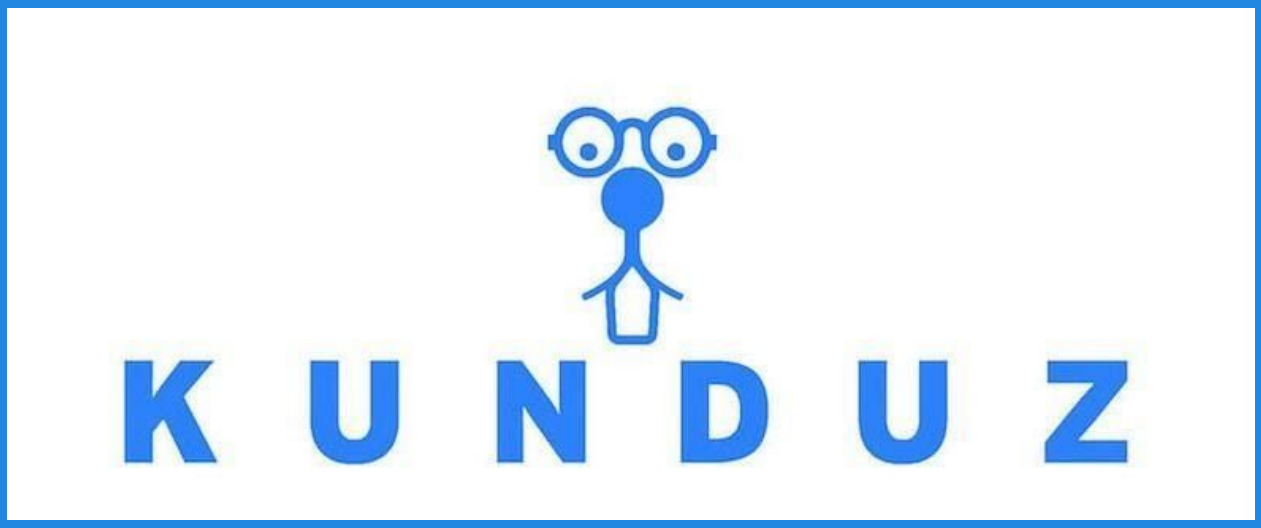
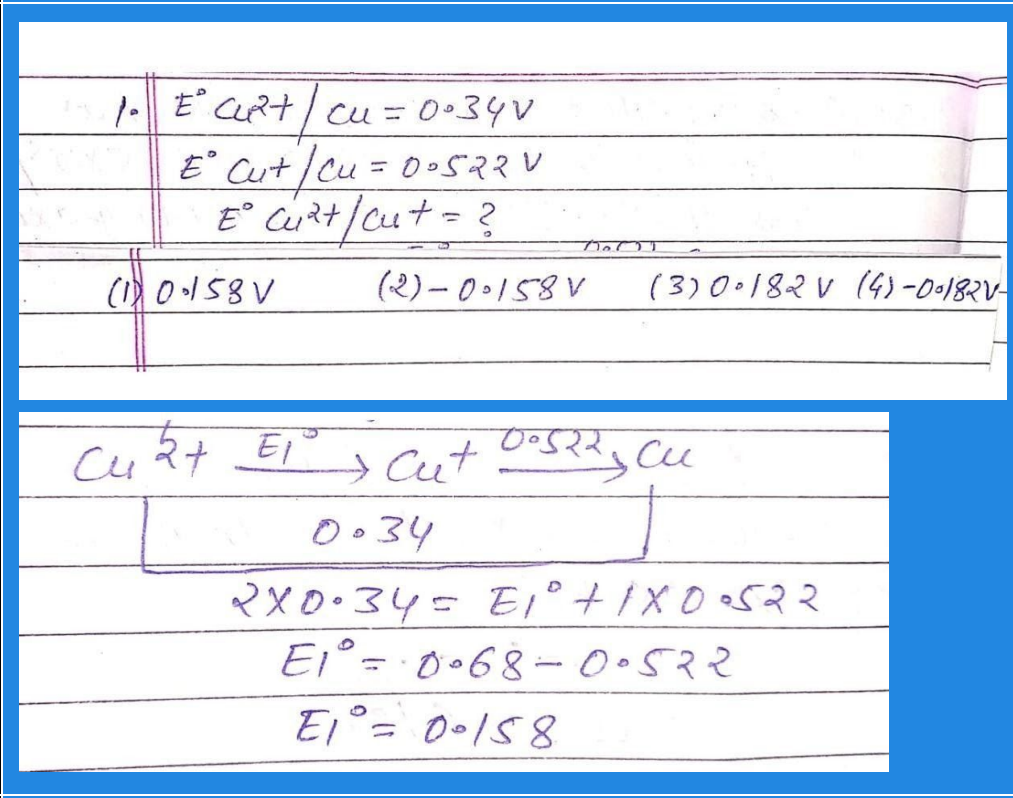
