Co-ordination number, colour, magnetic properties and shapes. IUPAC Nomenclature of mono-nuclear co-ordination compounds, Bonding, Isomerism, Importance of co-ordination compounds (In qualitative analysis, extraction of metals and Biological systems), Organo metallic compounds.

Unit-11 gyk ,YdUl rFkk gyk,jhUl

gyk,YdUl& ukedj.k] C-x cU/k dh idfr] HkkSfrd ,o jlk;fud x.k] ifrLFkkiu fØ;kvk dh fØ;kfof/kA

gyk,jhUl& ukedj.k] C-X cU/k dh idfr] ifrLFkkiu fØ;k, rFkk ,dy ifrLFkkiu ;kfxdk e gykstuk dk nf'kd iHkkoA MkbDyksjk] VkbDyksjk rFkk VVkDyksjk eFku] vk;kMkQke] Ýhvku] DDT, rFkk BHC d i;kx l i;kfoj.kh; iHkkoA

Halo Alkanes– Nature of C-X bond, physical and chemical properties, mechanism of substitution reactions.

Haloarenes– Nomenclature, Nature of C–X bond, substitution reactions and directive influence of halogen for mono substituted compounds only. environmental effects of dichloromethane, tri chloromethane & Tetra Chloromethane, Idoform, Freons, DDT, BHC.

bdkb &12 ,Ydkgy fQuky rFkk bFkj

,Ydkgy & ukedj.k] iFkked f}rh;d ,o rrh;d vYdkgy dh igpku] futyhdj.k dh fØ;kfof/kA

fQuky & ukedj.k] vEyh; idfr dk dkj.k] byDVkfQfyd ifrLFkkiu fØ;k,A

bFkj & ukedj.k

Alcohols, Phenols and Ether's

1. Nomenclature of Alcohols, distinction among Primary, Secondary and Tertiary Alcohols, mechanism of dehydration of Alcohols.
2. Nomenclature of phenols and reason for its Acedic nature, electrophillic substitution reactors.
3. Nomenclature of Ethers.

bdkb &13 ,YMhgkbMl dhVkUl rFkk dkckfDlfyd vEy

vYMhgkbM rFkk dhVkUl & dkckukby leg dh idfr vYMhgkbMl e vYQk gkbMkstu dh fØ;k'khyrk] U;fDyvkfQfyd ;kx'khy fØ;kvk dh fØ;kfof/kA

dkckfDlfyd vEy & ukedj.k] vEyh; idfr dk dkj.k]

Aldehydes and Ketones– Nature of –COOH group, reactivity of α-H atom in Aldehydes. Mechanism of Nucleophillic Addition reactions.

Carboxyllic Acids- Nomenclature, Reason for Acidic nature.

bdkbZ &14 ukbVªkstu ;qDr dkcZfud ;kSfxd
ukbVªks ;kSfxd & izdkj] egRoiw.kZ jklk;fud fØ;k,¡
vehUl& oxhZdj.k] ukedj.k] lajpuk] izkFkfed f}rh;d rFkk r`rh;d vehuksa dh igpkuA
lkbukbMl rFkk vkblks lkbukbMl & jklk;fud vfHkfØ;k,A
Mk;ktksfu;e yo.k & dkcZfud la'ys"k.k esa budk egRoA

Organic compounds containing Nitrogen – (Nitro Compounds)
Types, Important chemical properties.

Amines – Classification, Nomenclature, Structure, distinetion of primary, secondary and tertiary Amines.
Cynides and Iso-cynides - Important chemical reactions
Diazonium salts - Importance in Organic syntheses .

bdkbZ &15 ck;ks ekyhD;wYl ¼tSo v.kq½
dkcksZgkbMsVªl & ekuks lSdsjkbMl ¼Xywdkst] ÝDVkst½
vksyhxks lSdsjkbMl & ¼lqØkst] ySDVkst] ekYVkst½
ikWyh lSdsjkbMl & ¼LVkpZ] lSY;qykst½] egRo
izksVhUl & vYQk vehuks vEy] vko';d vehuks vEy] iSIVkbM cU/k] ikWyh iSIVkbMl] izksVhUl dh izkFkfed f}rh;d] r`rh;d ,o prq"dh; lajpuk ¼doy x.kkRed Kku½
foVkfeUl & jklk;fud uke ,o lzksr rFkk oxhZdj.k
U;fDyd vEy & D N A rFkk R N A

bdkbZ&16 nfud thou esa jlk;u & vkS"kf/k;ksa esa jlk;u & nnZ fuokjd] iz'kkard] ifrjksf/kh] jksxk.kquk'kh] thok.kquk'kh] mojrkjks/kh nok,] ifrtfod] vEyrkjks/kh] ,UVh fgLVkekbUlA
lkcqu rFkk viekstZd & vrj] fØ;kfof/k] dhV ifrd"khA

Chemistry in Daily life –
Chemicals in medicines - Analgesics, Tranquiligers, Antiseptics, disinfactants, Anti microbials, Antifertility drugs, Anitibiotics, Antacids and Anti Histamines.
Soap and Detergents- Difference, cleanging action, insect repellents.

