NAME REACTIONS

1.	Finkelstein	CH₃Br + Nal — Acetone → CH₃-I + NaBr
2.	Swarts	CH₃Br + AgF → CH₃F + AgBr
3.	Friedel-Crafts Alkylation	+ H ₃ C—CI Anhydrous AlCl ₃
4.	Friedel-Crafts Acylation	CH 3COCI Anhydrous AlCl 3
5.	Wurtz	H ₃ C —CI + CI —CH ₃ — 2Na Dry ether → H ₃ C —CH ₃ + Na CI
6.	Fittig	+ CI 2Na + Na CI
7.	Wurtz-Fittig	+ CI—CH 3 — 2Na — CH 3 + Na CI
8.	Kolbe	Na OH i) CO 2 COOH
9.	Reimer-Tiemann	CH 3Cl + Na OH CHO H+
10.	Williamson	CH₃-Br + CH₃-ONa — CH₃-O- CH₃ + NaBr
11.	Stephen	H_3C — $CN + SnCl_2 + HCl$ — H_3C — CH — H_3C — CHO

12.	Etard	CHO 2CI 2 H ₃ O ⁺
13.	Gatterman – Koch	CO / HCI Anhydrous AlCl 3
14.	Rosenmund reduction	H ₂ C CI Pd / BaSO 4 H ₃ C H
15.	Clemmensen	O Zn - Hg
16.	Wolff-Kishner reduction	H ₃ C CH ₃ ii) NH ₂ ·NH ₂ H ₃ C —CH ₂ -CH ₃
17.	Tollens' test	R-CHO + 2 [Ag(NH ₃) ₂] ⁺ + 3 OH ⁻ → R-COO ⁻ + 2Ag + 2H ₂ O + 4 NH ₃
18.	Fehling's test	R-CHO + 2 Cu ²⁺ + 5 OH → R-COO + Cu ₂ O + 3H ₂ O
19.	lodoform	O
20.	Aldol condensation	2 H ₃ C — CHO — $\frac{\text{dil NaOH}}{}$ H ₃ C -CH -CH ₂ —CHO — $\frac{\Delta}{}$ CH ₃ -CH = CHCHO
21.	Cannizzaro	нсно + нсно — Conc. NaOH + нсоома + н₃с — он
22.	Hell-Volhard- Zelinsky (HVZ)	H ₃ C ——COOH ii) Cl ₂ / Red Phosphorus H ₂ C ——COOH II) H ₂ O Cl
23.	Hoffmann bromamide degradation	O Br ₂

0.0.0

Distinguish By a Single Chemical Test

1. All aldehydes (R-CHO) give Tollens' Test and produce silver mirror.

RCHO + 2
$$[Ag(NH_3)_2]^+$$
 + 3 OH⁻ \rightarrow RCOO⁻ + 2 Ag \downarrow + 2H₂O + 4 NH₃
Tollens' Reagent silver ppt

Note: HCOOH(methanoic acid) also gives this test, ketones (RCOR) do not give this test

 All aldehydes (R-CHO) and ketones(RCOR) give 2,4-DNP test RCOR + 2,4-DNP → Orange ppt

R-CHO + 2,4-DNP → Orange ppt

3. Aldehydes and ketones having CH₃CO- (keto methyl) group give Iodoform Test. Alcohols having CH₃CH- OH group also give Iodoform Test.

CH₃CHO + 3I₂ + 4 NaOH \rightarrow CHI₃ \downarrow + HCOONa + 3 NaI + 3H₂O Yellow ppt

- The following compounds give Iodoform Test: ethanol (C₂H₃OH), propan-2-ol (CH₃CH(OH)CH₃), ethanal(CH₃CHO), propanone(CH₃COCH₃), butanone (CH₃COCH₂CH₃), pentan-2-one (CH₃COCH, CH₃CH₄), acetophenone (PhCOCH₃)
- All carboxylic acids (R-COOH) give Bicarbonate Test RCOOH + NaHCO₃ → RCOONa + CO₂ ↑ + H₂O effervescence
- 6. Phenol gives FeCl, Test

$$C_6H_5OH + FeCl_3 \rightarrow (C_6H_5O)_3Fe + 3 HCl$$

(neutral) (violet color)

- All primary amines (R/Ar -NH₂) give Carbyl Amine Test
 R-NH₂ + CHCI₃ + KOH(alc) → R-NC + KCI + H₂O
 offensive smell
- 8. Aniline gives Azo Dye Test (Only for aromatic amines) $C_6H_5NH_7 + NaNO_7 + HCI \rightarrow C_6H_5N_2^*CI^-; \text{ then add } \beta\text{-naphthol orange dye}$
- All alcohols (ROH) give Na-metal test
 R-OH + Na → R-ONa + H₂
 bubbles
- For esters (RCOOR): Hydrolyses first. Then see the products (acid & alcohol) and give a terto identify them.
- 11. All alkenes (C=C) and alkynes (C≡C) decolorizes Br₂ water from red to colourless
- 12. Lucas Test to distinguish primary, secondary and tertiary alcohols

Lucas reagent: ZnCl,/HCl

3°-alcohol + Lucas reagent → immediate turbidity

2°-alcohol + Lucas reagent → turbidity after sometime

 1° -alcohol + Lucas reagent \rightarrow no turbidity