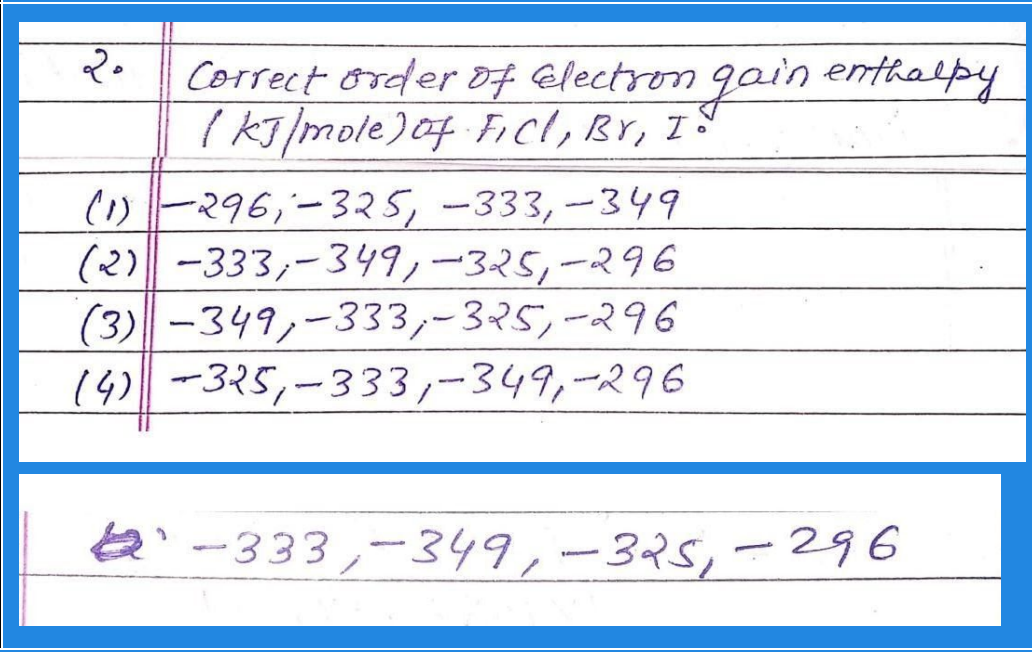


