1) Which of the statements about the reaction below are incorrect?

$2PbO(s) + C(s) \rightarrow 2Pb(s) + CO_2(s)$

(a) Lead is getting reduced

(b) Carbon dioxide is getting oxidized

(c) Carbon is getting oxidized

(d) Lead oxide is getting reduced.

(a) (a) and (b) (b) (a) and (c) (c) (a), (b) and (c)

(d) All of these

2) $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$.

The reaction is an example of a

(a) Combination of reaction (b) Double displacement reaction

(c) Decomposition reaction (d) Displacement reaction.

3) What happens when dilute hydrochloric acid is added to iron fillings?

Tick the correct answer

(a) Hydrogen gas and Iron chloride are produced.

(b) Chloride gas and Iron hydroxide are produced.

(c) No reaction takes place (d) Iron salt and water are produced

4) Which of the following is not a physical change?

(a) Boiling of water to give water vapour.

(b) Melting of ice to give water. (c) Dissolution of salt in water.

(d) Combustion of Liquefied Petroleum Gas(LPG).

5) The following reaction: $4NH_3(g) + 5O_2(g) \rightarrow 4NO(g) + 6H_2O(g)$ is an example of a
(i) displacement reaction
(ii) combination reaction
(iii) redox reaction
(iv) neutralisation reaction
(a) (i) and (iv) (b) (ii) and (iii) (c) (i) and (iii) (d) (iii) and (iv)

6) Which of the following statements about the given reaction are correct?
$3Fe(s) + 4H_2O(g) \rightarrow Fe_3O_4(s) + 4H_2(g)$
(i) Iron metal is getting oxidised
(ii) Water is getting reduced
(iii) Water is acting as reducing agent
(iv) Water is acting as oxidising agent
(a) (i), (ii) and (iii) (b) (iii) and (iv) (c) (i), (ii) and (iv)
(d) (ii) and (iv)

7) Which of the following are exothermic processes?
(i) Reaction of water with quicklime
(ii) Dilution of an acid
(iii) Evaporation of water
(iv) Sublimation of camphor(crystals)
(a) (i) and (ii) (b) (ii) and (iii) (c) (i) and (iv) (d) (iii) and (iv)

8) Three beakers labelled as A, B and C each containing 25 mL of water was taken. A small amount of NaOH, anhydrous $CuSO_4$ and NaCl were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solutions contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is (are) correct?
(i) In beakers A and B, exothermic process has occurred.
(ii) In beakers A and B, endothermic process has occurred.

(iii) In beaker C exothermic process has occurred.
(iv) In beaker C endothermic process has occured.
(a) (i) only (b) (ii) only (c) (i) and (iv) (d) (ii) and (iii)

9) A dilute ferrous sulphate solution was gradually added to the beaker containing acidified permanganate solution. The light purple colour of the solution fades and finally disappears. Which of the following is the correct explanation for the observation?

(a) $KMnO_4$ is an oxidising agent, it oxidises $FeSO_4$

(b) $FeSO_4$ acts as an oxidising agent and oxidises $KMnO_4$

(c) The colour disappears due to dilution; no reaction is involved

(d) $KMnO_4$ is an unstable compound and decomposes in presence of $FeSO_4$ to a colourless compound.

10) Which among the following is /are double displacement reaction(s) ?

(i) $Pb + CuCl_2 \quad PbCl_2 + Cu$

(ii) $Na_2SO_4 + BaCl_2 \quad BaSO_4 + 2NaCl$

(iii) $C + O_2 \quad CO_2$

(iv) $CH_4 + 2O_2 \quad CO_2 + 2H_2O$

(a) (i) and (iv) (b) (ii) only (c) (i) and (ii) (d) (iii) and (iv)

11) Which among the following statement(s) is (are) true? Exposure of silver chloride to sunlight for a long duration turns grey due to

(i) the formation of silver by decomposition of silver chloride

(ii) sublimation of silver chloride

(iii) decomposition of chlorine gas from silver chloride

(iv) oxidation of silver chloride

(a) (i) only (b) (i) and (iii) (c) (ii) and (iii) (d) (iv) only

12) Solid calcium oxide reacts vigorously with water to form calcium hydroxide accompanied by liberation of heat. This process is called slaking of lime. Calcium hydroxide dissolves in water to form its solution called lime water. Which among the following is (are) true about slaking of lime and the solution formed?

(i) It is an endothermic reaction

(ii) It is an exothermic reaction

(iii) The pH of the resulting solution will be more than seven

((iv) The pH of the resulting solution will be less than seven

(a) (i) and (ii) (b) (ii) and (iii) (c) (i) and (iv) (d) (iii) and (iv)

13) Barium chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. Which of the following correctly represents the type of the reaction involved?
(i) Displacement reaction
(ii) Precipitation reaction
(iii) Combination reaction
(iv) Double displacement reaction
(a) (i) only (b) (ii) only (c) (iv) only (d) (ii) and (iv)

14) Electrolysis of water is a decomposition reaction. The mole ratio of hydrogen and oxygen gases liberated during electrolysis of water is
(a) 1 : 1 (b) 2 : 1 (c) 4 : 1 (d) 1 : 2

15) Which of the following is (are) an endothermic process (es)?
(i) Dilution of sulphuric acid
(ii) Sublimation of dry ice
(iii) Condensation of water vapours
(iv) Evaporation of water
(a) (i) and (iii) (b) (ii) only (c) (iii) only (d) (ii) and (iv)

16) In the double displacement reaction between aqueous potassium iodide and aqueous lead nitrate, a yellow precipitate of lead iodide is formed. While performing the activity if lead nitrate is not available, which of the following can be used in place of lead nitrate?
(a) Lead sulphate (insoluble) (b) Ammonium nitrate
(c) Lead acetate (d) Potassium sulphate

17) Which of the following gases can be used for storage of fresh sample of an oil for a long time?
(a) Carbon dioxide or oxygen (b) Carbon dioxide or helium
(c) Nitrogen or oxygen (d) Helium or nitrogen

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18) The following reaction is used for the preparation of oxygen gas in the laboratory

$2KClO_3(s) \xrightarrow[\text{Catalyst}]{\text{Heat}} 2KCl + 3O_2(g)$

Which of the following statement(s) is (are) correct about the reaction?

(a) It is a decomposition reaction and endothermic in nature

(b) It is a combination reaction

(c) It is a decomposition reaction and accompanied by release of heat

(d) It is a photochemical decomposition reaction and exothermic in nature

19) Which one of the following processes involves chemical reactions?

(a) Storing of oxygen gas under pressure in a gas cylinder.

(b) Liquefaction of air.

(c) Keeping petrol in a china dish in the open.

(d) Heating copper wire in presence of air at high temperature.

20) In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved temperature?

(a) $2H_2(l) + O_2(l) \quad 2H_2O(g)$ (b) $2H_2(g) + O_2(l) \quad 2H_2O(l)$

(c) $2H_2(g) + O_2(g) \quad 2H_2O(l)$ (d) $2H_2(g) + O_2(g) \quad 2H_2O(g)$

21) Which of the following are combination reactions?

