(4) Assertion is wrong but reason is correct statement.

Ans. (2) https://previouspaper.in

Sol. Due to half filled orbital configuration nitrogen has more ionisation energy than oxygen.

Column-I Column-II

(i) Siderite (a) KCl. MgCl₂.6H₂O (ii) Malachite (b) CuCO₃.Cu(OH)₂

(iii) Camalite (c) ZnCO₃ (iv) Calamine (d) FeCO₃

Correct match is:

(1) d b a c (2) a b c d
(3) a d a b c (4) d b c a

Ans. (1)

Sol. Siderite ⇒ FeCO₃

 $\begin{array}{ll} \mbox{Malachite} & \Rightarrow \mbox{CuCO}_3.\mbox{Cu(OH)}_2 \\ \mbox{Carnalite} & \Rightarrow \mbox{KCI.} \mbox{ MgCl}_2.6\mbox{H}_2\mbox{O} \\ \mbox{Calamine} & \Rightarrow \mbox{ZnCO}_3 \\ \end{array}$

3. Which of the following is correct option regarding CH4, NH₄⁺ and BH₄⁻

(1) All are isoelectronic & tetrahedral.

(2) All are not isoelectronic but tetrahedral.

(3) All are isoelectronic but only two are tetrahedral.

(4) All are isoelectronic but all are not tetrahedral.

Ans. (1)

 Sol.
 Species
 CH4
 NH⁺₄
 BH_−₇

 No. of electron
 10
 10
 10

Structure Tetrahedral Tetrahedral



Resonance Eduventures Ltd.

Reg. Office & Corp. Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No.: +91-022-39167222

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

PAGE#1

Resonance | JEE MAIN-2022 | DATE: 29-06-2022 (SHIFT-2) | PAPER-1 | MEMORY BASED | CHEMISTRY

. Which set of compounds contain carbonate ion ?

(1) Baking soda, Washing soda (2) Baking soda, Caustic soda

(3) Washing soda, Caustic soda (4) Only Washing soda

Ans. (1)

Sol. Compound Formula

(1) Baking soda NaHCO₃

(2) Washing soda Na₂CO₃.10H₂O

(3) Caustic soda NaOH

5. 1 Mole of CoCl₃ xNH₃ on reaction with excess of AgNO₃ give 2 moles of AgCl then value of X is:

Ans. (5)

Sol. $CoCl_3.xNH_3 + AgNO_3$ (excess) \longrightarrow AgCl

1 mole 2 moles

It means 2 Cl are outside the co-ordinations sphere & co-ordination number of Co is 6 So possible complex is [Co(NH₃)₅Cl]Cl₂

so x = 5

The magnetic moment (spin only) of complex [MnBr₆]⁴ isBM

[Report your answer to nearest integer]

```
https://previouspaper.in
```

Ans.

Sol. [MnBr₆]4-

> $_{25}Mn^{2+} = 3d^54s^{\circ} \Rightarrow t_{2g}^{1,1,1}, eg^{1,1}$ number of unpaired electrons = 5

 $\mu(\text{spin only}) = \sqrt{n(n+2)} BM = \sqrt{5(5+2)} BM = \sqrt{35} BM = 5.916 BM \approx 6 BM$

For a first order reaction K = 6.3×10^{-18} e^{-2800/T}. Then the value of activation energy in KJ is: [given R = 8.314 J/mole × K]

[Report your answer to nearest integer]

(216)Ans.

Sol. $K = Ae^{-\left(\frac{E_a}{R}\right)/T}$

 $K = 6.3 \times 10^{-18} e^{-2600/T}$

 $\frac{E_a}{R} = 26000 = 26 \times 10^3$

Ea = $26 \times 10^3 \times 8.314 = 216.164 \times 10^3 J = 216.164 KJ$

Resonance Eduventures Ltd.

Reg. Office & Corp. Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No.: +91-022-39167222

To Know more: sms RESO at 56677 | Website: www.resonance.ac.in | E-mail: contact@resonance.ac.in | CIN: U80302RJ2007PLC024029 Toll Free : 1800 258 5555 🔘 7340010333 🖬 facebook.com/ResonanceEdu 💟 twitter.com/ResonanceEdu 🚨 www.youkube.com/Resonance

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

Resonance | JEE MAIN-2022 | DATE: 29-06-2022 (SHIFT-2) | PAPER-1 | MEMORY BASED | CHEMISTRY

In 100 L vessel at 610 K, 4 mole of Ar and 5 mole of PCIs are taken. At equilibrium total pressure of gases is 6 atm, then value of Kp is

$$[R = 0.082 \frac{atm \times L}{mole \times K}]$$

[Report your answer to nearest integer]

(2) Ans.