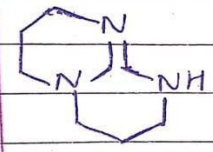
Jan 7 2020 shift 1 Chemistry prepared by KUNDUZ tutors

https://kunduz.com/en/

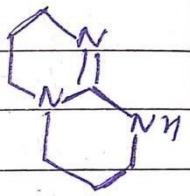
Question no.	Questions and Answers
1	
2	

3

3. Arrange the following in order of their pK_b value.

(A)  (B) $CH_3-NH-CH_3$ (C) $CH_3-CH=NH$

(1) A>B>C (2) B>A>C (3) C>B>A (4) B>C>A

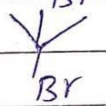
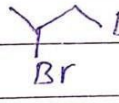
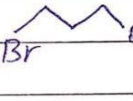
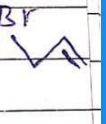
$CH_3-CH=NH > CH_3-NH-CH_3 >$ 

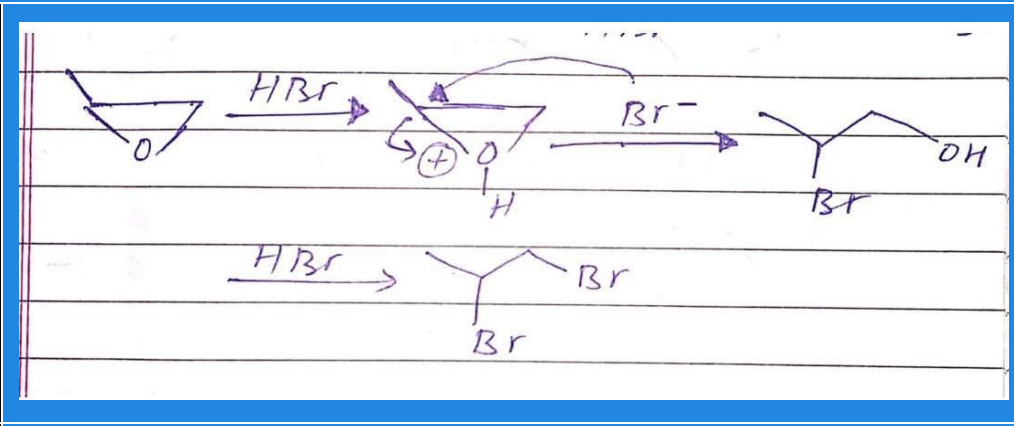
C > B > A

option A represent Gunadine the Conjugate acid of which is resonance stabilised. The option B is aliphatic amine, here the N is SP^3 whearas in option C the N is SP^2, hence B is more basic than C.

4

4. 1-Methylethylene oxide $\xrightarrow[HBr]{Excess}$ X, Product X will be

(1)  (2)  (3)  (4) 



5

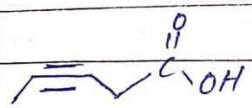
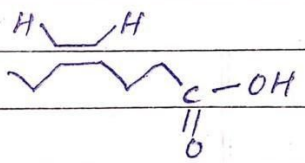
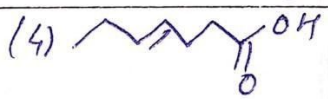
5. Correct order of intermolecular forces

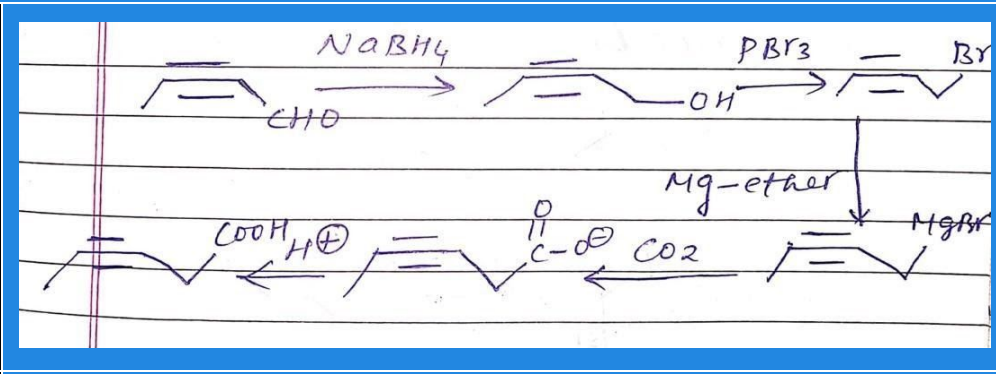
(1) Dipole-Dipole > Ion-Ion > Dipole-Ion
(2) Ion-Ion > Dipole-Dipole > Dipole-Ion
(3) Dipole-Ion > Dipole-Dipole > Ion-Ion
(4) Ion-Ion > Dipole-Ion > Dipole-Dipole

