NAME:- MUKESH MEEL

CLASS:- M.Sc. (Previous)

SUBJECT:- ORGANIC- CHEMISTRY

ROLL NO:- 1285828

COLLEGE:- R. K. VIGYAN (PG) COLLEGE

KALVAR, JAIPUR

S. No.	Name of the Experiment	Page No.	Date of Experiment	Date of Submission	Remarks
(1.)	To prepare m-nitroaniline from nitro-benzene		Started		
(2.)	To prepare sym.-tribromo-benzene from aniline				
(3.)	To prepare benzilic acid from Benzoin				
(4.)	To prepare dibenzalacetone from the benzaldehyde				
(5)	Separation of identy of the organic compound from given mixture of also suitable derivative.		Started		
(6.)	Separation of identy of the organic cpd from given mixture of also suitable derivative.				
(7.)	Separation of identy of the organic cpd from given mixture of also suitable derivative.		Started		

S. No.	Name of the Experiment	Page No.	Date of Experiment	Date of Submission	Remarks
(8.)	separate of identfy the organic cpd from given mixture & also form suitable derivatives.				
(9)	separate & identify the organic cpd from given mixture & also the suitable derivatives.				
(10.)	separate & identify the organic cpd from given mixture of also form suitable derivative.				

Expt. No. (1.) Page No.

Step = 1

object:-

To prepare m-nitro aniline from nitro-benzene

Requirement:-

Nitrobenzene = 12ml
conc. HNO_3 = 15ml
conc. H_2SO_4

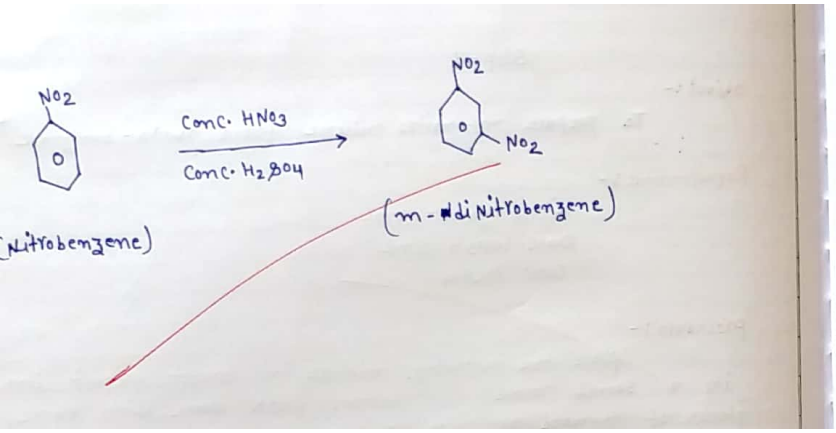
procedure:-

place the nitrating mixture in correct prepart ion in a 500ml round bottom flask along with same pieces of unglazed procelain or glass to quoid bumping attach condenser and add 12ml of the nitro-benzene partion wise.

Add 15ml conc. H_2SO_4, slowely with constant shaking through the condenser than add 5ml. conc. HNO_3 with conc. stirring, reflex the mixture on a boiling water bath for one Lower with occasional shaking.

Allow the mixture to cool pour it with constant stirring to 300ml cold water taken in a beaker filter the product, wash with the water and recrystallisation with the alcohol.

Teacher's Signature :



Result:-

We get bright yellow crystals of the m-dinitrobenzene are 14.5211 gms. In weight and these melting point = - 90°C

23/4/18

Date .....

Expt. No. ..... Page No. .....

Step = 2

object :-

To prepare m-nitro aniline from the m-dinitrobenzene.

Requirements :-

m-dinitrobenzene = 6.7gm
Sodium sulphide = 18gm
Na_2CO_3 = 6gm
powdered sulphur = 5gm
Ice

Procedure :-

Take 15gm of Sodium sulphite dissolve in 30mL of H_2O add 5gm Sodium bicarbonate add 40mL methanol with constant string.

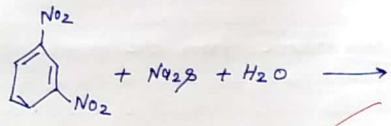
Suspend 6.7gm of m-dinitrobenzene in 100mL water in a 500mL beaker heat it to boiling and than add dropwise with constant and vigrous striring the Sodium sulphite solution from the separating funnel.

Cool the constants for about 20 minutes. by adding ice. Filter the product at the pump and wash with cold water.

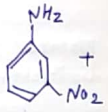
Transfer the product to a 500mL beaker having about 15mL of water and 18mL of conc. Hcl boil the contents for about 15 min. When the m-minitroaniline

Teacher's Signature : _____

Chemicals reactions:-



+ Na_2S + H_2O ⟶

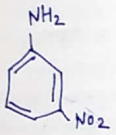


+ $Na_2S_2O_3$

(m-dinitrobenzene)

(m-minitrobenzone)

Structure:-



(m-nitro aniline)

Date .....

Expt. No. ..... Page No. .....

dissolves leaving the unused sulphur and m-dinitrobenzene.

Filter the contents and precipitate out m-nitro aniline from the filtrate by adding excess of conc. aqueous ammonia solution filter the m-nitro aniline and recrystallise from boiling water.

Result:-

We get by this preparation bright yellow needle shaped crystals of m-nitro aniline which are 5.5321 gm in weight.

crystals melting point is - 114°C

23/4/18

Date .....

Expt. No. (2.) ..... Page No. .....

To prepare sym-tribromobenzene from aniline.

