JAMB

Chemistry

Past questions

Paper Type: **Objective (PT. 1-5)**

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JAMB CHEMISTRY PAST QUESTIONS (PT.1)

PAPER TYPE: B

1. Which question Paper Type of Chemistry is given to you?

A. Type A
B. Type B
C. Type C
D. Type D

2. What is the concentration of a solution containing 2g of NaOH in $100cm^3$ of solution?
[Na = 23, O = 16, H = 1]

A. 0.40 mol dm^{-3}
B. 0.50 mol dm^{-3}
C. 0.05 mol dm^{-3}
D. 0.30 mol dm^{-3}

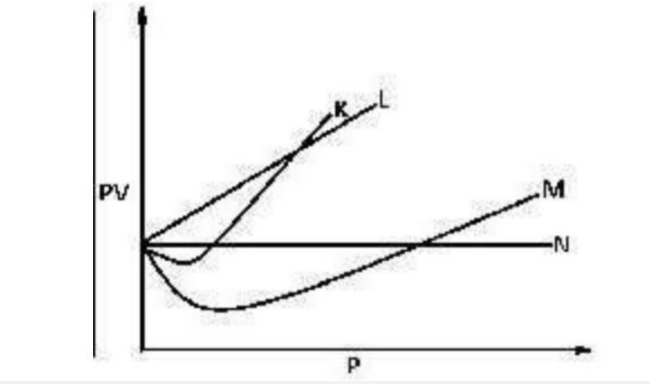
3. Which of the following properties is NOT peculiar to matter?

A. kinetic energy of particles increases from solid to gas
B. Random motion of particles increases from liquid to gas
C. Orderliness of particles increases from gas to liquid
D. Random motion of particles increases from gas to solid

4. The principle of column chromatography is based on the ability of the constituents to _____

A. move at different speeds in the column
B. dissolve in each other in the column
C. react with the solvent in the column
D. react with each other in the column

5.



From the diagram above, an ideal can be represented by _____

A. M
B. N
C. K
D. L

6. Which of the following questions is correct about the periodic table?

A. The non-metallic properties of the elements tend to decrease across each period
B. The valence electrons of the elements increase progressively across the period
C. Elements in the same group have the same number of electron shells
D. Elements in the same period have the number of valence electrons

7. The relative atomic mass of a naturally occurring lithium consisting of 90% Li and 10% Li is _____

A. 6.9
B. 7.1
C. 6.2
D. 6.8

8. An isotope has an atomic number of 15 and a mass number of 31. The number of protons it contain is _____

A. 16
B. 15
C. 46
D. 31

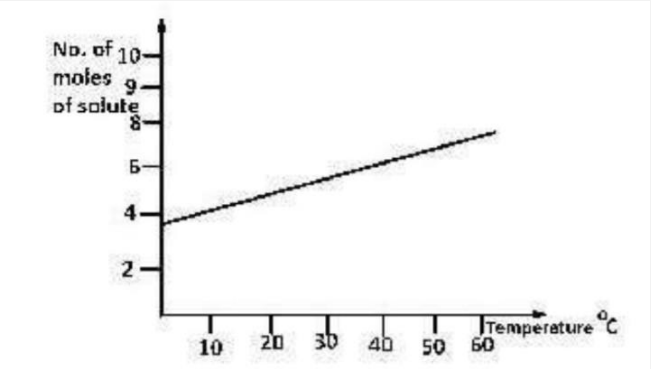
9. The molecular lattice of iodine is held together by _____

A. dative bond
B. metallic bond
C. hydrogen bond
D. van der Waal's forces

10. The arrangement of particles in crystal lattices can be studied using _____

A. X - rays
B. γ - rays
C. α - rays
D. β – rays

11.



From the diagram above, find the amount of solute deposited when 200 cm^3 of the solution is cooled from 55°C to 40°C.

