

Organic Tests :-

I) Unsaturation

- 1) Bayer's test→ 3
- 2) Bromine Water→ 3

II) Terminal alkyne

- 1) Tollen's→ 4
- 2) Cuprous chloride→ 4

III) Alkyl Halide

- 1) Rxn with AgNO_3 → 5
- 2) Beilstein's test→ 5

IV) Alcohol

- 1) CAN test→ 6
- 2) Lucas test→ 7
- 3) Haloform test→ 7
- 4) Victor Meyer test→ 8

V) Phenols

- 1) Bromine Water→ 9
- 2) FeCl_3 test→ 9
- 3) Liberman nitroso test→ 9

VI) Carbonyls

- 1) DNP test→ 10
- 2) Haloform→ 10
- 3) Tollen's→ 11
- 4) Fehling's→ 12
- 5) Benedict's→ 13
- 6) NaHSO_3 → 13
- 7) Schiff's test→ 14

* Carboxylic acid→ 14

VI) Amines

1) Carbyl amine► 15

2) Hinsberg's► 15

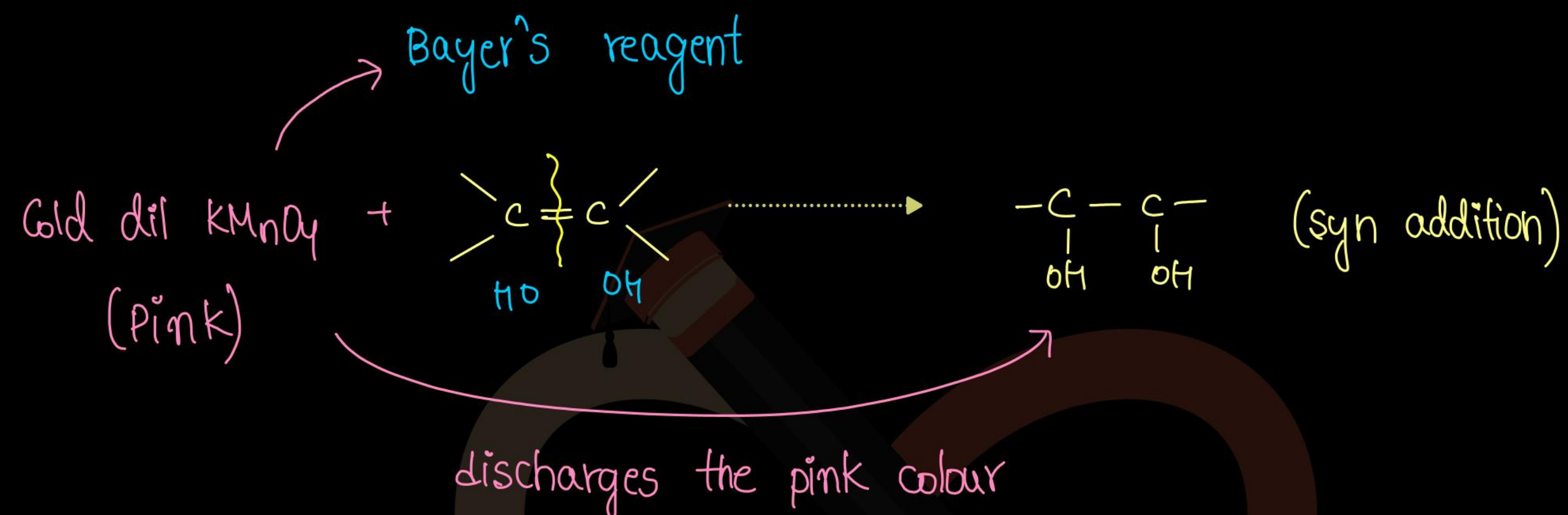
3) Mustard oil► 15

4) Azo dye► 16

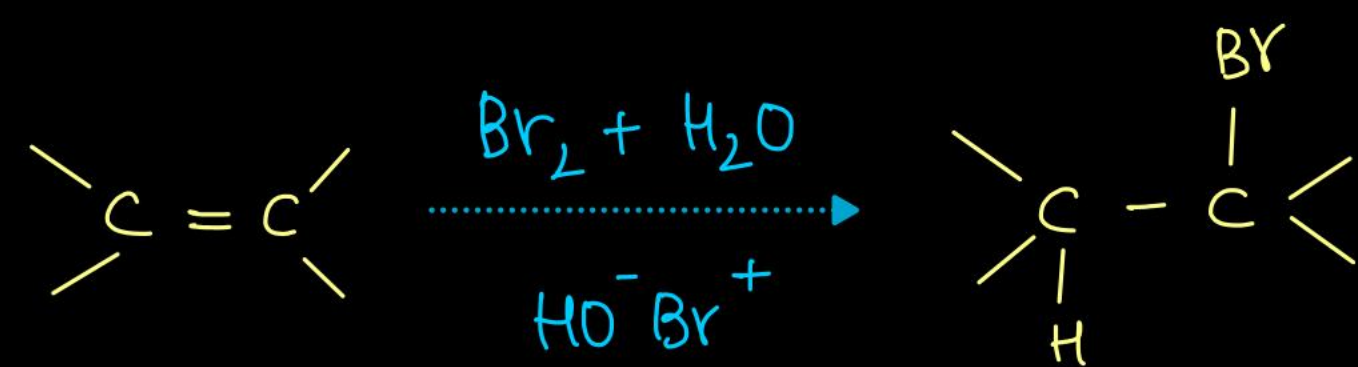


4) Unsaturation

a) Bayer's test :



