

55. The first chlorinated organic insecticide prepared is :

- (A) Gammexane (B) Chloroform  
(C)  $\text{COCl}_2$  (D) DDT

56. Which of the following crystals has the unit cell such that  $a = b \neq c$  and  $\alpha = \beta = 90^\circ$ ,  $\gamma = 120^\circ$  ?

- (A) Zinc blende (B) Graphite  
(C) Cinnabar (D) Potassium dichromate

57.  $\text{MnO}$  exhibits :

- (A) Ferrimagnetism (B) Antiferromagnetism  
(C) Ferromagnetism (D) Paramagnetism

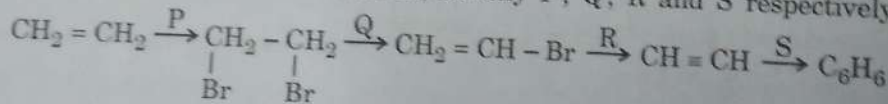
58. The number of atoms in 4.5 g of a face-centred cubic crystal with edge length 300 pm is : (Given density =  $10 \text{ g cm}^{-3}$  and  $N_A = 6.022 \times 10^{23}$ )

- (A)  $6.6 \times 10^{20}$  (B)  $6.6 \times 10^{23}$   
(C)  $6.6 \times 10^{19}$  (D)  $6.6 \times 10^{22}$

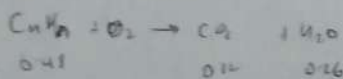
59. 0.48 g of an organic compound on complete combustion produced 0.22 g of  $\text{CO}_2$ . The percentage of C in the given organic compound is :

- (A) 25 (B) 50 (C) 12.5 (D) 87.5

60. In the given sequence of reactions, identify 'P', 'Q', 'R' and 'S' respectively.



- (A)  $\text{Br}_2$ , Alc.  $\text{KOH}$ ,  $\text{NaOH}$ ,  $\text{Al}_2\text{O}_3$   
(B)  $\text{HBr}$ , Alc.  $\text{KOH}$ ,  $\text{CaC}_2$ ,  $\text{KMnO}_4$   
(C)  $\text{HBr}$ , Alc.  $\text{KOH}$ ,  $\text{NaNH}_2$ , Red hot iron tube  
(D)  $\text{Br}_2$ , Alc.  $\text{KOH}$ ,  $\text{NaNH}_2$ , Red hot iron tube



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$10 \times 10^6 \times \frac{M_0 \times 10^{-30}}{2} \rho = \frac{M_0 \times 10^3}{N_A}$

$a = 300 \times 10^{-12}$

$W = 4.1 \text{ g}$   
 $\rho = 10 \text{ g cm}^{-3}$

$\frac{a^3}{2} \times N_A = n \times N_A$  (22)  
 $\frac{a^3}{2} \times N_A = \frac{W}{M_0} \times N_A$   
 $\frac{a^3}{2} = \frac{W}{M_0}$   
 $2 \times 2^3 \times 10^{-36}$

$10 \times 10^6 = \frac{4.1}{a^3}$

$10 \times 10^6 \times 2^3 \times 10^{-36}$

36  
13  
47

C D-3



C D-3

49. In the reaction between moist  $\text{SO}_2$  and acidified permanganate solution :

- (A)  $\text{SO}_2$  is oxidised to  $\text{SO}_4^{2-}$   
 $\text{MnO}_4^-$  is reduced to  $\text{Mn}^{2+}$
- (B)  $\text{SO}_2$  is reduced to S  
 $\text{MnO}_4^-$  is oxidised to  $\text{MnO}_4$
- (C)  $\text{SO}_2$  is oxidised to  $\text{SO}_3^{2-}$   
 $\text{MnO}_4^-$  is reduced to  $\text{MnO}_2$
- (D)  $\text{SO}_2$  is reduced to  $\text{H}_2\text{S}$   
 $\text{MnO}_4^-$  is oxidised to  $\text{MnO}_4$

50. Which one of the following properties is generally **not** applicable to ionic hydrides ?

- (A) Non-volatile (B) Non-conducting in solid state  
 (C) Crystalline (D) Volatile

