ZENITH TUTORIALS CHM101 PDF 1

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1. Determinate errors can be minimized by any of the following except (a) Running a blank determination (b) Running parallel determination (c) Calibration of apparatus (d) Use of external standard

   The correct option is D

2. The error committed by an analyst who claimed not to observe any colour change with methyl orange indicator during acid-base titration is termed (a) Indeterminate (b) Determination methodical (c) Determinate, instrumental (d) Determinate, personal

   The correct option is D

3. _____is the departure of the result from the true value (a) Precision (b) Error (c) Accuracy (d) Bias

   The correct option is B

4. _____is the trueness or the closeness of the analytical result to the true value (a) Precision (b) Relative error (c) Bias (d) Accuracy

   The correct option is D

5. The consistent deviation of analytical result from the value caused by systematic errors in a procedure is (a) Error (b) True value (c) Bias (d) Accuracy

   The correct option is C

6. The components contributing to bias are laboratory, sample and _____bias (a) Peak (b) True (c) Method (d) Experimental

   The correct option is C

7. A researcher measures the mass of a sample to be 5.51g. The actual mass of the sample is known to be 5.80g. Calculate the error of the measurement (a) 0.29g (b) 0.29g (c) -0.29g (d) -0.92g

   The correct option is C

8. One of the following scientists did not contribute to the elucidation of the structure of the atoms (a) Sir Isaac Newton (b) James Chadwick (c) J.J. Thompson (d) Ernest Rutherford

   The correct option is A

9. Dalton's atomic theory was limited by the fact that (a) He did not explain the existence of isotope (b) He stated that matter consists of tiny particles (c) Atoms can neither be created nor destroyed (d) New atoms can be formed by pre-existing ones

The correct option is A

10. Neutron was discovered by (a) Mosely (b) Rutherford (c) Chadwick (d) Milikan

The correct option is C

11. S-orbital is _____in shape (a) Dumb-bell (b) Spherical (c) Directional (d) Circle

The correct option is B

12. An orbital contains_____electrons and a shell contains ____electrons (a) 2 and 2n (b) $2n^2$ and 2 (c) 2 and $2n^2$ (d) 2 and n^2

The correct option is C

13. _____is called the size of the orbitals (a) Shell (b) Sub-shell (c) Quantum number (d) Energy level

The correct option is A

14. Write the designation for the orbital occupied by an electron described by n=3,1=2 (a) 3p (b) 2p (c) 3d (d) 4f

The correct option is C

15. Which of these orbitals represents an electron described with these quantum number $n = 4\ \ l = 0$ (a) $4s$ (b) $2s$ (c) $3s$ (d) $5s$

The correct option is A

16. Which is the valence shell electron configuration of the element with atomic number 17 (a) $1s^2 2s^2 2p^6 3s^2 3p^4$ (b) $1s^2 2s^2 2p^6 3s^2 3p^5$ (c) $1s^2 2s^2 2p^6$ (d) $1s^2 2p^6 3s^6$

The correct option is B

17. Which of the following determines the size of an orbital? (a) Principal (b) Azimuthal (c) Magnetic (d) Spin quantum number

The correct option is A

18. _____occupy the same place in the periodic table (a) Isobars (b) Isotopes (c) Isotones (d) None

The correct option is B

19. The electronic configuration of isotopes of an element are (a) Same (b) Different (c) Closer (d) None

The correct option is A

20. _____are nuclides with the same number of neutrons but different number of proton (a) Isotope (b) Isobars (c) Isoyet (d) Isotones

The correct option is D

21. Which of this reaction is an oxidizing agent

$Mn0\bar{4} + 8H^2 \rightarrow Mn^{2+} + 4H_2O$

(a) $Mn0\bar{4}$ (b) Mn^{2+} (c) H_20 (d) $S0_4^{2-}$

The correct option is A

22. The mass number is the same thing as

(a) Proton number (b) Nucleon number (c) Electron number (d) Neutron number

The correct option is B

23. What is the oxidation number of Mn in 2M$n0_4^-$

(a) +4 (b) +3 (c) +2 (d) +7

The correct option is D

24. The oxidation number of carbon in $C_20_4^{2-}$

(a) +3 (b) -2 (c) -1 (d) +2

The correct option is A

25. The mean of the following CHM experiment

23,49, 24.69, 20.49, 62.54, 21.00 is

(a) 30.44 (b) 22.42 (c) 40.44 (d) 30.33

The correct option is B

26. Accuracy is estimated in one of following

(a) Absolute error (b) Standard error (c) Probable error (d) Standard deviation

The correct option is A

27. Round off 58.3 + 0.039-25.92 to 3 significant figures

(a) 32.41 (b) 32.42 (c) 32.4 (d) 22.4

The correct option is C

28. Oxidation number of hydrogen is – 1 in which of the following

(a) NAOH (b) H_20_2 (c) N_aH (d) H_2S0_4

The correct option is C

29. Which of the following discovered electron

(a) Chadwick (b) Dalton (c) J.J. Thompson (d) Millikan

The correct option is C

30. Which of the scientists named electron

(a) G.J Stoney (b) J.J. Thompson (c) Millikan (d) Chadwick

The correct option is A

31. The scientist that calculated proton charge to mass ratio is

(a) J.J. Thompson (b) G.J. Stoney (c) Millikan (d) Chadwick

The correct option is A

32. Oxidation is the addition of hydrogen and reduction is the addition of oxygen (a) True (b) False (c) None of the above (d) All of the above

