CHEMISTRY

BOOKS - MCGROW HILL EDUCATION

CHEMISTRY (HINGLISH)

MISCELLANEOUS QUESTIONS

Mcqs

1. The temperature at absolute zero is

A. $273.15^\circ C$

B. $0^\circ C$

C. $-373.15^{\circ}C$

D. $-273.15^{\circ}C$

Answer: D

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2. Molecule is th smallest particle of

A. compound

B. substance

C. mixture

D. element

Answer: A

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3. Atom is th smallest particle of

A. compound

B. element

C. mixture

D. substance

Answer: B

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4. Avogadro's numbr is the numbr of particles present in ..... Of a susbtance.

A. 1 molecule

B. 1 atom

C. 1 kg

D. 1 mole

Answer: D

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5. SI unit of temperature is

A. Kelvin

B. degree Celsius

C. degree Fahrenheit

D. Dalton

Answer: A

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6. Homogenous mixture is formed by mixing

A. phenol and water

B. iron filing and sand

C. silver chloride and water

D. ethanol and water

Answer: D

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7. Atomicity of ammonium pohosphate molecule is

A. 5

B. 10

C. 15

D. 20

Answer: D

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8. The number of molecules in $22.4cm^3$ of nitorgen gas at STP is

A. 6.02×10^{20}

B. 6.02×10^{23}

C. 22.4×10^{20}

D. 22.4×10^{23}

Answer: A

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9. Number of moles of water in 1L of H_2O with density $1g/cm^3$ are

A. 55.56

B. 45.56

C. 56.55

D. 56.45

Answer: A

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10. At STP 2g of helium gas (molar mass =4) occupies a volume of

A. 22.4L

B. 11.2L

C. 5.6L

D. 2L

Answer: B

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11. A measured temperature on Fahrenheit scale is $200^\circ F$. What will this reading be one celsium scale?

A. $40^\circ C$

B. $94^\circ C$

C. $93.3^\circ C$

D. $30^\circ C$

Answer: C

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12. What is the mass percent of carbon in carbon dioxide?

A. $0.034\ \%$

B. $27.27\ \%$

C. $3.4\ \%$

D. $28.7\ \%$

Answer: B

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13. The empirical formula and molecular mass of a compound are CH_2O and 180 g respectively. What will be the molecular formula of the compound?

A. $C_9H_{18}O_9$

B. CH_2O

C. $C_6H_{12}O_6$

D. $C_2H_4O_2$

Answer: C

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14. Which of the following statements about a compound is correct?

A. A molecule of a compound has atoms of different elements

B. A compound cannot be separated into constituent element by physical methods of separation

C. A compound retains the physical properties of its constituent elements

D. The ratio of atoms of different elements in a compound is fixed

Answer: C

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15. Which of the following reactions is not correct according to the law of conservation of mass?

A. $2Mg + O_2 \rightarrow 2MgO$

B. $CH_3H_8 + O_2 \rightarrow CO_2 + H_2O$

C. $P_4 + 5O_2 \rightarrow P_4O_{10}$

D. $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

Answer: B

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16. The physical state of a substance with lot of empty intermolecular space is

A. solid

B. liquid

C. gas

D. plasma

Answer: C

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17. The liquid with maximum viscosity is

A. water

B. acetone

C. glycerol

D. glass

Answer: D

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18. Which of the following property of water can be used to explain the spherical shape of rain droplets ?

A. viscosity

B. surface tension

C. pressure

D. vaporisation

Answer: B

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19. In Rtherfor'ds experiment most of the alpha particles were

A. passed undeflected

B. deflected

C. thrown back

D. absorbed

Answer: A

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20. The maximum number of electrons in a shell is given by expression

A. n^2

B. $2n^2$

C. $(n+1)^2$

D. $(2n)^2$

Answer: B

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21. An electron has principal quantum number 2. The number of sub shell and orbitals would be respectively

A. 2 and 3

B. 2 and 5

C. 2 and 7

D. 2 and 4

Answer: D

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22. Which of the following statements about the electron is incorrect?

A. it is a negatively charged particle

B. the mass of electron is equal to the mass of neutron

C. it is a basic constituent of all atoms

D. it is a constituent of cathode rays

Answer: B

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23. Which of the following properties of atom could be explained correctly by Thomson model of atom?