~~(1) Dipole-Dip~~
(Ion-Ion > Dipole-Ion > Dipole-Dipole

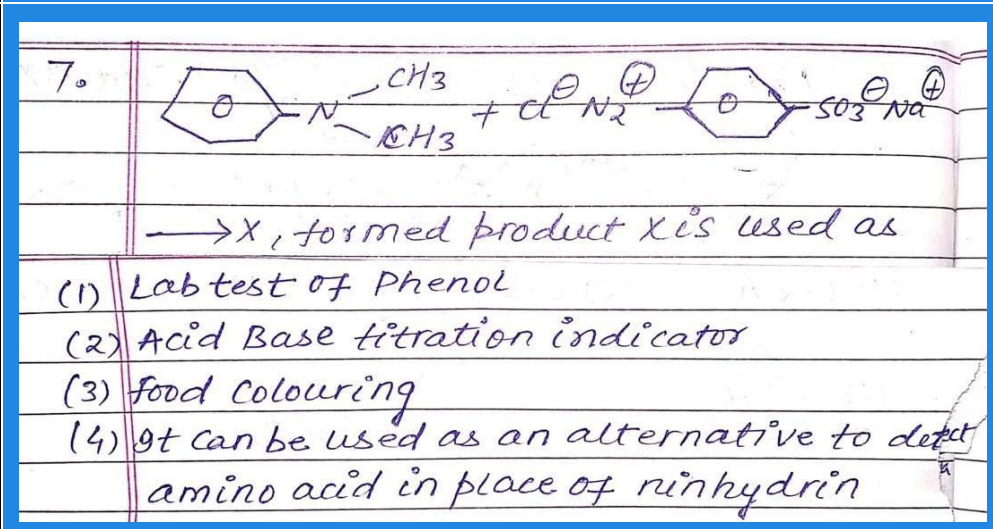
6

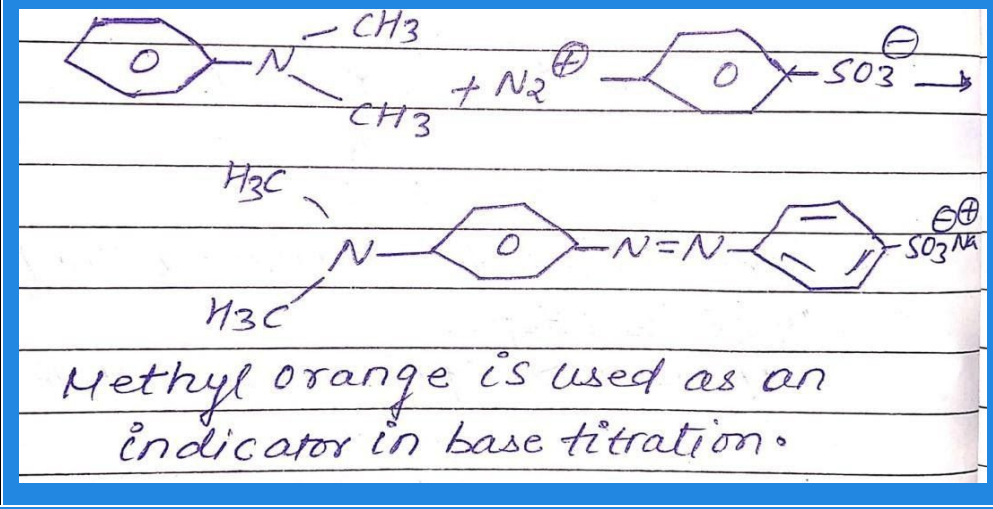
6. Hex-3-ynal $\xrightarrow{(1)\ NaBH_4}$ $\xrightarrow{(2)\ PBr_3}$ $\xrightarrow{(3)\ Mg/ether}$ $\xrightarrow{(4)\ CO_2}$ $\xrightarrow{(5)\ H^{\oplus}}$ (X)

(1) 
(2) 
(3) 
(4) 


NaBH4
PBr3
Br
CHO
OH
Mg-ether
MgBr
COOH
H⊕
C-O⊖
CO2

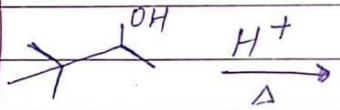
7

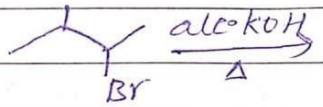

7.
CH3
N
CH3
+ Cl⊖ N2⊕
SO3⊖ Na⊕
→X, formed product X is used as
(1) Lab test of Phenol
(2) Acid Base titration indicator
(3) food colouring
(4) It can be used as an alternative to detect amino acid in place of ninhydrin

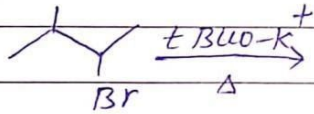

CH3
N
CH3
+ N2⊕
SO3⊖
→
H3C
N
H3C
N=N
SO3⊖ Na⊕
Methyl orange is used as an indicator in base titration.