 $PCl_5(g) \rightleftharpoons PCl_3(g) + Cl_2(g)$

5 mole

Total moles at equilibrium = $(5 + x) + n_{Ar} = (5 + x) + 4 = (9 + x)$

 $n_{\text{total}} = \frac{PV}{RT} = \frac{6 \times 100}{0.082 \times 610} = 11.995 = 12 \text{ moles}$

9 + x = 12 moles

x = 3 moles

Pressure of (PCl₅ + PCl₃ + Cl₂) = $\frac{8}{12}$ × 6 = 4 atm

$$K_{P} = \frac{P_{PCl_{3}} \times P_{Cl_{2}}}{P_{PCl_{6}}} = \frac{\left(\frac{3}{8} \times 4\right) \left(\frac{3}{8} \times 4\right)}{\left(\frac{2}{8} \times 4\right)} = \left(\frac{3}{2}\right) \left(\frac{3}{2}\right) = \left(\frac{9}{4}\right) = 2.25$$

For a solution containg non volatile non electrolyte solute concentration is 1.5 m. The elevation in boiling point (ΔT_b) is 4 K while at concentration of 4.5 m depression in freezing point (ΔT_f) is 4 K then find ratio of $\left(\frac{K_b}{K_E}\right)$

Ans. (3)

Sol. $\Delta T_b = K_b \times m_1$

 $\Delta T_f = K_f \times m_2$

 $\frac{K_b}{K_f} = 3$

Shape and number of lone pair electrons in BrF3 is

(1) Bent T-shape, 2 (2) Bent T-shape, 1 (3) See-Saw, 2

(4) See-Saw, 1

Ans. (1)



Bent T-shape with Two unpaired electron

Resonance Eduventures Ltd.

Reg. Office & Corp. Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No.: +91-022-39167222

To Know more: sms RESO at 56677 | Website: www.resonance.ac.in | E-mail: contact@resonance.ac.in | CIN: U80302RJ2007PLC024029

Toll Free: 1800 258 5555 S 7340010333 T sectock com/ResonanceEdu v stransport (Since Section Resonance Ac.in) S www.youtube.com/resonance.ac.in | CIN: U80302RJ2007PLC024029

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

PAGE#3

Resonance | JEE MAIN-2022 | DATE: 29-06-2022 (SHIFT-2) | PAPER-1 | MEMORY BASED | CHEMISTRY 42.14 % (w/v) NaCl solution is used to coagulate 1 L of colloidal solution in 10 hours, then coagulation value for 2 hours is: (3) 1440 mole (4) 1440 milimole (1) 36 mole (2) 36 milimole Ans. (4) Coagulation value = $\frac{milimoles\ of\ electrolyte}{Volume\ of\ solution\ in\ L}$ Molarity of NaCI = $\frac{\% (W/V) \times 10}{\text{GMM}} = \left[\frac{42.14 \times 10}{58.5}\right] = 7.2 \text{ M}$ milimole of NaCl electrolyte = 7.2 mole = 72000 milimole Coagulation value for 10 hours = $\frac{milimoles\ of\ electrolyte}{Volume\ of\ solution\ in\ L} = 72000$ For 2 hours Coagulation value = $\left(\frac{72000\times2}{10}\right)$ = 1440 milimole For the following cell: Pt(s) | H₂(g) | H⁺(aq.) || Cu²⁺(aq) | Cu at pH = 3, E_{cell} = 0.31 V and [Cu²⁺] = 10^{-4} . then value of x is [Given $E_{cu^2+/cu} = 0.34 \text{ V}$] Ans. (7) Sol. $H_2(g) \longrightarrow 2H^+ + 2e^+$ $Cu^{2+} + 2e^{-} \longrightarrow Cu(s)$ Cathode: $H_2(g) + Cu^{2+}(aq) \longrightarrow 2H^+(aq) + Cu(s)$ Overall: $E_{cell} = E_{cell}^0 - \frac{0.059}{2} \log \frac{[H^+]^2}{[Cu^2+]}$ $0.31 = 0.34 - \frac{0.06}{2} \log \left(\frac{[H^+]^2}{[Cu^2]^4} \right)$ $0.31 = 0.34 + 0.03 [-\log [H^+]^2 + \log [Cu^{2+}]$ 0.31 = 0.34 + 0.03 [2pH + log [Cu²⁺]-0.03 = 0.03 [2pH + log [Cu²⁺] $-1 = 6 + \log \left[Cu^{2+} \right]$ $-7 = \log [Cu^{2+}]$ log [Cu2+] = log 10-7 $[Cu^{2+}] = 10^{-7}$ x = 7Statement-I: CuSO4.5H2O contain Cu-O Bond. Statement-II: Sulphur and oxygen donate it's electron pair and act as ligand. (2) Both S₁ & S₂ are false (1) Both S₁ & S₂ are true

Resonance Eduventures Ltd.