51. Which one of the following nitrate will decompose to give  $\text{NO}_2$  on heating ?

- (A)  $\text{NaNO}_3$  (B)  $\text{KNO}_3$  (C)  $\text{RbNO}_3$  (D)  $\text{LiNO}_3$

52. Which of the following halides **cannot** be hydrolysed ?

- (A)  $\text{CCl}_4$  (B)  $\text{SiCl}_4$  (C)  $\text{GeCl}_4$  (D)  $\text{SnCl}_4$

53. In the analysis of III group basic radicals of salts, the purpose of adding  $\text{NH}_4\text{Cl}_{(s)}$  to  $\text{NH}_4\text{OH}$  is :

- (A) to increase the concentration of  $\text{OH}^-$  ions.  
 (B) to precipitate the radicals of group IV and V.  
 (C) to suppress the dissociation of  $\text{NH}_4\text{OH}$ .  
 (D) to introduce  $\text{Cl}^-$  ions.

54. Solubility product of  $\text{CaC}_2\text{O}_4$  at a given temperature in pure water is  $4 \times 10^{-9} (\text{mol L}^{-1})^2$ . Solubility of  $\text{CaC}_2\text{O}_4$  at the same temperature is :

- (A)  $6.3 \times 10^{-5} \text{ mol L}^{-1}$  (B)  $2 \times 10^{-5} \text{ mol L}^{-1}$   
 (C)  $2 \times 10^{-4} \text{ mol L}^{-1}$  (D)  $6.3 \times 10^{-4} \text{ mol L}^{-1}$

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$\text{Na}_2\text{O} + \text{H}_2\text{O}$        $\text{H}_2\text{O}_2$        $\text{KMnO}_4$        $(\text{a}^{1+}) (\text{b}^{2+})$   
 (20)       $\text{MnO}_4^-$        $\text{SO}_2$        $4 \times 10^{-9} = (x)^2$   
 $\sqrt{40 \times 10^{-10}}$   
 $6.3 \times 10^{-5}$



43. The energy associated with first orbit of  $\text{He}^+$  is :

- (A) 0 J (B)  $-8.72 \times 10^{-18}$  J  
 (C)  $-4.58 \times 10^{-18}$  J (D)  $-0.545 \times 10^{-18}$  J

44. A metalloid is :

- (A) Bi (B) Sb (C) P (D) Se

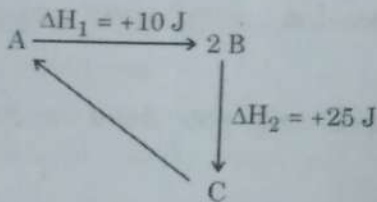
45. A pair of isoelectronic species having bond order of one is :

- (A)  $\text{N}_2, \text{CO}$  (B)  $\text{N}_2, \text{NO}^+$  (C)  $\text{O}_2^{2-}, \text{F}_2$  (D)  $\text{CO}, \text{NO}^+$

46. Identify the **wrong** relation for real gases :

- (A)  $Z = \frac{V_{\text{ideal}}}{V_{\text{real}}}$  (B)  $P_{\text{ideal}} = P_{\text{real}} + \frac{an^2}{V^2}$   
 (C)  $V_{\text{real}} = V_{\text{ideal}} - nb$  (D)  $\left(p + \frac{a}{V^2}\right)(V - b) = RT$

47. From the diagram



$\Delta_r H$  for the reaction  $\text{C} \rightarrow \text{A}$  is :

- (A) +35 J (B) -15 J (C) -35 J (D) +15 J

48. For which one of the following mixtures is composition uniform throughout ?

- (A) Sand and water  
 (B) Grains and pulses with stone  
 (C) Mixture of oil and water  
 (D) Dilute aqueous solution of sugar

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C D-3



Handwritten notes and diagrams in the rough work area, including a small cycle diagram with states A, B, C and arrows between them.

Handwritten calculations and notes, including the number (18) and some algebraic expressions.

Handwritten calculations involving numbers like 1364, 144, and 20, along with chemical equations like A → B, B → C, C → A.

