CHEMISTRY

AAKASH INSTITUTE ENGLISH

TEST 9

Example

1. Give an ore of Sn and Pb

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2. Which of the following is a pair of peroxy compounds?

A. H_2SO_5 and $H_2S_2O_8$

B. $H_2S_4O_6$ and $H_2S_2O_8$

C. H_2SO_5 and $H_2S_2O_3$

D. $H_2S_4O_6$ and $H_2S_2O_3$

Answer:

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3. Phosphine can be prepared by the reaction of

A. P_4 and H_2SO_4

B. P_4 and $NaOH$

C. P_4 and $HCIO_4$

D. P_4 and HNO_3

Answer:

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4. Which of the following complexs is not correctly matched with hybridization of its central metal?

A. $[CoF6]^{3-}$,d^2sp^3`

B. $\left[Ni(CO)_4\right]$, sp^3

C. $\left[Cr(H_2O)_6\right]^{3+}$, d^2sp^3

D. $\left[Pt(NH_3)_4\right]^{2+}$, dsp^2

Answer:

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5. The weight of 1 atom of an element is 3.98 x 10^{-23}.what is its atom mass?

A. 29.9

B. 154

C. 108.36

D. 24

Answer:

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6. Among the following,biogradable polymer is

A. Nylon-2-nylon-6

B. Neoprene

C. Melamine polymer

D. Teflon

Answer:

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7. The weight of 1 atom of an element is 2.98 x 10^{-23}.what is its atom mass?

A. 24

B. 108

C. 18

D. 54

Answer:

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8. Benzamide on treatment with Br_2 and alkali gives

A. Aniline

B. Benzoic acid

C. Benzaldehyde

D. 1-Phenylmethanamine

Answer:

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9. Observe the following compounds

(A) CH_3CH_2CHO

(B) CH_3COCH_3

(C) Ph-CHO

(D)$CH_3CH(CH_3)CHO$

(E) HCHO

A. (A),(B), and (C) will give aldol condensation reaction

B. (A),(B) and (D) will give aldol condensation reaction

C. (B),(D) and (E) wil give Cannizzaro reaction

D. (C) and (E) will give Cannizzaro reaction

Answer:

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10. What is racemisation?

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11. Which of the following reaction mixtures does not produce1° alcohol?

A. HCHO+RMgX, followed by hydrolysis

B. $R-CHO+H_2$, over palladium

C. CH_3 - CH = CH_2 + B_2H_6

, $followedby \otimes idation \in thepresenceof$H_2O_2/OH^θ`

D. R - CHO + RMgX, followed by hydrolysis

Answer:

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12. Which of the following is an achiral compound?

A. 2,4-dibromo-3-chloropentane

B. 3-hydroxypent-1,5-dioicacid

C. 2,3-dichloropent-1,5-diol

D. 3-ethyl-3methylhex-1-ene

Answer:

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13. Correct reactivity order of alkyl halides towards SN2 reaction is

A.

$$PhCOCH_2CL > CH_2 = CHCH_2CL > CH_3Cl > CH_3CH(CI)CH$$

B.

$$PhCOCH_2Cl > CH_3Cl > CH_2 = CHCH_2Cl > CH_3CH(Cl)CH_3$$

C.

$$CH_3Cl > CH_2 = CHCH_2Cl > CH_3CH(Cl)CH_3 > PhCOCH_2Cl$$

D.

$$CH_3Cl > CH_2 = CHCH_2Cl > PhCOCH_2Cl > CH_3CH(Cl)CH_3$$

Answer:

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14. pH of 0.2 M monobasic acid is 5. pK_a value of monobasic acid is (log 5 = 0.7)

A. 6.3

B. 7.3

C. 9.3

D. 10.3

Answer:

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15. For a chemical reaction, observed thermodynamic parameters are given below

$\Delta_r H$ = +ve and $\Delta_r S$ = +ve

The said chemical reaction is

A. Spontaneous at low tempareture

B. Spontaneous at all tempareture

C. Spontaneous at high tempareture

D. Non-spontaneous at all temparetures

Answer:

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16. 3 g of a gas (X) AT $77^\circ C$ occupy the same volume as 0.1 g of Hydrogen gas at $27^\circ C$. Assuming that the pressure is same then the molar mass of gas (X) WILL BE

A. 70 g/mole

B. 55 g/mole

C. 82 g/mole

D. 40 g/mole

Answer:

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17. Which one of the following statements is incorrect?