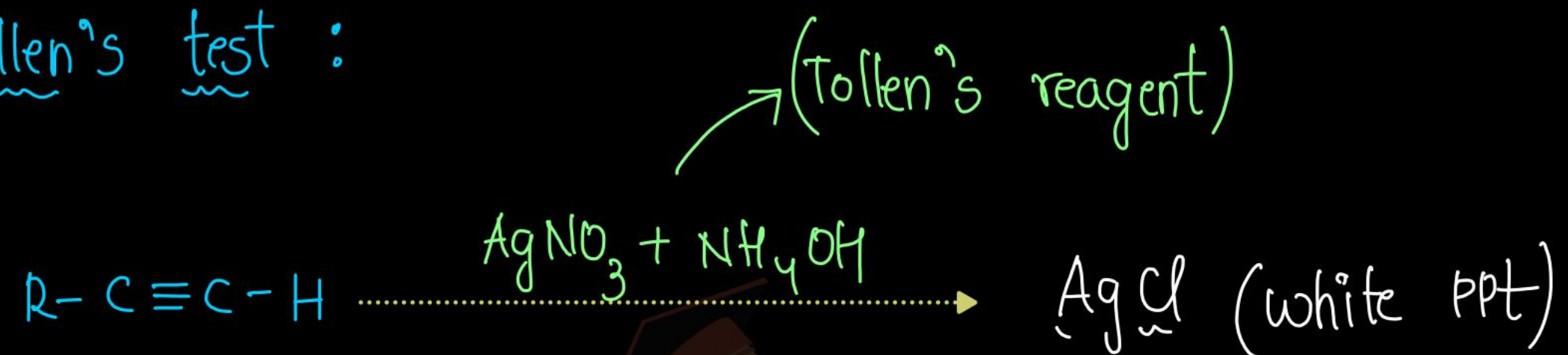
2) Bromine water :



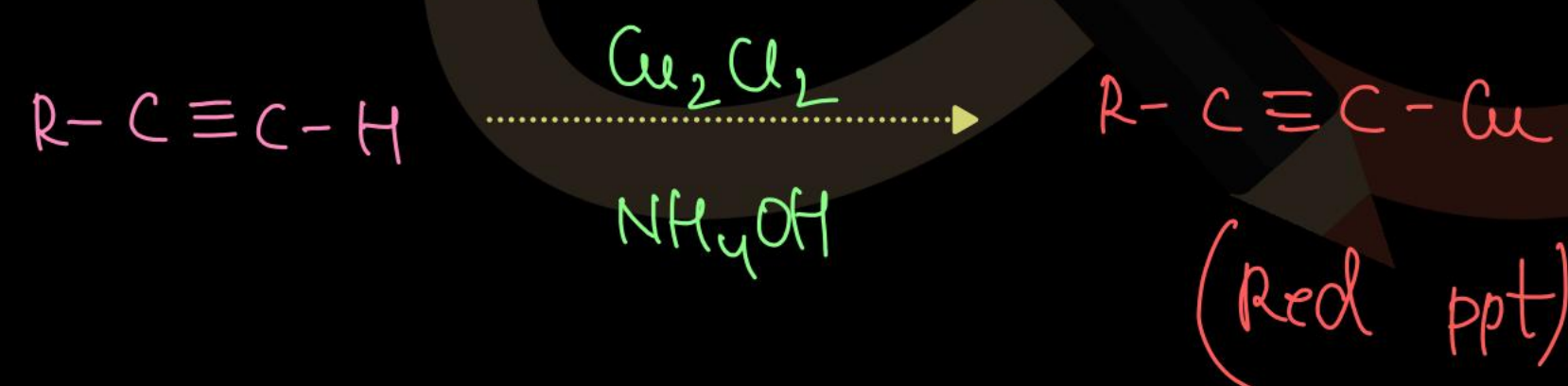
discharges the Reddish brown color.

2) Terminal alkyne :

a) Tollen's test :



b) Cuprous chloride test :



③ Alkyl halide :

1) Rxn with AgNO_3

* AgCl (white)

* AgBr (pale Yellow)

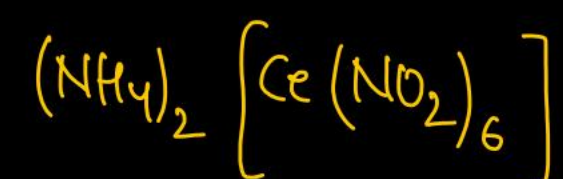
* AgI (Dark Yellow)

2) Beistein's Test :

If small amount of OC is taken on Cu wire,
Green Colour is imparted to the flame.