The correct option is B

33. One of the following is not related to precision

(a) Average deviation (b) Standard deviation (c) Probable error (d) Standard error

The correct option is D

34. Which of the following is not an example of an electrolyte

(a) N_aCl (b) Sugar solution (c) Acidified water (d) H_2S0_4

The correct option is B

35. Oxidation is the gain of electrons while reduction is the loss of electron

(a) True (b) False (c) I don't know (d) A and B

The correct option is B

36. Electron was discovered by who?

Sir J.J Thompson (b) Isaac John Dalton (c) John Dalton (d) Chad wick

The correct option is A

37. $4Mn0_2^- + 0H^+ \leftarrow Mn^{2+} + H_20$

What is the change in the number of oxidation of Mn

(a) +4>+2 (b) +6 > +2 (c) +8 > + 2 (d) + 3 > + 2

The correct option is D

38. _____is the degree of closeness between replicate set of measurement or analysis

(a) Accuracy (b) Data (c) Precision (d) Error

The correct option is C

39. Oxidation number of Na of NaOH is

(a) +2 (b) +1 (c) +3 (d) -1

The correct option is B

40. Who was the first person to invent mass spectrometer?

(a) Chadwick (b) Francis Aston (c) J.J. Thompson (d) John Dalton

The correct option is B

41. Which of the following is an Oxidizing Agent in the equation below $Mn0_4^- + Fe^{2+} \leftarrow Mn^{2+} + Fe^{3+}$ (a) $Mn0_4^-$ (b) Fe^{2+} (c) Mn^{3+} (d) Fe^{3+}

The correct option is A

42. Where is hydrogen said to be – 1

(a) Halides (b) Hydride (c) Peroxide (d) Hydroxyl

The correct option is B

43. Oxidation is the addition of electropositive elements and reduction is the removal of electronegative elements (a) True (b) False (c) I don't know (d) None of the above

The correct option is B

44. The oxidation of elements is its neutral state is

(a) +2 (b) -2 (c) +1 (d) 0

The correct option is D

45. X = equal volume of all gases at the same temperature and pressure contain an equal number of molecules

Y = number of molecules in one of gas of 6.0255×10^{22}

Which of the above is correct

(a) X and Y (b) X only (c) Y only (d) X and Y are incorrect

The correct option is B

46. Find the oxidation number of chromium in the oxidizing agent $K_2Cr_20_7$

(a) +5 (b) +3 (c) +4 (d) +6

The correct option is D

47. What is the oxidation number of hydrogen?

(a) -1 (b) +2 (c) +1 (d) -2

The correct option is C

48. How many atoms of copper are present in 35.4g of copper (Cu = 63.5)

(a) 3.35×10^{23} atoms (b) 3.02×10^{22} atoms (c) 3.35×10^{22} atoms (d) 3.35×10^{21} atoms

The correct option is A

49. Convert 6.36500 to 3 significant figure

(a) 6.36 (b) 6.37 (c) 6.33 (d) 6.35

The correct option is B

50. The oxidation number of oxygen in Hydrogen peroxide is

(a) +2 (b) -2 (c) +1 (d) -1

The correct option is D

51. A boy measured the mass of a ball as 52.63g and the actual mass of the ball is 58.78g, calculate the percentage relative error

(a) -10.3% (b) -10.5% (c) -10.7% (d) -10.13%

The correct option is B

52 Precision is referred to as

(a) Measurements that are within 1 min (b) Highly accurate data (c) Level of measurement and exactness of description in a data (d) Logical accuracy

The correct option is C

53. Find the mean deviation of 4.31, 3.20, 4.09, 11.09, 3.02, 4.30 and 5.06

(a) 0.54 (b) 0.52 (c) 0.20 (d) 0.30

The correct option is A

54. Who proposed atomic theory?

(a) James Chadwick (b) G.J. Stoney (c) John Dalton (d) J.J. Thompson

The correct option is C

55. Oxidation number of Mn changes from _____to____ in the following reaction

$2Mn0_4^- + C0 + 14H^+ \leftarrow 2Mn^{2+} + C0_2 + 7H_20$

(a) +4 →+2 (b) +7→+2 (c) +5 →+2 (d) +2→+7

The correct option is B

56. The root mean square error of a cyanide in cassava is 0.45g, the mean of cyanide is 6.38. what is the variance of the cyanide (a) 0.2025 (b) 0.2051 (c) 0.0001 (d) 0.3594

The correct option is A

57. Which of the following is the least conductor of electricity(a) $ZnS0_4$ (b) HCl (c) NH_3 (d) $NaCl$

The correct option is C

58. Two samples A and B have a mass of Ma and Mb, kinetic energy Ea. and Eb where T is the temperature of the gases, which of the following is correct