Step-1.

Object:-

To prepare 2,4,6-tribromoaniline from aniline

Requirements:-

Aniline = 5mL

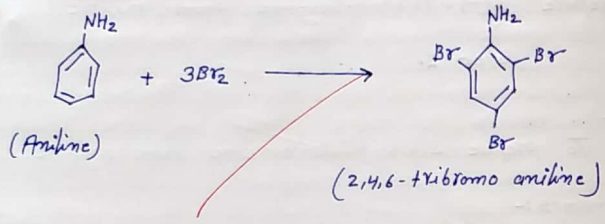
Glacial acitic acid = 19mL

Bromine in glacial acetic acid 8.4mL in 20mL of glac Ice.

Procedure:-

Take 5mL of aniline and 19mL of the glacial acetic acid in a flask. place the flask in ice bath & add to it 8.4mL of bromine water in 20mL of glacial acetic acid dropwise with constant stirring through a burete or reparating funnel, pour the reaction mixture solution to a beaker having excess of water filter the product wash with water and recrystallise from alcohol or rectified spirit.

Chemical Reaction :-



(Aniline)

(2,4,6-tribromo aniline)

Date .....

Expt. No. .....

Page No. .....

Result :-

We get colourless shining long needles crystal which are 10.1027 gms in weight and these are of sym - tribromo benzene these melting point is 120°C

Date .....

Expt. No. ..... Page No. .....

Step - 2

object :-

To prepare sym - tribromobenzene from 2,4,6 - tribromo aniline.

Requirements :-

sym - tribromoaniline = 10gm
Rectified sprit = 60gm
benzene = 15ml
Conc. H_2SO_4 = 3.5ml
Sodium Nitrate = 120ml
decolourising carbon = 2.5gm
Ice

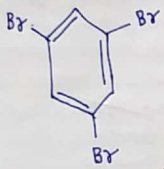
procedure :-

Dissolve 10gm of sym - tribromo aniline in 60ml rectified sprit and 15ml benzene by heating on a water bath add about 3.5ml of conc. H_2SO_4 dropwise from the burette or a graduated pepette to the hot solution of tribromo aniline and ~~swirl~~ (the solid the liquid gently.

Heat the constant on water bath and using reflux water condenser until the clear solution boils.

Remove the condenser add about 1.75 gms of sodium nitrite attach the condenser and shake the flask vigorously.

structure :-



(sym - tribromobenzene)

Expt. No. ..... Date .....

Page No. .....

Remove the condenser and heat the flask boiling water both till the gas is evolved Allow the reaction mixture to stand for about 10 minutes.

Now immerse it on ice both and than filter the product with solution on a buchner funnel wash with a little amount of alcohol followed by several water washings to remove all the sodium sulphate.

Result :-

We get colourless shining needless shaped crystals of sym - tribromobenzene.

Which are 5.2460 gms in weight crystals melting point is 122°C.

23/4/18

Date

Expt. No. (3.) Page No.

To prepare benzilic acid from benzoin.

Step - 1.

object:-

To prepare benzil from benzoin of HNO_3.

Requirements:-

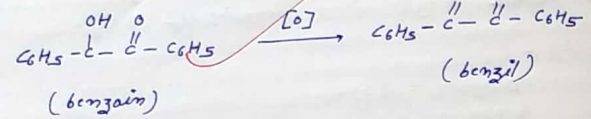
Benzoin = 8.5gm
Glacial acetic acid = 40ml
conc. HNO_3 = 20ml
Ice.

procedure:-

In around bottom flask we take 0.5 gms of benzoin 40ml of glacial acetic acid 20ml of conc. HNO_3 swirl the flask vigrously and then heat the reaction mixture on a steam bath add 150ml of water min. throughly and allow the yellow ppt. of benzil to setter filter the product with suction wash throughly with water & dry the product by pressing a crystals with a clean glass stopper.

Although again the benzil obtained is sufficiently pure for conversion to derivatives or to the benzilic acid it may be purified by recrystallisation

Chemical reaction :-



Date

Expt. No.

Page No.

from methanol or 5% aqueous ethanol.

Result :- We get yellow crystals of benzoin which are 6.462 gms in weight crystals melting point is 95°C.

23/4/18

Expt. No. .....

Page No. .....

Step-2.

object:-

To prepared benzilic acid from benzil.

Requirements:-

benzil = 5gms
KOH = 5gm
Ethyl alcohol = 15ml
Conc. HCl
Ice.

Procedure:-

dissolve 5gms of KOH filtrate in 10ml of H_2O in a flask add 15ml of ethyl alcohol acid mixture will the solution by swirling.

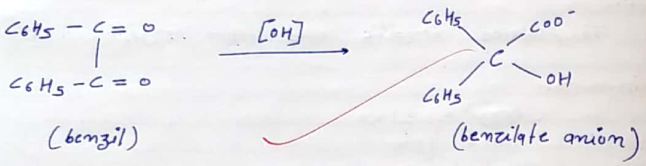
Add 5gms of pure benzil to the resulting solution fit a reflase water condenser to the flask of boil the constents on a water bath for 10-15 min.

Transfer the contants of the flask to a small beaker or a procelain dish cover it with a watch glass, allow it to stand undisturbed for a several hours.

preferably overnight until potassium benzilate is completely crystallised filter the product and wash it with ice cold ethanol.

Teacher's Signature : _____

Chemical reaction:-



(benzil) (benzilate anion)

Expt. No. Page No.

Dissolve the product in above 50ml of water and then add an Hcl drop by drop till the ppt. of the free acid is complete.