IV) Alcohol

1) Ceric ammonia Nitrate :



* Boil with acetic acid & Conc H_2SO_4 , fruity smell of ester is observed



2) Lucas test :

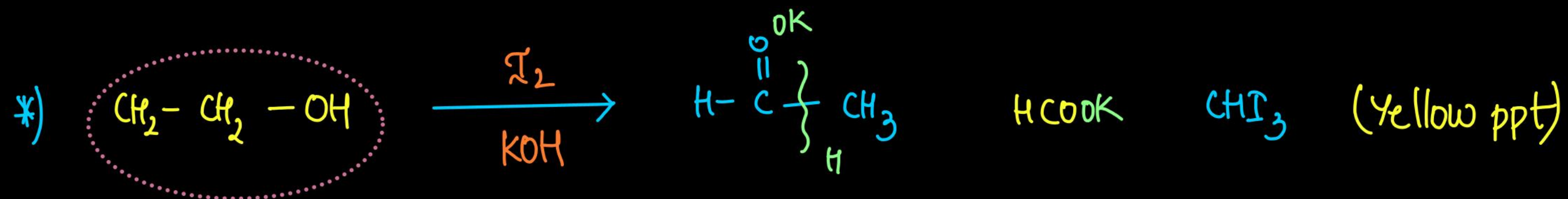
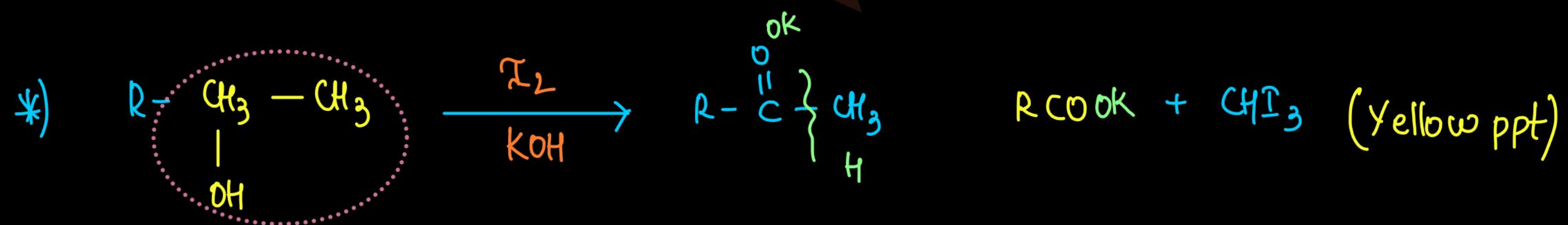
(Conc HCl + anhyd ZnCl_2)

1° ROH $\longrightarrow$ No TB

2° ROH $\longrightarrow$ TB in minutes

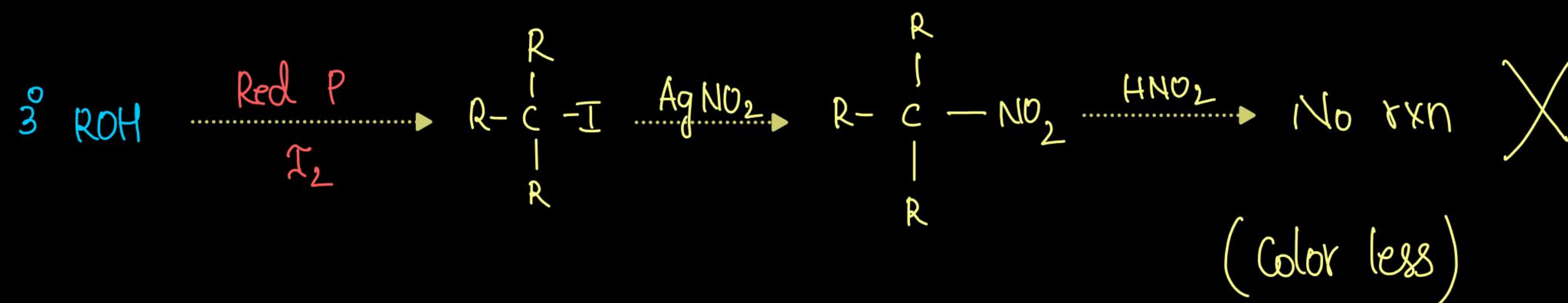
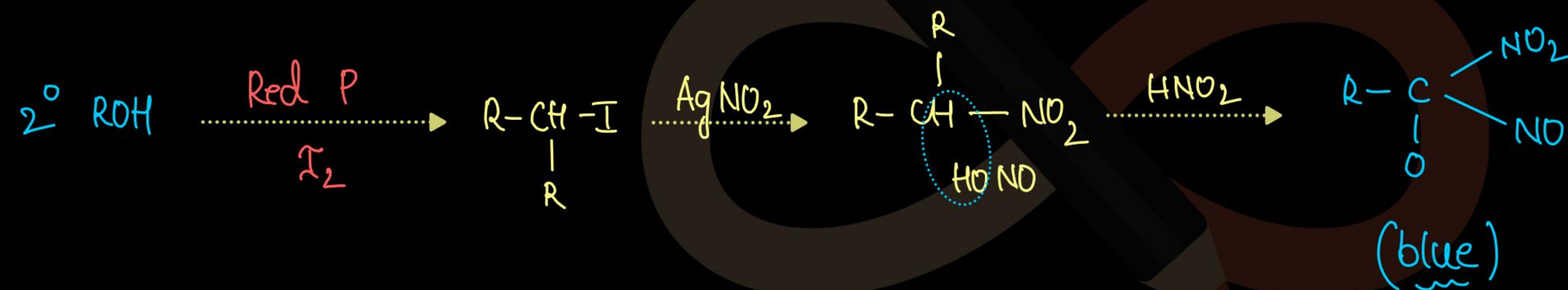
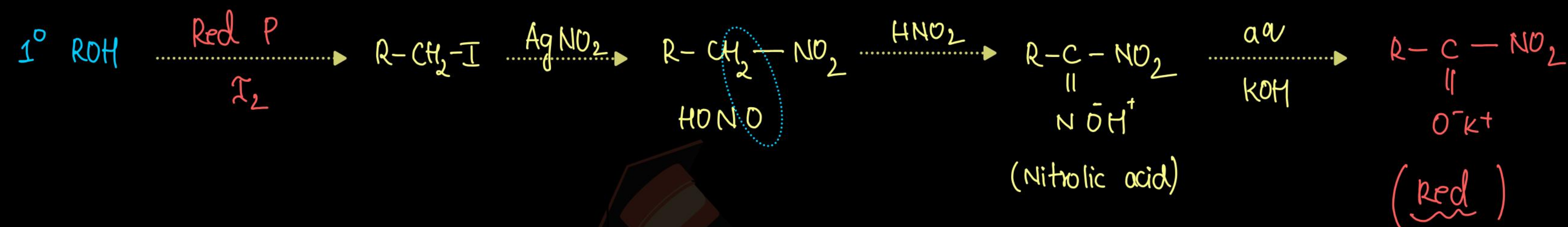
3° ROH $\longrightarrow$ TB in seconds