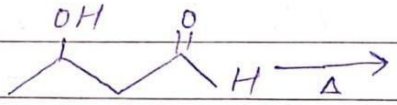
8

8. On which of the following saytzeff product will not be formed as major product.

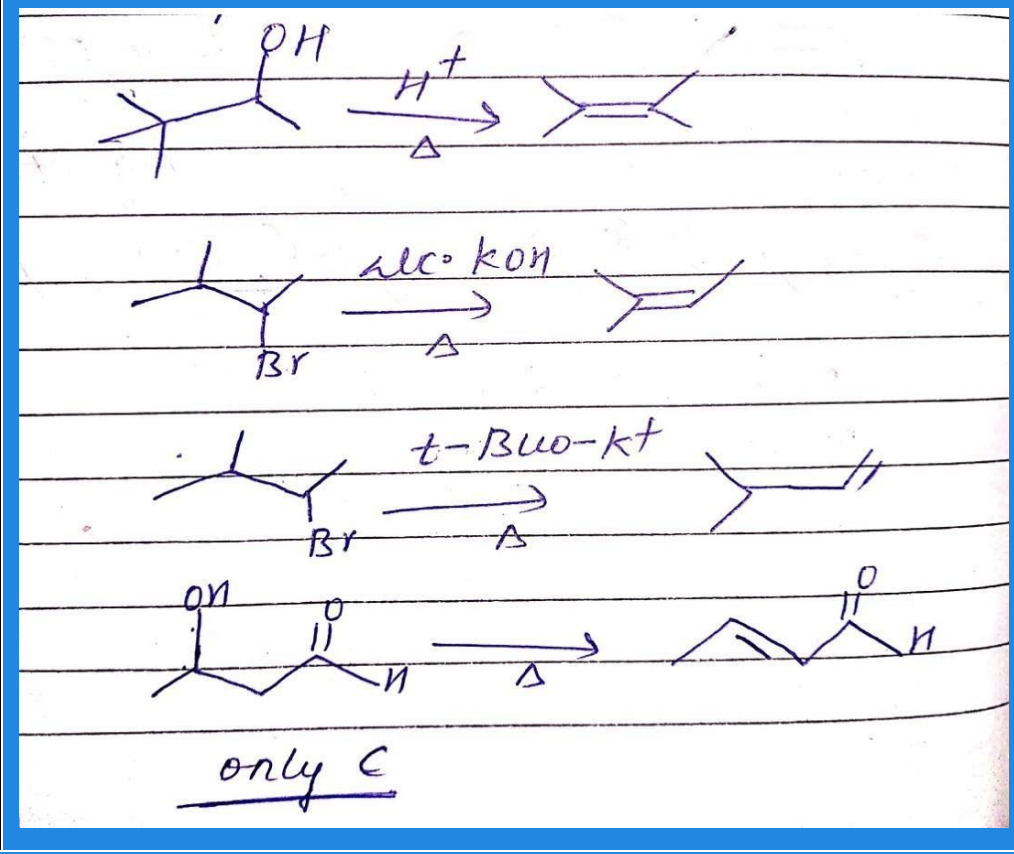
(A) 

(B) 

(C) 

(D) 

(1) only C
(2) only B
(3) A, C & D
(4) B & D



only C

9

9. Match the Column

Column I	Column II
(A) Thiamine	(P) Scurvy
(B) Riboflavin	(Q) Beri Beri
(C) Pyridoxine	(R) cheilosis
(d) Ascorbic acid	(S) Convulsions.

(1) A → Q B → R C → P D → S
(2) A → Q B → R C → S D → P
(3) A → R B → Q C → S D → P
(4) A → R B → Q C → P D → S

Thiamine → Beri Beri
Riboflavin → cheilosis
Pyridoxine → Convulsions
Ascorbic acid → Scurvy

10

10. Atomic radius of Ag is similar to
(1) Cu (2) Hg (3) Au (4) Ni

It is similar to Au
So Au

11

11. Correct IUPAC name of $[Pt(NH_3)_2Cl(CH_3NH_2)]Cl$

(1) Bis(ammine)chlorido(methylamine)Platinum(II) Chloride

(2) Diamminechlorido(methylamine)Platinum(II) Chloride

(3) Diamminechlorido(aminomethyl)Platinum(II)Chloride

(4) Chloridobis(ammine)methylamine platinum(II) chloride.