A. The protecting power of lyophilic sol is expressed in terms of gold number

B. In Feundlich adsorption isotherm , the value of 1/n lies between 0 and 1 including both.

C. The ability of anion to bring about coagulation of a given colloid depends upon both magnitude and sign of the charge

D. Pure water can be obtained from sea water by centrifugation

Answer:

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18. The rate of a first order reaction is 2.5×10^{-3}mol L^{-1} $\overset{-1}{\min}$ at 0.25 M concentration of reactant. The half life (in min) of the reaction is

A. 69.3

B. 43.5

C. 76.6

D. 38.7

Answer:

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19. What is Flux and its role in metallurgy?

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20. 3F eletricity was passed through molten FeO. Weight of iron metal (Atomic wt=56) deposited at cathode (in g) is

A. 112

B. 84

C. 56

D. 28

Answer:

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21. The electrode potentials for $M^{2+}(aq) + e^- \rightarrow M^+(aq)$ and $M^+(aq) + e^- \rightarrow M(s)$ are 0.25 V and 0.60 V respectively.The value of $E^\circ_{-\frac{M^{2+}}{M}}$ is

A. $+0.425V$

B. $-0.425V$

C. $+0.855V$

D. $-0.855V$

Answer:

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22. The vapour pressures of pure liquids A and B respectively are 600 torr and 500 torr. In a binary solution of A and B , mole fraction of A is 0.25 then total pressure of the solution (in torr) will be

A. 625

B. 530

C. 525

D. 575

Answer:

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23. The van$tHofffac \to r(i)f$ or CH_3COOH` in water and benzene respectively are (assume 100% dissociation/association)

A. 2 and 0.5

B. 2 and 1

C. 1 and 2

D. 2 and 0.75

Answer:

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24. Percentage of tetrahedral voids occupied by carbon atoms per unit cell of diamond is

A. 50

B. 100

C. 75

D. 25

Answer:

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25. Among the following , greenhouse gases are

$CO_2. CH_4. CF_2CL_2. H_2O, N_2O, O_3, N_2$

A. All except N_2 and H_2O

B. All except N_2 and CH_4

C. All except N_2

D. All except N_2 and O_3

Answer:

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26. (a) What does PMMA stand for?

(b) Name a synthetic polymer which is an ester.

(c) Give a natural elastomer.

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27. Sodium salt of which acid will be needed for the preparation of propane?

A. Propanoic acid

B. Butanoic acid

C. Pentanoic acid

D. Fumaric acid

Answer:

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28. Colligative prperties of solution depends on

A. Natur of solute particles

B. Number of solute particles

C. Number of solvent particles

D. Volume of the solution

Answer:

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29. What is the end product of natural radioactive series?

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30. IUPAC name of compound X is

A. Cyclohex-1-en-3-ol

B. Cyclohex-2-en-1-ol

C. Cyclohex-5-en-2-ol

D. Cyclohex-5-en-1-ol

Answer:

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31. Which of the following can react with steam?

A. Carbon

B. Silicon

C. Tin

D. Germanium

Answer:

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32. The observed discontinuity in the ionisation enthalpies between Al and Ga and between In and TI are due to

A. poor shielding of d and f electrons to compensate the increase in nuclear charge

B. High screening effect of d and f electrons

C. Sudden increase in size of Ga and TI

D. Marginal increase in electronegativity of elements from Al to Tl

Answer:

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33. Which of the following is not the point of difference between Be and other alkline earth metals?

A. Beryllium does not exhibit co-ordination number more than 4

B. Oxide of Beryllium is amphoteric in nature

C. Beryllium does not form BeH_2 directly upon heating with H_2

D. Beryllium combines with halogen at elevated tempareture to form halides

Answer:

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34. Give the monomers and uses of Nylon 66

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35. What is ATP? Give two enzymes which are required in the digestion of proteins.