(a) $Ea \neq Eb$ (b) $Ea = Eb$ (c) $Ea < Eb$ (d) $Ea > Eb$

The correct option is B

59. The addition of higher electronegativity element is (a) Oxidation (b) Reduction (c) None of the above (d) Redox

The correct option is A

60. A scientist measured an object to have a mean of 6.36 while the value is 6.20. calculate the percentage relative error (a) 3.57% (b) 4.76% (c) 2.58% (d) 5.91%

The correct option is C

61. In the purification of cooper. What is the cathode half reaction?

(a) $Cu^{2+} + 2e^- = Cu$ (b) $Cu^{2+} + 2e^- = 2Cu$ (c) $Cu \rightarrow Cu^{2+} + 2e^-$ (d) $Cu^{2+} + 2e^- \rightarrow Cu^{2+} \rightarrow Cu^{2+}$

The correct option is A

62. _____is the electronic configuration of ${}_{17}^{?}Cl$ (a) $1S^2 2S^2 3P^6 4S^2 4P^6$

(b) $1S^2 2P^3 3P^4 4s^6$ (c) $1s^2 2s^2 2p^6 3s^2 3p^5$ (d) $1s^2 2s^2 2P^6 3s^2 3p^6$

The correct option is C

63. All these are basic laws upon stoichiometry except (a) Law of conservation of mass (b) Law of definite proportion (c) Law of multiple proportion (d) Law of conservation

The correct option is D

64. Determinate errors are classified into (a) 4 (b) 7 (c) 2 (d)8

The correct option is C

65. _____are errors due to apparatus or reagent (a) Instrumental error (b) Operative error (c) Personal error (d) Methodical error

The correct option is A

66. Calculate the formula of a compound which has the following of magnesium of 9.8%, sulphur 13%, oxygen 26%, water of crystallization 51.2%

(a) $MgS0_4.5H_20$ (b) $MgS0_3.7H_20$ (c) $MgS0_4.7H_20$ (d) $MgS0_3.5H_20$

The correct option is C

67. Round off to 3 significant figures 5.38 x 2,53 ÷ 3.23

(a) 4.41 (b) 5.30 (c) 7.310 (d) 4.21

The correct option is D

68. Which of the following is an oxidizing agent and reducing agent $Fe_20_3 + 3C0 \rightarrow 2Fe + 3C0_2$ (a) Fe_20_3 is a reducing agent and $C0_2$ is an oxidizing agent (b) Fe_20_3 is an oxidizing agent and 3CO is a reducing agent (c) Fe_2C0_3 is a reducing agent and 3CO is a oxidizing agent (d) Fe_20_3 is a oxidizing agent and $C0_3$ is reducing agent

The correct option is B

69. How many numbers of moles of oxygen atoms are there in 0.3 mole of $S0_2$

(a) 02mol (b) 0.4mol (c) 0.3mol (d) 0.6mol

The correct option is D

70. R.A Millikan contributed in (a) Electron affinity (b) Neutron and Proton (c) Charge to mass ratio for the electron (d) Nucleus

The correct option is C

71. In the bombardment of the alpha particles, the positive ions are trapped in ____

(a) Magnetic field (b) Electric field (c) Ionization chamber (d) Vacuum pump

The correct option is C

72. Millikan discovered? (a) Cathode ray (b) Proton ray (c) Charge on an electron (d) Mass

The correct option is C

73. Convert 5.36799 to 3 significant figures (a) 5.367 (b) 5.37 (c) 5.370 (d) 5.368

The correct option is B

74. Given $\frac{Zn}{Zn^{2+}}//Pb^{2+}/Pb$ where Zn^{2+}/Zn = 0.76v and $Pb^{2+}/Pb = -0.13v$. what is the EMF of the cell (a) 0.89v (b) 0.82v (c) 0.76v (d) 0.13v

The correct option is A

75. Round off 5.83 + 0.069-2.29679 to 3 significant figures (a) 3.60 (b) 3.61 (c) 3.6 (d) 3.62

The correction option is A

76. Which of the following is not one of the uses of electrolysis (a) Extraction of aluminium (b) Purification of metals (c) Extraction of iron (d) Tin plating

The correct option is C

77. Error is divided into (a) 3 (b) 4 (c) 7 (d) 2

The correct option is D

78. Atomic theory was supported by experimental evidences except (a) Law of conservation of mass (b) Law of multiple proportion (c) Frose law (d) Avogadro's law

The correct option is C

79. ____is a chemical substance that dissociates in water to give proton (a) Acid (b) Base (c) Buffer solution (d) Basic

The correct option is A

80. Round up 6.7560 to 3 significant figure (a) 6.750 (b) 6.7560 (c) 6.76 (d) 6.756

The correct option is C

81 Find the atom particle of mass 63g of copper (Cu=63.5g/mol) (a) 5.0 x 10^{22} atoms (b) 5.96 x 10^{23} atoms (c) 4.96 x 10^{22} atoms (d) 4.0 x 10^{23} atoms