C D-3

39. For the reaction  $\text{PCl}_5 \rightarrow \text{PCl}_3 + \text{Cl}_2$ , rate and rate constant are  $1.02 \times 10^{-4} \text{ mol L}^{-1} \text{ s}^{-1}$  and  $3.4 \times 10^{-5} \text{ s}^{-1}$  respectively at a given instant. The molar concentration of  $\text{PCl}_5$  at that instant is :

- (A)  $8.0 \text{ mol L}^{-1}$  (B)  $3.0 \text{ mol L}^{-1}$   
(C)  $0.2 \text{ mol L}^{-1}$  (D)  $2.0 \text{ mol L}^{-1}$

40. Which one of the following does **not** represent Arrhenius equation ?

- (A)  $\log k = \log A - \frac{E_a}{2.303 RT}$  (B)  $k = A e^{-E_a/RT}$   
(C)  $\ln k = -\frac{E_a}{RT} + \ln A$  (D)  $k = A e^{E_a/RT}$

41. Identify the **incorrect** statement :

- (A) Values of colligative properties of colloidal solution are of small order compared to values of true solution.  
(B) Tyndall effect is observed only when diameter of the dispersed particles is not much smaller than wavelength of incident light.  
(C) Colour of colloidal solution depends on the wavelength of light scattered by the dispersed particles.  
(D) Brownian movement is due to balanced bombardment of molecules of dispersion medium on colloidal particles.

42. For the coagulation of positively charged hydrated ferric-oxide sol, the flocculating power of the ions is in the order :

- (A)  $\text{PO}_4^{3-} > \text{SO}_4^{2-} > \text{Cl}^- > [\text{Fe}(\text{CN})_6]^{4-}$   
(B)  $\text{Cl}^- > \text{SO}_4^{2-} > \text{PO}_4^{3-} > [\text{Fe}(\text{CN})_6]^{4-}$   
(C)  $\text{SO}_4^{2-} = \text{Cl}^- = \text{PO}_4^{3-} = [\text{Fe}(\text{CN})_6]^{4-}$   
(D)  $[\text{Fe}(\text{CN})_6]^{4-} > \text{PO}_4^{3-} > \text{SO}_4^{2-} > \text{Cl}^-$

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$$1.02 \times 10^{-4} = 3.4 \times 10^{-5} (A_5)$$

C D-3



(16)

$$\frac{34 \times 10^5}{10^2}$$

$$\frac{1.02 \times 10^{-4} \times 10^5}{3.4} = \frac{10.2}{3.4} = 3$$

C D-3



33. The type of linkage present between nucleotides is :

- (A) Phosphoester linkage (B) Phosphodiester linkage  
(C) Amide linkage (D) Glycosidic linkage

34.  $\alpha$ -D-(+)-glucose and  $\beta$ -D-(+)-glucose are :

- (A) Enantiomers (B) Conformers  
(C) Epimers (D) Anomers

35. Which of the following set of polymers are used as fibre ?

- (i) Teflon (ii) Starch (iii) Terylene (iv) Orlon  
(A) (i) and (ii) (B) (ii) and (iii)  
(C) (iii) and (iv) (D) (i) and (iv)

36. The biodegradable polymer obtained by polymerisation of Glycine and Aminocaproic acid is :

- (A) Nylon 6 (B) PHBV  
(C) Nylon 2 - Nylon 6 (D) Nylon 6, 10

37. The compound  is :

- (A) Sucralose (B) Aspartame  
(C) Saccharin (D) Alitame

38. Which one of the following is a cationic detergent ?

- (A) Cetyltrimethylammonium bromide  
(B) Sodium dodecylbenzene sulphonate  
(C) Dodecylbenzene sulphonic acid  
(D) Dodecylbenzene

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33. ಈ ಕೆಳಗಿನ ಯಾವುದು

- (A) ಫಾಸ್ಫೋಸ್ಟರ್ ಲಿಂಕ್‌ಜೆ  
(C) ಅಮೈಡ್ ಲಿಂಕ್‌ಜೆ

34.  $\alpha$ -D-(+)-

- (A) ಪ್ರತ್ಯೇಕ ರೂಪ  
(C) ಎಪಿಮರ್

35. ಈ ಕೆಳಗಿನ ಯಾವುದು

- (i) ಟೆಫ್ಲಾನ್  
(A) (i) ಮತ್ತು (iii)  
(C) (iii) ಮತ್ತು (iv)