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36. Define medicine. Give two types of medicines with examples

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37. Calculate the molar mass of Aluminum oxide

A. 102

B. 100

C. 142

D. 123

Answer:

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38. The correct incresing order of oxidation state of Cl is

A. $Cl_2 < HClO < ClO_2 < ClO_3$

B. $HClO < Cl_2 < ClO_2 < ClO_3$

C. $ClO_3 < ClO_2 < HClO < Cl_2$

D. $ClO_2 < ClO_3 < Cl_2 < HClO$

Answer:

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39. The pair of species having paramagnetic nature and same bond order is

A. C_2 and O_2`

B. B_2 and F_2`

C. N_2 and O_2^(2+)`

D. O_2 and N_2^(2-)`

Answer:

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40. (a)Give example of Vat dye.

(b)Give use of Morphine.

(c) Name of liquid which is used both as fuel and an oxidiser.

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41. Highest bond angle is observed in

A. H_2O

B. F_2O

C. Cl_2O

D. CH_4

Answer:

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42. 98.5 kg of gold was recovered from a smuggler. The atoms of gold recovered are:

A. 30.1 x 10^{25}

B. 6.02 x 10^{25}

C. 3.01 x 10^{23}

D. 3 x 10^{25}

Answer:

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43. Read the following statements

(i) The correct order of energy difference between adjacent energy levels in H-atom is $(E_2 - E_1) > (E_3 - E_2) > (E_4 - E_3)$

(ii) Two electrons occupying the same orbital are distinguised by spin quantum number

(iii) Kinetic energies of two subatomic particles,having same de-Broglie`s

wavelength is same.

The correct statements is/are

A. only (I)

B. only (ii)

C. only (i) and (ii)

D. (i),(ii), and (iii)

Answer:

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44. Number of electrons of $Cr^{\oplus}$ having azimuthal quantum number (l) = 0, in its ground state is

A. 7

B. 6

C. 5

D. 8

Answer:

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45. Two elements P and Q combine to form two different compounds in stoichimetric ratios of 1:2 and 1:3.If 0.25 mole of 1^{st} compound weighs 16 g and 0.05 mole of 2^{nd} compound weighs 4 g, then the atomic weighs of P and Q respectively are

A. 8 and 32

B. 16 and 16

C. 16 and 32

D. 32 and 16

Answer:

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46. CaF_2 is sparingly soluble salt having $K_{sp} = 4.43 \times 10^{-16}$. If in a saturated solution of CaF_2, calcium ions are increased and its concentration becomes four times. The fluoride ion concentration will become

A. One fourth

B. Double

C. One third

D. Half

Answer:

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47. Which of the following reaction is associated with amine as a product?

A. HVZ

B. Schmidt

C. Curtius

D. Both (2) & (3)

Answer:

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48. Which of the following artificial sweeteners is sweetest?

A. Aspartame

B. Saccharin

C. Alitame

D. Sucralose

Answer:

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49. Mention three colligative properties.

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50. Number of σ and π bonds in anthracene will be equal to respectively

A. 30σ and 9π

B. 30σ and 7π

C. 26σ and 9π

D. 26σ and 7π

Answer:

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51. Hydrolysis of sucrose in acidic medium is known as

A. Esterification

B. Mutarotation

C. Saponification

D. Inversion

Answer:

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52. Write the units of enthalpy, entropy and free energy

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53. The weight of 1 atom of an element is 4.68 x 10^{-23}.what is its atom mass?

A. 28

B. 32

C. 35

D. 24

Answer:

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54. The weight of 1 atom of an element is 6.98 x 10^{-23}.what is its atom mass?

A. 16

B. 36

C. 42

D. 32

Answer:

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55. Benzene on controlled oxidation with V_2O_5 forms

A. Succinic acid

B. Maleic anhydride

C. Glyoxal

D. Oxalic acid

Answer:

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56. The weight of 1 atom of an element is 8 x 10^{-23}.what is its atom mass?