(i) $2KClO_3 \quad 2KCl + 3O_2$

(ii) $MgO + H_2O \quad Mg(OH)_2$

(iii) $4Al + 3O_2 \quad 2Al_2O_3$

(iv) $Zn + FeSO_4 \quad ZnSO_4 + Fe$

(a) (i) and (iii) (b) (iii) and (iv) (c) (ii) and (iv) (d) (ii) and (iii)

22) The chemical formula of lead sulphate is

(a) $PbSO_4$ (b) $PB(SO_4)_2$ (c) $Pb_2(SO_4)_3$ (d) Pb_2SO_4

23) In the reaction, $SO_2(g) + 2H_2S(g) \quad 2H_2O(l) + S(s)$, the reducing agent is

(a) SO_2 (b) H_2S (c) H_2O (d) S

24) Chemically rust is

(a) only ferric oxide (b) hydrated ferrous oxide

(c) hydrated ferric oxide (d) none of these

25) Both CO_2 and H_2 gases are

(a) colourless (b) acidic in nature (c) soluble in water

(d) heavier than air

26) Methane on combustion gives

(a) neither CO_2 nor H_2O (b) CO_2 (c) both CO_2 and H_2O

(d) H_2O

27) Fatty foods become rancid due to the process of

(a) corrosion (b) reduction (c) hydrogenation (d) oxidation

28) We store silver chloride in a dark coloured bottle because it is

(a) a white solid (b) to avoid action by sunlight

(c) undergoes redox reaction (d) none of the above

29) Which of the following will be required to identify the gas evolved when dilute hydrochloric acid reacts with zinc metal?

(a) Red litmus paper (b) A burning splinter (c) Lime water

(d) PH paper

30) When a magnesium ribbon is burnt in air, the ash formed is

(a) pink (b) white (c) black (d) yellow

31) The reaction of H_2 gas with oxygen gas to form water is an example of

(a) redox reaction (b) combination reaction
(c) exothermic reaction (d) all of these reactions

32) Which information is not conveyed by a balanced chemical equation?

(a) Physical states of reactants and products

(b) Symbols and formulae of all the substances involved in a particular reaction

(c) Number of atoms/molecules of the reactants and products formed

(d) Whether a particular reaction is actually feasible or not

33) The electrolytic decomposition of water gives H_2 and O_2 in the ratio of

(a) 1 : 2 by volume (b) 2 : 1 by volume (c) 8 : 1 by mass

(d) 1 : 2 by mass

34) In the decomposition of lead (II) nitrate to give lead (II) oxide, nitrogen dioxide and oxygen gas, the coefficient of nitrogen dioxide (in the balanced equation) is

(a) 1 (b) 2 (c) 3 (d) 4

35) Silver article turns black when kept in the open for a few days due to formation of

(a) H_2S (b) AgS (c) $AgSO_4$ (d) Ag_2S

36) When crystals of lead nitrate are heated strongly in a dry test tube

(a) crystals immediately melt (b) a brown residue is left

(c) white fumes appear in the tube (d) a yellow residue is left

37) Dilute hydrochloric acid is added to granulated zinc taken in a test tube. The following observations are recorded. Point out the correct observation

(a) The surface of metal becomes shining

(b) The reaction mixture turns milky

(c) Odour of a pungent smelling gas is recorded

(d) A colourless and odourless gas is evolved

38) When carbon dioxide is passed through lime water

(a) calcium hydroxide is formed

(b) white precipitate of CaO is formed

(c) lime water turns milky (d) colour of lime water disappears

39) In which of the following, heat energy will be evolved?

(a) Electrolysis of water (b) Dissolution of NH4Cl in water

(c) Burning of L.P.G

(d) Decomposition of AgBr in the presence of sunlight

40) Rancidity can be prevented by

(a) adding antioxidants (b) storing food away from light

(c) keeping food in refrigerator (d) all of these

41) The reaction in which two compound exchange their ions to form two new compounds is called

(a) displacement reaction (b) combination reaction

(c) double displacement reaction (d) redox reaction

42) On immersing an iron nail in $CuSO_4$ solution for few minutes, you will observe

(a) no reaction takes place (b) the colour of solution fades away

(c) the surface of iron nails acquire a black coating

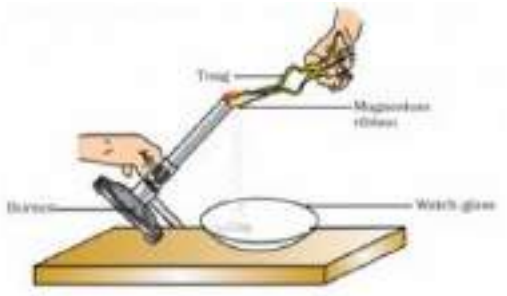
(d) the colour of solution changes to green

43) An element X on exposure to moist air turns reddish-brown and a new compound Y is formed. The substance X and Y are

(a) X = Fe, Y = Fe_2O_3 (b) X = Ag, Y = Ag_2S

(c) X = Cu, Y = CuO (d) X = Al, Y = Al_2O_3

44)



A magnesium ribbon is burnt in air. A student made the following observations

i. Magnesium ribbon undergoes oxidation reaction.

ii. Magnesium reacts with air to form magnesium oxide.

iii. Magnesium ribbon undergoes decomposition reaction.

(a) (ii) and (iii) (b) (i) and (iii) (c) (i), (ii) and (iii)

(d) (i) and (ii)

45) Reaction between Ammonium chloride and Barium hydroxide is

(a) Exothermic reaction (b) Chemical change

(c) Endothermic reaction (d) None of these

46) Physical changes are accompanied by:

(a) Evolution of hydrogen gas (b) Change in state

(c) Formation of a new yellow precipitate

(d) Formation of a new compound

47) In a reaction between zinc and hydrochloric acid, the changes accompanying a reaction are:

(a) Evolution of gas and heat (b) Evolution of steam

(c) Formation of precipitate (d) Formation of dazzling white light

48) If reaction between nitrogen and hydrogen to form ammonia is exothermic, then it will be accompanied by

(a)

49) Change in state (b) Change in colour (c) Evolution of heat

(d) Formation of precipitate

50) During an exothermic reaction

(a) Heat is absorbed (b) There is no heat transfer

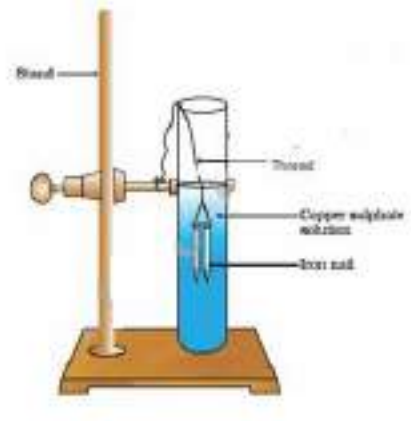
(c) Heat can either be absorbed or evolved (d) Heat is evolved.

51) The reactions in which precipitate is formed are known as

(a) Exothermic reactions (b) Endothermic reactions

(c) Precipitation reactions (d) Combustion reactions

52) As seen in the figure, two nails are carefully dipped in copper sulphate solution with the help of threads. What will happen when the nails are removed after half an hour?



(a) No change is observed (b) Nails turn blue in colour

(c) Nails turn green in colour (d) Nails turn brown in colour

53) An example of a chemical reaction in which heat is evolved is

(a) Reaction between sodium and water

(b) Reaction between lead nitrate and potassium iodide

(c) Boiling of water

(d) Ammonium chloride and Barium hydroxide

54) An example of reaction in which gas is evolved is

(a) Reaction between limestone and HCl

(b) Burning of magnesium ribbon in air

(c) Reaction between Calcium oxide and water

(d) Reaction between lead nitrate and potassium iodide

55) Freezing of water is a

(a) Physical change (b) Chemical change

(c) Both physical and chemical change (d) Exothermic reaction

56) An example of reaction in which precipitate is formed is:
(a) Reaction between hydrogen and oxygen
(b) Reaction between lead nitrate and potassium iodide
(c) Reaction between hydrochloric acid and zinc
(d) Reaction between sodium and water

57) An example of a physical change is
(a) Burning of coal (b) Boiling of water
(c) Reaction between lime and water
(d) Burning of magnesium ribbon

58) The preparation of water from hydrogen and oxygen gas is accompanied by:
(a) Evolution of coloured gas (b) Formation of precipitate
(c) Formation of ashes (d) Change in state

59) Which of the following feature is common to both physical and chemical change?
(a) Evolution of hydrogen gas (b) Formation of new precipitate
(c) Evolution of carbon dioxide (d) Change in state and colour

60) A drop of colourless liquid is poured over blue litmus paper and it turns to red. The colourless liquid is
(a) sodium chloride solution (b) pure water
(c) potassium hydroxide solution (d) dilute hydrochloric acid

61) What happens when dilute sulphuric acid is added to zinc granules? Select the correct option

(a) Water and zinc sulphate is formed
(b) No reaction takes place
(c) Hydrogen and zinc sulphate is formed
(d) Hydrogen gas and zinc sulphide is formed.