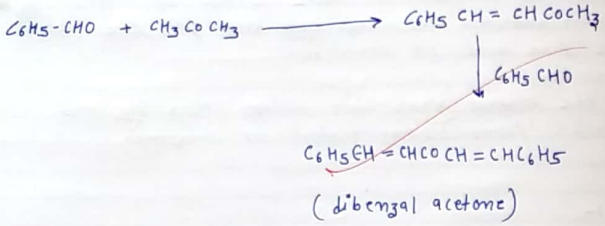
Filter the product wash with water press dry and recrystalise from boiling water or benzene.

Result:-

We get colourless shining crystals of the benzilic acid which are 9.26 gms in the weight

crystals m.p. is 150°c.

Chemicals reaction:-



object:-

To prepare dibenzalacetone from the benzaldehyde.

Requirements:-

benzaldehyde = 10mL
Alcohol = 100mL
Acetone = 4mL
Sodium hydroxide = 10gms

procedure:-

Dissolve 10gms of NaOH in 80mL of H_2O and 100mL of alcohol in a flask, cool it an ice bath to about 20-25°c spirit and then add 4mL of acetone.

Slowly into installments with an interval of 15 mint. but with constant stirring corke the flask or shake it vigourously for 30mint.

Filter the product wash with water or recrystallise from ethyl alcohol or hot ethyl acetate

Result:-

We get bright yellow crystals of dibenzalacetone which are 8.0/20 gms in the weight.

Crystals m.p. is 112°c.

Teacher's Signature :

Expt. No. (5) Date

Page No.

(Separation of organic mixture)

Object:-

Separation of identify of the organic compound from given mixture also of also from suitable derivative.

Test for solid compound :-

Primary test :-

Physical state - solid
Colour - colourless
odour - odourless
Solubility - less soluble in water but soluble in organic solvents

Observation Table :-

Experiment	observation	inferences
(1) Flame test :- on burning the organic solid in burner flame	compound burns with smoky flame	compound is aromatic
(2) litmus test :- blue of red litmus paper take in the aqeous solution of the organic compound.	colour of blue litmus paper turned in red	nature of the organic compounds in basic

Teacher's Signature :

Expt. No. _____ Date _____

Page No. _____

(3.)	**Element test :-**		
(a)	"N" Test - take L.S soln + Freshly prepared $FeSO_4$ soln + conc H_2SO_4	blue / green ppt soln is not obtained	"N" - absent
(b)	"S" - Test :- Sodium Nitroprypside test :- take L.S solution + add. sodium Nitro - py prypside	black colour solution or ppt is not obtained	"S" - absent
(c)	"X" - test :- L.S solution + conc HNO_3 + $AgNO_3$	white ppt is not obtained	"X" - absent
⇒	**Test for functional group :-** organic mix. + conc. H_2SO_4 4-5 drop ethyl alcohol + $\Delta \longrightarrow$ cool	fruits like odour is now evolved	$-\overset{\overset{O}{\|\|}}{C}-OH$ group may be
	Iodate - colite Test :- organic mix. + 2% KI 5 drop + 5 drop KIO_3 soln $\xrightarrow{\Delta}$ then cool + 1 ml starch solution	blue colour is obtained	$-\overset{\overset{O}{\|\|}}{C}-OH$ confirm

Teacher's Signature : _____

$RCOOH + SOCl_2 \longrightarrow RCOCl + SO_2 + HCl$

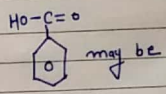
$RCOCl + NH_3 \longrightarrow RCONH_2 + HCl$

(amide)

Date

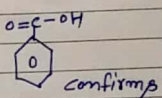
Expt. No. Page No.

M.P of organic is ≈121°C



Confirmation test for functional group:-

neutral solution of organic mix. + $FeCl_3$ → buff coloured ppt is obtained



Formation of the derivative:-

Amide is derivative of $\left[-\overset{\overset{O}{\|}}{C}-NH_2\right]$

carboxylic acid.

Method:-

- We take about 0.5gm organic compounds in a round bottom flask.
- Now we add $SOCl_2$ & heat it about 20-30 mint. formation of a acyclchloride take place by this process
- Now we add it in 10ml cool concentration ammonia solution with dropwise & vigrous reaction takes.
- Keep it in ice bath & cool it we obtained white crystaline ppt of amide.
- MP of $-\overset{\overset{O}{\|}}{C}-NH_2$ is 128°C

Teacher's Signature :

Expt. No. ---------- Page No. ----------

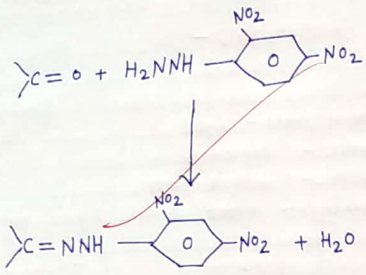
Test for liquid Compounds :-

primary test :-

physical state - liquid
Colour - colourless
odour - special odour
Solubility → water soluble liquid solvent also

	Experiment	observation	Inference
(1.)	Flame test :- on burning the organic compound in burners flame	compound burns without smoky flame	compound is alphatic
(2.)	Litmus test :- blue and red litmus paper take in the aqueous sol^n of the organic compounds	colour of litmus paper not change	compound is neutral
(3.)	Element test :-		
(a)	"N" - test :- Take L.S sol^n + Freshly prepared $FeSO_4$ sol^n + conc. H_2SO_4	blue/green ppt sol^n is not obtained	"N" - absent
(b)	"S" - test :- take L.S sol^n + add sodium Nitro - prapside	black colour sol^n or ppt is not obtained	"S" - absent
(c)	"X" - test :- L.S - sol^n + conc. H_2SO_4 + $AgNO_3$	White ppt is not obtained	"X" - absent

