

CHEMISTRY-XII

1.

21/12/2020 IMPORTANT NOTES By-Dr.Rinky

NEED TO REVISE FOR BOARD EXAMS

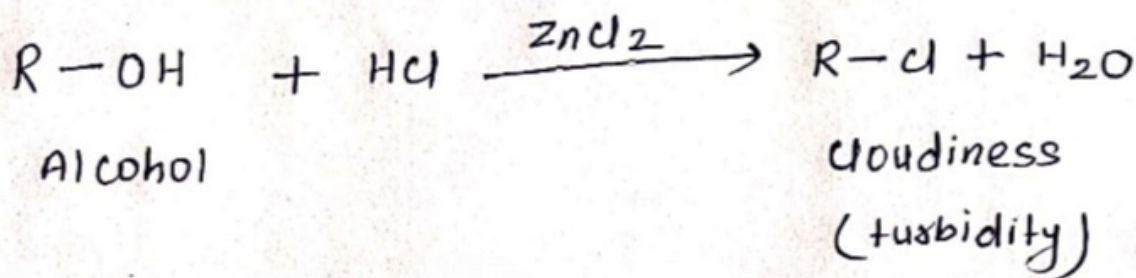
DIFFERENTIATING TESTS

ALCOHOLS

LUCAS TEST

- * This test is based upon relative reactivity of various alcohols towards HCl in the presence of $ZnCl_2$. In this test, alcohol is treated with Lucas reagent ($HCl + ZnCl_2$).

On reaction, alkyl chlorides are formed which being insoluble result in cloudiness/turbidity in the solution.



- * If cloudiness appears immediately, tertiary (3°) alcohol is indicated.
- * If cloudiness appears within 5-10 minutes, secondary (2°) alcohol is indicated.
- * If cloudiness appears only upon heating, (1°) primary (1°) alcohol is indicated.

~End~

PHENOLS

Ferric Chloride Test

- * Phenol gives a violet coloured water soluble complex with ferric chloride ($FeCl_3$). The complex formation takes place in all compounds containing enolic group ($=C-OH$). However, the colour of complexes are different such as green, blue, violet, etc. and depend upon the structure of phenols.

Alcohols being weakly acidic DO NOT form such a complex and no change in colour is observed.



~End~

CARBONYL ($>C=O$)

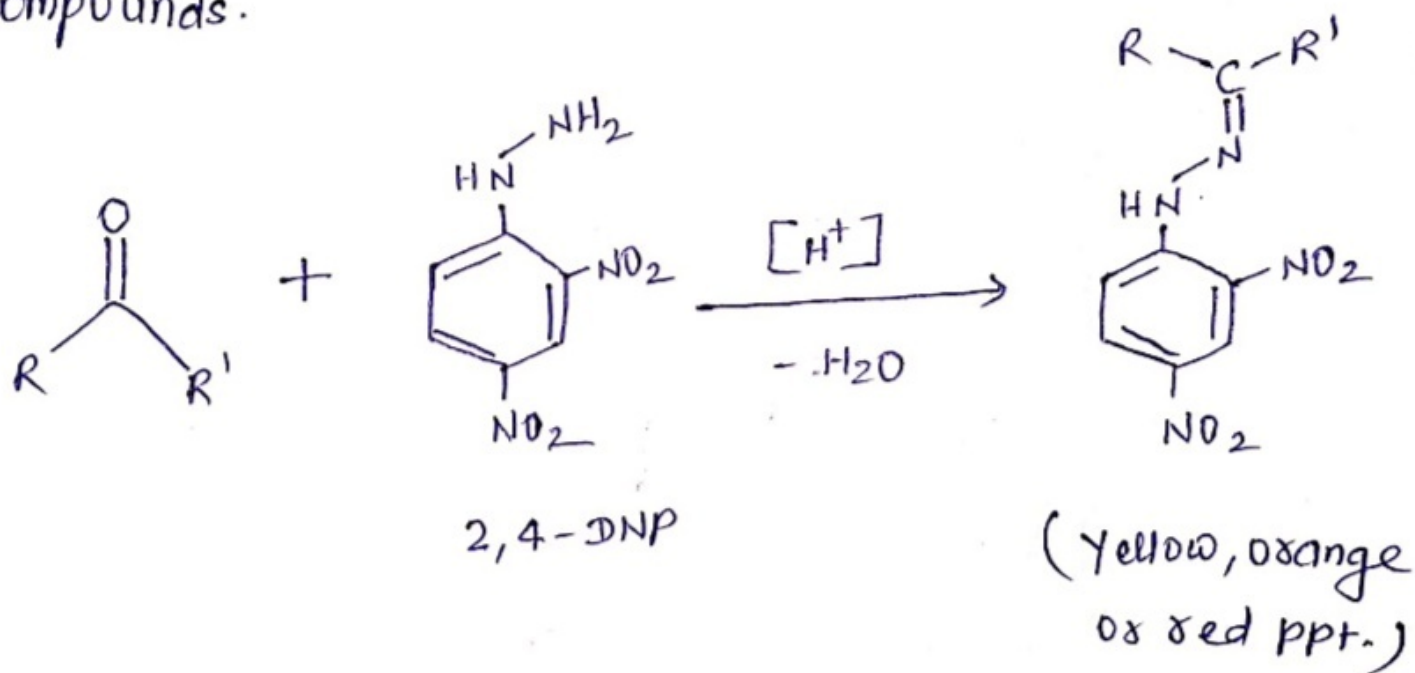
3.

COMPOUNDS

2,4-DNP Test

* Carbonyl compounds (ie; aldehydes and ketones) when treated with 2,4-dinitrophenylhydrazine (2,4-DNP) form yellow, orange or red precipitate.

No such precipitation occurs with other organic compounds.



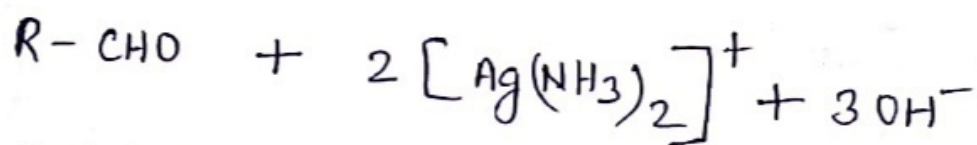
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ALDEHYDES

Tollen's Test (Silver Mirror Test)

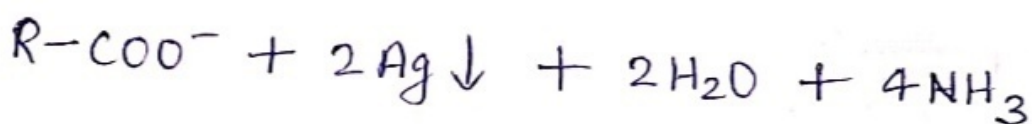
* Tollen's reagent is ammoniacal solution of silver nitrate. On warming with this reagent, aldehydes

form a silver mirror on walls of the container.



Aldehyde

Tollen's reagent



Silver mirror

- * Ketones do not respond to this test with the exception of α -hydroxy ketones which give this test positive.
- * Fructose (monosaccharide) being α -hydroxy ketone gives this test positive.
- * Formic acid also gives silver mirror test positive.

~End~

**Fehling's Test & Others test
in next lecture..@inky**