The correct option is B

82. Which of the following does not describe the gas theory (a) Gravity does not attract gases because gases are so light that gravity does not act on them (b) Gas molecules moves in random motion (c) The kinetic energy function as it temperature increases (d) Gas molecules contain small molecules but large distance between them (e) None of the options

The correct option is E

83. The method of coating the surface of a metal is ____(a) Electroduction (b) Electroplating (c) Electrometal (d) Electrolysis

The correct option is B

84. In an electrochemical cell, the symbol// represents ____(a) Salt bridge (b) Electrolyte (c) Boundary (d) Volt cell

The correct option is A

85. If X = - $Log_{10}^{[H^+]}, [H^+]$ denotes (a) Equilibrium constant (b) Hydroxyl concentration (b) Degree of Hydrogen concentration (d) Enthalpy change

The correct option is C

86. Ionization energy decreases down the group due to (a) Increase in ionic radius (b) Increase in atomic radius (c) Decrease in atomic radius (d) Decrease in ionic radius

The correct option is B

87. The electronic configuration of isotopes of an element is? (a) Different (b) Same (c) Similar (d) I don't know

The correct option is B

88. An error that varies from one measurement to another is called (a) Random error (b) Operative error (c) Instrumental error (d) Systematic error

The correct option is D

89. The difference between the experimental value and the true value is (a) Error (b) Mistake (c) Precision (d) Accuracy

The correct option is A

90. Calculate $\frac{5.8\ x\ 2.568}{4.186}$ (a) 3.5581 (b) 3.56 (c) 3.55 (d) 4.6

The correct option is D

91. Reducing agent _____(a) Is reduced (b) Is oxidized (c) Gain electron (d) Decrease in the number of oxidation

The correct option is B

92. Oxidizing agent _____ (a) Is reduced (b) Is oxidized (c) Loses electron (d) Increase in the number of oxidation

The correct option is A

93. The shape of the D-orbital is (a) Spherical (b) Dumb bell (c) Spherical circular (d) Double dumb bell

The correct option is D

94. Give the number of electrons in Na^+ and Cl^- (a) 11 and 17 (b) 10 and 17 (c) 10 and 18 (d) 12 and 18

The correct option is C

95. The screening effect is a factor that has more effect on the (a) Period (b) Group (c) Orbitals (d) Electron shells

The correct option is D

96. Which of the following quantum numbers defines the main energy level the electrons occupies _____(a) Azimuthal (b) Magnetic (c) Spin (d) Principal

The correct option is D

97. The nucleus of an atom consists of ____and___ (a) Proton and Neutron (b) Proton and electron (c) Electron and Neutron (d) Mass no and Atomic no

The correct option is A

98. Which of the scientists modified Dalton's atomic theory (a) Chadwick (b) Niels Bohr (c) Millikan (d) Rutherford

The correct option is B

99. The mutual repulsion between electrons causing an increase in atomic radius is referred to as ____(a) Screening expulsion (b) Screening force (c) Screening effect (d) Inductive effect

The correct option is C

100. In the arrangement of electrons in the orbital, electrons are arranged singly before pairing. Which law is obeyed (a) Pauli's (b) Dalton's (c) Bohr's (d) Hund's

The correct option is D

101. In a laboratory, a gaseous compound of carbon and hydrogen contain 80% carbon by mass. The molar mass of the hydrocarbon is 30.2g. Calculate both the empirical and molecular formula of the hydrocarbon (C=12,H=1) (a)CH_3 and C_2H_6 (b) CH_4 and C_2H_6 (c) CH_3 and C_3H_6 (d) CH_4 and C_4

The correct option is A

102. Calculate the molarity of a solution which contains 6.00g of NaCl (Molar weight = 58.44) in 200cm^3 of the solution (a) 0.521moldm^{-3} (b) 0.413 moldm^{-3} (c) 0.513 moldm^{-3} (d) 0.214moldm^{-3}

The correct option is C

103. Calculate the amount of moles and in grams of KMn0_4 present in 3.00dm^3 of a 0.240M solution (MW=158.0) (a) 0.75mol and 119g (b) 0.25mol and 158g (c) 0.75mol and 158g (d) 0.25mol and 119g

The correct option is A

104. What mass of copper (II) sulphate could be obtained by starting with 10g of copper (II) oxide from the following reaction

$Cu0_{(s)} + H_2SO_{4(L)} \longrightarrow CuSO_{4_{(s)}} + H_20_{(L)}$

1 : 1 1 : 1

(a) 20.02g (b) 20.1g (c) 20.09g (d) 20.45g

The correct option is B

105. What is the number of copper atoms in one naira coin which weighs 7.39g (Assume the material from which the coin was made contains 86% of Copper) (Cu=63.5g/mol) (a) 6.20 x 10^{22} atoms (b) 6.20 x 10^{23} atoms (c) 6.30 x 10^{23} atoms (d) 6.03 x 10^{23} atoms

