→ GOC
* Acidic Strength
* Basic Strength
* Stability of Intermediate
* Solubility in NaOH, $NaHCO_3$
* Aromatic, Non-Aromatic, Anti-Aromatic (Simple / Reacⁿ)
* Chiral / AChiral
* Relationship b/w two compounds (ENT / D.I / I / TA
* G.I (No. of compounds showing GI)
  Simple / Reacⁿ
* E/Z Nomenclature
* Boiling point
* No. of structural isomers / stereoisomers – with M.F → X Y Z
* Reacⁿ Mechanism
  → Dehydration of Alcohol (~~Reagents~~ with Reagents)
* → Markinov and Anti-Markinov Reacⁿ
* → Peroxide effect
* Br_2 addition with ~~stereo~~
* S_N1 and S_N2 S_N1 → Lucas ~~test~~
  → Reactivity Order
  → Ether formation and ether cleavage
  → HBO / OMDM / H_3O^+ → Stereo.
* E_2 with everything
  Satyzeff and Hoffmann product
  E_1
* $SOCl_2$ → S_Ni → Retention
  ~~$SOCl_2$~~
* Alcohol polyhydroxy Compound → HI Reacⁿ
* Grignard → As a base as a nucleophile

* Reduction

Different reducing agent → To prepare

(i) Alcohol
(ii) Aldehyde / ketone
(iii) Hydrocarbon

LAH, SBH, B_2H_6, H_2/Ni (Stereo.), Birch, Lindlar, Rosenmund, Stephen, ~~MBV~~ MPV, Boulvanc, Red P + HI, WKR, Clemenson

* Oxidation of alcohol
* Free Radical →
  Wurtz / Kolbe
* Alkane Oxidation →
  NBS, no. of monochlorinated product
→ SOR, MOR
→ SeO_2, MnO_2, Cu/Δ
→ Tollens, Fehling, Reducing Sugar in Carbohydrates
→ Baeyer, $KMnO_4/H^+$ } *
  $KMnO_4$/Base }
→ Ozonolysis → (Intra - Aldol)
→ Hydrocarbon (Alkane Oxidation → NCERT)

* Nu addition to Carbonyl system.
  Aldol and Cannizaro (Crossed Cannizaro, Intra Aldol, Combination with Protection)
* Reacn with HCN (Cyanohydrin)
  H_2O (Stable Hydrate)
  $NaHCO_3$ (test of aldehyde and ketone)
→ Perkin (without mechanism)
  ↳ with Intra-molecular EAS with aliphatic system

→ 2,4-DNP (No exception)
→ Iodoform (Heating effect → β-Keto acid
OMSGAPSA, hydroxy acid, amino acid
→ Rucherov followed by Iodoform.
→ Dry distillation followed by Iodoform.
→ Carboxylic acid
(i) Soda lime
(ii) Step-up → Arnst Eister → Only Reagent
→ Acid preparation
(i) Cyanide hydrolysis
(ii) Ester hydrolysis
→ Alkyne ~~Oxida~~ Ozonolysis / Alkene oxidation ~~ozonolysis~~
→ HVZ
→ Esterification
→ Common name of Carboxylic acid →
(i)
→ Common name of acid without CO_2H →
→ Amines
Preparation (Hoffmann Bromamide, Tollens, Fehling, Iodoform balance reac^n from NCERT)
→ Nitrobenzene reduction in different medium
→ Diazotisation → $NaNO_2 + HCl$ → 1°, 2°, 3°
→ Diazocoupling → Phenol, β-Naphthanol, Aniline, 
→ Test of amine →
Hinsberg reagent, Carbyl amine (Isocyanide test)
→ Physical properties of amines (Basic strength, Solubili
, B.P from NCERT)