62) Dissolving of quick lime in water is accompanied by
(a) Formation of precipitate (b) Evolution of heat (c) Change in colour (d) Change in state

63) Setting of cement is an example of
(a) Physical change (b) Precipitation reaction
(c) Endothermic reaction (d) Exothermic reaction

64) The symbol used to denote a liquid reactant or product in a reaction is
(a) (s) (b) (aq) (c) (g) (d) (l)

65) Select the chemical equation which is unbalanced
(a) $NaOH + CO_2 \rightarrow Na_2CO_3 + H_2O$
(b) $CuSO_4 + H_2S \rightarrow H_4SO_2 + CuS$
(c) $2FeCl_3 + H_2S \rightarrow 2FeCl_2 + 2HCl + S$
(d) $2Mg + CO_2 \rightarrow 2MgO + C$

66) The substances that are formed after completion of the reaction are called
(a) Catalysts (b) Reactants (c) Reagents (d) Products

67) Which of the following equation is balanced?

(a) $H_2 + N_2 \rightarrow NH_3$ (b) $Cl_2 + H_2 \rightarrow HCl$

(c) $CH_4 + O_2 \rightarrow CO_2 + H_2O$ (d) $C + O_2 \rightarrow CO_2$

68) Which one of the following reaction is not balanced?

(a) $CaCO_3 \rightarrow CaO + CO_2$ (b) $2KI + H_2O_2 \rightarrow 2KOH + I_2$

(c) $Mg + 2HCl \rightarrow MgCl_2 + H_2$ (d) $2Fe + 3H_2O \rightarrow Fe_2O_3 + H_2$

69) The balanced chemical equation for the reaction of zinc metal with hydrochloric acid is

(a) $Zn + HCl \rightarrow ZnCl + H_2$ (b) $Zn + HCl \rightarrow ZnCl_2 + H_2$

(c) $Zn + 2HCl \rightarrow 2ZnCl_2 + H_2$ (d) $Zn + 2HCl \rightarrow ZnCl_2 + H_2$

70) In the equation $N_2 + aH_2 \rightarrow bNH_3$, what will be the value of a and b?

(a) a=2 ; b=3 (b) a=3 ; b=2 (c) a=2 ; b=2 (d) a=3 ; b=3

71) $NH_4OH + FeCl_3 \rightarrow NH_4Cl + Fe(OH)_3$

To balance the above equation, the coefficient for ammonium hydroxide and ammonium chloride will be:

(a) 3 and 3 (b) 3 and 1 (c) 3 and 2 (d) 2 and 3

72) Which atom is balanced in the given equation?

$4P + O_2 \rightarrow 2P_2O_5$

(a) Phosphorus (b) Oxygen (c) Both Phosphorus and oxygen

(d) Neither Phosphorus nor oxygen

73) Which of the following statement is true for a balanced chemical equation?

(a) Number of atoms of each element are equal on both the sides

(b) Law of conservation of mass holds true

(c) Law of conservation of mass does not hold true

(d) Both A and B

74) 10 g of hydrogen is burnt in the presence of excess oxygen. The mass of water formed is

(a) 90 g (b) 45 g (c) 10 g (d) 18 g

75) In the reaction, $3O_2(g) + 2H_2S(g)$) $2H_2O(l) + 2SO_2(g)$, the reducing agent is

(a) O_2 (b) H_2O (c) H_2S (d) SO_2

76) The following reaction is an example of

$4NH_3(g) + SO_2(g)$ $4NO(g) + 6H_2O(g)$

(i) displacement reaction

(ii) combustion reaction

(iii) redox reaction

(iv) neutralisation reaction

(a) (i) and (iv) (b) (ii) and (iii) (c) (iii) and (iv) (d) (i) and (ii)

77) Reddish-brown copper metal forms a black solid on combustion. Which of the following statement is incorrect?

(a) Black solid is CuO (b) The reaction is a redox reaction

(c) The reaction is a precipitation reaction .

(d) Copper is being oxidised.

78) Which of the following reaction is used in white washing of walls?

(a) $2Ca + O_2$ $2CaO$ (b) $CaO + H_2O$ $Ca(OH)_2$ +

(c) $Ca(OH)_2 + CO_2$ $CaCO_3 + H_2O$

(d) $Ca(OH)_2$ $CaO + H_2O$

79) Based on the reaction given below, what is the correct increasing order of reactivity of metals?

(i) $Fe(s) + CuSO_4(aq)$ $FeSO_4(aq) + Cu(s)$

(ii) $Cu(s) + FeSO_4(aq)$ No reaction

(iii) $Cu(s) + 2AgNO_3(aq)$ $Cu(NO_3)_2(aq) + 2Ag(s)$

(iv) $2Ag(s) + Cu(NO_3)_2(aq)$ No reaction

(a) Ag < Cu < Fe (b) Ag < Fe < Cu (c) Fe < Cu < Ag

(d) Cu < Ag < Fe

80) Identify the following type of reaction:

$2KClO_3 \xrightarrow[\text{catalyst}]{\text{heat}} 2KCl(s) + 3O_2(g)$

(a) It is a combination reaction.

(b) It is a decomposition reaction and is accompanied by release of heat

(c) It is a photochemical decomposition reaction and exothermic in nature.

(d) It is a decomposition reaction and is endothermic in nature

81) What is true about the following equation?

$3Fe(s) + 4H_2O(g) \quad Fe_3O_4(s) + 4H_2(g)$

(i) Iron metal is being oxidised

(ii) Water is being reduced

(iii) Water is acting as reducing agent

(iv) Water is acting as oxidising agent

(a) (i), (ii) and (iii) (b) (ii) and (iv) (c) (i), (ii) and (iv)

(d) (ii) and (iv)

82) Which of the following is not an example of single displacement reaction

(a) $CuO + H_2 \quad H_2O + Cu$

(b) $Zn + CuSO_4 \quad ZnSO_4 + Cu$

(c) $4NH_3 + 5O_2 \quad 4NO + 6H_2O$

(d) $Zn + 2HCl \quad H_2 + ZnCl_2$

83) In the reaction $CuO + H_2$ Cu + H2O, the correct statement is

(a) CuO is an oxidising agent (b) H_2 is getting oxidised

(c) The reaction is a displacement reaction (d) All of these

84) A solution turns red litmus blue; its pH is likely to be?

(a) 1 (b) 4 (c) 5 (d) 10

85) A solution reacts with crushed egg-shells to give a gas that turns lime-water milky. The solution contains.