∴ Diamminechlorido(methylamine) Platinum(II) Chloride

12

12. Vapour pressure of pure CS_2 and CH_3COCH_3 are 512 mm of Hg & 312 mm of Hg respectively. Total vapour pressure of mixture is 600 mm of Hg. Then find incorrect statement:-

(1) A---A, B---B > A---B

(2) Does not obey Raoult's law

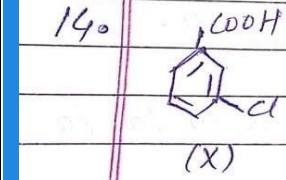
(3) Endothermic solution

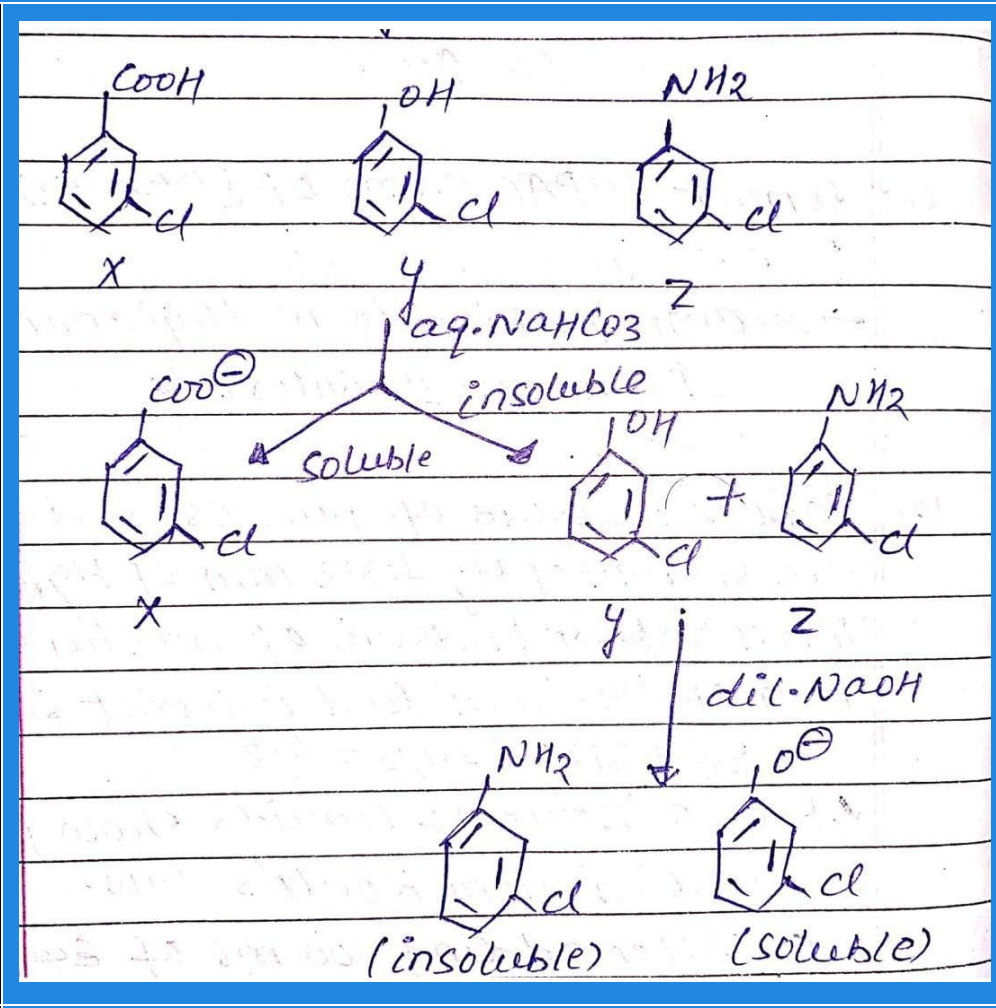
(4) after adding 100 ml of each, then net volume is less than 200 ml.

$\frac{512}{2} + \frac{312}{2} < 824/2 = 412$

Above mixture of liquids show positive deviation from Roult's law.

So, After adding 100 ml of each, then net volume is less than 200 ml.