A. 48

B. 52

C. 60

D. 56

Answer:

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57. The weight of 1 atom of an element is 7 x 10^{-23}.what is its atom mass?

A. 48

B. 42

C. 46

D. 50

Answer:

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58. 78.8 kg of gold was recovered from a smuggler. The atoms of gold recovered are:

A. 3.01 x 10^{23}

B. 24.08 x 10^{25}

C. 3.x 10^{25}

D. None of these

Answer:

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59. What is the mass in grams of one molecule of caffeine ($C_8H_{10}N_4O_2$)

?

A. 3.22 x 10^{-22}

B. 32.2 x 10^{-22}

C. 3.22 x 10^{-23}

D. 322 x 10^{-22}

Answer:

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60. Glycerol reacts with 3 moles of HI to form 'X' and excess of HI to form Y. Here 'Y' and 'X' are respectively

A. Allyl iodide and 2-Iodopropane

B. Allyl iodide and propene

C. 2-Iodopropane and Allyl iodide

D. 1-Iodopropane and Allyl iodide

Answer:

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61. Isoprene can form two polymers which are natural rubber and gutta percha. They are related to each other by

A. Geometrical isomerism

B. Metamerism

C. Optical isomerism

D. Chain isomerism

Answer:

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62. Find out the oxidation state of tin in its salt, when 11.0 g of deposited when a current of 1.0 A is passed for 5 hours through molten salt.

(Given atomic weight of tin = 119)

A. 1

B. Zero

C. 3

D. 2

Answer:

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63. Find out the incorrect statement.

A. Al is least electronegative element in group 13

B. Number of B-O-B linkages in $Na_2B_4O_7.10H_2O$ is six

C. Basicity of H_3BO_3 and H_3PO_3 are 1 and 2 respectively

D. Bond order of CO^+ is more than CO

Answer:

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64. Which of the following is/are acidic salts?

A. NaH_2PO_4

B. NaH_2PO_2

C. Na_2HPO_3

D. All of these

Answer:

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65. Which of the following is correct relation of stability?

A. $N_2 < O_2$

B. $H_2 < Li_2$

C. $H_2^+ < H_2^-$

D. $N_2^+ > O_2^+$

Answer:

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66. Which of the following does not follow EAN rule?

A. $\left[Cr(H_2O)_6\right]Cl_3$

B. $\left[Co(NH_3)_6\right]Cl_3$

C. $Ni(CO)_4$

D. $K_4\left[Fe(CN)_6\right]$

Answer:

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67. Strongest base among following is

A. $Ce(OH)_3$

B. $La(OH)_3$

C. $Yb(OH)_3$

D. $Lu(OH)_3$

Answer:

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68. In which of the following there will be no Jahn-Teller effect with either weak of strong ligand?

A. d^4

B. d^3

C. d^9

D. d^2

Answer:

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69. Find out the pair of isostructural compounds.

A. lCl_4^- and XeF_4

B. lCl_4^- and XeF_2

C. BrO_3^- and XeO_3

D. Both (1) & (3)

Answer:

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70. The sum of σ and $d\pi - p\pi$ bonds in $H_4P_2O_7$ is

A. 12

B. 14

C. 10

D. 8

Answer:

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71. Aluminium forms a carbide 'x' which react with water to give a gas 'y' . 'y' does not react with Br_2 water. Give 'x' and y respectively.

A. C_2H_2, Al_4C_3

B. Al_4C_3, CH_4

C. CH_4, Al_4C_3

D. Al_2C_3, C_3H_4

Answer:

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72. Which of the following process is carried out for concentration when impurity of SiO_2 is in excess in bauxite ore?

A. Zone refining

B. Serpeck's process

C. Bayer's process

D. Mond's process

Answer:

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73. In excess, which of the following can harm bones and teeth?

A. SO_4^{2-}

B. NO_3^-

C. F^-

D. All of these

Answer:

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74. The degree of hardness of 1 L sample of water having 0.025 g of $MgCl_2$ is

A. 28.4

B. 21.3

C. 23.6

D. 26.3

Answer:

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75. A gaseous reaction $A_2(g) \rightarrow B(g) + \frac{1}{2}C(g)$ shows increase in pressure form $100mm$ to $120mm$ in $5\ \min$. What is the rate of disappearance of A_2 ?