36. ಗ್ಲೈಸಿನ್ ಮತ್ತು

- ವಿಫಲನೀಯ :  
(A) ನೈಲಾನ್ 6  
(C) ನೈಲಾನ್ 6, 10

37. ಈ ರಸಾಯನಿಕ

- (A) ಸುಕ್ರಾಲ್ಯೋಸ್  
(C) ಸ್ಯಾಕಾರಿನ್

38. ಈ ಕೆಳಗಿನ ಯಾವುದು

- (A) ಸೀಟೈಲ್‌ಟ್ರಿಮೀಥೈಲ್‌ಅಮೋನಿಯಂ ಬ್ರೋಮೈಡ್  
(B) ಸೋಡಿಯಂ ಡೋಡೈಲ್‌ಬೆನ್ಜೀನ್ ಸಲ್ಫೋನೇಟ್  
(C) ಡೋಡೈಲ್‌ಬೆನ್ಜೀನ್ ಸಲ್ಫೋನಿಕ್ ಆಸಿಡ್  
(D) ಡೋಡೈಲ್‌ಬೆನ್ಜೀನ್



27. Propene and Propanal are :

- (A) Position isomers (B) Functional isomers  
(C) Chain isomers (D) Geometrical isomers

28. Sodium ethanoate on heating with soda lime gives 'X'. Electrolysis of aqueous solution of sodium ethanoate gives 'Y', 'Z' and 'W' respectively are :

- (A) Methane and Ethane (B) Methane and Methane  
(C) Ethane and Methane (D) Ethane and Ethane

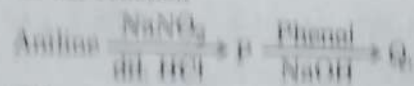
29. But-1-yne on reaction with dil.  $H_2SO_4$  in presence of  $Hg^{2+}$  ions at 333 K gives :

- (A)  (B)   
(C)  (D) 

30. Biologically active adrenaline and ephedrine used to increase blood pressure contain :

- (A) Primary amino group (B) Secondary amino group  
(C) Tertiary amino group (D) Quaternary ammonium salt

31. In the reaction



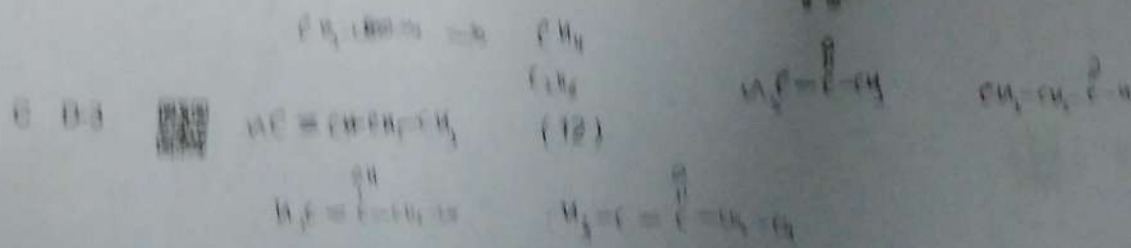
'Q' is :

- (A)  $C_6H_5N_2Cl$  (B) ortho-hydroxyazobenzene  
(C) para-hydroxyazobenzene (D) meta-hydroxyazobenzene

32. The female sex hormone which is responsible for the development of secondary female characteristics and participates in the control of menstrual cycle is :

- (A) Testosterone (B) Estradiol  
(C) Insulin (D) Thyroxine

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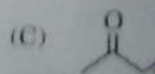
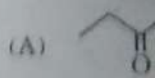
27. ಪ್ರೊಪೇನ್ ಮತ್ತು ಪ್ರೋಪೇನಾಲ್ :

- (A) ಸ್ಥಾನಿಕ ಸಮಾನಾಂತರತೆ  
(C) ಸರಪಳಿ ಸಮಾನಾಂತರತೆ

28. ಸೋಡಿಯಂ ಈಥೇನೇಟ್ ಅನ್ನು ಹೀಟಿಂಗ್ ಮಾಡಿದಾಗ 'X' ಉತ್ಪಾದಿಸುತ್ತದೆ. ಈಥೇನೇಟ್ ಅನ್ನು ಅಕ್ವಿಯೂಸ್ ದ್ರಾವಣದಲ್ಲಿ ವಿದ್ಯುತ್‌ವಿಭಜನೆ ಮಾಡಿದಾಗ 'Y', 'Z' ಮತ್ತು 'W' ಉತ್ಪಾದಿಸುತ್ತವೆ. ಇವುಗಳ ಗುಣಗಳನ್ನು ಗುರುತಿಸಿ.