(a) NaCl (b) HCl (c) LiCl (d) KCl

86) 10 ml of a solution of NaOH is found to be completely neutralised by 8 ml of a given solution of HCl. If we take 20 ml of the same solution of NaOH, the amount HCl solution (the same solution as before) required to neutralise it will be
(a) 4 ml (b) 8 ml (c) 12 ml (d) 16 ml

87) Which one of the following types of medicines is used for treating indigestion?
(a) Antibiotic (b) Analgesic (c) Antacid (d) Antiseptic

88) What happens when a solution of an acid is mixed with a solution of a base in a test tube? (a) The temperature of the solution increases (b) The temperature of the solution decreases (c) The temperatures of the solution remains the same (d) Salt formation takes place
(a) (i) only (b) (i) and (iii) (c) (ii) and (iii) (d) (i) and (iv)

89) An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the change?
(a) Baking powder (b) Lime (c) Ammonium hydroxide solution
(d) Hydrochloric acid

90) During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to
(a) absorb the evolved gas (b) moisten the gas
(c) absorb moisture from the gas
(d) absorb Cl-ions from the evolved gas

91) Which of the following salts does not contain water of crystallisation?
(a) Blue vitriol (b) Baking soda (c) Washing soda
(d) Gypsum

92) Sodium carbonate is a basic salt because it is a salt of
(a) Strong acid and strong base (b) weak acid and weak base
(c) strong acid and weak base (d) weak acid and strong base

93) Calcium phosphate is present in tooth enamel. Its nature is
(a) basic (b) acidic (c) neutral (d) amphoteric

94) A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish-blue?
(a) Lemon juice (b) Vinegar (c) Common salt
(d) An antacid

95) Which of the following gives the correct increasing order of acidic strength?
(a) Water < Acetic acid < Hydrochloric acid
(b) Water < Hydrochloric acid < Acetic acid
(c) Acetic acid < Water < Hydrocholoric acid
(d) Hydrochloride acid < Water < Acetic aicd

96) If a few drops of a concentrated acid accidentally spills over the hand of a student, what should be done?
(a) Wash the hand with saline solution
(b) Wash the hand immediately with plenty of water and apply a paste od sodium hydrogen carbonate
(c) After washing with plenty of water apply solution of solution hydroxide on the hand
(d) Neutralise the acid with a strong alkali

97) Sodium hydrogen carbonate when added to acetic acid evolves a gas. Which of the following statements are true about the gas evolved?
(i) It turns lime water milky
(ii) It extinguishes a burning splinter
(iii) It dissolves in a solution of sodium hydroxide
(iv) It has a pungent odour
(a) (i) and (ii) (b) (i), (ii) and (iii) (c) (ii), (iii) and (iv)
(d) (i) and (iv)

98) Common salt besides being used in kitchen can also be used as the raw meterial for making.
(i) washing soda
(ii) bleaching powder
(iii) baking soda
(iv) slaked lime
(a) (i) and (ii) (b) (i), (ii) and (iv) (c) (i) and (iii)
(d) (i), (iii) and (iv)

99) One of the constituents of baking powder is sodium hydrogen carbonate, the other constituent is
(a) hydrochloric acid (b) tartaric acid (c) acetic acid
(d) sulphuric acid

100) To protect tooth decay we are advised to brush our tech regularly. The nature of the tooth paste commonly used is
(a) acidic (b) neutral (c) basic (d) corrosive

101) Which of the following statements is correct about an aqueous solution of an acid and of a base?
(i) Higher the pH, stronger the acid
(ii) Higher the pH, weaker the acid
(iii) Lower the pH, stronger the base
(iv) Lower the pH, weaker the base
(a) (i) and (iii) (b) (ii) and (iii) (c) (i) and (iv) (d) (ii) and (iv)

102) The pH of the gastric juices released during digestion is
(a) less than 7 (b) more than 7 (c) equal to 7 (d) equal to 0

103) Which of the following phenomena occur, when a small amount of acid is added to water? (i) Ionisation (ii) Neutralisation (iii) Dilution (iv) Salt formation
(a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) (ii) and (iv)

104) Which one of the following can be used as an acid-base indicator by a visually impaired student?

(a) Litmus (b) Turmeric (c) Vanilla essence

(d) Petunia leaves

105) Which of the following substance will not give carbon dioxide on treatment with dilute acid?

(a) Marble (b) Limestone (c) Baking soda (d) Lime

106) Which of the following is acidic in nature?

(a) Lime juice (b) Human blood (c) Lime water (d) Antacid

107) Which of the following is used for dissolution of gold?

(a) Hydrochloric acid (b) Sulphuric acid (c) Nitric acid

(d) Aqua regia

108) Which of the following is not a mineral acid?

(a) Hydrochloric acid (b) Citric acid (c) Sulphuric acid

(d) Nitric acid

109) Which among the following is not a base?

(a) NaOH (b) KOH (c) N OH (d) $C_2 {}_5OH$

110) Which of the following statement is not correct?

(a) All metal carbonates react with acid to give a salt, water and carbon dioxide

(b) All metal oxides react with water to give salt and acid

(c) Some metals react with acids to give salt and hydrogen

(d) Some non-metal oxides react with water to form an acid

111) Match the chemical substances given in Column (A) with their appropriate application given in Column (B).

Column (A)	Column (B)
(A) Bleaching Powder (B) Baking Soda (C) Washing Soda (D) Sodium Chloride	(i) Preparation of glass (ii) Production of and C (iii) Decolourisation (iv) Antacid

(a) A - (ii), B - (i), C - (iv), D - (iii)

(b) A - (iii), B - (ii), C - (iv), D - (i)

(c) A - (iii), B - (iv), C - (i), D - (ii)

(d) A - (ii), B - (iv), C - (i), D - (iii)

112) Equal volumes of hydrochloric acid and sodium hydroxide solutions of same concentration are mixed and the pH of the resulting solution is checked with a pH paper. What would be the colour obtained?

(a) Red (b) Yellow (c) Yellowish green (d) Blue

113) Which of the following is (are) true when HCl (g) is passed through water? (i) It does not ionise in the solution as it is a covalent compound. (ii) It ionises in the solution (iii) It gives both hydrogen and hydroxyl ion in the solution (iv) It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule

(a) (i) only (b) (iii) only (c) (ii) and (iv) (d) (iii) and (iv)

114) Which of the following statement is true for acids?

(a) Bitter and change red litmus to blue

(b) Sour and change red litmus to blue

(c) Sour and change blue litmus to red

(d) Bitter and change blue litmus to red

115) Which of the following are present in a dilute aqueous solution of hydrochloric acid?

(a) $_3^+ + C^-$ (b) $_3^+ + O^-$ (c) $^- \quad ^-$

(d) unionised HCl

116) Identify the correct representation of reaction occurring during chloralkali process

(a) $2NaCl(l) + 2\ \ _2O(l) \rightarrow 2NaOH(l) + C\ _2(g) +\ \ _2(g)$

(b) $2NaCl(aq) + 2\ \ _2O(aq) \rightarrow 2NaOH(aq) + C\ _2(g) +\ \ _2(g)$

(c) $2NaCl(aq) + 2\ \ _2O(l) \rightarrow 2NaOH(aq) + C\ _2(aq) +\ \ _2(aq)$

(d) $2NaCl(aq) + 2\ \ _2O(l) \rightarrow 2NaOH(aq) + C\ _2(g) +\ \ _2(g)$

117) In an attempt to demonstrate electrical conductivity through an electrolyte, the following apparatus shown below was set up.

which among the following statement(s) is (are) correct?

(i)Bulb will not glow because electrolyte is not acidic

(ii)Bulb will glow because NaOH is a strong base and furnishes ions for conduction.

(iii)Bulb will not glow because circuit is incomplete.

(iv)Bulb will not glow because it depends upon the type of electrolytic solution.

(a) (i) and (iii) (b) (ii) and (iv) (c) (ii) only (d) (iv) only

118) Which one of the following will turn red litmus blue?

(a) Vinegar (b) Baking soda solution (c) Lemon juice

(d) Soft drinks

119) Which one of the following will turn blue litmus red?