Teacher's Signature : _____



(2,4-dinitrophenyl hydrazone)

Test for functional group:-

(a) Sodium bisulphite test – conc. + 2ml $NaHSO_3$	White ppt is obtained	$-\overset{\overset{O}{\|}}{C}-$ may be
(b) 2,4-dinitrophenyl hydrazine test. Alcoholic sol^n of the organic Cpd + 1ml 2,4 dinitrophenyl hydra $\xrightarrow{\Delta}$	yellow or orange colour ppt is obtained	$-\overset{\overset{O}{\|}}{C}-$ group is confirm
BP of organic compound	≈56°	$CH_3-\overset{\overset{O}{\|}}{C}-CH_3$ may be

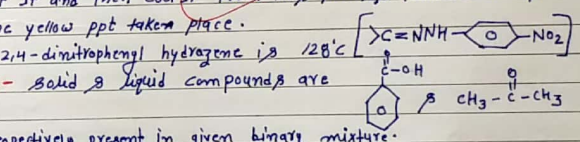
confirmative test for functional group:-

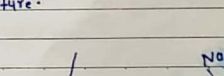
Iodoform test – 1ml compound + 2ml I_2 sol^n + NaOH by dropping + Δ	yellow colour sol^n ppt is obtained	$CH_3-\overset{\overset{O}{\|}}{C}-CH_3$ confirm

Formation of derivative:-

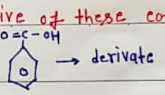
Derivative of carbonyl group is 2,4-dinitrophenyl hydrazone-

Method:- All of first take 1ml compound and 4-5ml of 2,4-dinitrophenyl hydrazone in atleast test tube then mix. Up 2-drop of conc. H_2SO_4 Now heat it and then cool it from this process formation of 2,4-dinitrophenyl hydrazone yellow ppt taken place.

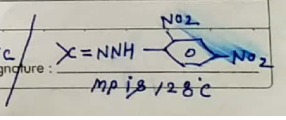
MP of 2,4-dinitrophenyl hydrazone is 128°c 

Result:- Solid & liquid compounds are  respectively present in given binary mixture.

derivative of these compounds:-

 → derivate is $-\overset{\overset{O}{\|}}{C}-NH_2$ ⇒ MP is 128°c

Teacher's Signature :



MP is 128°c

Expt. No. (6.)

Date

Page No.

Object:-

Separation and Identify of the organic compound from given mixture & also form the suitable derivative.

Test for solid compound:-

primary test:-

Physical state - solid crystaline
Colour - colourless
odour - odourless
Solubility - soluble in water & insoluble organic solution

observation table:-

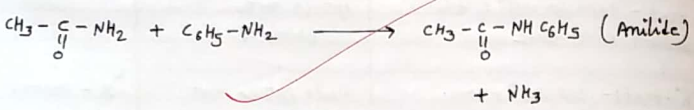
S. No.	Experiment	observation	Inference
1.	Flame test:- on burning the organic solid in burners flame	compound burns without smoky flame	compound is aliphatic
2.	litmus test:- blue & red litmus paper take in the aquous solution of the organic compound	colour of litmus paper is not change in red or blue	Nature of organic compound is netural
3.	Element test:-		
(a)	"N"-test:- Take L.S sol^n + Freshly FeSo$_4$ sol^n + conc. H_2SO_4	blue / green colour ppt sol^n is obtained	"N"- present

Teacher's Signature :

Expt. No. ---------- Page No. ----------

(b)	"S"-test :- Sodium Nitroprusside test - take L.S sol^n + add. Sodium Nitroprusside	black colour sol^n ppt is not obtained	"S"- absent
(c)	"X"-test :- L.S sol^n + conc. HNO_3 + $AgNO_3$	White ppt is not obtained	"X"- absent
	Test for functional group :- organic cpd + NaOH solution $\xrightarrow{\Delta}$	Ammonia a like odour is evolved	$-\overset{\overset{O}{\|}}{C}-NH_2$ may be
	above sol^n + conc. HCl	White ppt is obtained	$-\overset{\overset{O}{\|}}{C}-NH_2$ confirm
	Melting point of organic compound	$\approx 132^\circ C$	$H_2N-\overset{\overset{O}{\|}}{C}-NH_2$ may be
	Confirmative test for functional group :- Biuret test :- organic mix. + $\xrightarrow{\Delta}$ then $\uparrow NH_3$ $\longrightarrow$ cool $\longrightarrow$ obtained	Violet colour sol^n ppt is obtained	
	White ppt + 2-3 drop H_2O + $CuSO_4$ solution + NaOH		$NH_2-\overset{\overset{O}{\|}}{C}-NH_2$ confirms

Teacher's Signature : _____



Expt. No. ..... Page No. .....

Formation of derivative of amide :- Amide reaction with aniline and formed ($CH_3 - \underset{\underset{O}{\|}}{C} - NHC_6H_5$)

Method :- Take 0.5gm compound and heat with 1ml aniline ammonia like odour is evolved white ppt is obtained.
MP of aniline is 250°C.