- (A) ಮಿಥೇನ್ ಮತ್ತು ಈಥೇನ್  
(C) ಈಥೇನ್ ಮತ್ತು ಮಿಥೇನ್

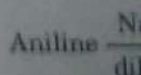
29. ಬುಟ-1-ಯಿನ್ ಅನ್ನು ದಿಲಿ  $H_2SO_4$  ಮತ್ತು  $Hg^{2+}$  ಅಯಾನುಗಳ ಸಾಧಕದಲ್ಲಿ 333 K ನಲ್ಲಿ ಕ್ರಿಯೆಗೊಳಿಸಿದಾಗ ಉತ್ಪಾದಿಸುವ ಸಂಯುಕ್ತ :



30. ರಕ್ತದ ಒತ್ತಡವನ್ನು ಹೆಚ್ಚಿಸಲು ಬಳಸುವ ಅಡ್ರಲಿನ್ ಮತ್ತು ಏಫೆಡ್ರಿನ್ ರಕ್ತದ ಒತ್ತಡವನ್ನು ಹೆಚ್ಚಿಸಲು ಬಳಸುವ ಔಷಧಿಗಳಾಗಿವೆ. ಇವುಗಳಲ್ಲಿ :

- (A) ಪ್ರಾಥಮಿಕ ಅಮೈನೋ ಗುಂಪು  
(C) ತೃತೀಯ ಅಮೈನೋ ಗುಂಪು

31. ಈ ಕ್ರಿಯಾ ಸರಣಿಯಲ್ಲಿ 'Q' ಯ ಗುಣ :



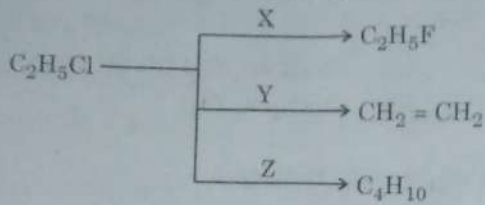
'Q' ಅನ್ನು ಗುರುತಿಸಿ.

- (A)  $C_6H_5N_2Cl$   
(C) p-ಹೈಡ್ರಾಕ್ಸಿಅಜೋಬೆನ್ಜೀನ್

32. ಸೆಕೆಂಡರಿ ಸ್ತ್ರೀ ಸ್ವಾಮ್ಯವನ್ನು ಹೆಚ್ಚಿಸಲು ಮತ್ತು ಮೆನ್ಸ್ಟ್ರುವಲ್ ಸೈಕಲ್ ನಿಯಂತ್ರಣದಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳಲು ಸಹಾಯ ಮಾಡುವ ಹಾರ್ಮೋನ್ :

- (A) ಟೆಸ್ಟೋಸ್ಟಿರಾನ್  
(C) ಇನ್ಸುಲಿನ್

23. In the following scheme of reaction,



X, Y and Z respectively are :

- (A) AgF, alcoholic KOH and benzene  
 (B) HF, aqueous KOH and Na in dry ether  
 (C) Hg<sub>2</sub>F<sub>2</sub>, alcoholic KOH and Na in dry ether  
 (D) CoF<sub>2</sub>, aqueous KOH and benzene

24. 8.8 g of monohydric alcohol added to ethyl magnesium iodide in ether liberates 2240 cm<sup>3</sup> of ethane at STP. This monohydric alcohol when oxidised using pyridinium-chlorochromate, forms a carbonyl compound that answers silver mirror test (Tollens' test). The monohydric alcohol is :

- (A) butan-2-ol (B) 2, 2-dimethyl propan-1-ol  
 (C) pentan-2-ol (D) 2, 2-dimethyl ethan-1-ol