3) Haloform test :-



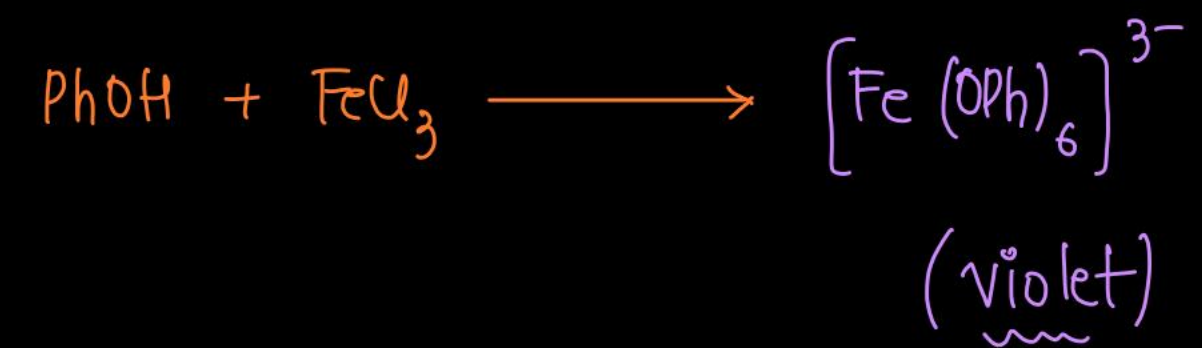
4) Victor Mayer Test :