Test for Liquid Compounds :-

primary test :- physical state - liquid form
Colour - colourless
odour - specific
solubility - less soluble in the water but soluble in organic solvent

observation table :-

	Experiment	Observation	Inference
1)	Flame test :- on burning organic solid in the burners flame	compound burns with smoky flame	Nature of compound is aromatic
2)	litmus test :- blue or red litmus paper take in aqueous sol^n of the organic compound.	colour of blue / Red litmus paper not changed	Nature of organic compound is neutral

Teacher's Signature : _____

C_6H_6 + $C_6H_2(OH)(NO_2)_3$ → $[C_6H_5\,C_6H_2(OH)(NO_2)_3]$

(benzene) (picric acid) (picrate)

Date

Expt. No. Page No.

3.) Element test:-

(a)	"N"-test:- take L.S sol^n + freshely $FeSO_4$ sol^n + conc. H_2SO_4	blue/green ppt sol^n is not obtained	"N"-absent
(b)	"S"-test:- take L.S sol^n + sodium nitroprupside	black colour sol^n ppt is not obtained	"S"-absent
(c)	"X"-test:-		
	compound + $AlCl_3$ + Δ + $CHCl_3$	Red colour sol^n/ppt is obtained	Aromatic hydro-carbon is confirm
	BP	≈ 80°	⬡ may be

Determination test for functional group:-

organic mixture + conc. HNO_3 + conc. H_2SO_4	yellow colour sol^n/ ppt is obtained in only form	⬡ confirm

Formation of derivative of aromatic hydrocarbon cpd:- Aromatic hydro-carbon reaction with picric acid and formed picrate

$[C_6H_5\,C_6H_2(OH)(NO_2)_3]$ → Picrate

Method:- take 0.5gm organic cpd are mix. up 1ml picric acid & stirring constant we obtained solid picrate. We crystaline it with C_6H_6 MP of this is 90°C

Result:- Solid & liquid cpd are $H_2N-\overset{O}{\overset{\|}{C}}-NH_2$ & ⬡ respectively present in given binary organic mix.

Ethanol 23/4/18

derivative of these cpds:-

$H_2N-\overset{O}{\overset{\|}{C}}-NH_2$ - anilide $CH_3-\overset{O}{\overset{\|}{C}}-NHC_6H_5$

Teacher's Signature :

⬡ - picrate

$[C_6H_5-C_6H_2(OH)(NO_2)_3]$ MP = 90°C

Date _____

Expt. No. (7.) _____ Page No. _____

Object:- Separate & Identify the organic cpd from given mixture & also form suitable derivatives.

Test for Solid Compound:-

primary test:-

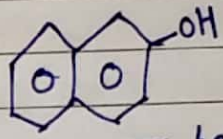
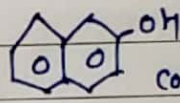
pysical state - solid crystaline
colour - pink brown colour
odour - carbolic odour
solubility - less soluble in water but solvents

observation table:-

S.No.	Expirement	observation	Inference
(i)	Flame test:- on burning organic cpd in burners flame	cpd burns with smoky flame	cpd is aromatic
2.)	litmus test:- blue/Red litmus paper take in the aqueous soln of the organic cpd.	colour of litmus paper not change in red or blue	nature of cpd is neutral
3.)	Element test:-		
(a)	"N" test:- Take L.S soln + Freshely $FeSO_4$ + Conc. H_2SO_4	blue/green colour ppt is not obtained	"N" - absent
(b)	"S" test:- take L.S soln + add sodium nitroprupside	black colour ppt is not obtained	"S" - absent

Teacher's Signature : _____

Expt. No. ---------- Page No. ----------

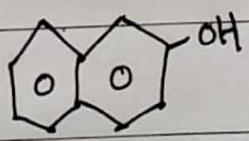
(c)	"X"-test :- L.S-Soln + conc. HNO_3 + $AgNO_3$	White ppt is not obtained	"X"-absent
	Test for functional group :- Soln organic cpd + Sodium metal	Hg gas is evolved	-OH group may be
	MP of organic cpd.	$\approx 123^{\circ}C$	 may be
	conformation test for functional group :- organic mixture + NaOH Soln + $CHCl_3$ + Δ ⟶	blue colour salt/ppt is obtained	 confirm

Formation of derivative of phenolic group :-

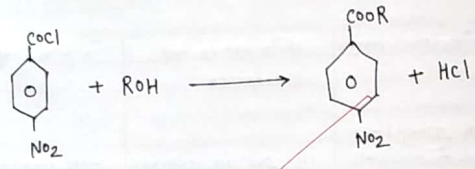
p-nitro benzail :-

Alcohol reaction with p-nitro benzail not chloride is formed p-nitro benzoate

Method :- We take 1ml alcohol & 2-gram p-nitrobenzail chloride & Kept in water bath about 15-20 minutes.
Then add 5% $NaHCO_3$ soln & 10ml gradially then cool the mixture. we obtained solid p-nitro-benzoate & wash with cool water Recorystalise with alcohol → Such we get p-nitro benzaite derivative of β-nepthal.



Teacher's Signature : _____



(Nitrobenzail chloride) (P-nitro benzoate)

Date .....

Expt. No. ..... Page No. .....

Test for liquid Compounds :-

primary test :-

physical state - liquid

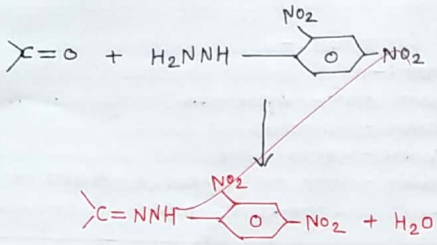
colour - colourless

odour - special odour

Solubility - Water Soluble liquid is Soluble in organic Solvents.