The correct option is A

106. $45.7cm^3$ of 0.5moldm^{-3} H_2S0_4 is required to react completely with $20cm^3$ sample of sodium hydroxide solution. What is the concentration of sodium hydroxide in moldm^{-3} and gdm^{-3} (a) 20.4moldm^{-3} and 80.6 gdm^{-3} (b) 2.29moldm^{-3} and 80.6gdm^{-3}(c) 2.29moldm^{-3} and 91.6gdm^{-3} (d) 4.29moldm^{-3} and 80.6 gdm^{-3}

The correct option is C

107. A redox reaction is made up of ____and___ reaction (a) Oxidation and Reductive (b) Oxidation and Oxidation (c) Oxidation and Reduction (d) Reduction and Reduction

The correct option is C

108. What happens to the electrolyte in the electrolysis of copper (II) chloride solution using copper as the electrode? The electrolyte becomes (a) Uncharged (b) Diluted (c) Acidic (d) Basic

The correct option is A

109. Which of the following ions will migrate to the cathode during electrolysis? (a) Cl^- (b) Zn^{2+} (c) S^{2+} (d) $S0_4^{2-}$

The correct option is B

110. If $2S0_{3_{(g)}} \leftrightarrow 2S0_{2_{(g)}} + 0_{2_{(g)}}$ $(\Delta H = -ve)$

Which of the following factors will increase the yield of $S0_2$?

(a) Decrease in temperature (b) Increase in pressure (c) Increase in temperature (d) Addition of 0_2

The correct option is A

111. The oxidation number of an uncombined atom of Lithium is (a) +1 (b) -1 (c) I don't know (d) 0

The correct option is D

112. The name of the scientist that defined the PH scale is (a) Lauter Peter (b) Peter Sorenson (c) Peter Sorensen (d) Soren Sorenson

The correct option is C

113. The solution that resists changes in PH when limited amount of acid or base is added to it is ____ (a) Acid (b) Base (c) Salt (d) Buffer

The correct option is D

114. When an element loses an electron, it becomes (a) Positively charged (b) Negatively charged (c) Uncharged (d) Neutral

The correct option is A

115. When an element gains an electron, it becomes (a) Positively charged (b) Negatively charged (c) Uncharged (d) Neutral

The correct option is B

116. The substance that leads to a decrease in the oxidation number of a substance is called ____
(a) Oxidising agent (b) Reducing agent (c) Redox (d) Reduxidation

The correct option is B

117. The type of error caused by the tip of the pipette being broken can be classified as (a) Operative (b) Personal (c) Indeterminate (d) Instrumental

The correct option is D

118. A person claimed not to observe any colour change with using methyl orange indicator during acid-base titration. This type of error is classified as ____ (a) Operative (b) Personal (c) Indeterminate (d) Instrumental

The correct option is B

119. The electronic configuration of Al^{3+} is
(a) $Is^2 2S^2 2p^6 3s^2 2p^4$ (b) $Is^2 2s^2 2p^6 3s^2$ (c) $Is^2 2s^2 2p^6$ (d) $Is^2 2s^2 2p^6 3s^2 2p^1$

The correct option is C

120. Which of the following has the same electronic configuration as $_{18}$Ar (a) Cl^- (b) Ga^+ (c) Na^+ (d) Fe^{2+}

The correct option is A

121. Photolytic reaction takes place in the presence of ____(a) Heat (b) Catalyst (c) Light (d) Temperature

The correct option is C

122. The balanced equation for the reaction $C_6H_{14} + 0_2 \longrightarrow C0_2 + H_20$ is
(a) $2C_6H_{14} + 190_2 \rightarrow 12C0_2 + 14H_2O$
(b) $C_6H_{14} + 70_2 \rightarrow 6C0_2 + 7H_2O$
(c) $2C_6H_{14} + 80_2 \rightarrow 6C0_2 + 7H_2O$
(d) $C_6H_{14} + 190_2 \rightarrow 12C0_2 + 14H_2O$

The correct option is A

123. What mass of CH_3CH_2C00H would be dissolved in a mixture of 60g of H_2O and 55g of $CH_3CH_2CH_2OH$. If the mole fraction of propanoic acid is 0.054 (a) 17.89g (b) 17.48g (c) 17.91g (d) 17.08g

The correct option is C

124. A combination of the two Faraday's laws of electrolysis can be expressed mathematically as (a) m $\propto Q$ (b) m $\propto E$ (c) m $\propto$ It (d) m $\propto$ EIt

The correct option is D

125. A Lewis base ____ (a) Donates protons (b) Accept protons (c) Donates lone pair of electrons (d) Accept a lone pair of electrons

