doubtnut
India's Number 1 Education App

CHEMISTRY

BOOKS - SAI CHEMISTRY (TELUGU ENGLISH)

QUESTION PAPER

Chemistry

1. Which of the following series correctly represents the energy of the radiation ?

A. Radiu waves $>$ X-rays $>$ visible $>$ IR

B. UV $>$ X-rays $>$ IR rdio waves

C. $\gamma -$ rays $>$ IR $>$ Visible $>$ micro waves

D. X-rays $>$ UV $> IR >$ micro wave

Answer: D

Watch Video Solution

2. Identify the correct order of innic radii of the following ions

A. $Al^{3+} > K^{+} > Mg^{2+} > Li^{+}$

B. $K^{+} > Mg^{2+} > Al^{3+} > Li^{3+}$

C. $K^{+} Li^{+} > Mg^{2+} > Al^{3}$

D. $k^{+} > Mg^{2} > Li^{+} > Al^{3+}$

Answer: C

Watch Video Solution

3. The elements with higheset and lowest electron gain enthaly in group 16 resiectively are

A. O, Te

B. O, Po

C. S, O

D. S, Te

Answer: C

Watch Video Solution

4. Which is the correct order of dipole moments of BF_3, NF_3 and NH_3?

A. $NH_3 > BF_3 > NF_3$

B. $BF_3 > NF_3 > NH_3$

C. $NH_3 > NF_3 > BF_3$

D. $NF_3 > NH_3 > BF_3$

Answer: C

Watch Video Solution

5. The van der Waals equatin for 0.5 mol of a gas is

A. $\left(P+\frac{a}{4V^2}\right)\left(\frac{V-b}{2}\right)=RT$

B. $\left(P+\frac{a}{4V^2}\right)(2V-b)=RT$

C. $\left(P+\frac{a}{4V^2}\right)(2V-4b)=RT$

D. $\left(P+\frac{a}{4V^2}\right)=\frac{2RT}{2(V-R)}$

Answer: B

Watch Video Solution

6. The approximate molarity of a solution in mol L^{-1} that contains 13.50 g of naCl dissolved in 452 mL of water is

A. 0.25

B. 0.51

C. 1.0

D. 1.2

Answer: B

Watch Video Solution

7. The coefficients X,y,p,q and r in the following balanced equations respectively are :

$$xMnO_{4(aq)}^{2-} + yH_2O_{(l)} \rightarrow pMnO_{2(s)} + qMnO_{4(aq)}^{-} + rOH_{(aq)}^{-}$$

A. $3, 2, 2, 4, 1$

B. $2, 3, 1, 1, 5$

C. $2, 3, 2, 1, 5$

D. $3, 2, 1, 2, 4$

Answer: D

Watch Video Solution

8. The increase in entropy in JK^{-1} of a substance when it absorbs 1 kJ of hear energy at 3 K is

A. 3.33

B. 333.3

C. 0.333

D. 0.0333

Answer: B

Watch Video Solution

9. Consider the equilibrium $H_2 + I_2 Harr 2HI.$ Calculate the equilibrium constant of the reverse reaction when the equlibrium concentration of H_2, I_2 and HI are $1.14 \times 10^{-2}, 0.12 \times 10^{-2}$ and $2.50 \times 10^{-2} molL^{-1},$ respectively

A. 46.4

B. 0.021

C. 18.42

D. 0.054

Answer: B

Watch Video Solution

10. The concentration in M of OH in $0.0014MH_2SO_4$ is

A. 1×10^{-13}

B. 0.5×10^{-12}

C. 5×10^{-12}

D. 0.5×10^{-13}

Answer: C

Watch Video Solution

11. Which one of the following gives highest volume of O_2 at STP on complete decompositon ?

A. 2 mL of 100 vol. H_2O_2

B. 500 mL of 30 vol. H_2O_2

C. 1 L of 10 vo. H_2O_2

D. 100 mL of 20 vol.H_2O_2

Answer: B

Watch Video Solution

12. The frequency of the radiation emitted by alkali metals in the flame test follows the other

A. $Li > Na > K > Cs$

B. $Li > K > Na > Cs$

C. $K > na > Li > Cs$

D. $K > Cs > Na > Li$

Answer: D

Watch Video Solution

13. Which one of the following is correct relating to diborane (B_2H_6) ?

A. Colourless liquid

B. Colourless solid

C. Colourless gas

D. Colourless gel

Answer: C

Watch Video Solution

14. Identify the correct statement (s) from the following:

(i) The catentiaon property of group 14 elements decreases from carbon to tin.