S.No	Experiement	observation	Inference
1)	flame test :- on burning the organic cpd in burners flame	cpd burns without smoky flame	cpd is an aliphatic
2)	Litmus test :- take red or blue litmus paper and aqueous sol^n in organic cpd.	colour of litmus paper not change in blue/red	nature of cpd is neutral.
3.)	Element test :-		
(a)	"N" - test :- take L.S sol^n + freshely prepared $FeSO_4$ s/n + conc. H_2SO_4	green/blue coloured ppt sol^n is not obtained	"N" - absent
(b)	"S" - test :- Take L.S sol^n + Sodium nitroprusside	black colour is not obtained	"S" - absent
(c)	"X" - test :- L.S sol^n + conc. HNO_3 + $AgNO_3$	White ppt is not obtained	"X" - absent

Teacher's Signature : _____



Date .....

Expt. No. ..... Page No. .....

Test for functional group :-

Sodium bisulphite test :- compound + 2mL $NaHSO_3$	White ppt is obtained	$-\overset{\overset{O}{\|\|}}{C}-$ group may be
2,4-dinitrophenyl hydrazine test :- Alcoholic sol^n of organic cpd + 1mL 2,4-dinitro-phenyl hydrazone + $\Delta \longrightarrow$	yellow/orange colour ppt is obtained	$-\overset{\overset{O}{\|\|}}{C}-$ group confirms
BP of ognic cpd -	$\approx 56^\circ C$	$CH_3-\overset{\overset{O}{\|\|}}{C}-CH_3$ may be

Determination test for functional group :-

Iodoform test :-

1mL cpd + 2mL I_2 sol^n + NaOH by droping + Δ	yellow colour sol^n is obtained	$CH_3-\overset{\overset{O}{\|\|}}{C}-CH_3$ confirms

Derivative :-

2,4-dinitrophenyl hydrazen react with acetone & formed 2,4-dinitro phenyl hydrazone

Method :-

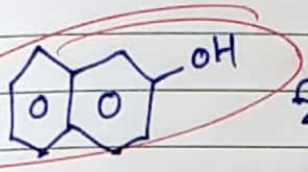
We take 1mL cpd & 4-5mL 2,4-dinitro-phenyl hydrozene in a test tube then add 2-drop conc H_2SO_4 & heat then cool hydrozene then crystaline it.

Date ----------

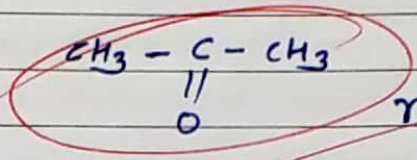
Expt. No. ---------- Page No. ----------

Result :-

The solid & liquid compounds are as

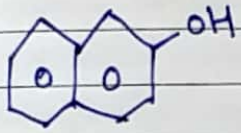


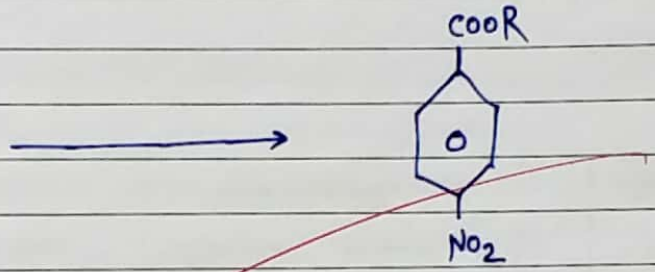
&

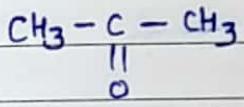


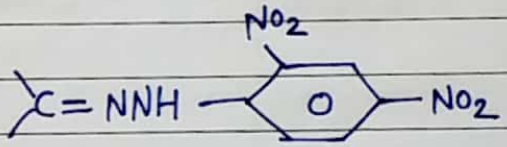
respectively in given binary organic mixture.

Derivative :-









MP :- 128°c

Signature

23/4/18

Expt. No. (8.) Date

Page No.

object :-

separate and identify the organic compound from given mixture of also form suitable derivative.

Test for solid compounds :-

primary test :-

physical state = solid crystals

colour = colourless

odour = odourless

Solubility - hot water soluble

soluble in organic cpd.

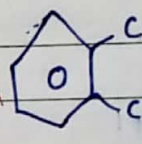
Observation Table :-

S.No	Experiment	observation	Inference
1.)	Flame test :- on burning of organic mix. on burners flame.	Compound burns with smoky flame	compound is aromatic
2.)	litmus test :- Red / blue litmus paper take in aquous soln of organic cpd.	colour of blue litmus paper turned into red	nature of cpd is acidic
3.)	Element test :-		
(a)	"N"-test :- take L.S soln + freshely perpared $FeSO_4$ + Conc. H_2SO_4	blue/green coloured ppt is not obtained	"N" - absent.

Teacher's Signature :

Expt. No. ---------- Date ----------

Page No. ----------

(b)	"S"- Test :- take L.S soln + sodium nitroprupside	black colour ppt is not obtained	"S"- absent
(c)	"X"- test :- L.S soln + Conc. HNO_3 + $AgNO_3$	white ppt is not obtained	"x"- absent
4.)	Test for functional group :-		
	organic mix. + Conc. H_2SO_4 + 4-5 drop ethyl alcohol + Δ ⟶ then Cool	fruit like odour is evolved	$-C-OH$ grp ‖ O may be
	conformation test :- 0.2 organic mix. + 0.4gm phenol + 2 drops Conc. H_2SO_4 + Δ ⟶ then cool + 2ml H_2O, NaOH	pink colour soln is obtained	 confirms

Formation of derivative :-

MP 220°C acid react with $SOCl_2$ and formed acyl chloride which react with ammonia + formed amide derivative.