(a) Vinegar (b) Lime water (c) Baking soda solution

(d) Washing soda solution

120) Methyl orange is
(a) Pink in acidic medium, yellow in basic medium
(b) Yellow in acidic medium, pink in basic medium
(c) Colourless in acidic medium, pink in basic medium
(d) Pink in acidic medium, colourless in basic medium

121) Lime water is
(a) CaO (b) Ca(OH)2 (c) CaCO3 (d) CaCl2

122) The nature of calcium phosphate is present in tooth enamel is
(a) Basic (b) Amphoteric (c) Acidic (d) Neutral

123) Which of the following salts has no water of crystallization?
(a) Blue vitriol (b) Washing soda (c) Baking soda
(d) Gypsum

124) The role of quick lime in soda lime (mixture) is to
(a) Absorb moisture present in soda lime
(b) Increase the efficiency of soda lime
(c) Increase the pH of soda lime
(d) Take part in reaction with NaOH

125) The pH of a solution of HCl is 4. This shows that the molarity of the solution is
(a) 4.0M (b) 0.4 (c) 0.0001M (d) 0.001M

126) A milkman added a small pinch of baking soda to fresh milk which had pH close to 6. As a result, pH of the medium
(a) became close to 2 (b) became close to 4
(c) did not undergo any change (d) became close to 8

127) In which of the following pairs, both are acidic salts?
(a) KCl, KNO_3 (b) Na_2SO_4, K_2SO_4 (c) CH_3COONa, K_2CO_3
(d) $CuSO_4$, $AgNO_3$

128) The compound used for neutralisation of excess HCl in the stomach is
(a) $NaHCO_3$ (b) $Mg(OH)_2$ (c) Both (d) None of these

129) Which of the following is incorrectly matched?
(a) Tomato - tartaric acid (b) Citrus fruits - citric acid
(c) Ant sting - methanoic acid (d) Curd - lactic acid

130) The aqueous solution of which of the following salt will have higher OH^- ions?
(a) NaCl (b) Na_2SO_4 (c) CH_3COONa (d) None of these

131) Which one of the following can be used as an acid-base indicator by a visually impaired student?
(a) Litmus (b) Vanilla essence (c) Thrmeric
(d) Petunia leaves

132) Which of the following phenomenon occur when a small amount of acid is added to water?
(i) Ionisation (ii) Dilution (iii) Neutralisation (iv) Salt formation
(a) (i) and (ii) (b) (ii) and (iii) (c) (i) and (iii) (d) (ii) and (iv)

133) Which of the following substances will not give carbon dioxide on treatment with dilute acid?
(a) Marble (b) Limestone (c) Lime (d) Baking soda

134) The chemical formula of caustic potash is
(a) NaOH (b) $Ca(OH)_2$ (c) NH_4OH (d) KOH

135) Substances exposed to atmosphere at ordinary temperature, lose their water of crystallisation are called as
(a) hygroscopy (b) efflorescence (c) deliquescence
(d) all of these

136) Identifythe substance, having the property of deliquescence
(a) gypsum (b) hydrated calcium chloride (c) quick lime
(d) conc. sulphuric acid

137) The composition of aqua regia is

(a) conc. H_2SO_4 and conc. HCl in ratio of 1 : 3

(b) conc. HNO_3 and cone. HCl in ratio of 1 : 3

(c) conc. HNO_3 and cone, HCl in ratio of 3 : 1

(d) conc. H_2SO_4 and cone. HNO_3 is ratio of 3 : 1

138) An element 'X' forms a solid oxide which dissolves in water forming solution which turns blue litmus paper red, 'X' is

(a) Ca (b) Cu (c) Fe (d) P

139) Soda-acid fire extinguishes the fire by

(a) cutting the supply of air (b) raising ignition temperature

(c) removing combustible substance (d) none of these

140) The formula of washing soda is

(a) $NaHCO_3$ (b) $Na_2CO_3.H_2O$ (c) Na_2CO_3

(d) $Na_2CO_3.10H_2O$

141) The substance which on treating with chlorine, yields bleaching powder is

(a) quick lime (b) limestone (c) slaked lime (d) gypsum

142) If tartaric acid is not added in baking powder, the cake will taste bitter due to the presence of

(a) sodium hydrogen carbonate (b) sodium carbonate

(c) carbon dioxide (d) same unreacted tartaric acid

143) An aqueous solution has $[H^+]$ ion concentration = 1.0×10^{-7} mol L^{-1}. Its pH value is

(a) +7 (b) -7 (c) 0.70 (d) $^{-7}$

144) Milk of magnesia is

(a) solid magnesium oxide (b) insoluble magnesium hydroxide

(c) soluble magnesium hydroxide

(d) insoluble magnesium carbonate

145) The pH of human blood varies between
(a) 7.12 to 7.36 (b) 7.36 to 7.42 (c) 7.42 to 7.50
(d) 7.25 to 7.42

146) The difference of molecules of water in gypsum and Plaster of Paris is
(a) 5/2 (b) 2 (c) 3/2 (d) 1/2

147) Which of the following does not form an acidic salt?
(a) Nitric acid (b) Carbonic acid (c) Hydrochloric acid
(d) Sulphuric acid

148) Which of the following pairs will give displacement reactions?
(a) NaCl solution and copper metal
(b) $MgCl_2$ solution and aluminium metal
(c) $FeSO_4$ solution and silver metal
(d) $AgNO_3$ solution and copper metal

149) Which of the following methods is suitable for preventing an iron frying pan from rusting?
(a) Applying grease (b) Applying paint
(c) Applying a coating of zinc (d) All of the above

150) An element reacts with oxygen to give a compound with a high melting point. This compound is also suitable in water. The element is likely to be
(a) Calcium (b) Carbon (c) Silicon (d) Iron

151) Food cans are coated with tin and not with zinc because
(a) Zinc is costlier than tin
(b) Zinc has a higher melting point than tin
(c) Zinc is more reactive than tin
(d) Zinc is less reactive than tin

152) Which of the following properly is generally not shown by metals?
(a) Electrical conduction (b) Sonorous in nature (c) Dullness
(d) Ductility

153) The ability of metals to be drawn into thin wire is known as
(a) Ductility (b) mallleability (c) Sonorousity
(d) conductivity

154) Aluminium is used for making cooking utensils. Which of the following properties of aluminium are responsible for the same? (i) Good thermal conductivity (ii) Good electrical conductivity (iii) Ductility (iv) High melting point
(a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) (i) and (iv)

155) Which one of the following metals do not react with cold as well as hot water?
(a) Na (b) Ca (c) Mg (d) Fe

156) Which of the following oxide(s) of iron would be obtained on prolonged reaction of iron with steam?
(a) FeO (b) Fe_2O_3 (c) Fe_3O_4 (d) Fe_2O_3 and Fe_3O_4

157) What happens when calcium is treated with water? (i) It does not react with water. (ii) It reacts violently with water. (iii) It reacts less violently with water. (iv) Bubbles of hydrogen gas formed stick to the surface of calcium.
(a) (i) and (iv) (b) (ii) and (iii) (c) (i) and (ii) (d) (iii) and (iv)

158) Generally metals react with acids to give salt and hydrogen gas. Which of the following acids does not give hydrogen gas on reacting with metals (except Mn and Mg)?
(a) H_2SO_4 (b) HCl (c) HNO_3 (d) All of these

159) The composition of aqua-regia is
(a) Dil.HCl : Conc.HNO_3 [3 : 1] (b) Conc.HCl : Dil.HNO_3 [3 : 1]
(c) Conc.HCl : Conc.HNO_3 [3 : 1] (d) Dil.HCl : Dil.HNO_3 [3 : 1]

160) Which of the following are not ionic compounds ?
(i) KCl (ii) HCl (iii) CCl_4 (iv) NaCl
(a) (i) and (ii) (b) (ii) and (iii) (c) (iii) and (iv) (d) (i) and (iii)

161) Which one of the following properties is not generally exhibited by ionic compounds?
(a) Solubility in water (b) Electrical conductivity in solid state
(c) High melting and boiling points
(d) Electrical conductivity in molten state

162) Which of the following metals exist in their native state in nature?
(i) Cu (ii) Au (iii) Zn (iv) Ag
(a) (i) and (ii) (b) (ii) and (iii) (c) (ii) and (iv) (d) (iii) and (iv)

163) Metals are refined by using different methods. Which of the following metals are refined by electrolytic refining?
(i) Au (ii) Cu (iii) Na (iv) K
(a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) (iii) and (iv)