(ii) Fullerence (C_{60}) has 20 five-membered carbon rings and 12 six-membered carbon rings.

(iii) SiO_2 is soluble in Conc.NaOH.

A. Only iii

B. I, iii

C. I, ii

D. ii, iii

Answer: B

Watch Video Solution

15. Consider the following reactins involving some atmospheric pollutants.

$NO + O_3 \rightarrow NO_2 + O_2 \xrightarrow{h\nu} NO + O_3$

$4NO_2 + O_2 + 2H_2O \rightarrow 4HNO_3$

$3CH_4 + 2O_3 \rightarrow 3H_2C = O + 3H_2O$

Based on the above, the formation of formaldehyde from methane in the atmosphere will be controlled by,

A. Only O_3

B. O_3 and NO_2

C. O_3, NO and NO_2

D. NO and NO_2

Answer: C

Watch Video Solution

16. The number of no bond resonance structures possible for but-1-ene and a 3° carbocation having methyl, ethyl and isobutyl groups on cationic carbon respectively are

A. $3, 7$

B. $4, 6$

C. $2, 7$

D. $5, 6$

Answer: C

Watch Video Solution

17. Total number of acyclic and cyclic isomers possible for molecular formula C_4H_6 is

A. 5

B. 7

C. 9

D. 8

Answer: C

Watch Video Solution

18. In a compound AB, A atoms occupy the corners of the cube and the cube and the B atoms occupy the body centre of the cube. If the A atoms posses magnetic moment due to up-spin and B atoms possess magnetic moment due to down spin, the magnetic nature of the compound AB in an isolated unit cell is

A. Paramagnetic q

B. Ferrimagnetic

C. Diamagnetic

D. Anti-ferromagnetic

Answer: D

Watch Video Solution

19. Two compounds form an ideal solution at room temperature. Which of the following are correct for this ideal solution ?

(a) $\Delta G = +ve$

(b) $\Delta S = +ve$ surrounding

(c) $\Delta S = +vc$ system

(d) $\Delta_{mix} H = 0$

A. c,d

B. b,c,d

C. b,c

D. a,d

Answer: A

Watch Video Solution

20. If a solute associates in a solvent, its experimetally calculated molar mass using boiling point elevation method will be

A. Half of the actual value

B. Will remain same as actual value

C. One fourth of the actual value

D. Higher than the actual value

Answer: D

Watch Video Solution

21. For a hald cell containing a Pt rod immersed in a solution of $1MHA, O_2(g)$ is bubbled at 1 atm. The stnadard reduction potential for water formation is 1.23 V. Given a dissociation constant, $Ka = 1 \times 10^{-4}$ for HA, what is $E_{\text{half cell}} at 298K$ in V?

A. 1.289

B. 1.717

C. 1.348

D. 1.112

Answer: D

Watch Video Solution

22. When the temperaature of a reaction is raised by $10^{\circ}C$ how many times the rate will be enhanced ?

A. 1.5

B. 3

C. 2

D. 4

Answer: C

Watch Video Solution

23. When the temperature of a reaction is rasied by $10^{\circ}C$ for Sb_2S_3 sol is

A. Na_2SO_4

B. $Al_2(SO_4)_2$

C. NH_4Cl

D. $NaCl$

Answer: B

Watch Video Solution

24. In electrolytic fefining of cooper, pure Cu os used as anode.

(B) Zone refining is based on the principle that impurities are more solutble in the melt than in the solid states of the metal. (D) Very pure Zr may be obtained by Galvanisation.

(E) In copper smelting hot air is used to convery Cu_2S to $CuSO_4$.