Teacher's Signature : _____

$RCOOH + SOCl_2 \longrightarrow RCOCl + SO_2 + HCl$

(acyl chloride)

$RCOCl + NH_3 \longrightarrow R-\underset{\underset{O}{\|}}{C}-NH_2 + HCl$

Date

Expt. No. Page No.

Method:-

Take 0.5gm organic compound in around bottom flask.

- Then acyl chloride is prepared.
- Now add it in 10ml conc. NH_3 solution by dropping a vigorous reaction takes place.
- cool mixture on ice bath and achieved white crystaline amide.
- Then filter and crystaline with water recrystalline with alcohol.
- MP of $R-\underset{\underset{O}{\|}}{C}-NH_2$ is 220°C.

Date .....

Expt. No. (9.) .....

Page No. .....

Object :-

Separate and identify the organic compounds from given mixture and also form suitable derivative.

Test for Solid Compounds :-

primary test :-

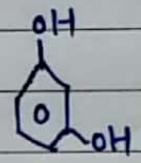
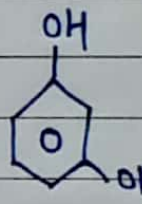
physical state - solid crystals
colour - colourless or pink
odour - odourless
solubility - soluble in water

observation table :-

	Experiment	observation	Inference
1.)	Flame test :- on burning the organic cpd in burners	compound burns with smoky	compound is aromatic
2.)	Litmus test :- Red / blue litmus paper take in the aqueous solution of the organic mixture.	No change in colour	compound is neutral
3.)	Element test :-		
(a)	"N" - test :- take L.S soln + freshly prepared $FeSO_4$ soln + conc. H_2SO_4	Green / blue coloured ppt soln is not obtained	"N" - absent

Teacher's Signature : _____

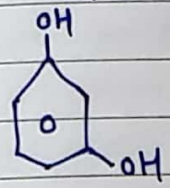
Expt. No. ---------- Page No. ----------

c) "X"- Test :- L.S. Solution + conc. HNO_3 + $AgNO_3$	White ppt is not obtained	"X" - absent
Functional group test :-		
Solution of organic mix. + sodium metal	H_2 gas is evolved	-OH group may be
Ceric ammonium nitrate test :- organic mix. + 2-4 drop ceric	Red colour salt is obtained	-OH group confirm.  may be
MP of organic compound	$\approx 110^\circ C$	
Conformative test for functional group :-		
Aquous solution of organic mixture + $FeCl_3$ + ammonium nitrate	blue violet salt ppt is obtained	 confirm
BP of organic compound	$\approx 78^\circ C$	C_2H_5OH may be
Determination test for functional group :-		
Iodoform test :- 1mL mix. + 2mL I_2 80% + NaOH drop $\xrightarrow{\Delta}$ (gradually)	yellow coloured salt ppt is obtained	C_2H_5OH confirms

Teacher's Signature : _____

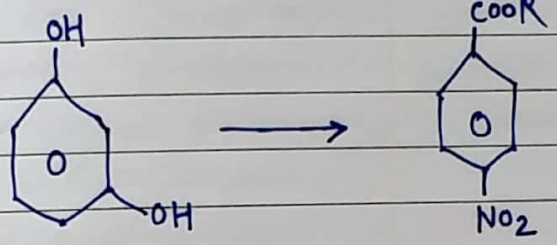
Result :-

The solid and liquid compound are



and C_2H_5OH respectively in given binary organic mixture.

Derivative :-



MP = 182°C

	Experiment	observation	Inference
1.)	Flame test - on burning the organic solid on burners flame	compound burns without smoky flame	compound is aliphatic
2.)	litmus test :- Red / blue litmus paper take in the aquous sol^{n} of organic compounds	colour of red & blue litmus does not change	Nature of compound is neutral.
3.)	Element test :-		
(a)	"N" - test :- Take L.S solution + Freshely prepared $FeSO_4$ sol^{n} + conc H_2SO_4	green / blue colour sol^{n} ppt is not obtained	"N" - absent
(b)	"S" - test :- Take L.S sol^{n} + sodium nitroprusside	black ppt / sol^{n} is not obtained	"S" - absent
(c)	"x" - test :- L.S salt + conc. HNO_3 + $AgNO_2$	White ppt is not obtained	"x" - absent
	Test for functional group :- salt of organic mix. + sodium metal	H_2 gas evolved	-OH group may be
	ceric ammonium nitrate test :- mix. + 2-7 drop ceric ammonium nitrate	Red colour sol^{n} is obtained	-OH group confirms

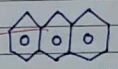
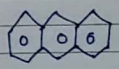
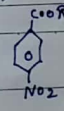
Teacher's Signature : _____

$C_6H_5OH \longrightarrow C_6H_5(OH)(NO_2)_3 \longrightarrow C_6H_5OH \cdot C_6H_5(NO_2)_3$

(Phenol) (picric acid) (picrate)

Date .....

Expt. No. ..... Page No. .....