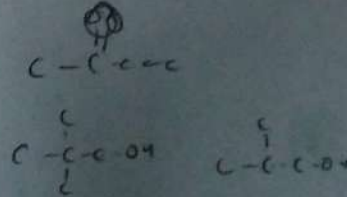
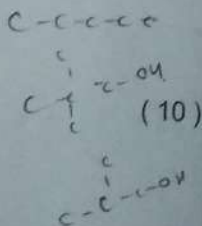
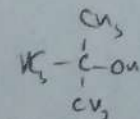
25. When a tertiary alcohol 'A' (C<sub>4</sub>H<sub>10</sub>O) reacts with 20% H<sub>3</sub>PO<sub>4</sub> at 358 K, it gives a compound 'B' (C<sub>4</sub>H<sub>8</sub>) as a major product. The IUPAC name of the compound 'B' is :

- (A) But-1-ene (B) But-2-ene  
 (C) Cyclobutane (D) 2-Methylpropene

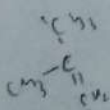
26. PCC is :

- (A) K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> + Pyridine  
 (B) CrO<sub>3</sub> + CHCl<sub>3</sub>  
 (C) CrO<sub>3</sub> + H<sub>2</sub>SO<sub>4</sub>  
 (D) A complex of chromium trioxide with pyridine + HCl

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C D-3



C D-3



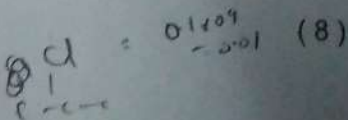
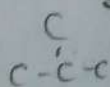
18. On treating 100 mL of 0.1 M aqueous solution of the complex  $\text{CrCl}_3 \cdot 6\text{H}_2\text{O}$  with excess of  $\text{AgNO}_3$ , 2.86 g of  $\text{AgCl}$  was obtained. The complex is :
- (A)  $[\text{Cr}(\text{H}_2\text{O})_3\text{Cl}_3] \cdot 3\text{H}_2\text{O}$  (B)  $[\text{Cr}(\text{H}_2\text{O})_4\text{Cl}_2]\text{Cl} \cdot 2\text{H}_2\text{O}$   
 (C)  $[\text{Cr}(\text{H}_2\text{O})_5\text{Cl}]\text{Cl}_2 \cdot \text{H}_2\text{O}$  (D)  $[\text{Cr}(\text{H}_2\text{O})_6\text{Cl}_3]$
19. The complex compounds  $[\text{Co}(\text{NH}_3)_5\text{SO}_4]\text{Br}$  and  $[\text{Co}(\text{NH}_3)_5\text{Br}]\text{SO}_4$  are :
- (A) Coordination isomers (B) Geometrical isomers  
 (C) Optical isomers (D) Ionisation isomers
20. Which of the following statements are true about  $[\text{CoF}_6]^{3-}$  ion ?
- I. The complex has octahedral geometry.  
 II. Coordination number of Co is 3 and oxidation state is + 6.  
 III. The complex is  $\text{sp}^3\text{d}^2$  hybridised.  
 IV. It is a high spin complex.
- (A) I, II and IV (B) I, III and IV  
 (C) II and IV (D) II, III and IV
21. A haloalkane undergoes  $\text{S}_{\text{N}}2$  or  $\text{S}_{\text{N}}1$  reaction depending on :
- (A) Solvent used in the reaction  
 (B) Low temperature  
 (C) The type of halogen atom  
 (D) Stability of the haloalkane
22. 2-Methyl propane can be prepared by Wurtz reaction. The haloalkanes taken along with metallic sodium and dry ether are :
- (A) chloromethane and 2-chloropropane  
 (B) chloroethane and chloromethane  
 (C) chloroethane and 1-chloropropane  
 (D) chloromethane and 1-chloropropane