A. 0.10 mole
B. 0.20mole
C. 0.01 mole
D. 0.02 mole

12. The importance of sodium aluminate (III) in the treatment of water is to _____

A. cause coagulation
B. neutralize acidity
C. prevent goitre and tooth decay
D. kill germs

13. What type of bond exits between an element X with atomic number 12 and Y with atomic number 17?

A. Electrovalent
B. Metallic
C. Covalent
D. Dative

14. Hardness of water is mainly due to the presence of _____

A. calcium hydroxide or magnesium hydroxide
B. calcium trioxocarbonate (IV) or calcium tetraoxosulphate (VI)
C. sodium hydroxide or magnesium Hydroxide
D. calcium chloride or sodium chloride salts

15. A suitable solvent for iodine and nephthalene is _____

A. carbon (IV) sulphide
B. ethanol
C. water
D. benzene

16. Which of the following noble gases is commonly found in the atmosphere?

A. Xenon
B. Neon
C. Helium
D. Argon

17. $N_2O_{4(g)} \leftrightharpoons 2NO_{2(g)}$ $\Delta H = +ve$
In the reaction above, an increase in temperature will _____

A. increase the value of the equilibrium constant
B. decreases the value of the equilibrium constant
C. increase in the reactant production
D. shift the equilibrium to the left

18. $CH_3COOH_{(aq)} + OH^-_{(aq)} \leftrightharpoons CH_3COO^-_{(aq)} + H_2O_{(l)}$
In the reaction above, $CH_3COO^-_{(aq)}$ is _____

A. conjugate base
B. acid
C. base
D. conjugate acid

19. How many cations will be produced from a solution of potassium aluminium tetraoxosulphate (VI)?

A. 3
B. 4
C. 1
D. 2

20. Which of the following is **NOT** an alkali?

A. NH_3
B. $Mg(OH)_2$
C. $Ca(OH)_2$
D. NaOH

21. An effect of thermal pollution on water bodies is that the _____

A. volume of water reduces
B. volume of chemical waste increase
C. level of oxides of nitrogen increase
D. level of oxygen reduces

22. Which of the following is a deliquescent compound?

A. Na_2CO_3

B. $CaCl_2$

C. CuO

D. $Na_2CO_3. 10H_2O$

23. A chemical reaction which the hydration energy is greater than the lattice energy is referred to as _____

A. a spontaneous reaction

B. an endothermic reaction

C. an exothermic reaction

D. a reversible reaction

24. The function of zinc electrode in a galvanic cell is that it _____

A. undergoes reduction

B. serves as the positive electrode

C. production electrons

D. uses up electrons

25. $CH_{4(g)} + Cl_{2(g)} \rightarrow CH_3Cl_{(s)} + HCl_{(g)}$

The major factor that influence the rate of the reaction above is _____

A. catalyst

B. temperature

C. concentration

D. light

26. The condition required for corrosion to take place is the presence of _____

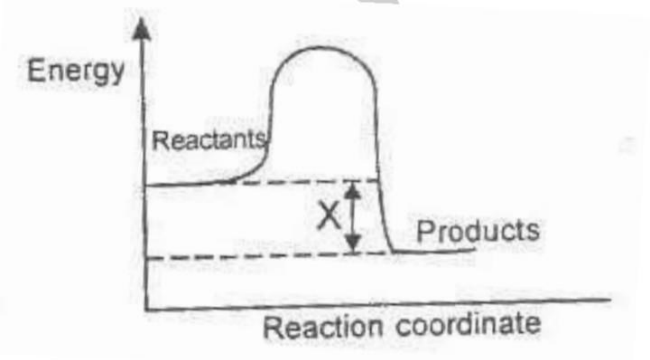
A. water and carbon (IV) oxide

B. water, carbon (IV) oxide and oxygen

C. oxygen and carbon (IV) oxide

D. water and oxygen

27.