164) Silver articles become black on prolonged exposure to air. This is due to the formation of
(a) Ag_3N (b) Ag_2O (c) Ag_2S (d) Ag_2S and Ag_3N

165) Galvanisation is a method of protecting iron from rusting by coating with a thin layer of
(a) Gallium (b) Aluminium (c) Zinc (d) Silver

166) Stainless steel is very useful material for our life. In stainless steel, iron is mixed with
(a) Ni and Cr (b) Cu and Cr (c) Ni and Cu (d) Cu and Au

167) If copper is kept open in air, it slowly loses its shining brown surface and gains a green coating. It is due to the formation of
(a) $CuSO_4$ (b) $CuCO_3$ (c) $Cu(NO_3)_2$ (d) CuO

168) Generally, metals are solid in nature. Which one of the following metals is found in liquid state at room temperature?
(a) Na (b) Fe (c) Cr (d) Hg

169) Which of the following metals are obtained by electrolysis of their chlorides in molten state? (i) Na (ii) Ca (iii) Fe (iv) Cu
(a) (i) and (iv) (b) (iii) and (iv) (c) (i) and (iii) (d) (i) and (ii)

170) Generally, non-metals are not lustrous. Which of the following nonmetal is lustrous?
(a) Sulphur (b) Oxygen (c) Nitrogen (d) Iodine

171) Which one of the following four metals would be displaced from the solution of its salts by other three metals?
(a) Mg (b) Ag (c) Zn (d) Cu

172) 2 ml each of concentrated HCl, HNO_3 and a mixture of concentrated HCl and concentrated HNO_3 in the ratio of 3 : 1 were taken in test tubes labelled as A, B and C. A small piece of metal was put in each test tube. No change occured in test tubes A and B but the metal got dissolved in test tube C respectively. The metal could be
(a) Al (b) Au (c) Cu (d) Zn

173) An alloy is
(a) An element (b) A compound (c) A homogeneous mixture
(d) A heterogeneous mixture

174) An electrolytic cell consists of (i) Positively charged cathode (ii) Negatively charged anode (iii) Positively charged anode (iv) Negatively charged cathode
(a) (i) and (ii) (b) (iii) and (iv) (c) (i) and (iii) (d) (ii) and (iv)

175) During electrolytic refining of zinc, it gets
(a) Deposited on cathode (b) Deposited on anode
(c) Deposited on cathode as well as anode
(d) Remains in the solution

176) An element A is soft and can be cut with a knife. This is very reactive to air and cannot be kept open in air. It reacts vigorously with water. Identify the element from the following

(a) Mg (b) Na (c) P (d) Ca

177) Alloys are homogeneous mixtures of a metal with a metal or nonmetal. Which among the following alloys contain non-metal as one of its constituents?

(a) Brass (b) Bronze (c) Amalgam (d) Steel

178) Which among the following statements is incorrect for magnesium metal?

(a) It burns in oxygen with a dazzling white flame.

(b) It reacts with cold water to form magnesium oxide and evolves hydrogen gas

(c) It reacts with hot water to form magnesium hydroxide and evolves hydrogen gas.

(d) It reacts with steam to form magnesium hydroxide and evolves hydrogen gas.

179) Which among the following alloys contain mercury as one of its constituents?

(a) Stainless steel (b) Alnico (c) Solder (d) Zinc amalgam

180) Reaction between X and Y, forms compound Z. X loses electron and Y gains electron. Which of the following properties is not shown by Z?

(a) Has high melting point (b) Has low melting point

(c) Conducts electricity in molten state (d) Occurs as solid

181) The electronic configurations of three elements X, Y and Z are X - 2, 8; Y - 2, 8, 7 and Z - 2, 8, 2. Which of the following is correct?

(a) X is a metal (b) Y is a metal (c) Z is a non-metal

(d) Y is a non-metal and Z is a metal

182) Although metals form basic oxides, which of the following metals form an amphoteric oxide?

(a) Na (b) Ca (c) Al (d) Cu

183) Generally, non-metals are not conductors of electricity. Which of the following is a good conductor of electricity?

(a) Diamond (b) Graphite (c) Sulphur (d) Fullerene

184) Electrical wires have a coating of an insulating material. The material, generally used is

(a) Sulphur (b) Graphite (c) PVC (d) All can be used

185) Which of the following non-metals is a liquid?

(a) Carbon (b) Bromine (c) Phosphorus (d) Sulphur

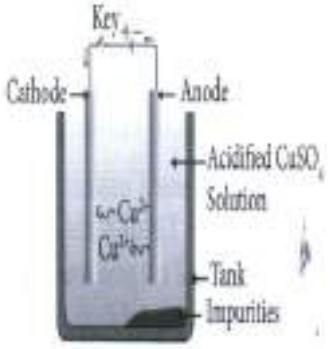
186) Which of the following can undergo a chemical reaction?

(a) $MgSO_4$ + Fe (b) $ZnSO_4$ + Fe (c) $MgSO_4$ + Pb

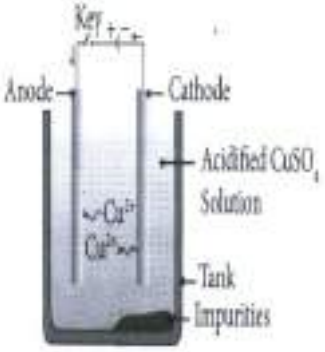
(d) $CuSO_4$ + Fe

187) Which one of the following figures correctly describes the process of electrolytic refining?

(a)



(b)



(c)

(d)

188) Which of the following metals is present in the anode mud during the electrolytic refining of copper?
(a) Sodium (b) Aluminium (c) Gold (d) Iron

189) When iron fillings are heated in a stream of dry hydrogen chloride the compound formed is $FeCl_x$ where X is
(a) 1 (b) 2 (c) 3 (d) 4

190) The second most abundant metal in the earth's crust is
(a) oxygen (b) silicon (c) aluminium (d) iron

191) An alloy of Zn and Cu is dissolved in dil. HCl. Hydrogen gas is evolved. In this evolution of gas
(a) only zinc reacts with dil. HCl
(b) only copper reacts with dil. HCl
(c) both zinc and copper react with dil. HCl
(d) only copper reacts with water

192) A greenish coating develops on copper utensils due to formation of
(a) $CuCO_3$ (b) $Cu(OH)_2$ (c) $Cu(OH)_2.CuCO_3$ (d) CuO

193) Rusting of iron takes place in
(a) ordinary water (b) distilled water
(c) both ordinary and' distilled water (d) none of the above

194) Bronze is an alloy
(a) Cu and Zn (b) Zn and Ni (c) Cu and Sn (d) Cu, Zn, Tn

195) During smelting, an additional substance is added which combines with impurities to form a fusible product known as
(a) slag (b) mud (c) gangue (d) flux

196) A student placed an iron nail in copper sulphate solution. He observed the reddish brown coating on the iron nail which is
(a) soft and dull (b) hard and flading (c) smooth and shining
(d) rough and granular

197) Which among the following alloys contain non-metal as one of its constituents

(a) Brass (b) Amalgam (c) Gun metal (d) None of thes

198) An aluminium strip is kept immersed in freshly prepared ferrous sulphate solution taken in a test tube, the change observed is that

(a) Green solution slowly turns brown

(b) Lower end of test tube become slightly warm

(c) A colourless gas with the smell of burning sulphur is observed

(d) Light green solution changes to blue.

199) Which of the following will not evolve CO_2 upon heating?

(a) $CaCO_3$ (b) $MgCO_3$ (c) $ZnCO_3$ (d) Na_2CO_3

200) Which of the following are not ionic compounds?