R	B	C
1°	2°	3°

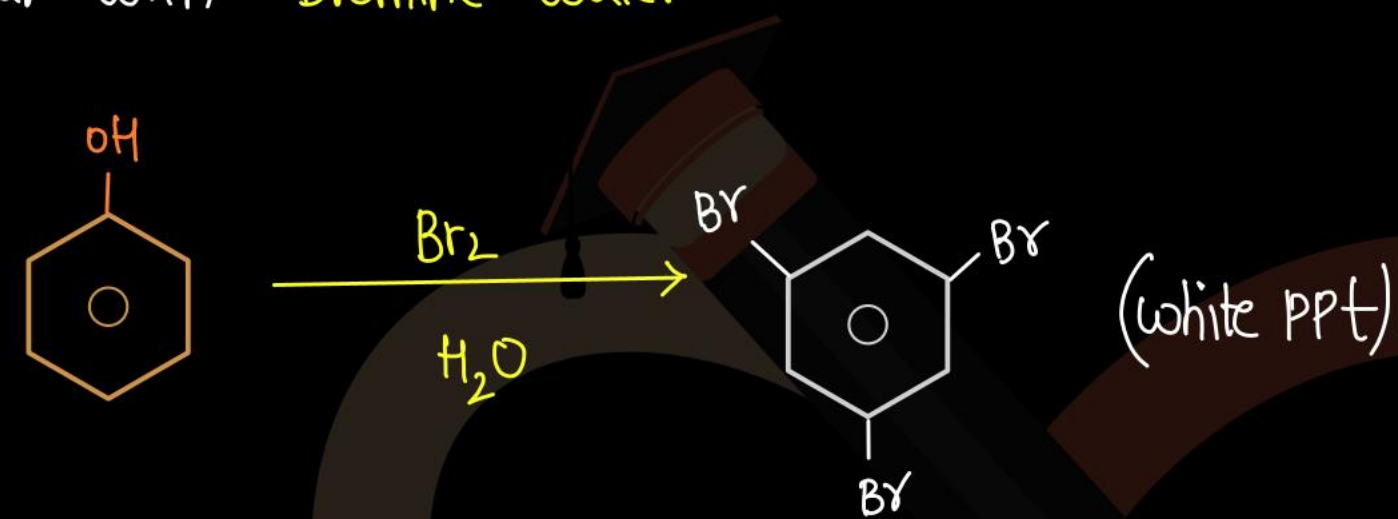


IV) Phenol :-

1) Violet colour with FeCl_3

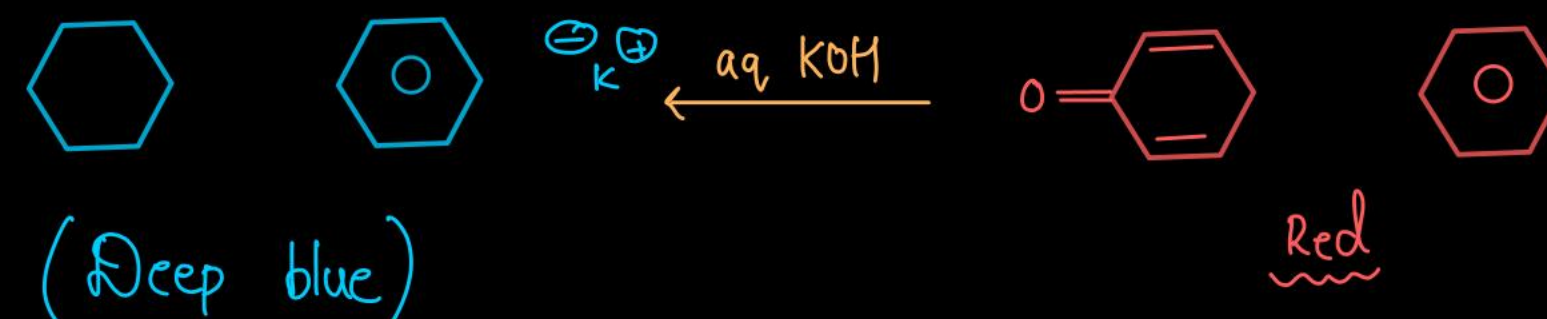


2) White colour with Bromine water



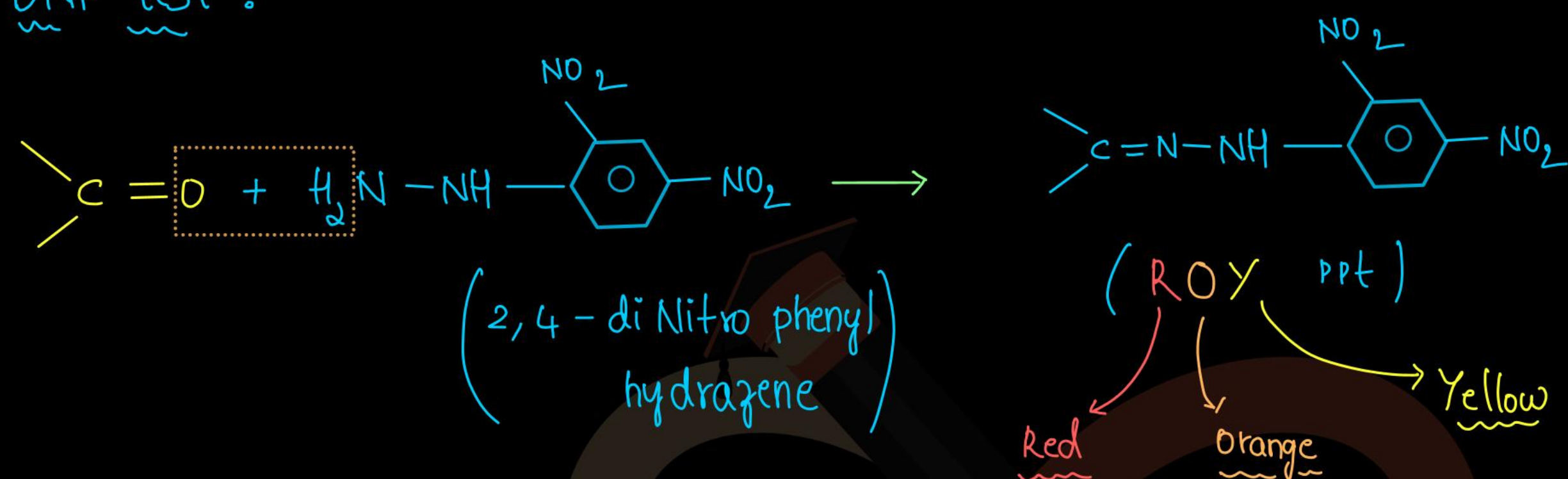
3) Lieberman nitroso Test :

(GRB)