A. overall neutrality of atom

B. Spectrum of hydrogen atom

C. Position of electrons, protons and neutrons

D. Stability of atom

Answer: A

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24. Two atoms are said to be isobars if

A. they have same atomic number but different mass number

B. they have same number of electrons but different number of neutrons

C. they have same number of neutrons but different number of electrons

D. sum of the number of protons and neutrons is same but the number of protons is different

Answer: D

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25. Which of the following is not a part of isotopes?

A. ${}_{6}^{12}X, {}_{6}^{13}Y$

B. ${}_{17}^{35}X, {}_{17}^{37}Y$

C. ${}_{6}^{14}X, {}_{7}^{14}Y$

D. ${}_{4}^{8}X, {}_{4}^{9}Y$

Answer: C

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26. Which of the following statement is not correct about the characterstics of cathode rays

A. They start from the cathode and move towards the anode

B. They travel in straight lineinthe absence of an external electrical or magnetic field

C. characteristics of cathode rays do not depend upon the matieral of electrodes in cathode ray tube

D. Characteristics of cathode rays depend upon the nature of gas present in the cathode ray tube

Answer: D

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27. Which of the following conclusions could not be derived from Rutherford's is α- ray scattering experiment?

A. Most of the space in the atom is empty

B. The radius of the atom is about $10^{-10}m$ while that of nucleus is 10^{15}m

C. Electrons move in a circular path of fixed energy called orbits

D. Electrons and the nucleus are held together by electrostatic forces of attraction

Answer: C

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28. Deuterium necleus contains

A. $1p + 1n$

B. $2p + 0n$

C. $1p + 1e^{-1}$

D. $2p + 2n$

Answer: A

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29. Which one of the following pairs constitutes isotones?

A. ${}_{6}^{13}C$ and ${}_{6}^{14}C$

B. ${}_{6}^{13}C$ and ${}_{7}^{14}N$

C. ${}_{7}^{14}N$ and ${}_{9}^{19}F$

D. ${}_{7}^{14}N$ and ${}_{7}^{15}N$

Answer: B

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30. A metallic ion m^{2+} has an electronic configuration of 2,8,8,6 and the ionic weight is 56 amu. The number of neutrons in its nucleus is

A. 30

B. 32

C. 34

D. 42

Answer: A

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31. The first attempt to classify elements was made by

A. Mendeleev

B. Newland

C. Lothar Meyer

D. Dobereiner

Answer: D

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32. In the modern Periodic Table, the elements are arranged in

A. increasing mass

B. increasing atomic volume

C. increasing atomic number

D. incresing atomic weight

Answer: C

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33. Which of the following sets belong to the sam period?

A. Li,Na,K

B. Li,Mg,Ca

C. Ni,Cu,Zn

D. F,Cl,Br

Answer: C

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34. Which of the following is the largest in size?

A. Cl^-

B. S^{2-}

C. Na^+

D. F^-

Answer: B

35. If the long form of periodic table the total number of periods is

A. 5

B. 7

C. 8

D. 9

Answer: B

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36. In the long form of periodic table the total number of groups are

A. 15

B. 18

C. 12

D. 8

Answer: B

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37. Halgens are placed in which group of elements in modern periodic table?

A. 17

B. 2

C. 4

D. 6

Answer: A

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38. Which pair of elements has similar properties?

A. 13,31

B. 11,20

C. 12,10

D. 21,33

Answer: A

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39. The most electronegative element is

A. compound

B. B

C. O

D. N

Answer: C

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40. Which of the following property does not increase across the period?

A. electronegativity

B. ionization energy

C. metallic character

D. acidic nature of oxides,

Answer: C

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41. Which of the following elements will gain one electron more readily in comparison to other elements of their group?

A. Mg

B. Na

C. O

D. Cl

Answer: D

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42. Amongst the followng the most metallic elements is

A. F

B. Ca

C. Li

D. Na

Answer: B

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43. Which element is the most electronegative?

A. A(2,2)

B. B(2,3)

C. C(2,4)

D. D(2,5)

Answer: D

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44. A substance that gains electron(s) is

A. an oxidising agent

B. a reducing agent

C. a substance that oxidies

D. reductant

Answer: A

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45. In the reaction $A + B^+ \rightarrow A^+ + B$, A is

A. oxidised

B. reduced

C. an oxidising agent

D. being reduced

Answer: A

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46. Which of the following is not an example of redox reaction?