A. A,B,E

B. B,C

C. B,C,D,E

D. B,C,D

Answer: B

Watch Video Solution

25. Identify all the products formed when XeF_4 is completely hydrolysed

A. Xe, XeO_3, O_2, HF

B. Xe, O_2, HF

C. XeO_3, O_2

D. XeO_3

Answer: A

Watch Video Solution

26. What are the compounds formed when white Phosphorous is dissolved in boiling NaOH solution in an inert atmosphere ?

A. $PH_3, NaPO_4$

B. $NaH_2PO_4, P(OH)_3$

C. PH_3, NaH_2PO_2

D. P_4O_{10}, Na

Answer: C

Watch Video Solution

27. The correct order of the increasing magnetic moments for the following ions is

$NiCl_4^{2-}, Fe(H_2O)_6^{2+}, Ni(CN)_4^{2-}, cu(H_2O)_6^{2+}$

A. $Ni(CN)_4^{2-} < Cu(H_2O)_6^{2+} < NiCl_4^{2-} < Fe(H_2O)_6^{2+}$

B. $NiCl_4^{2-} < Ni(Cn)_4^{2-} < Fe(H_2O)_6^{2+} < Cu(H_2O)_6^{2+}$

C. $Ni(Cn)_4^{2-} < NiCl_4^{2-} < cu(H_2O)_6^{2+} < Fe(H_2O)_6^{2+}$

D. $Ni(Cn)_4^{2-} < Cu(H_2O)_6^{2+} < Fe(H_2O)_6 < NiCl_4^{2-}$

Answer: A

Watch Video Solution

28. The monomer units of Nylon 6,6 Nylon 2-Nylon 6 are respectively,

A.

$H_2NCH_2CO_2H, H_2N(CH_2)_6NH_2, HO_2C(CH_2)_4CO_2H, H_2NCH_2C$

B.

$H_2NCH_2CO_2H, HO_2C(CH_2)_4CO_2H, H_2N(CH_2)_6NH_2, H_2N(CH_2$

C.

$H_2N(CH_2)_6NH_2, HO_2C(CH_2)_4CO_2H, H_2NCH_2CO_2H, H_2N(CH_2$

D.

$H_2NCH_2CO_2H, H_2N(CH_2)CO_2H, H_2N(CH_2)_6NH_2, HO_2C(CH_2)$

Answer: C

Watch Video Solution

29. The product (s) formed when glucose rreacts with a strong oxidising agent like HNO_3 is/are

A. $COOH(CHOH)_4COOH$

B. CO_2, H_2O

C. $COOH(CHOH)_4CHO$

D. CO, CO_2, H_2O

Answer: A

Watch Video Solution

30. Which of the following statements are true foe saccharin.

(A) It is a sodium salt and is not soluble in water.

(B) It is much sweeter than cane suger.

(C) It is great value for diabetic patients and is excerted as such in urine.

(D) It is harmful

A. A,B

B. B,C

C. C,D

D. B,D

Answer: B

Watch Video Solution

31. The final prouct"B" of the below reaction sequence is

$$CH_3 - \overset{\overset{Br}{|}}{CH} - CH_3 \xrightarrow{KOH/C_2H_5OH} A \xrightarrow[HBr]{(C_6H_5CO)_2} B$$

A. $CH_3CH_2CH_2OH$

B. $CH_3CH = CH_2$

C. $CH_3CH_2CH_2Br$

D. $(CH_3CH_2CH_2)_2O$

Answer: C

Watch Video Solution

32. The prouduct (P) of below reactin sequence is

$$CH_3CH_2CHO \xrightarrow[(ii)\ \Delta H^{\oplus}]{(i)\ NaOH} P$$

$$(iii) H_2/Ni, 573K$$

A. $CH_3CH_2CH = \overset{CH_3}{\underset{|}{C}} - CH_3$

B. $CH_3CH_2CH_2 \overset{CH_3}{\underset{|}{C}} H - CH_2OH$

C. $CH_3CH_2CH = \overset{CH_3}{\underset{|}{C}} - CHO$

D. $CH_3CH_2CH = \overset{CH_3}{\underset{|}{C}} - CO_2H$

Answer: B

Watch Video Solution