In the diagram above, X is the _____

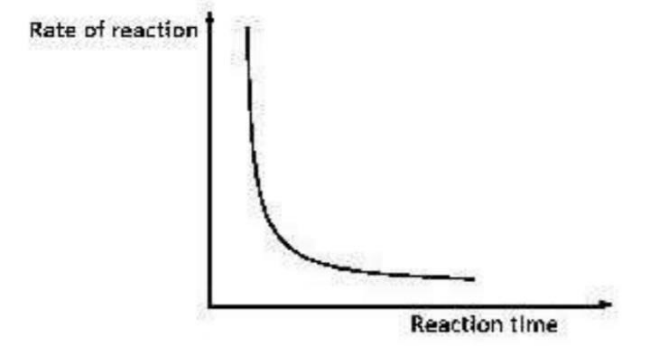
A. enthalpy

B. enthalpy change

C. activation energy

D. activated complex

28. The diagram below best illustrates the effect of decrease in _____



A. concentration
B. temperature
C. surface area
D. pressure

29. $MnO^{-}_{4(aq)} + Y + 5Fe^{2+}_{(aq)} \rightarrow Mn^{2+}_{(aq)} + 5Fe^{2+}_{(aq)} + 4H_2O_{(l)}$

In the equation above, Y is _____

A. $5H^{+}_{(aq)}$
B. $4H^{+}_{(aq)}$
C. $10H^{+}_{(aq)}$
D. $8H^{+}_{(aq)}$

30. Given that M is the mass of a substance deposited during electrolysis and Q is the quantity of electricity consumed, then Faraday's first law can be written as _____
[Electrochemical equivalent]

A. $M = \frac{E}{Q}$
B. $M = EQ$
C. $M = \frac{Q}{E}$
D. $M = \frac{E}{2Q}$

31. The impurities formed during the laboratory preparation of chlorine gas are removed by _____

A. H_2O
B. NH_3
C. H_2SO_4
D. HCl

32. The effect of the presence of impurities such as carbon and sulphur on iron is that they _____

A. give it high tensile strength
B. make it malleable and ductile
C. increase its melting point
D. lower its melting point

33. A few drops of concentrated HNO_3 is added to an unknown solution and boiled for a while. If this produces a brown solution, the cation presents are likely to be _____

A. Pb^{2+}
B. Cu^{2+}
C. Fe^{3+}
D. Fe^{2+}

34. The bleaching action of chlorine gas is effective due to the presence of _____

A. hydrogen chloride
B. water
C. air
D. oxygen

35. In the laboratory preparation of oxygen, dried oxygen is usually collected over _____

A. hydrochloric acid
B. mercury
C. calcium chloride
D. tetraoxosulphate (VI) acid

36. The property of concentrated H_2SO_4 that makes it suitable for preparing HNO_3 is its _____

A. boiling point
B. density
C. oxidizing properties
D. dehydrating properties

37. Bronze is preferred to copper in the making of medals because it _____

A. is stronger
B. can withstand low temperature
C. is lighter
D. has low tensile strength

38. The constituents of baking powder that makes the dough to rise is _____

A. $NaHCO_3$
B. NaOH
C. Na_2CO_3
D. NaCl

39. Which of the following compound is used as a gaseous fuel?

A. $CH_3 - C = CH$

B. $CH_3 - CH_2 - CH_3$

I

OH

C. $CH_3 - CH_2 - CH_2 - COOH$

D. $CH_3 - CH_2 - CH_2 - CH_3$

40. The ability of carbon to form long chains is referred to as _____

A. alkylation

B. acylation

C. catenation

D. carbonation

41. Which of the following compounds will undergo polymerization reaction?

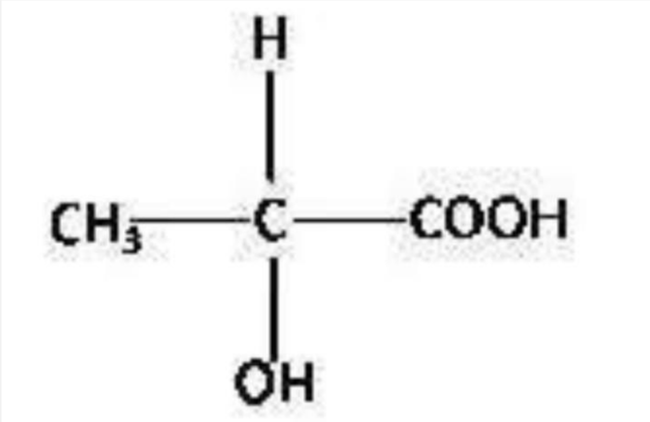
A. C_2H_4

B. C_2H_5COOH

C. C_2H_6

D. C_2H_5OH

42.