A. $CuO + H_2 \rightarrow Cu + H_2O$

B. $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

C. $2K + F_2 \rightarrow 2KF$

D. $BaCl_2 + H_2SO_4 \rightarrow BaSo_4 + 2HCl$

Answer: D

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47. Which of the following statement is not true about the following decomposition reaction.

$2KClO_3 \rightarrow 2KCl + 3O_2$

A. potassium is neither undergoing oxidation nor reduction

B. chlorine is undergoing reaction

C. oxygen is oxidised

D. None of the species undergoing oxidation or reduction

Answer: D

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48. Identify the correct statement(s) in relation to the following reaction.

$Zn + 2HCl \rightarrow ZnCl_2 + H_2$

A. Zinc is acting as an oxidant

B. Chlorine is acting as a reductant

C. Hydrogen is acting as a reducing agent

D. zinc is acting as a reductant

Answer: D

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49. Which of the following is a decomposition reaction as well redoc reaction?

A. $2KBr + Cl_2 \rightarrow 2KCl + Br_2$

B. $2Na + H_2O \rightarrow 2NaOH + H_2$

C. $2MgO \rightarrow 2Mg + O_2$

D. $ZnCO_3 \rightarrow ZnO + CO_2$

Answer: C

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50.

$BaCl_{2(aq)} + H_2SO_{4(aq)} \rightarrow BaSO_{4(s)} + 2HCl_{(aq)}$

is

A. a non redox reaction

B. double displacement reaction

C. a precipatation reaction

D. all these are correct

Answer: D

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51. The formula of sodium phosphate is

A. $NaPO_4$

B. Na_2PO_4

C. Na_3PO_4

D. $NaPO_2$

Answer: C

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52. In the reaction

$$MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$$

A. MnO_2 is being reduced to $MnCl_2$

B. HCl is being reduced to Cl_2

C. MnO_2 is acting as a reducing agent

D. HCl is an oxidant

Answer: A

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53. $2FeCl_3 + SnCl_2 \rightarrow 2FeCl_2 + SnCl_4$ is an example of

A. non redox reaction

B. double displacement reaction

C. redox reaction

D. None of these

Answer: C

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54. In the balanced reaction

$$aFe_2O_3 + bH_2 \rightarrow cFe + dH_2O$$

a, b, c and d, respectivel, are

A. 1,1,2,3

B. 1,1,1,1

C. 1,3,2,3

D. 1,2,2,3

Answer: C

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55. The neutralisation of HCl by NaOH to form salt and water is an example of

A. decomposition reaction

B. combination reaction

C. displacement reaction

D. double decomposition reaction

Answer: D

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56. Na_2CO_3 is a salt of

A. strong acid and strong base

B. strong acid and weak base

C. weak acid and strong base

D. weak acid and weak base

Answer: C

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57. The concentration of OH^- in a solution is $1.0 \times 10^{-10} M$. The solution is

A. acidic

B. basic

C. neutral

D. None of these

Answer: A

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58. The acid present in the tomatoes is

A. tartaric acid

B. oxalic acid

C. carbonic acid

D. acetic acid

Answer: B

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59. The ant bilte can be neutralised by

A. NaOH

B. $NaHCO_3$

C. KOH

D. H_2SO_4

Answer: B

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60. When a little sulphur in a spoon is heated, it burns with a blue flame which slowly disappears after some time and we can feel a pungent odour. This pungent odour is due to

A. carbon dioxide

B. sulphur dioxide

C. sulphur vapours

D. sulphuric acid.

Answer: B

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61. Ant sting causes irratation due to the presence of

A. a base in the sting

B. formic acid in the sting

C. sulphuric acid in the sting

D. both b and c

Answer: B

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62. Each of the following oxide dissolves in water to give an aqueous solution which turns red litmus blue except

A. MgO

B. CaO

C. CO_2

D. Na_2O

Answer: C

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63. $CuSO_4.5H_2O$ becomes anhydrous $CuSO_4$ on heating. This property of losing water molecules of crystallisation is known as

A. deliquescence

B. dehydration

C. efflorescence

D. hydrolysis

Answer: C

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64. The acidity of soil, which is due to excessive use of fertiliser ammonium sulphate can be neutralised by adding

A. lime

B. caustic soda

C. washing soda

D. limestone

Answer: A

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65. Which of the following is incorrectly matched?