(4) S₁ is false & S₂ is true

Reg. Office & Corp. Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No.: +91-022-39167222

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

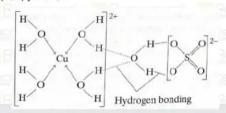
(3) S₁ is true & S₂ is false

Ans.

PAGE#4

Resonance | JEE MAIN-2022 | DATE: 29-06-2022 (SHIFT-2) | PAPER-1 | MEMORY BASED | CHEMISTRY

Sol. $CuSO_4.5H_2O \Rightarrow [Cu(H_2O)_4]SO_4.H_2O$

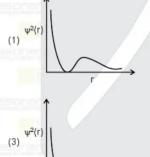


14. An inorganic Compound on reaction with BaCl2 give white ppt which on reaction with dilute HCl which on reaction with dilute HCl give characteristics smell. Which anion is present in inorganic compound

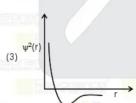
(3) SO₃2-

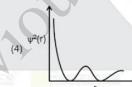
Ans.

- $SO_3^{2-} + Ba^{2+} \longrightarrow BaSO_3 \downarrow$ (White ppt) $\xrightarrow{dil \, HCl}$ $SO_2(g) \uparrow$ (Burning sulphur like smell) Sol. $S^{2-} + Ba^{2+} \longrightarrow No PPT$
- 15. Identify the correct graph for 2s-orbital for $\psi^2(r)$ vs r



(2)





Ans. (1)

A container contain 128 gram O₂ (g) and 16 gram H₂, then volume of gaseous mixture at STP is (Report your answer to nearest integer)

(269)Ans.

Resonance Eduventures Ltd.

Reg. Office & Corp. Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No.: +91-022-39167222

To Know more: sms RESO at 56677 | Website: www.resonance.ac.in | E-mail: contact@resonance.ac.in | CIN: U80302RJ2007PLC024029

Toll Free: 1800 258 5555

7340010333
**Geobook.com/Resonance.doi: **District Control Resonance.doi: **District Cont

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

Resonance* | JEE MAIN-2022 | DATE: 29-06-2022 (SHIFT-2) | PAPER-1 | MEMORY BASED | CHEMISTRY

 $n_{O_2} = \frac{128}{32} = 4$ mole

 $n_{H_2} = \frac{16}{2} = 8 \text{ mole}$

 $n_{Total} = 12$

Volume at STP = 12 × 22.4 = 268.8 L

17. What is the value of x in : 0.002858×0.112

Ans. (2)

Sol.
$$\frac{0.00285 \times 0.112}{0.5702} = \frac{0.0003200}{0.5702} = 0.000561$$

18. A compound decompose according to 1st order reaction, then find time taken (in hours) to reduce concentration from initial value to 6.25 % if its half life is 5 hour.

Ans. (20)

Sol.
$$100 \xrightarrow{t_{W2}} 50 \xrightarrow{t_{W2}} 25 \xrightarrow{t_{W2}} 12.5 \xrightarrow{t_{W2}} 6.25$$

total time = $4T_{1/2} = 20$ hours

19. Identify most stable carbocation out of following.



Ans. (3)

- Sol. Due to extend conjugation most stable carbocation is
- Friedal craft alkylation of aniline gives
 - (1) Secondary amine

- (2) Amide product after attack on aniline
- (3) ortho/para alkyl derivative
- (4) Meta alkyl derivative

Ans. (1)

Sol.
$$\rightarrow R - X \longrightarrow \bigcirc$$
 $\rightarrow R - X \longrightarrow \bigcirc$

2º amine

Resonance Eduventures Ltd.

Reg. Office & Corp. Office : CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No. : +91-022-39167222

To Know more: sms RESO at 56677 | Website: www.resonance.ac.in | E-mail: contact@resonance.ac.in | CIN: U80302RJ2007PLC024029

Toll Free: 1800 258 5555
7340010333
Toll Free: 1800 258 5555
7340010333

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

PAGE#6

RESONANCE | JEE MAIN-2022 | DATE : 29-06-2022 (SHIFT-2) | PAPER-1 | MEMORY BASED | CHEMISTRY

- 21. On heating which structure not affected.
 - (1) Secondary structure of protein
- (2) Primary structure of protein
- (3) Tertiary structure of protein
- (4) Quaternary structure of protein

Ans. (2)

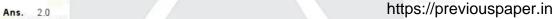
- Sol. During denaturation of protein 2 and 3 structure are destroyed but 1º structure remain intact.
- 22. Statement-I: Dacron is an example of polyester compound.

