F.L.T-01 Solutions

(46) disproportion in which same element undergoes
(d) oxidation & Reduction.

$$Cu^{+} \longrightarrow Cu^{0} + Cu^{+2}$$

(47) ratio by mass of C & H is 6:1 means ratio of atoms
d may be $\overset{H}{4}:\overset{C}{2}$ or $\overset{H}{6}:\overset{C}{3}$
by Hit & trial $C_2H_4 + 3O_2 \longrightarrow 2CO_2 + 2H_2O$
amount of 'O' is half to that of above ∴
$C_2H_4O_3$.

(48) d

(49) d all points are explained by spectroscopy or C.F.T.

(50) b M.O.T diagram.

(51) C NH_4Cl (salt of weak base & strong acid)

$$pH = 7 - \frac{1}{2}(pK_b + \log c)$$

$$= 7 - \frac{1}{2}(5 - 1.7) = 5.35$$

(52) d
$$[H^+] = \frac{(75 \times \frac{1}{5} - 25 \times \frac{1}{5}) \text{millimoles}}{(75+25)\text{ml}} = \frac{10}{100} = .1$$

$\therefore pH = 1$

(53) C Constant pressure ∴ $W_{irr} = -\frac{P_{ext}(\Delta V) \times 101.325}{1000}$ KJ

(54) d $\Delta G = \Delta H - T.\Delta S$.
at equilli $\Delta G = 0$ $\Delta H = 491.1 \times 10^3$ J

$$\therefore T = \frac{\Delta H}{\Delta S} = 2480.3\ K$$

(55) C isothermal proces $\Delta U = 0$

$\therefore Q_{irr} = -W$
or $W = -Q = -P_{ext}\Delta V \times 101.325$ J

$\Delta S = \frac{W}{T}$

(56) c $\log \frac{K_2}{K_1} = \frac{Ea}{2.303R}\left[\frac{1}{T_1} - \frac{1}{T_2}\right]$

$-\frac{Ea}{R}$ = slope = −4608

(57) a $1 \xrightarrow{t_{1/2}} .25 \xrightarrow{t_{1/2}} .125$

$2 \times t_{1/2} = 50$

$t_{1/2} = 25$ $\quad \therefore r = K[.05]$

$\therefore K = \frac{.693}{25}$

(58) a Same as (57)

(59) c

(60) c m.M of colloidal particles is > m.M of solute in true solution.

∴ particles of true sol. >

(61) c

(62) c $KMnO_4 \xrightarrow{\Delta} K_2MnO_4 + MnO_2 + O_2$

$NaCl + H_2SO_4 + MnO_2 \rightarrow MnCl_2 + Cl_2 + H_2O$

(63) d Lab method.

(64) b R.P of Cu > Zn

∴

(65) d

(66) b C.N of Ni^{+2} for Cl^- & CN^- is 4, Cl^- is a weak ligand CN^- is a strong ligand for H_2O C.N of Ni^{+2} is 6.

(67) c

(68) c

(69) a

(70) c

(71) b

(72) c

(73) c white ppt with $AgNO_3$ is given by Cl^- ∴

$Cl_2 + H_2O \rightarrow HCl + HOCl$

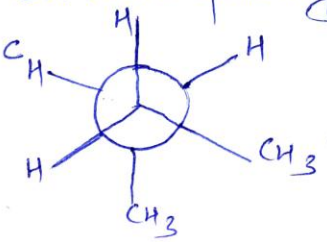
$HCl + AgNO_3 \rightarrow AgCl \downarrow$

$Mg + HCl \rightarrow MgCl_2 + H_2$

(74) b group III rd.

(75) d main chain must contain more no. of π bonds with double bond in more priority.

(76) c

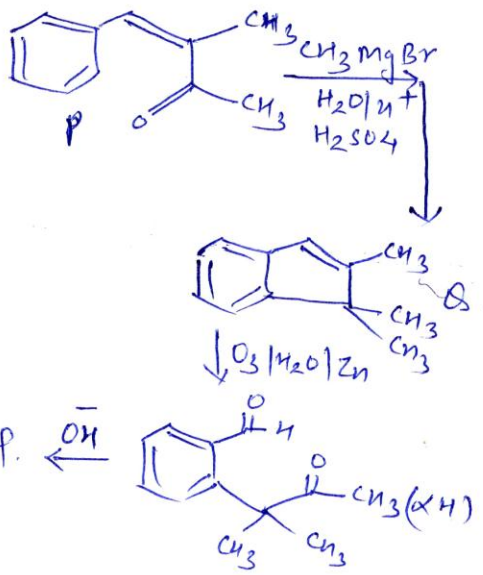


gauche

(77) a cis/trans with two chiral centers.

(78) b P gives Iodoform test

∴ Ans may be a or b



(79) b

(80) b No active α-H

(81) b, on dehydration ring formed will be very large ∴ chances will be less. Hence product will be

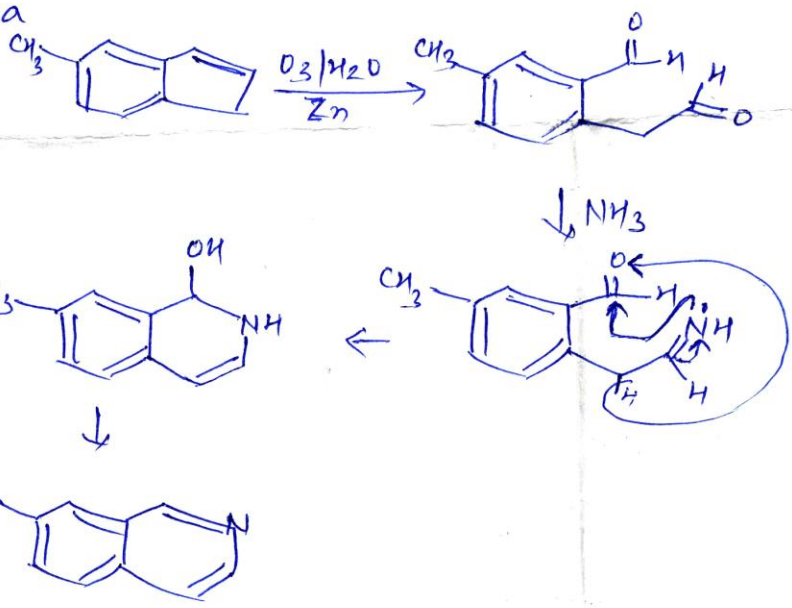
(82) d, $NaHCO_3$ test

(83) a, all undergo nucleophillic substitution. but leaving tendency

$\bar{N}H_2 < CH_3\bar{O} < C_2H_5-\overset{O}{\overset{\|}{C}}-\bar{O} < Cl^-$

(84) a pK_b small means K_b >, basic ↑

(85) a



(86) a DiBAL-H is a weak reducing agent but source of $\bar{H}^{\ominus}$

∴ a

(87) d OMe is ER.G

(88) a

(89) a

(90) b