A. milt of magnesia $\rightarrow Mg(OH)_2$

B. quick lime $\rightarrow$ CaO

C. vinegar $\rightarrow CH_3COOH$

D. washing soda $\rightarrow NaHCO_3$

Answer: D

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66. Which of the following base is used to neutralise acidity in the stomach?

A. KOH

B. NaOH

C. $Mg(OH)_2$

D. all these

Answer: C

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67. Which of the following metal does not evolve hydrogen gas on reaction with dilute HCl?

A. magnesium

B. iron

C. copper

D. aluminium

Answer: C

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68. Which of the following has highest concentration of hydrogen ion?

A. Solutioni with pH=4

B. solution with pH=7

C. Solution with pH=5

D. Solution with pH=2

Answer: D

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69. Which of the following molecule involves electrovalent bond?

A. H_2

B. CH_4

C. $CaCl_2$

D. HCl

Answer: C

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70. Among the following, the molecule with linear geometry is

A. C_2H_4

B. CO_2

C. NH_3

D. H_2O

Answer: B

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71. Total number of sigma bonds involved in ethylene molecule C_2H_4 are

A. 3

B. 5

C. 2

D. 1

Answer: B

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72. Octer rule is not violated in case of

A. methane

B. boron trifluoride

C. sulphur hexafluoride

D. aluminnium chloride

Answer: A

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73. In forming compound AB, an electron is transferred from A to B then

A. A is divalent

B. B is oxidised

C. A and B are covalently bonded

D. the compound AB is electrovalent

Answer: D

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74. A true covalent bond is formed by

A. transfer of electron from one atom to the other

B. mutual sharing of electrons

C. one sided sharing of electrons

D. None of these

Answer: B

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75. Which of the following has a bond angle of 109°?

A. CO_2

B. H_2O

C. CH_4

D. SO_2

Answer: C

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76. The angle between two covalet bonds is minimum in

A. CH_4

B. C_2H_2

C. NH_3

D. H_2O

Answer: D

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77. Which of the following molecules has hargest bond angle ?

A. H_2O

B. NH_3

C. CO_2

D. CH_4

Answer: C

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78. Which of the following species has tetrahedral geometry?

A. BF_4^-

B. CH_4

C. NH_4^+

D. all these

Answer: D

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79. Which of the following compound contains ionic bond, covalent bond and datic bond?

A. $NaCl$

B. $CaCl_2$

C. HBr

D. NH_4Cl

Answer: D

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80. Which of the following metal reacts least vigorously with water?

A. Li

B. Na

C. K

D. Cs

Answer: A

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81. Dead burnt plaster is

A. $CaSO_4$

B. $CaSO_4\frac{.1}{2}H_2O$

C. $CaSO_4.\ H_2O$

D. $CaSO_4.2H_2O$

Answer: A

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82. Suspension of slaked lime in water in known as

A. lime water

B. quick lime

C. milk of lime

D. aqueous solution of slaked lime

Answer: A

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83. By adding gypsum to cement

A. setting time of cement becomes less

B. setting time of cement increases

C. colour of cement becomes light

D. shining surface is obtained

Answer: B

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84. The formula of soda ash is

A. $Na_2CO_3.10H_2O$

B. $Na_2CO_3.2H_2O$

C. $Na_2CO_3.\ H_2O$

D. Na_2CO_3

Answer: D

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85. Which of the following is an ore of zinc?

A. Calamine

B. Galena

C. Siderite all these

D. all these

Answer: A

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86. Which of the following ore can be subject to roasting?

A. Galena

B. Cinnabar

C. Copper pyrite

D. all these

Answer: D

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87. Which of the following is not the criterion of purity of a substance?