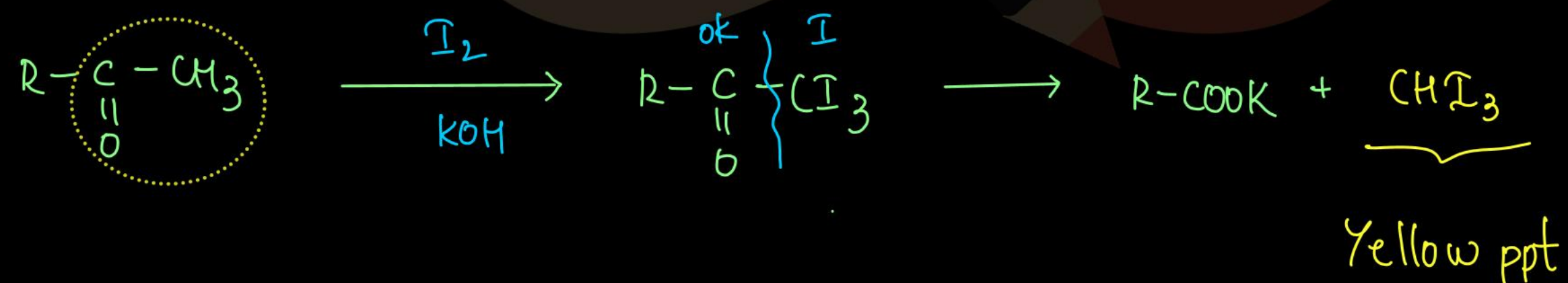


VI) Carbonyl Compounds

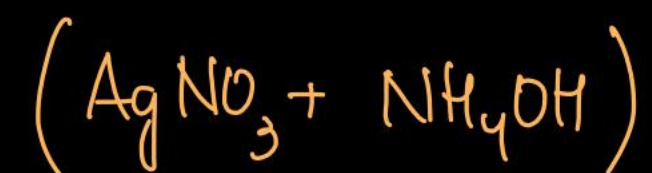
1) DNP test:



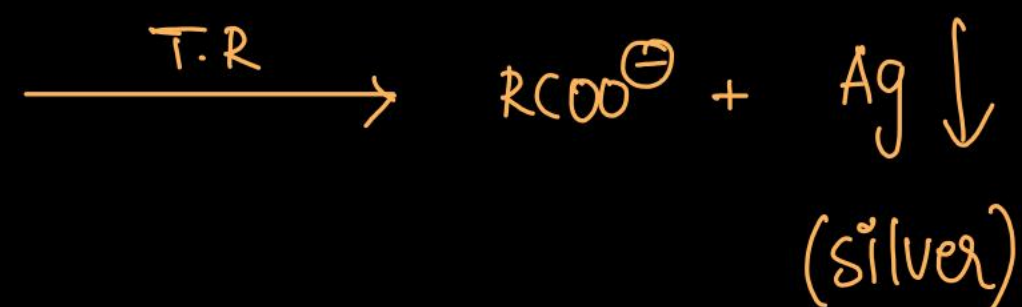
2) Haloform test:-



④ Tollen's test :-



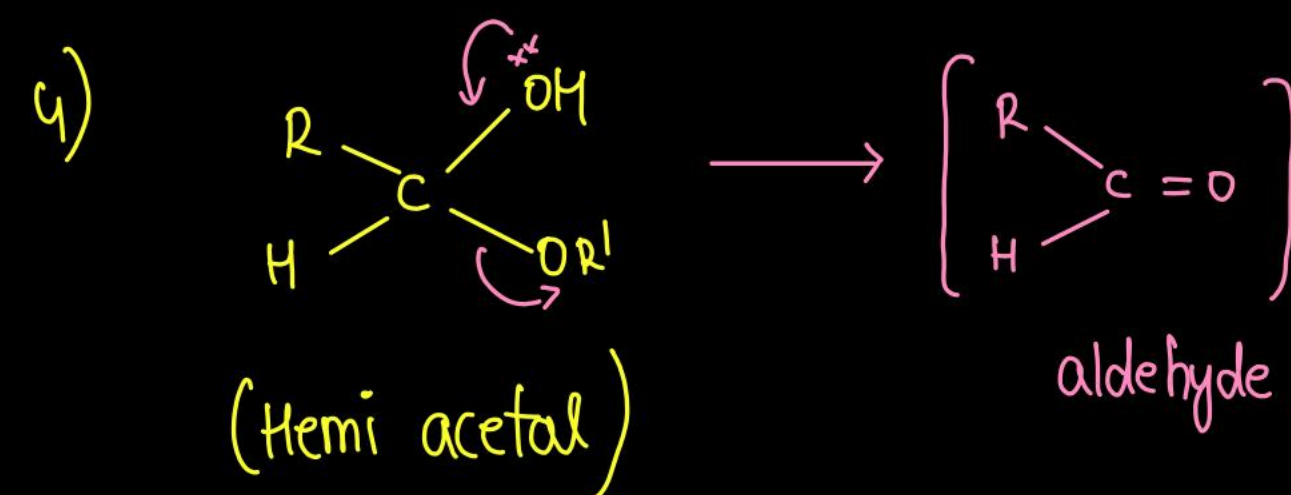
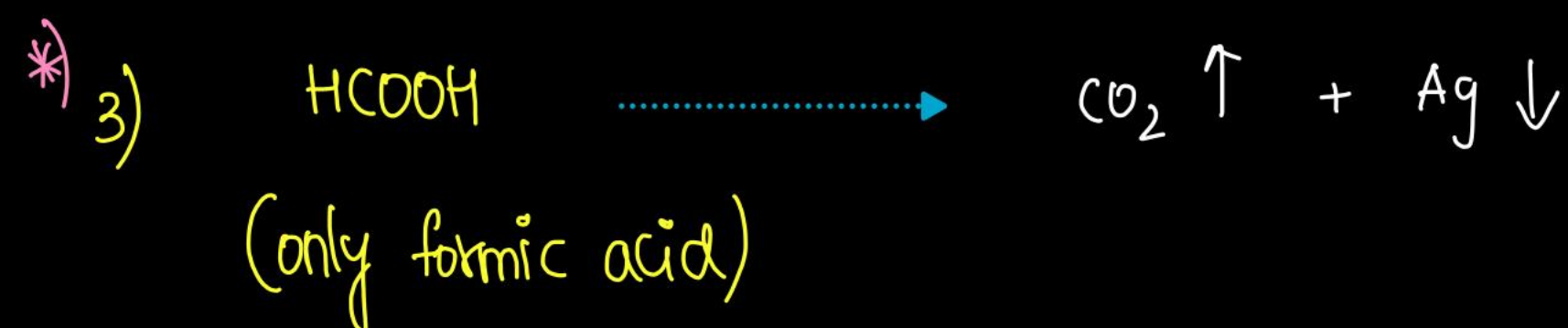
* Aliphatic / Aromatic aldehydes ✓