(a) $CaCl_2$ (b) $MgCl_2$ (c) NaCl (d) CCl_4

201) 5 mL each of cone. HCl, HNO_3 and a mixture of cone. HCl (15 mL) and cone. HNO_3 (5 mL) were taken in test tubes labelled as A, Band C. A small piece of metal was put in each tube. No change occurred in test tube A and B but the metal got dissolved in test tube C. The metal could be

(a) Al (b) Au (c) Cu (d) Na

202) The electronic configuration of three element X, Y and Z are

X - 2,8

Y - 2, 8, 6

Z - 2, 8, 1

Which of the following is correct?

(a) X is a metal (b) Z is a non-metal (c) Y is a metal

(d) X and Yare non-metal and Z is a metal

203) The process of coating of Zn over Fe is known as

(a) Cathodic protection (b) Metallurgy (c) Tinning

(d) Galvanization

204) The method used for reduction of mercuric oxide to mercury is

(a) Heating (b) Chemical reduction (c) Calcination

(d) Electrolytic reduction

205) $Cu + 2Ag(NO_3)_2 \quad CU(NO_3)_2 + 2Ag$

$Pb + CU(NO_3)_2 \quad Pb(NO_3)_2 + Cu$

$Zn + Pb(NO_3)_2 \quad Zn(NO_3)_2 + Pb$

The most reactive metal is

(a) Ag (b) Pb (c) Cu (d) Zn

206) Which of the following oxides, on reduction with carbon gives metal ?

(a) Al_2O_3 (b) ZnO (c) MgO (d) All of these

207) Magnesium dissolves in hot water to form

(a) MgO (b) $Mg(OH)_2$ (c) MgOH (d) $MgO.Mg(OH)_2$

208) Identify an ore containing sulphur in it

(a) Siderite (b) Fluorspar (c) Iron pyrites (d) Calamine

209) Arrange the following metals in the order of their decreasing reactivity: Fe, Cu, Mg, Ca, Zn,Ag

(a) Ca > Zn > Mg > Cu > Ag > Fe

(b) Ca > Zn > Cu > Mg > Ag > Fe

(c) Ca > Mg > Zn > Fe > Cu > Ag

(d) Ca > Mg > Fe > Zn > Cu > Ag

210) Ethane, with the molecular formula C_2H_6 has

(a) 6 covalent bonds (b) 7 covalent bonds

(c) 8 covalent bonds (d) 9 covalent bonds

211) Butanone is a four-carbon compound with the functional group

(a) carboxylic acid (b) aldehyde (c) ketone (d) alcohol

212) While cooking, if the bottom of the vessel is getting blackened on the outside, it means that

(a) the food is not cooked completely.

(b) the fuel is not burning completely. (c) the fuel is wet.

(d) the fuel is burning completely.

213) Carbon exists in the atmosphere in the form of

(a) carbon monoxide only

(b) carbon monoxide in traces and carbon dioxide

(c) carbon dioxide only (d) coal

214) Which of the following statements are usually correct for carbon compounds? These

i) are good conductors of electricity

ii) are poor conductors of electricity

iii) have strong forces of attraction between their molecules

iv) do not have strong forces of attraction between their molecules

(a) (i) and (iii) (b) (ii) and (iii) (c) (i) and (iv) (d) (ii) and (iv)

215) A molecule of ammonia (NH_3) has

(a) only single bonds (b) only double bonds

(c) only triple bonds (d) two double bonds and one single bond

216) Buckminsterfullerene is an allotropic form of

(a) Phosphorous (b) Sulphur (c) Carbon (d) Tin

217) $C_3 - C_2 - OH \xrightarrow{\text{Alkaline } KMn_4 + \text{Heat}} C_3 - COOH$

In the above given reaction, alkaline $KMnO_4$ acts as

(a) reducing agent (b) oxidising agent (c) catalyst

(d) dehydrating agent

218) Oils on treating with hydrogen in the presence of palladium or nickel catalyst form fats. This is an example of

(a) Addition reaction (b) Substitution reaction

(c) Displacement reaction (d) Oxidation reaction

219) In which of the following compounds, -OH is the functional group?
(a) Butanone (b) Butanol (c) Butanoic acid (d) Butanal

220) The soap molecule has a
(a) hydrophilic head and a hydrophobic tail
(b) hydrophobic head and a hydrophilic tail
(c) hydrophobic head and a hydrophobic tail
(d) hydrophilic head and a hydrophilic tail

221) Identify the unstructured compounds from the following
(i) Propane
(ii) Propene
(iii) Propyne
(iv) Chloropropane
(a) (i) and (ii) (b) (ii) and (iv) (c) (iii) and (iv) (d) (ii) and (iii)

222) Chlorine reacts with saturated hydrocarbons at room temperature in the
(a) absence of sunlight (b) presence of sunlight
(c) presence of water (d) presence of hydrochloric acid

223) In the soap micelles
(a) the ionic end of soap is on the surface of the cluster while the carbon chain is in the interior of the cluster.
(b) ionic end of soap is in the interior of the cluster and the carbon chain is out of the cluster.
(c) both ionic end and carbon chain are in the interior of the cluster
(d) both ionic end and carbon chain are on the exterior of the cluster

224) Pentane has the molecular formula C_5H_{12} . It has
(a) 5 covalent bonds (b) 12 covalent bonds
(c) 16 covalent bonds (d) 17 covalent bonds

225) Vinegar is a solution of

(a) 50% - 60% acetic acid in alcohol

(b) 5% - 8% acetic acid in alcohol

(c) 5% - 8% acetic acid in water

(d) 50% - 60% acetic acid in water

226) Mineral acids are stronger acids than carboxylic acids because

i) mineral acids are completely ionized

ii) carboxylic acids are completely ionized

iii) mineral acids are partially ionized

iv) carboxylic acids are partially ionised

(a) (i) and (iv) (b) (ii) and (iii) (c) (i) and (ii) (d) (iii) and (iv)

227) Carbon forms four covalent bonds by sharing its four valence electrons with four univalent atoms, e.g. hydrogen. After the formation of four bonds, carbon attains the electronic configuration of

(a) Helium (b) Neon (c) Argon (d) Krypton

228) Which of the following does not belong to the same homologous series?

(a) CH_4 (b) C_2H_6 (c) C_3H_8 (d) C_4H_8

229) The name of the compound $CH_3 - CH_2 - CHO$ is

(a) Propanal (b) Propanone (c) Ethanol (d) Ethanal

230) The heteroatoms present in $CH_3 - CH_2 - O - CH_2 - CH_2Cl$ are

i) oxygen

ii) carbon

iii) hydrogen

iv) chlorine

(a) (i) and (ii) (b) (ii) and (iii) (c) (iii) and (iv) (d) (i) and (iv)

231) Which of the following represents saponification reaction?

(a) $CH_3COONa + NaOH \xrightarrow{CaO} CH_4 + Na_2CO_3$

(b) $CH_3COOH + C_2H_5OH \xrightarrow{H_2SO_4} CH_3COOC_2H_5 + H_2O$

(c) $2CH_3COOH + 2Na \rightarrow 2CH_3COONa + H_2$

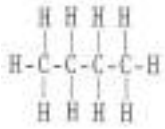
(d) $CH_3COOC_2H_5 + NaOH \rightarrow CH_3COONa + C_2H_5OH$

232) The first member of alkyne homologous series is

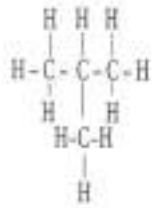
(a) Ethyne (b) Ethane (c) Propyne (d) Methane

233) Which of the following are correct structural isomers of butane?