13	13. Purest form of commercial iron is Purest form is wrought iron (1) Wrought iron (2) Cast iron (3) Pig iron (4) iron scrap + Pig iron. Purest form is wrought iron (1) Wrought iron
14	14.  (X) (Y) (Z) Mixture of above three was subjected to aq. $NaHCO_3$ (1) X in aq. $NaHCO_3$ and y in dil. NaOH (2) X in aq. $NaHCO_3$ & Z in dil. NaOH (3) y in aq. $NaHCO_3$ & X in dil. NaOH (4) y is aq. $NaHCO_3$ & Z in dil. NaOH



15

15. Which theory can explain Bonding of $Ni(CO)_4$

(1) MOT (2) CFT (3) VBT (4) Werner's theory

— MOT

16

16. $n=5, m_s=+1/2$ How many orbitals are possible

(1) 25 (2) 30 (3) 50 (4) 35

	2+6+10+14 ≤ 26 so 25
17	17. In zeolites & synthetic resin method will be more efficient in removing permanent hardness of water:- (1) synthetic resin method as its exchange only cation (2) zeolite resin method as it exchange only cation. (3) synthetic resin method as it exchange only anion. (4) synthetic resin is harmful for nature. ∴ Synthetic resin method as It Exchange only cation.
18	18. Oxidation state of Potassium in K_2O, K_2O_2 & KO_2 are respectively:- (1) +1, +1, +1 (2) +1, +2, +4 (3) +1, +2, +2 (4) +1, +4, +2 In all, +1 so, +1, +1, +1

19

19. Decreasing order of Dipole moment in $CHCl_3$, CCl_4 & CH_4 is

(1) $CHCl_3 > CCl_4 = CH_4$ (2) $CHCl_3 > CCl_4 > CH_4$

(3) $CCl_4 > CHCl_3 > CH_4$ (4) $CCl_4 = CH_4 > CHCl_3$

$\mu CCl_4 = \mu CH_4 = 0$ but $\mu CHCl_3 \neq 0$.

So, $CHCl_3 > CCl_4 = CH_4$

20

20. Amongst the following which is not a postulate of Dalton's atomic theory

— under identical Conditions of Pressure and Temperature gases combines and give gaseous products in simple volume ratio.

21

21. Half life of ^{90}Sr is 6.93 years. In a child body 1 μg of ^{90}Sr dropped in place of Calcium, how many years will it take to reduce its Concentration by 90%.

$$\frac{t_{90\%}}{t_{50\%}} = \frac{\ln 100/10}{\ln 2} = \frac{\ln 10}{0.693}$$

$$t_{90\%} = \frac{6.93}{0.693} \times \ln 10$$

$$\simeq 23 \text{ years}.$$

22

22. Each of solution A & B of 100 L containing 4g NaOH and 9.8 g H_2SO_4. find PH of solution which is obtain by mixing 40 L solution of A & 10 L solution of B.

$M\ H_2SO_4 \Rightarrow \frac{9.8}{98 \times 100} = 10^{-3}$

$M\ NaOH \Rightarrow \frac{4}{40 \times 100} = 10^{-3}$

$= \frac{40 \times 10^{-3} - 10 \times 10^{-3} \times 2}{50} = \frac{20}{50} \times 10^{-3}$

$[OH^-] = 2/5 \times 10^{-3}$

$POH = 3.4$

$PH = 10.6$

23

23. $A(\ell) \rightarrow 2B(g)$

$\Delta U = 2.1$ kcal, $\Delta S = 20$ Cal/k, $T = 300$ k

find ΔG (in kcal)