The correct option is C

126. $H_2S_{(g)} + Cl_{2_{(g)}} \rightarrow 2HCl_{(g)} + S_{(g)}$

The reducing agent in the above reaction is? (a) H_2S (b) Cl_2 (c) $2HCl$ (d) S

The correct option is A

127. $2Mn0_4 + S0_3^{2-} + H^+ \rightarrow S0_4^{2-} + Mn^{2+} + H_20$

Balance the above reaction in an acidic medium

(a) $2Mn0_4^- + 5S0_3^{2-} + 6H^+ \rightarrow 2Mn^{2+} + 5S0_4^{2-} + 3H_20$

(b) $4Mn0_4^- + 8S0_3^{2-} + 5H^+ \rightarrow 2Mn^{2+} + 5S0_4^{2-} + 9H_20$

(c) $2Mn0_4^- + 5S0_3^{2-} + 6H^+ \rightarrow 8Mn^{2+} + 4S0_4^{2-} + 3H_20$

(d) $4Mn0_4^- + 5S0_3^{2-} + 5H^+ \rightarrow 2Mn^{2+} + 5S0_4^{2-} + 9H_20$

The correct option is A

128. In the reaction, $N_2 + 3H_2 \rightarrow 2NH_3$

The unit for K_c for the reaction is (a) mol^2dm^{-6} (b) $mol^{-2}dm^6$ (c) $mol^{-2}dm^{-6}$ (d) mol^2dm^6

The correct option is B

129. Consider the following equilibrium at 127^0C. Calculate K_p for the reaction, if $K_c = 2.6 \text{ x } 10^{-5}$

$2NH_{3_{(g)}} \rightarrow N_{2_{(g)}} + 3H_{2_{(g)}}$ (a) $2.6 \text{ x } 10^{-5}$ (b) 0.028 (c) 0.25 (d) 3.890

The correct option is B

130. The element used as an electrode in car battery is? (a) Potassium (b) Sodium (c) Magnesium (d) Lead

The correct option is D

131. How many moles of hydrogen ion will be produced at the cathode during electrolysis of water with a current of 4 A for a period of 100s? (a) $2.07 \text{ x } 10^{-3}$mol (b) $4.14 \text{ x } 10^{-3}$mol (c) $2.07 \text{ x } 10^{-2}$mol (d) $4.14 \text{ x } 10^{-3}$mol

The correct option is A

132. The reaction of electrolysis takes place in a unit called? (a) Electrolyse (b) Electrote (c) Electrolyzer (d) Electrode

The correct option is C

133. The equilibrium constant of the reaction between 0.012moldm^{-3} of propanol and 0.832moldm^{-3} of butanoic acid to give 0.174moldm^{-3} propylbutanoate is (a) 4.03 (b) 3.03 (c) 5.03 (c) 5.03 (d) 6.03

The correct option is B

Use the data below to answer question 134 and 135

3.65, 4.11, 3.59, 7.51, 3.95, 3.87, 4.06, 1.48, 3.60, 3.76, 3.99

134. If the true mean value is 3.92, the absolute error is (a) 0.32 (b) -0.32 (c) 0.08 (d) -0.08

The correct option is D

135. The percentage relative accuracy is (a) 0.9184% (b) 91.84% (c) 0.9796% (d) 97.96%

The correct option is D

136. The result obtained from the operation: 38.91 x (6.81 – 6.730) is Y. the value of Y is (a) 3.1128 (b) 3.113 (c) 3.11 (d) 3

The correct option is C

137. The number 30,849.28 was recorded to three significant figures, using scientific notation, it can be written as ____ (a) 3.085×10^6 (b) 3.085×10^4 (c) 3.08×10^4 (d) 3.09×10^4

The correct option is C

138. How many moles of atoms of oxygen are there in 0.1mole of $S0_2$ (a) 0.2mol (b) 0.4mol (c) 0.6mole (d) 0.8mol

The correct option is A

139. Calculate the number of oxygen atoms in 10g of H_2S0_4

(a) 2.46×10^{22} atoms (b) 2.46×10^{23} atoms (c) 4.46×10^{22} atoms (d) 4.46×10^{23} atoms

The correct option is B

140. How many moles of H_2S0_4 are there in 10g of the substance [H = 1, S = 32, O = 16g/mole]

(a) 0.102mole (b) 0.203mole (c) 0.304mole (d) 0.406mole

The correct option is A

141. Sodium combines with oxygen as follows: $4Na_{(g)} + 0_{2_{(g)}} \rightarrow 2Na_20_{(s)}$

What is the mass of 0_2 needed to burn 4.6g of sodium? (a) 1.8g (b) 1.9g (c) 1.4g (d) 1.6g

The correct option is D

142. The sample of aluminium has a mass of 5.4g. what is the number of moles of aluminium present and the number of atoms of aluminium in the sample (a) 0.4moles and 5.2×10^{23}atoms (b) 0.2moles and 5.2×10^{23}atoms (c) 0.4moles and 1.2×10^{23}atoms (d) 0.2moles and 1.2×10^{23}atoms

The correct option is D

143. 0.6025g sample of a chloride salt was dissolved in water and the chloride precipitated by adding excess silver nitrate. The precipitate of silver chloride was filtered, washed, dried and found to weight 0.7134g. calculate the percentage of chloride (CI) in the sample [C1 = 35.45, Ag = 107.87] (a) 21.29% (b) 29.29% (c) 25.45% (d) 19.45%