3.) Element test :-		
(a) "N" - test - take L.S salt + freshly prepared $FeSO_4$ soln + conc. H_2SO_4	Green/blue coloured ppt/ soln is not obtained	"N" - absent
(b) "S" - test :- take L.S salt + sodium nitro prusside	black ppt / salt is not obtained	"S" - absent
(c) "X" - test :- take L.S salt + conc. HNO_3 + $AgNO_3$	white ppt is not obtained	"X" - absent
Test for functional group :-		
compound + $AlCl_3$ + Δ + $CHCl_3$	Red colour is obtained	Aromatic hydrocarbon confirm
MP of organic compound	≈ 216°C	 may be
Conformative test for functional group :-		
organic mixture in saturated salt of picric acid in benzene + Δ →	Red colour ppt / salt is obtained	 confirms
$C_2H_5OH \longrightarrow$ 	MP = 57°C	

Teacher's Signature : .....

Expt. No. (10.)

Page No.

Object:-

Separate and identify the organic compounds from given mixture and also form the suitable derivatives.

Test for solid Compound:-

primary test:-

physical state - solid crystalline
Colour - colourless or yellow
odour - specific odour
solubility - water insoluble but soluble in organic solution

observation table:-

S.No.	Experiment	observation	Inference
(1.)	Flame test:- on burning the organic solid in burner flame	compound burns with smoky flame	compound is aromatic
2.)	litmus test:- Red and blue litmus paper take in aquous solution of organic compounds.	No change in colour	compound is neutral

Teacher's Signature : _____

Expt. No.---------- Page No.----------

Formation of derivative :-

Derivative is picrate having melting point 138°C.

- phenol react with picric acid and is formed picrate.

Method :-

Take 0.5gm mixture and add in 1ml of benzene and add 2ml picric acid and stirring it well.

- know we obtain yellow crystals and crystaline it with benzene.

Test for liquid Compounds :-

primary test :-

physical state - liquid
colour - colourless
odour - sharp odour
solubility - soluble in water

Observation table :-

S.No.	Experiment	observation	Inference
1)	Flame test :- on burning of organic solid in burners flame	compound burns without smoky flame	compound is aliphatic

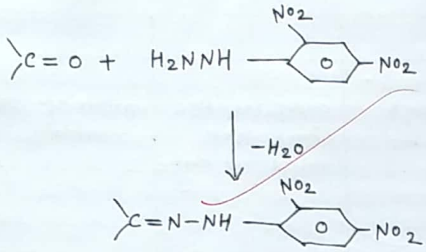
Teacher's Signature :

Expt. No. ---------- Date ----------

Page No. ----------

2.)	Litmus test:- Red/blue litmus papers take in the aqous solution of organic	colour red/blue litmus paper coloured not change	nature of epd is neutral
3.)	Element test:-		
(a)	"N"-test:- Take L.S solution + Freshly prepared $FeSO_4$ sol^n + conc. H_2SO_4	green/blue ppt/ sol^n is not obtained	"N"- absent
(b)	"S"-test:- Take L.S solution + 2ml sodium nitroprupside	black ppt/salt is not obtained	"S"- absent
(c)	"X"-test:- L.S solution + conc. HNO_3 + $AgNO_3$	White ppt is not obtained	"X"- absent
	Test for functional group:-		
	Sodium bisulphite test- compound + 2ml $NaHSO_3$	White ppt is obtained	$-\overset{O}{\overset{\|}{C}}-$ group may be

Teacher's Signature: _____



Expt. No. ..... Page No. .....

2,4-dinitrophenyl hydrozene test -

Alcoholic salt of organic mixture + 1mL 2,4-dinitrophenyl hydrazene + Δ ⟶	yellow/orange ppt/ppt is obtained	−C− group (O) confirm
Boling point of organic compound	≈ 20°C	CH_3-C-H (O) may be

Conformative test for functional group :-

Iodoform test :-

1mL organic mixture + 2mL of organic I_2 solution + NaOH + Δ	yellow ppt / ppt is obtained	CH_3-C-H (O) confirms

Formation of derivatives :-

Derivative is of 2,4-dinitrophenyl hydrazene melting point is 168°C

- Aldehyde and keto react with 2,4-dinitrophenyl hydrazene with formed 2,4-dinitrophenyl hydrazene.

Teacher's Signature : _____

Date .....

Expt. No. ..... Page No. .....

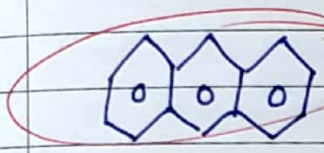
Method :-

Take 1ml compound and 4-5ml 2,4-dinitro phenyl hydrazene.

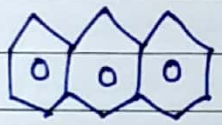
- Add 2-drop conc. H_2SO_4 + heat
- After cool the mixture we obtain yellow coloured ppt and crystaline with alcohol recrystaline is with benzene.

Result :-

The solid and liquid compound are

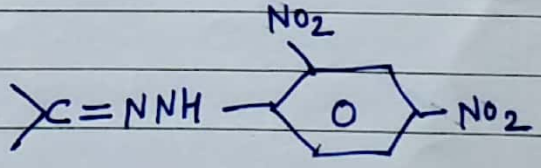
 and $CH_3-\overset{\overset{O}{\|}}{C}-H$ respectively in given binary organic mixture.

Derivative :-

 $\longrightarrow$ $C_6H_5OH \cdot C_6H_5(OH)(NO_2)_3$

(Picrate)

Melting paint - 138°C

$CH_3-\overset{\overset{O}{\|}}{C}-H \longrightarrow$ 

Melting paint = 168°C

23/4/18

Teacher's Signature : _____