$\Delta H = \Delta U + \Delta n_g RT$

$= 2.1 \times 10^3 + 2 \times (2) \times 300$

$= 3300$ Cal

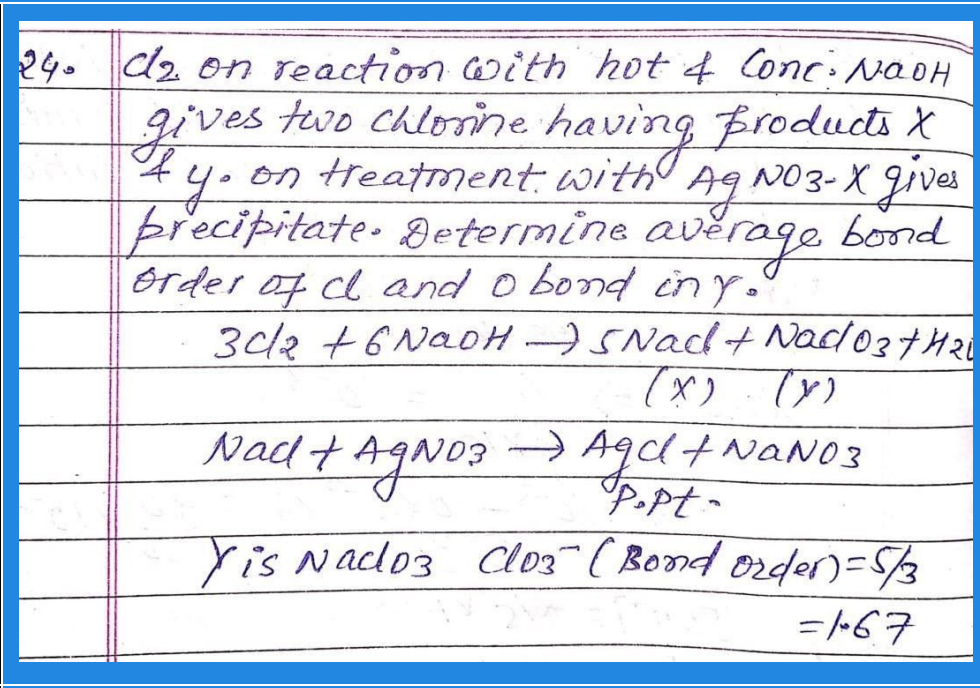
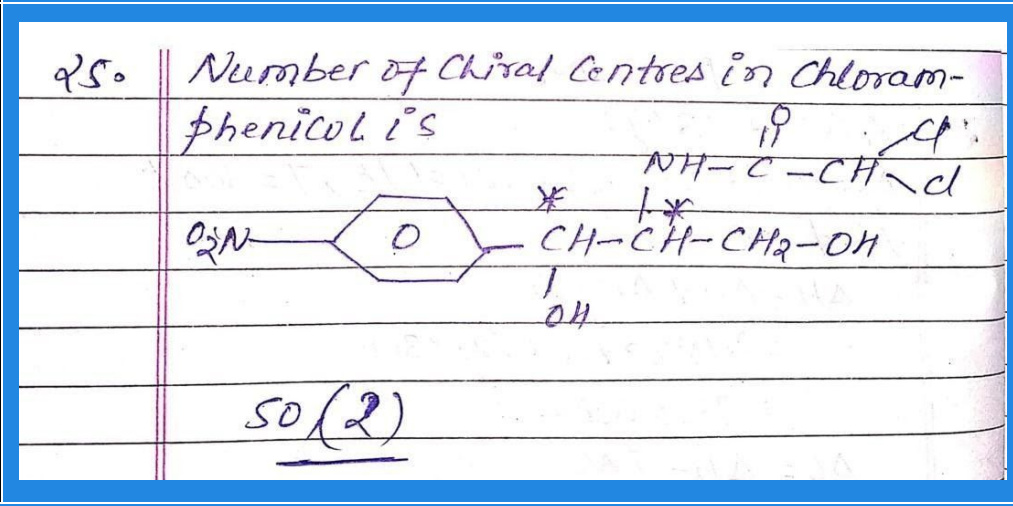
$\Delta G = \Delta H - T\Delta S$

$= 3300 - (300)(20)$

$= 3300 - 6000$

$= -2700$ Cal

$= -2.7$ kCal

24	
25	

Enrolling yourself for coaching classes has long been considered the first step towards cracking the jee. however, this trend is starting to slip. Recent studies show that, for the students who cleared the JEE Main/Advance, the number of students who had joined a coaching class is lower than the number of students who managed the feat with self-study

Preparation for JEE Main/Advance requires a lot of hard work and determination. Be ready to even go through many sleepless nights,

missed birthdays and extracurriculars to finish the vast JEE syllabus. But simply completing the syllabus is not enough! If you want to have an edge over your counterparts you need to step up your game. This means practicing a variety of problems and revising diligently while following a meticulous study plan that recognizes your strengths and takes care of all your weaknesses. To get your doubts solved or questions checked there is no better place than Kunduz.

Click to download our application for free