$CH_3CH_2OH + 4Cl_2 + 6NaOH \longrightarrow CHCl_3 + 5NaCl + HCOONa + 5H_2O$

Dykjk Qke

$CH_3CH_2OH + 4I_2 + 6NaOH \longrightarrow CHI_3 + 5NaI + HCOONa + 5H_2O$

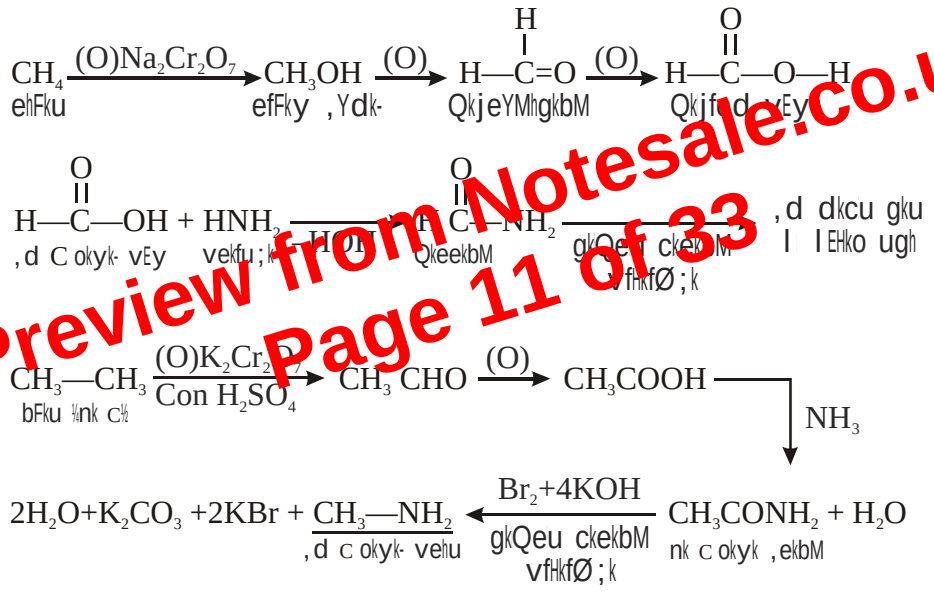
vk;kMk Qke

$CH_3CH_2OH + 4X_2 + 6KOH \longrightarrow CHX_3 + 5KX + HCOOK + 5H_2O$

gyk Qke

egRoi.k ifjoru yku gr ;fDr;k

1- ,d dkcu oky ,Ydu l vYdkgy] vYMhgkbM] dkckfDlfyd] vEy] vehu vkfn cuku gr fuEu rduhd viukb tk ldrh gA



gkQeu ckekbM vfHkfØ;k d viuku l cuu oky ;kfxd e ,d dkcu dh deh gk tkrh g vr% tgk Hkh >CO leg dk gVkuk gk ;g fØ;k djkb tk ldxhA bl ink e bl idkj n'kk;k tkuk Nk=k dk crk;k tk;

i) $R–CO–NH_2 + Br–Br \longrightarrow R–CO–NHBr + HBr$ (Acid)

ii) $HBr + KOH \longrightarrow KBr + HOH$

iii) $R–CO–NHBr + 3KOH \longrightarrow KBr + K_2CO_3 + \underline{R–NH_2} + H_2O$

$$R–CO–NH_2 + Br_2 + 4KOH \longrightarrow R–NH_2 + 2KBr + K_2CO_3 + 2H_2O$$

vkn'k mRrj

i'u- 1

¼1½ ¼i½ dkb nk"k ugh

¼ii½ 8

¼iii½ feBkl ink dju okyk inkFk

¼iv½ foVkfeu D

¼v½ nxuk

¼2½ ¼i½ vfØLVyh;

¼ii½ of)

¼iii½ xl dk no e

¼iv½ 'kU;