A. 40

B. 10

C. 8

D. 20

Answer:

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76. Draw the stable shape of PF_3Cl_2.

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77. Oxygen is difficult to liquify as compared to ammonia, then which of the following is true about oxygen as the reason for this fact?

A. It has high bond dissociation enthalpy

B. Its electronegativity is high

C. It has high critical temperature

D. It has low critical temperature

Answer:

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78. Calculate the concentration of OH^- ions in a solution prepared by mixing equal volumes of 0.2 M methyl amine and 0.6 M $CH_3NH_3^+Cl^-$ $\left[Given K_b = 3.6 \times 10^{-4}\right]$

A. $1.2 \times 10^{-4} M$

B. $3.6 \times 10^{-2} M$

C. $1.85 \times 10^{-5} M$

D. $3.6 \times 10^{-4} M$

Answer:

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79. Enthalpy of dissociation of $H_2C_2O_4 \rightarrow 2H^+ + C_2O_4^{2-}$ will be _____ if enthalpy of neutralisation of strong acid and strong base is -13.7 kcal mol^{-1} and that of oxalic acid by a strong base is -25 kcal mol^{-1}.

A. 1.2 kcal mol^{-1}

B. 11.7 kcal mol^{-1}

C. -11.3 kcal mol^{-1}

D. 2.4 kcal mol^{-1}

Answer:

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80. Which of the following is most soluble in water?

A. $BeCO_3$

B. $MgCO_3$

C. $BaCO_3$

D. $CaCO_3$

Answer:

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81. When $FeCl_3$ solution is added to NaOH a negatively charged sol is obtained. It is due to the:

A. May be + ve or-ve charge

B. No charge

C. $+vechar \geq$

D. $-vechar \geq$

Answer:

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82. A crystal is made of particles X,Y and Z.X form fcc packing . Y occupies all the octahedral void of X and Z occupies all the tetrahedral voids of X . If all the particles along one body diagonal are removed then the formula of the crystal would be:

A. $x_5y_5z_4$

B. $x_3y_3z_5$

C. $x_5y_7z_8$

D. $x_5y_5z_8$

Answer:

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83. Equivalent weight of MnO_4^- in the following reaction will be

$2MnO_4^- + l^- + H_2O \rightarrow 2MnO_2 + lO_3^- + 2OH^-$

A. $\frac{M}{3}$

B. $\frac{M}{5}$

C. $\frac{3M}{11}$

D. $\frac{M}{11}$

Answer:

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84. Two electrons move around the nucleus in circular orbits of 'R' and '4R' in an atom. Find out the ratio of time taken by them to complete one complete revolution.

A. $1:4$

B. $4:1$

C. $1:8$

D. $8:1$

Answer:

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85. 254 g of l_2 reacts completely with 142 g of Cl_2 to yield a mixture of ICI and ICI_3. Ratio of moles of ICI and ICI_3 is

A. $1:3$

B. $2:3$

C. $1:1$

D. $1:2$

Answer:

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86. Reaction quotient (Q) for Daniell cell is $\frac{[Zn^{+2}]}{[Cu^{+2}]}$. Calculate its value if E_{cell} is 1.1591 and E^o_{cell} is 1.10 volts.

A. $Q = 10^{-2}$

B. $Q = 10^{-3}$

C. $Q = 10^{+}2$

D. $Q = 10^{+}1$

Answer:

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87. Which of the following configurations does not follow Hund's rule of maximum multiplicity?

A. 

B. 

C. 

D. Both (2) & (3)

Answer:

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88. Calculate the molar mass of Ammonium nitrate

A. 40

B. 80

C. 84

D. 60

Answer:

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89. Market price for methyl alcohol, ethylene glycol and glycerol are same per kilogram. Which will cost least as antifreeze?

A. Methyl alcohol

B. Ethylene glycol

C. Glycerol

D. All will have same cost

Answer:

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