* Ketones :



MI :



④ Fehling's test :-

Fehling A

aq. CuSO_4

R-CHO ✓ Ph-CHO ✗

$\text{R}_1-\overset{\text{O}}{\underset{\text{O}}{\parallel}}\text{C}-\text{R}_2$ ✗

Fehling B :

NaKT

COONa

|

CHOH

|

CHOH

|

COOK

R-CHO



$\text{RCOO}^\ominus + \text{Cu}_2\text{O}$

Brick
(red ppt)

* α -hydroxy ketone ✓

* HCOOH ✓

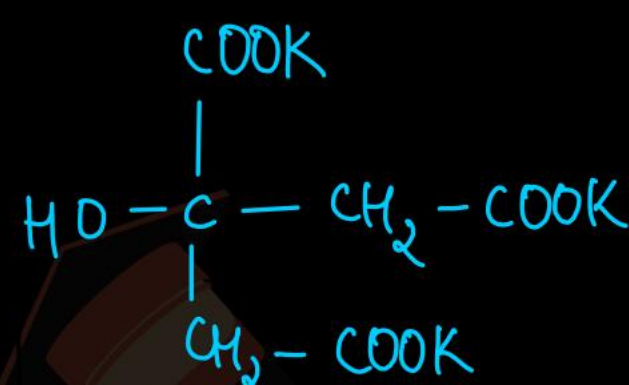
* Hemiacetal ✓

⑤ Benedict's test :

aq. CuSO_4 + Salt of citric acid

R-CHO ✓ Ph-CHO ✓

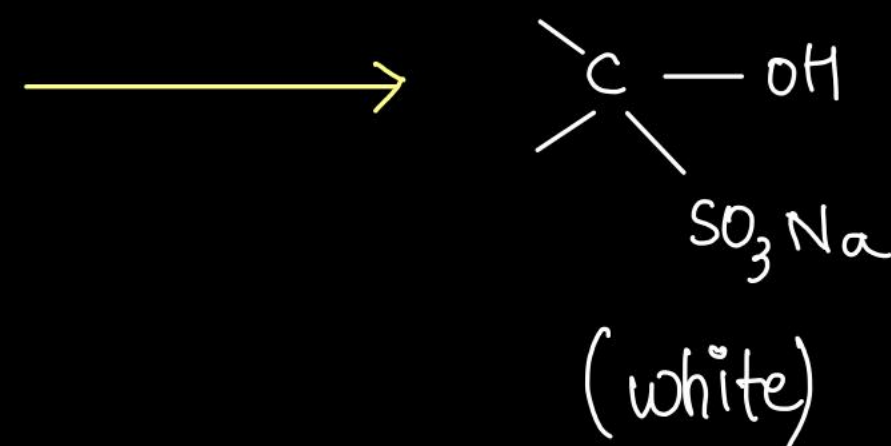
$\text{R}_1 - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \text{R}_2$ ✗