¼v½ idh.ku

¼3½ ¼i½ ty e ry

¼ii½ dkykbMh foy;u

¼iii½ vk;ju

¼iv½ fejcu dk ry

¼v½ nxU/k;Dr ok"i'khy no

¼4½ ¼i½ iLVhdjk

¼ii½ f=dk.kh; fijkeM

¼iii½ ,LVVhu

¼iv½ ikjk ¼ejdjh½

¼v½ gkQeu ckekbM vfHkfØ;k

i'u 5

mRrj & v) vk;dky & og le; ftle fØ;kdkjd dh lkUnrk mldh ikjfEHkd lkUnrk dh vk/kh jg tkrh g vFkok og le; ftle dkb fØ;k v)i.k gkrh g ml bl fØ;k dk v) vk;dky dgr gA bl t½ l inf'kr djr gA iFke dkfV d fy, bldk ek=d feuV gkrk gA

iFke dkfV vfHkfØ;k d fy, l=

iFke dkfV vfHkfØ;k d fy; lekdfyr nj lehdj.k fuEu gkrk gA

vfHkfØ;k nj ¾ $\dfrac{\text{fØ;kdkjd rFkk fØ;kQy dh lkUnrk e ifjoru}}{\text{le; vUrjky}}$

bdkb & eky fyVj^{-1} ld.M^{-1}

vfHkfØ;k dh nj dk iHkkfor dju oky dkjd &

1- vfHkdkjd dk lkUn.k& vfHkdkjd dk lkUn.k c<ku ij vfHkfØ;k dh nj c< tkrh g D;kfd vfHkfØ;k dh nj vfHkdkjd d lfØ; nO;eku d lekuikrh gA lkUn.k c<ku ij vfHkdkjd v.kvk dh l[;k c< tkrh g ftl l iHkkoh VDDjk dh l[;k e of) gk tkrh gA

2- vfHkfØ;k dk rki& lkekU; vfHkfØ;kvk e rki c<ku l vfHkfØ;k dh nj e of) gk tkrh g] D;kfd rki c<ku l v.kvk dh xfrt Åtk dk eku c< tkrk gA i;kxk }kjk n[kk x;k g fd ifr 10 rki of) l vfHkfØ;k dh nj nk l rhu xuh rd gk tkrh gA

3- mRijd dh mifLFkfr& mRijd dh mifLFkfr l lfØ; Åtk dk eku ifjofrr gk tkrk gA ftl l vfHkfØ;k dh nj ifjofrr gk tkrk g ftl l vfHkfØ;k dh nj ifjofrr gk tkrh gA /kukRed mRijd vfHkfØ;k dh nj dk c<k nr g tcfd _.kkRed mRijd vfHkfØ;k nj e of) gk tkrh gA

4- nkc& xlh; vfHkfØ;kvk e nkc c<ku l vfHkfØ;k dh nj c< tkrh gA nkc c<ku l vfHkdkjd v.k ikl&ikl vk tkr g iHkkoh VDDjk dh l[;k c< tkrh gA ftl l vfHkfØ;k nj e of) gk tkrh gA

¼bl d vykok i"B {k=Qy Hkh izHkkfor djrk g½

vFkok

ngyh Åtk & lfØ;r v.k d ikl tk lEi.k Åtk gkrh g mls ngyh Åtk dgr gA ngyh Åtk ;Dr v.k rjUr gh mRikn ldy vkj fQj vi?kfVr gkdj mRikn v.k e cny tkrk gA

ngyh Åtk ¾ v.k dh fuEure Åtk + lfØ;.k Åtk

lfØ;.k Åtk & og Åtk tk v.k dk lfØ; dju d fy, vko';d gkrh g lfØ;.k Åtk ikIr v.k Åtk vojk/k dk ij dj mRikn ldy cukrk gA

lfØ;.k Åtk = ngyh Åtk & v.k dh fuEure Åtk

lfØ;.k Åtk vkj ngyh Åtk e lc/k & lfØ;.k Åtk vkj ngyh Åtk e ijLij fudV dk lc/k gkrk g v.k Åtk xg.k dj lfØ;.k Åtk ikIr dj yrk g tk 'kh?k gh ngyh Åtk e cny tkrh gA ngyh Åtk ;Dr v.k mRikn e cny tkrk gA vr%

lfØ;.k Åtk = ngyh Åtk & v.k dh fuEure Åtk

ngyh Åtk = lfØ;.k Åtk + v.k dh fuEure Åtk