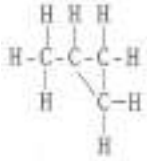
(i)



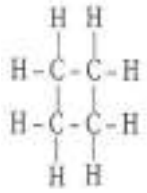
(ii)



(iii)



(iv)

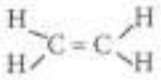
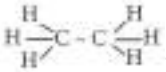


(a) (i) and (iii) (b) (ii) and (iv) (c) (i) and (ii) (d) (iii) and (iv)

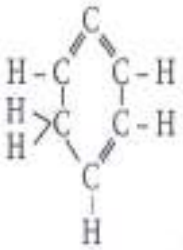
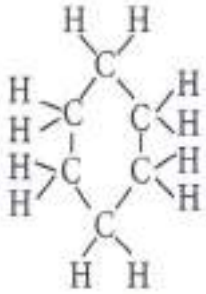
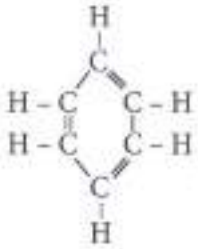
234) Which of the following is the correct representation of electron dot structure of nitrogen?

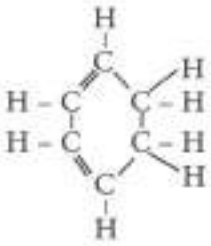
(a)  (b)  (c)  (d) 

235) Structural formula of ethyne is

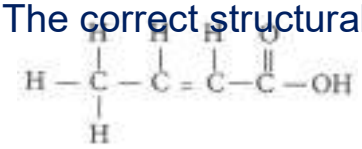
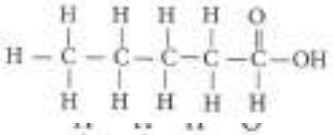
(a)  (b)  (c)  (d) 

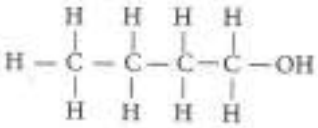
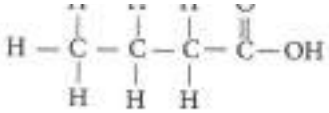
236) Structural formula of benzene is

(a)  (b)  (c) 

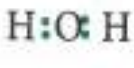
(d) 

237) The correct structural formula of butanoic acid is

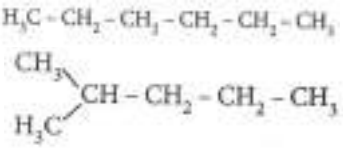
(a)  (b) 

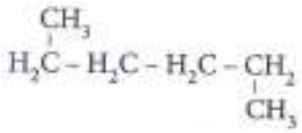
(c)  (d) 

238) The correct electron dot structure of a water molecule is

(a)  (b)  (c)  (d) 

239) Which of the following is not a straight chain hydrocarbon?

(a)  (b) 

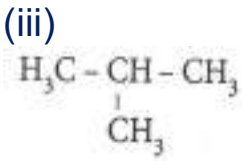
(c)  (d)

240) Which among the following are unsaturated hydrocarbons?

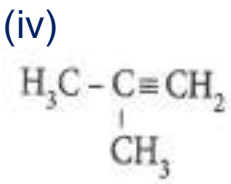
(i)

(ii)

(iii)



(iv)



(a) (i) and (iii) (b) (ii) and (iii) (c) (ii) and (iv) (d) (iii) and (iv)

241) The isomeric pair is

(a) ethane and propane (b) propane and butane

(c) ethane and ethane (d) butane and 2-methyl propane

242) Which of the following is used to oxidise ethanol to ethanoic acid

(a) Alkalme $KMnO_4$ (b) Cone. H_2SO_4 (c) Acidified $K_2Cr_2O_7$

(d) All of above

243) The compound which gives a brisk effervescence with sodium metal and not with sodium hydrogen carbonate is

(a) ethanol (b) ethanoic acid

(c) both ethanoic acid and ethanol (d) none of these

244) Identify the product formed when methane reacts with chlorine in the presence of sunlight is

(a) C_2Cl_6 (b) CH_3Cl (c) $CHCl_4$ (d) None of these

245) Which is denatured spirit?

(a) ethanol only (b) ethanol and methanol (50%)

(c) ethanol and methanol (5%) (d) methanol only

246) Drinking alcohol and driving may cause serious accidents. To discourage this, police randomly test drivers for alcohol using a breath analyser. The breath analyser works because

(a) Alcohol makes the breath dry and the machine registers moisture

(b) Alcohol makes the breath hotter which changes the machine reading

(c) Alcohol causes more saliva which the machine checks.

(d) Alcohol in the breath cause a chemical change registered by the machine

247) Tertiary butane gets oxidised with oxidising agents like alkaline $KMnO_4$ to

(a) Isobutane (b) Tert-butyl alcohol

(c) Secondary-propyl alcohol (d) All of above

248) The substance not responsible for the hardness of water is

(a) sodium nitrate (b) calcium hydrogen carbonate

(c) calcium carbonate (d) magnesium carbonate

249) The by product of soap is

(a) isoprene (b) glycerol (c) butene (d) ethylene glycol

250) Covalent compounds

(a) have high melting and boiling points

(b) are mostly soluble in water

(c) are formed between atoms of metals and non-metals

(d) are formed by the sharing of electrons in the bonding atoms

251) The heteroatoms present is CH_3 - O -CH_2 - CH_2 (Br)

(a) oxygen (b) carbon (c) hydrogen (d) bromine

252) Which of the following can be used for the denaturation of ethyl alcohol?

(a) Methyl alcohol (b) Pyridines (c) Copper sulphate

(d) All of above

253) Soaps are formed by saponification of

(a) alcohols (b) glycosides (c) simple esters

(d) carboxylic acids

254) Acetic acid was added to a liquid X kept in a test tube. A colourless and odourless gas Y was evolved. The gas was passed through lime water which turned milky. It was concluded that:

(a) Liquid X is sodium hydroxide and the gas Y is CO

(b) Liquid X is sodium carbonate and the gas Y is CO_2

(c) Liquid X is sodium acetates and the gas Y is CO_2

(d) Liquid X is sodium chloride and the gas Y is SO_2

255) For gas welding used for welding broken pieces of iron, we normally use a mixture of

(a) Ethane and oxygen (b) Ethene and oxygen

(c) Ethyne and oxygen (d) Ethene and air

256) Bromine reacts with saturated hydrocarbon at room temperature in the

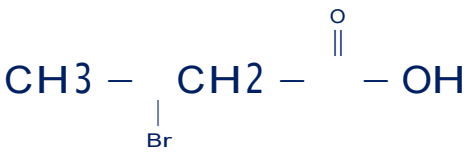
(a) absence of sunlight (b) presence of wate

(c) presence of sunligh (d) presence of hydrochloric acid

257) The number of single and double bonds present in benzene are

(a) 9 and 6 (b) 9 and 3 (c) 12 and 3 (d) 12 and 6

258) Identify the functional group present in the following compound



(a) aldehyde (b) bromine (c) carboxylic

(d) both bromine and carboxylic group

259) The upper and lower homologue of C_2H_5OH are respectively

(a) methyl alcohol and butyl alcohol

(b) ethyl alcohol and propyl alcohol

(c) butyl alcohol and propyl alcohol

(d) propyl alcohol and methyl alcohol

260) Which is not true about homologous series?

(a) They have same general formula.

(b) They differ from other by CH_3 group

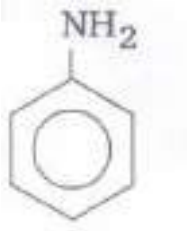
(c) They have same functional group.

(d) They have same chemical properties

261) Name the following aromatic compound

(a) toluene (b) aniline (c) phenol (d) furan

262) Ethanoic acid was added to sodium carbonate solution and the gas evolved was tested with a burning splinter. The following four observations were reported. Identify the correct observation.



(a) The gas burns with pop sound and the flame gets extinguished

(b) The gas does not burn but the splinter burns with pop sound

(c) The flame extinguishes and the gas does not burn

(d) The gas burns with a blue flame and the splinter burns brightly

263) The general formula for aldehydes is CnH_{2n+1} -CHO.The value of 'n' for the first member.

(a) 1 (b) 0 (c) 0.5 (d) 1.1