2O_7 gop So with the Help of Colour we Calculat Conc. of soln. $Crgo_7^{-2}$ in this diffrent Conc. of Di Cromet from the soln of it Comfermed d-maxim. (a or the dencity, 10.00 mesured) A or B alster this we drow a line Calculate Conc. of unknown soln.

Calculate:-

(i) $N_1 = 0.1N$ $V_1 = 1ml$ $V_2 = 10ml$ $N_2 = ?$

$$N_2 = \frac{N_1V_1}{V_2} = \frac{0.1 \times 1}{10} = 1 \times 10^{-2} N$$

2) $N_2 = \frac{0.1 \times 2}{10} = 2 \times 10^{-2} N$

3) $N_2 = \frac{0.1 \times 3}{10} = 3 \times 10^{-2} N$

4) $N_2 = \frac{0.1 \times 4}{10} = 4 \times 10^{-2} N$

5) $N_2 = \frac{0.1 \times 5}{10} = 5 \times 10^{-2} N$

6) $N_2 = \frac{0.1 \times 6}{10} = 6 \times 10^{-2} N$

7) $N_2 = \frac{0.1 \times 7}{10} = 7 \times 10^{-2} N$

8) $N_2 = \frac{0.1 \times 8}{10} = 8 \times 10^{-2} N$

9) $N_2 = \frac{0.1 \times 9}{10} = 9 \times 10^{-2} N$

10) $N_2 = \frac{0.1 \times 10}{10} = 10 \times 10^{-2} N$

Eg: weight of $K_2Cr_2O_7 = 294$

$$\text{mesured weight} = \frac{294}{6} = 49$$

$$\text{molecity} = \text{mesur. weight} \times \text{Normlety}$$

$$= 49 \times 5 \times 10^{-2}$$

$$= 2.45 \text{ m/l}$$

PAGE NO. .....

DATE .....

S.No	0.1N Conc. of $K_2Cr_2O_7$ Soln.	absorption (A)
1.	1×10^{-1}	0.25
2.	1×10^{-2}	0.28
3.	1×10^{-3}	0.34
4.	1×10^{-4}	0.38
5.	1×10^{-5}	0.39
6.	1×10^{-6}	0.42
7.	1×10^{-7}	0.43
8.	1×10^{-8}	0.44
9.	1×10^{-9}	0.47
10.	1×10^{-10}	0.48
11.	~~1×10^{-11}~~ Unknown	

Result :-

The Conc. of unknown soln $K_2Cr_2O_7$ is 8.45 ml

Sumanta
12/04/2021

Teacher's Signature.....