The correct option is B

144. Calculate the relative molecular mass of Copper (II) oxide and washing soda (a) 80g/mol and 286g/mol (b) 32g/mol and 286/mol (c) 80g/mol and 310g/mol (d) 32g/mol and 310g/mol

The correct option is A

145. Calculate the relative molecular mass of Quick lime and Calcium tetraoxophosphate V (a) 80g/mol and 286g/mol (b) 32g/mol and 286g/mol (c) 56g/mol and 310g/mol (d) 32g/mol and 310g/mol

The correct option is C

146. Find the percentage by mass of nitrogen in Magnesium trioxonitrate V(a) 5.7% (b) 16.2% (c) 18.9% (d) 64%

The correct option is C

147. What is the percentage by mass of carbon in limestone? (a) 40% (b) 12% (c) 48% (d) 17%

The correct option is B

148. An oxide of antimony is found to contain 24.73% oxygen. What is its empirical formula [Sb=122, O=16] (a) Sb_20_5 (b) Sb_20_7 (c) Sb_30_5 (d) Sb_30_7

The correct option is A

149. 8.00g of Iron when burned in air yielded 11.40g of its oxide. What is the empirical formula of this oxide? (a) $Fe0_3$ (b) Fe_20_5 (c) Fe_30_3 (d) Fe_20_3

The correct option is D

150. The characteristics odour of pineapple is due to ethylbutyrate, a compound containing carbon, hydrogen and oxygen. Combustion of 2.78mg of ethylbutyrate leads of formation of 6.32mg of $C0_2$ and 2.58mg of H_20. Calculate the empirical formula (a) $C_6H_{10}0_2$ (b) $C_6H_{12}0_2$ (c) $C_6H_{12}0$ (d) $C_3H_{12}0_2$

The correct option is B

151. How many moles of ammonia gas are there in $500cm^3$ of the gas (a) 0.032mol (b) 0.042mol (c) 0.022mol (d) 0.052mol

The correct option is C

152. What is the mass in grams of 1.45 x 1023 molecules of sucrose $C_{12}H_{22}0_{11}$ (a) 82.42g (b) 80.42g (c) 12.42g (d) 81.42g

The correct option is A

153. 45.7500cm^3 of 0.5moldm^3 in H_2S0_4 is required to react completely with 20cm^3 sample of sodium hydroxide solution. What is the concentration of sodium hydroxide in moldm^{-3} and gdm^{-3} (a) 4.29moldm^{-3} and 91.6g/dm^3 (b) 2.29moldm^{-3} and 80.6g/dm^3 (c) 4.29moldm^{-3} and 80. 6g/dm^3 (d) 2.29moldm^{-3} and 91.6g/d

The correct option is D

154. One mole of an ideal gas occupies 12L at 25^0C. what is the pressure of the gas? (a) 206kPa (b) 200kPa (c) 234kPa (d) 190kPa

The correct option is A

155. If 12grams of N_2 and 9.0grams of 0_2 are put into a 1.00 litre container at 270C. What is the total pressure in the container? (a) 224atm (b) 22.4atm (c) 221atm (d) 21.2atm

The correct option is B

156. For the dissociation of Sulphur (VI) oxide at 120^0C, the value of K_p with partial pressure is 1.78 x 10^{-6}atm. Calculate the corresponding value of K_c assuming ideal behaviour of gases. [R = 0.08205dm^3 atm $mol^{-1}K^{-1}$] (a) 7.52 10^{-8}moldm^{-3} (c) 5.52 x 10^{-8}moldm^{-3}(d) 8.52 x 10^{-8}moldm^{-3}

The correct option is C

167. In 1895, ____discovered that uranium salts emitted certain rays which had penetrating properties. (a) Newton (b) Charles (c) Henry (d) Becquerel

The correct option is D

158. Arrange the following in order of increasing frequency (α, β, y)

(a) $\alpha < \beta < \gamma$ (b) $\alpha > \beta > y$ (c) $\gamma < \beta < \alpha$ (d) $y > \beta > \alpha$

The correct option is A

159. 110g of a material was found to be 55g in 6 minutes. What is its half-life is?

(a) 16mins (b) 6mins (c) 6secs (d) 7mins

The correct option is B

160. If 10g out of 20g of substance Y present initially decomposed in 10seconds. The half-life is? (a) 10sec (b) 5sec (c) 15sec (d) 30sec

The correct option is A

161. Iodine-131 has a half-life of 8days. If there are 200grams of this sample, how much of 1- 131 will remain after 32days? (a) 10.4g (b) 9.5g (c) 12.5g (d) 16.4g

The correct option is C

162. One of the following is use of electrolysis (a) Electroplating (b) Purification of metals (c) Manufacture of chlorine (d) Tin plating (e) All of the above

The correct option is E

163. Convert 6.3056 to 3 significant figures

(a) 6.32 (b) 6.31 (c) 6.34 (d) 6.30

The correct option is B

164. $Mn + Zn^{2+} \rightarrow Mn^{2+} + Zn$

Which of this in the equation oxidized? (a) Zn^{2+} (b) Mn^{2+} (c) Mn (d) Zn

The correct option is C

165. In adding electron to the product side, the equation is said to be (a) reduction (b) Addition (c) Oxidation (d) Substitutions