→ Aromatic Reac^n where aromatic product formed
Trimer of alkyne
→ Polymerisation of Alkyne
→ Paul knorr
→ acetone + H_2SO_4 → Mesitylene
→ Se / Δ
→ use of Reagent in 3, 5, 7 membered ring.
→ Dienone – Phenol Rearrangement
→ Preparation of hexachlorobenzene / BHC
→ More reactive than benzene less reactive than benzene.
→ Reactivity order towards S_NAr.
→ Attacking site.
→ Nitration (Reagents / K.I effect, Aniline, Phenol, Toulene nitration)
→ Aniline → Diazonium ion ⟶* mono – substituted benzene (NCERT)
→ pH dependency on diazocoupling
→ Halogenation
$KBr + KBrO_3$, Br_2/CS_2, Br_2/H_2O
Br_2 → for various purpose
→ Friedel craft (For various system, Toulene, Aniline, Phenol, Nitrobenzene)
abnormal product
Adduct
NO reac^n
→ Deactivating group like $-NO_2$, $-CO_2H$, $-CO_2R$ does not give pdt in sulphonation, FCA but give product for other EAS.
→ Intra FCA
→ Acylation without / with $AlCl_3$
benzene acylation
↓
f.G acylation (alcoholic –OH, Phenolic –OH, 1° Amine, 2° Amine)

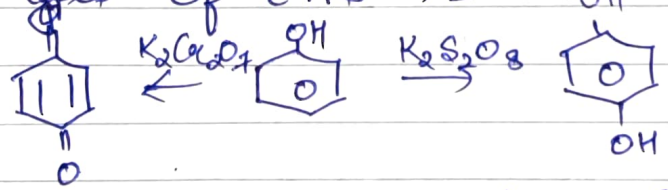
* 3° Amine and Amide ~~not~~ no acylation

Aspirin ~~preparation~~ + glucose / sugar acylation

* Sulphonation (O/P product)
Conjugated alkadiene → 1,2-, 1,4-

* Desulphonation (H_3O^+) followed by EAS
* Decarboxylation (Examples → Oakwood, Gemdicarboxyl, β-keto acid, β-amino acid, β-γ unsaturated acid)

* Phenol (Test – $FeCl_3$, diazocoupling V/s Test of alcoholic –OH → CAN)
* Riemer – Tiemann
* Kolbe
* Industrially preparation
* Are types of EAS → Zn dust



* Dow process and benzene oxidation at 250°C and from Grignard.

Carbohydrates →
→ Disaccharide
→ Polysaccharide
→ Reac^n with reducing / oxidising agent to prepare aldonic / saccharic acid
→ Cyclic structure
→ Glycosidic linkage (Disaccharide / Monosaccharide / Polysaccha

Amino acids
→ Essential / Non-essential
→ Acidic, Basic, Neutral
→ Value of pH at isoelectric point
→ Preparation of amino acid by Gabriel Phthalimide, HVZ.
→ Zwitterion
→ Chiral center
→ POC of surrounding group
→ Peptide linkage preparation.
→ Numerical questions

Test of Biomolecules →
(i) Molisch
(ii) Seliwanoff
(iii) Biuret
(iv) Ninhydrine
(v) Xanthoprotic
(vi) Barfoed

→ POC
(i) Kjeldahl
(ii) Duma (Quantative)
(iii) Carius
(iv) Lassign test (Qualitative)

→ Limitation of Lassign, Kjeldahl
→ Separation, fractional distillation, distillation under reduced pressure.
→ B.P, Dipole moment
↓
data to differentiate fractional / simple distillation

→ To distinguish terminal and non-terminal alkyne using POC.
eg- Tollens, ammonical Cu_2Cl_2.

→ Polymer
(Complete NCERT) [use, temp. condition]

Chemistry in Everyday life
→ All drugs
→ Structure
→ Chiral center
→ Infection
→ Antifertility
→ Antipyretic
→ F.G
→ Booklet

→ Vitamins
→ Solubility in fat, water
→ Diseases
→ Name of preservative
→ Artificial Sweetner
→ DNA and RNA (Different base group)
→ Nucleoside and Nucleotide
→ Enzyme
→ Soap and Detergents

→ Williamson ether synthesis for 2° possible

12 Question
→ 1 → Chemistry
→ 1 → GOC
→ 3 → Aromatic + Aliphatic
→ 1 → Carbohydrate + Amino acid + Polymer
→ 1/2 → Alcohol + ether + alkyl halide
→ 1 → Reduction / Oxidation
→ 1 → Amine + Carboxylic acid
→ 1/2 → Aldol + Cannizzaro + Carbonyl / Hydrocarbon
→ 1 → Hydrocarbon (only)