Statement-II: Dacron is a combination of terphthalic acid & ethylene glycol.

- (1) Statement-I and statement-II both are correct and statement-II is correct explanation of statement-I.
- (2) Statement-I and statement-II both are correct statements but statement-II is not correct explanation of statement-I.
- (3) statement-I is correct but statement-II is wrong statement.
- (4) statement-I is wrong but statement-II is correct statement

Ans. (1)

Sol. It is fact.



Sol.
$$\bigcirc^{OH} \longrightarrow \bigcirc^{O^*} \bigcirc^{CH_5} \longrightarrow \bigcirc^{OH} \bigcirc^{CH_5} \longrightarrow \bigcirc^{CH_5} \bigcirc^{CH_5} \longrightarrow \bigcirc^{CH_5} \bigcirc$$

No. of sp2 carbon are 2 in final product.

Most stable carbocation possible in above reaction is

Ans. (1)

Sol.
$$CH_3-CH_2-CH_2-CH_2-CI \xrightarrow{AlCl_3} CH_3-CH_2-CH_2+ \xrightarrow{Re arrangemen \ t} \bigoplus$$

Resonance Eduventures Ltd.

Reg. Office & Corp. Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No.: +91-022-39167222

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

PAGE#7

Resonance* | JEE MAIN-2022 | DATE : 29-06-2022 (SHIFT-2) | PAPER-1 | MEMORY BASED | CHEMISTRY

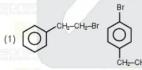
Find out number of π -bonds in product from by above reaction.

Ans. (2)

- 26. Chloroxylenol and terpineol work as
 - (1) Antiseptic
- (2) Disinfectant
- (3) Antipyretic
- (4) Antibiotic

- Ans. (1
- Sol. Commonly used antiseptic Dettol is a mixture of chloroxylenol and terpineol.
- 27. Reaction involve in troposphere during acid rain.
 - (1) $H_2S + O_2 \longrightarrow S + H_2O$
- (2) S + NaOH \longrightarrow Na₂S + Na₂S₂O₃ + H₂O
- (3) I_2 + $Na_2S_2O_3 \longrightarrow Na_2S_4O_6$ + Na_1
- (4) $2SO_2 + O_2 + 2H_2O \longrightarrow 2H_2SO_4$

- Ans. (4)
- Sol. SO2 and NO2 after oxidation and reaction with H2O are major contributors to acid rain.
- 28. 184 g per mole of given compound having C = 52.4%, H = 4.9% and Br = 42.7% and both A and B react with KMnO₄ & will give benzoic acid and para-bromo benzoic acid respectively than identify compound A and B. Compound A is optically active.













https://previouspaper.in

Resonance Eduventures Ltd.

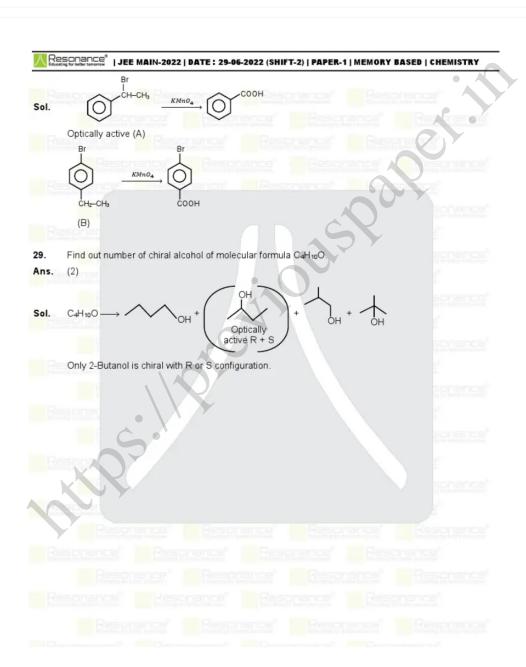
(3)

Ans.

Reg. Office & Corp. Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No.: +91-022-39167222

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

PAGE # 8



Resonance Eduventures Ltd.

Reg. Office & Corp. Office : CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) - 324005 Ph. No.: +91-744-2777777, 2777700 | FAX No. : +91-022-39167222

To Know more: sms RESO at 56677 | Website: www.resonance.ac.in | E-mail: contact@resonance.ac.in | CIN: U80302RJ2007PLC024029

Toll Free: 1800 258 5555 | 7340010333 | **Treatment of the contact of the

This solution was download from Resonance JEE (MAIN) 2022 Solution portal

PAGE#9



© Resonance Eduventures Limited | Toll-Free 1800-258-5555 | (0)744 27777777, 2777700 | contact@resonance.ac.in | CIN - U80302RJ2007PLC024029