A. solubility

B. melting point

C. boiling point

D. density

Answer: A

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88. Organic compounds are non conductors of electricity because they

A. are insoluble in water

B. do not form ions

C. have low melting point

D. do not form free radicals

Answer: B

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89. Vinegar contains_____functional group

A. $-OH$

B. $-\overset{O}{\overset{||}{C}}-H$

C. $-\overset{O}{\overset{||}{C}}-$

D. $-\overset{O}{\overset{||}{C}}-OH$

Answer: D

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90. The IUPAC name of $CH_3 \equiv C - CH_2 - CH_2OH$ is

A. 4-methyl but-3-yne-1-ol

B. pent-3-yn-1-ol

C. 1-hydroxypent -3-yne

D. 5-hydroxy pent -2-yne

Answer: B

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91. The principal functional group present in

A. an aldehyde

B. ketone

C. alcohol

D. oxy

Answer: B

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92. The IUPAC name of

 is

A. but-3-enoic-acid

B. but-1-enoic-acid

C. pent-4-enoic acid

D. prop-2-enoic acid

Answer: A

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93. Each of the following hydrocarbon belongs to an alkane series except

A. C_3H_8

B. C_4H_6

C. CH_4

D. C_5H_{12}

Answer: B

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94. Which of the following hydrocarbon contains maximum number of covalent bonds?

A. C_3H_8

B. C_4H_6

C. C_4H_{10}

D. C_4H_8

Answer: C

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95. Aromatic compounds burn with

A. blue flame

B. green flame

C. red flame

D. sooty flame

Answer: D

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96. The number of structural isomers for C_6H_{14} is :

A. 3

B. 4

C. 5

D. 6

Answer: C

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97. Pick out the alkane which differs from the other members of the group

A. 2,2-dimethyl propane

B. pentane

C. 3-methyl butane

D. 2,2-dimethyl butane

Answer: D

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98. Heating sodium ethanoate with sosa lime gives

A. methane

B. ethane

C. propane

D. ethene

Answer: A

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99. Which of the following hydrocarbon can decolourise bromine water?

A. C_4H_6

B. C_4H_8

C. C_3H_6

D. all these

Answer: D

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100. Neopentane and isopentane are

A. allotropes

B. homologous

C. isomers

D. isotopes

Answer: C

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101. A solution is a homogeneous mixture of two or more substances. Which of the following is a solution?

A. milk

B. smoke

C. Brass

D. face cream

Answer: C

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102. 1.80 g of glucose (molar mas =180) is dissolved in 36.0 g of water in a beaker. The total number of oxygen atoms in the solution is

A. 12.405×10^{23}

B. 12.405×10^{22}

C. 6.022×10^{23}

D. 6.022×10^{22}

Answer: A

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103. The turmeric solution will turn red by an aqueous solution of

A. potassium acetate

B. copper sulphate

C. sodium sulphate

D. ferric chloride

Answer: A

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104. Which of the following reaction is feasible?

A. $Ba_{(s)} + K_2SO_{4(aq)} \rightarrow BaSO_{4(aq)} + 2K_{(s)}$

B.

$$Zn_{(s)} + 2AgNO_{3(aq)} \rightarrow Zn(NO_3)_{(aq)} + 2Ag_{(s)}$$

C.

$$Mg(s) + Na_2SO_{4(aq)} \rightarrow MgSO_{4(aq)} + 2Na_{(s)}$$

D. $Cu(s) + MgSO_{4(aq)} \rightarrow CuSO_{4(aq)} + Mg_{(s)}$

Answer: B

105. When ethanol is converted to ethanoic acid by using acidified potassium dichromate, the ethanol is

A. reduced and the colour changes from orange to green

B. reduced and the colour changes from yellow to green

C. oxidised and the colour changes from orange to yellow

D. oxidised and the colour changes from orange to green

Answer: D

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106. Which of the following product(s) obtained when iron reacts with steam?

A. $FeO + H_2$

B. $Fe_2O_3 + H_2$

C. $Fe_2O_3 + O_2$

D. $Fe_3O_4 + H_2$

Answer: D

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107. If copper is kept in open air, it slowly loses its shining brown surface and covered with a green colour coating. It is due to the formation of

A. $CuCO_3$

B. $CuO + CuCO_3$

C. $Cu(OH)_2 . CuCO_3$

D. CuO

Answer: C

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108. Polymer used in non stick utensils is

A. polyvinyl chloride

B. polyethene

C. polystyrene

D. polytetrafluoroethene

Answer: D

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109. Vulcanised rubber contains

A. about 3-5% sulphur

B. about 30% sulphur

C. about 5% carbon black

D. about 15-20% carbon black

Answer: A

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