The correct option is C

166. What is the oxidation number of oxygen in peroxide? (a) +1 (b) -1 (c) +2 (d) -2

The correct option is B

167. Which of the following compounds conducts electricity least (a) Zinc (II) Tetraoxosulphate VI (b) Ammonia (c) Sodium chloride (d) Sugar

The correct option is D

168. Who discovered planetary model of atom? (a) J.J. Thompson (b) Rutherford (c) Chadwick (d) John Dalton

The correct option is B

169. Addition of electronegativity element is? (a) Oxidation (b) Reduction (c) Redox (d) Substitution

The correct option is A

170. If A and B are both gases, Ma and Mb are their masses respectively and Ea. And Eb are their velocities, which of the following is true?

(a) Ea > Eb (b) Ea < Eb (c) Ea = Eb (d) Ea ≠Eb

The correct option is C

171. Which of the following is not susceptive to mathematical treatment?

(a) Methodical (b) Determinate (c) Constant (d) Systematic

The correct option is B

172. During purification of copper, what is the anode reaction?

(a) Oxidation occur/loss of electrons

(b) Reduction occurs/ gain of electrons

(c) Oxidation occurs because there is gain of electrons

(d) Reduction occurs because there is loss of electrons

The correct option is A

173. $Mn0_4^-$ is (a) Reducing agent (b) Oxidizing agent (c) Redox (d) None of the above

The correct option is B

174. Equal volume of hydrogen gas and oxygen gas diffuses through a porous pot for 24s and 98s respectively, calculate the relative rate between molar mass of hydrogen and oxygen gas

(a) $\frac{144}{2401}$ $(b)\frac{2401}{144}$ $(c)\frac{576}{2401}$ $(d)\frac{144}{9604}$

The correct option is A

175. Who discovered atom (a) Millikan (b) Rutherford (c) Chadwick (d) John Dalton

The correct option is D

176. Calculate the time taken for 6.36g of copper (ii) tetraoxosulphate vi of the current of 10A (Cu = 63.5g/mol, F 965000) (a) 33.24min (b) 32.22min (c) 33.22min (d) 32.24min

The correct option is B

177. Given a mean of 27.99 and the true value of 34.75. Calculate the relative error (a) -0.195 (b) -0.230 (c) -0.994 (d) -0.115

The correct option is A

178. Atomic theory was supported by except (a) Law of multiple proportion (b) Law of definite proportion (c) Frosh law (d) Proust's law

The correct option is C

179. Find the root mean square velocity of 8.7^0C, Molecular mass = 63.0Kg/mol of a substance

(a) 10.56m/s (b) 11.57m/s (c) 10.50m/s (d) 11.50m/s

The correction option is A

180. Find the mean of 27.37, 27.35, 27.45, 45.30, 11.00

(a) 20.50 (b) 27.5 (c) 27.51 (d) 20.51

The correct option is C

181. How many mole of copper will be deposited in 1 faraday of copper II tetraoxosulphate (vi) (a) 2 (b) 1 (c) 3 (d) 4

The correct option is B

182. Which of the following does not belong to the trend? (a) Ionization energy (b) Electron affinity (c) Atomic radius (d) Electronegativity

The correct option is C

183. Calculate the empirical formula of compound that contains 32.37% Na, 22.57% S and the rest being oxygen (a) Na_2S0_3 (b) $NaS0_4$ (c) Na_2S0_4 (d) Na_2S0_2

The correct option is C

184. 14.28g of H_2 reacts with 85.72g of carbon. What is the empirical formula of the compound? (a) CH_2 (b) C_2H_2 (c) CH (d) CH_4

The correct option is A

185. The empirical formula of a compound is NH_2 and its molecular mass is 32.0g. What is its molecular formula (a) N_3H_6 (b) N_2H_2 (c) NH_4 (d) N_2H_4

The correct option is D

186. If $50cm^3$ of oxygen diffuses through a porous plug in 10sec, how long will it take $100cm^3$ of methane to diffuse through same plug under similar condition [H = 1, C=12, 0 = 16] (a) 12.5sec (b) 14.1 sec (c) 2.6sec (d) 4.8sec

The correct option is B

187. Two gases A and B have relative molecular masses of 64 and 16 respectively. Calculate the ratio of the relative rates of diffusion of gases A and B (a) 2:1 (b) 1:1 (c) 1:2 (d) 2:2

The correct option is C

188. At what temperature will 0_2 gas have the same r.m.s. velocity with $C0_2$ gas at 25^0C (a) 216.7k (b) 200.5k (c) 290k (d) 273k

The correct option is A

189. _____is the mutual repulsion between electrons causing an increase in atomic radius (a) Screening force (b) Screening weight (c) Screening effect (d) Inductive force

The correct option is C

190. Atomic radius increases down the group because of _____ (a) Screening effect of electrons (b) Number of protons (c) Induction (d) None

The correct option is A