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C D-3



$\text{C}_2\text{H}_5\text{Cl}$



$$\frac{1410 \times 2}{2720}$$

$$n = \frac{2 \times 1410 \times 2}{2720} = 2.042$$

C D-





8. Gold sol is **not** a :
- (A) Macromolecular colloid (B) Lyophobic colloid  
(C) Multimolecular colloid (D) Negatively charged colloid
9. The **incorrect** statement about Hall-Héroult process is :
- (A) Carbon anode is oxidised to CO and CO<sub>2</sub>.  
(B) Na<sub>3</sub>AlF<sub>6</sub> helps to decrease the melting point of the electrolyte.  
(C) CaF<sub>2</sub> helps to increase the conductivity of the electrolyte.  
(D) Oxidation state of oxygen changes in the overall cell reaction.
10. Select the correct statement :
- (A) Roasting involves heating the ore in the absence of air.  
(B) Calcination involves heating the ore above its melting point.  
(C) Smelting involves heating the ore with suitable reducing agent and flux below its melting point.  
(D) Calcination of calcium carbonate is endothermic.
11. NO<sub>2</sub> gas is :
- (A) Colourless, neutral (B) Colourless, acidic  
(C) Brown, acidic (D) Brown, neutral
12. Identify the **incorrect** statement from the following :
- (A) Oxides of nitrogen in the atmosphere can cause depletion of the ozone layer.  
(B) Ozone absorbs the intense ultraviolet radiation of Sun.  
(C) Depletion of ozone layer is because of its chemical reactions with chlorofluoro alkanes.  
(D) Ozone absorbs infrared radiation.

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- A current of 3 A is passed through a molten calcium salt for 1 hr 47 min 13 sec. The mass of calcium deposited is : (Molar mass of Ca = 40 g mol<sup>-1</sup>)
  - 6.0 g
  - 2.0 g
  - 8.0 g
  - 4.0 g
- The value of 'A' in the equation  $\lambda_m = \lambda_m^0 - A\sqrt{C}$  is same for the pair :
  - NaCl and CaCl<sub>2</sub>
  - CaCl<sub>2</sub> and MgSO<sub>4</sub>
  - NaCl and KBr
  - MgCl<sub>2</sub> and NaCl
- For the reaction, A  $\rightleftharpoons$  B, E<sub>a</sub> = 50 kJ mol<sup>-1</sup> and  $\Delta H = -20$  kJ mol<sup>-1</sup>. When a catalyst is added, E<sub>a</sub> decreases by 10 kJ mol<sup>-1</sup>. What is the E<sub>a</sub> for the backward reaction in the presence of catalyst ?
  - 60 kJ mol<sup>-1</sup>
  - 40 kJ mol<sup>-1</sup>
  - 70 kJ mol<sup>-1</sup>
  - 20 kJ mol<sup>-1</sup>
- Vapour pressure of a solution containing 18 g of glucose and 178.2 g of water at 100°C is : (Vapour pressure of pure water at 100°C = 760 torr)
  - 76.0 torr
  - 752.4 torr
  - 7.6 torr
  - 3207.6 torr
- A mixture of phenol and aniline shows negative deviation from Raoult's law. This is due to the formation of :
  - Polar covalent bond
  - Non-polar covalent bond
  - Intermolecular Hydrogen bond
  - Intramolecular Hydrogen bond
- Which one of the following pairs will show positive deviation from Raoult's Law ?
  - Water - HCl
  - Benzene - Methanol
  - Water - HNO<sub>3</sub>
  - Acetone - Chloroform
- How many Coulombs are required to oxidise 0.1 mole of H<sub>2</sub>O to oxygen ?
  - 1.93 × 10<sup>5</sup> C
  - 1.93 × 10<sup>4</sup> C
  - 3.86 × 10<sup>4</sup> C
  - 9.65 × 10<sup>3</sup> C

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C D-3

Handwritten calculations for question 1:

$$3 \times 3600 = 10800 \text{ C}$$

$$\frac{10800}{96500} \times 40 = 4.48 \text{ g}$$

Handwritten calculations for question 1:

$$W = \frac{40}{2 \times 96500} \times 3 \times 6 \times 60 \times 60 \times 60$$

$$= \frac{40}{193000} \times 1080000$$

$$= 222.8 \text{ g}$$

Handwritten calculations for question 1:

$$\frac{40}{193000} \times 1080000$$

Handwritten calculations for question 1:

$$\frac{40}{193000} \times 1080000$$

Handwritten calculations for question 1:

$$1 \text{ hr} \rightarrow 60 \times 60 = 3600$$

$$47 \text{ min} \rightarrow 2820$$

$$13 \text{ sec} \rightarrow 13$$

$$\frac{10800}{96500} \times 40 = 4.48 \text{ g}$$