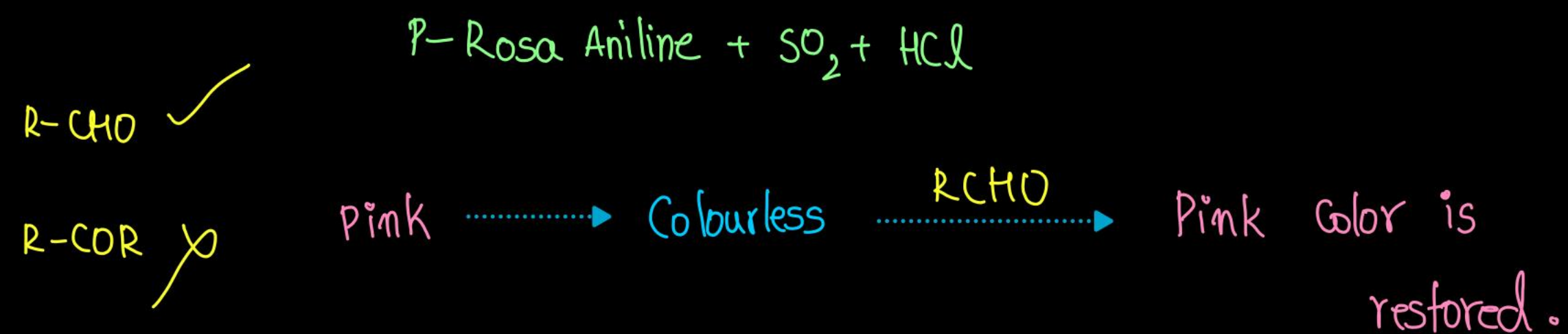
⑥ NaHSO_3 test

R-CHO ✓ Ph-CHO ✓

$\text{R} - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \text{CH}_3$ ✓
(methyl ketone)



⑦ Schiff's test :



* Carboxylic acid

* $NaHCO_3$ test → brisk efferece (CO_2)

* $HCOOH$ can give Tollen's ✓
Fehling's ✓

* fruity smell with alcohols

Amines

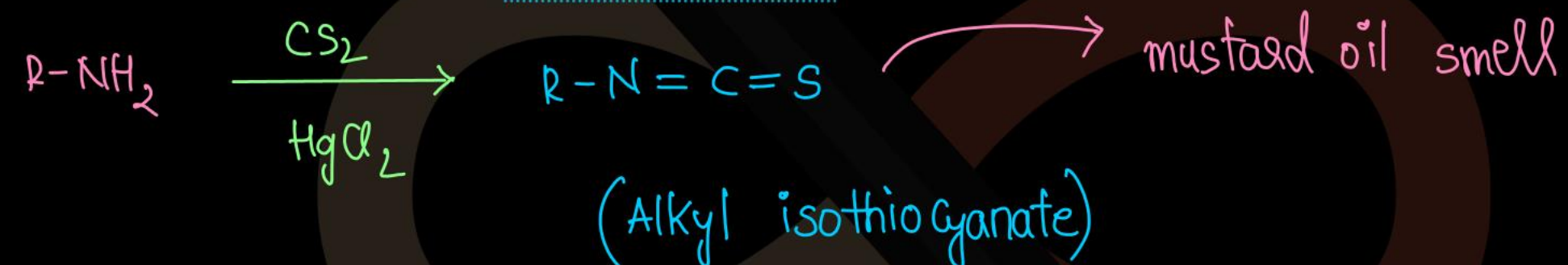
1) Carbylamine Test (Isoyanide test) :-

* only 1° amine

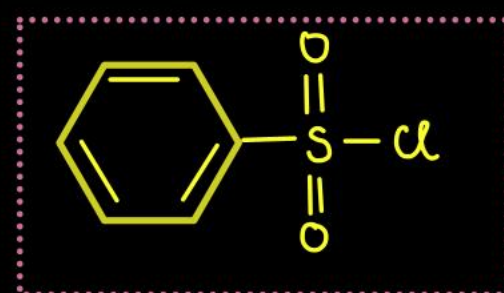


2) Hofmann mustard oil test

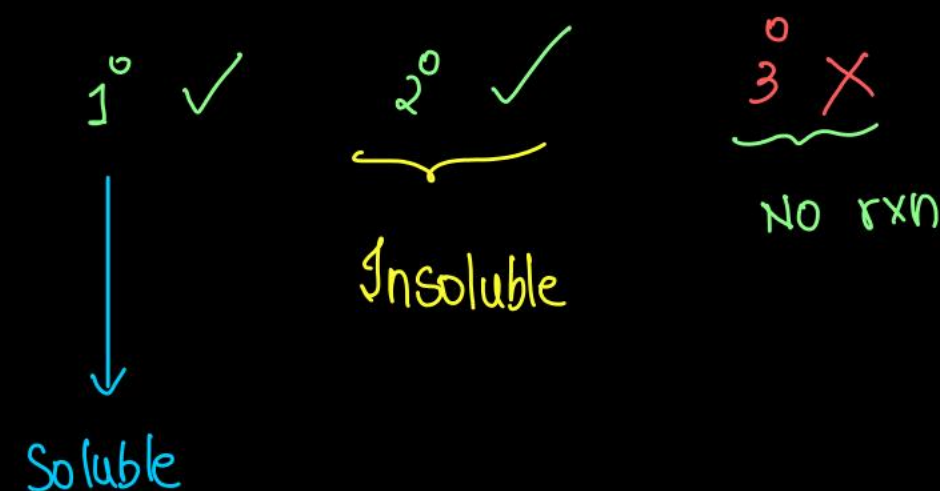
* only 1° amine



3) Hinsberg's test :-



Hinsberg's Reagent : alternative : p-toluene sulphonyl chloride



4) Azo-dye