The compound above exhibits ______

A. geometric isomerism

B. optical isomerism

C. structural isomerism

D. positional isomerism

43. An organic compound has an empirical formula CH_2O and vapour density of 45. What is the molecular formula?
[C=12, H=1, O=16]

A. C_3H_7OH

B. C_2H_5OH

C. $C_3H_6O_3$

D. $C_2H_4O_2$

44. $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$ + energy

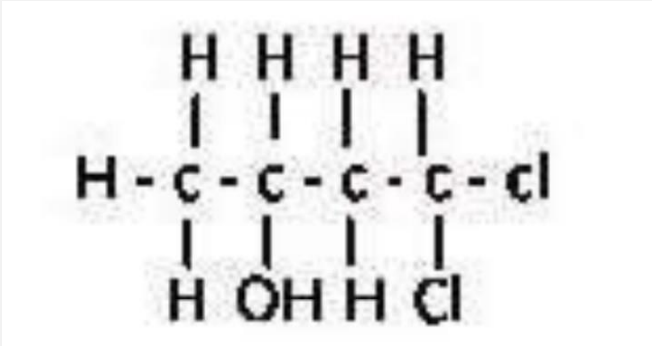
The reaction above represented by the equation above is useful in the production of _____

A. propanol
B. butanol
C. methanol
D. ethanol

45. The number of isomers that can be obtained from C_4H_{10} is _____

A. 3
B. 4
C. 1
D. 2

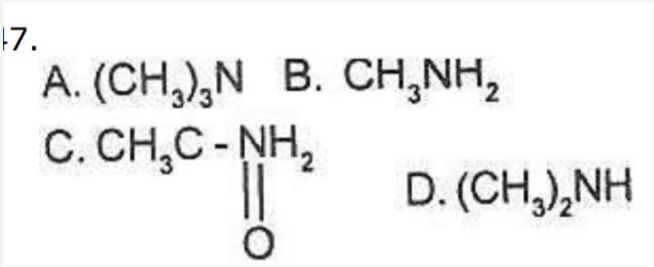
46.



The functional groups present in the compound above are _____

A. alkene and halo-group
B. hydroxyl and chloro-group
C. alkene and chloro-group
D. hydroxyl and halo-group

47.



Which of the following is a primary amine?

A. A
B. B
C. C
D. D

48. Two organic compounds K and L were treated with a few drops of Fehling's solutions respectively. K formed a brick red precipitate while L, remains unaffected. The compound K is an _____

A. alkanol
B. alkane
C. alkanal
D. alkanone

49. Which of the following statements is true about 2-methylpropane and butane?

A. They are members of the same homologous series
B. They have the same boiling point
C. They have different number of carbon atoms
D. They have the same chemical properties

50. $CH_3COOH + C_2H_5OH \xrightarrow[H_2SO_4]{conc} CH_3COOC_2H_5 + H_2O$

The reaction above is best described as _____

A. esterification
B. Condensation
C. saponification
D. neutralization

JAMB CHEMISTRY PAST QUESTIONS (PT.2)

PAPER TYPE: RED

1. Which Question Paper Type of Chemistry is given to you?

A. Type Green
B. Type Purple
C. Type Red
D. Type Yellow

2. Which of the following methods can be used to obtain pure water from a mixture of sand, water and methanoic acid?

A. neutralization with NaOH followed by filtration
B. neutralization with NaOH followed by distillation
C. fractional distillation
D. filtration followed by distillation

3. How many atoms are present in 6.0g of magnesium?
[Mg = 24, NA = 6.02 x 10^{23} mol^{-1}]

A. 1.20 x 10^{22}
B. 2.41 x 10^{22}
C. 1.51 x 10^{23}
D. 3.02 x 10^{23}

4. 50 cm^3 of gas was collected over water at 10°C and 765 mm Hg. Calculate the volume of the gas at s.t.p. if the saturated vapour pressure of water at 10°C is 5mm Hg.

A. 49.19 cm^3
B. 48.87 cm^3
C. 48.55 cm^3
D. 48.23 cm^3

5. An increase in the pressure exerted on gas at a constant temperature result in _____

A. a decrease in the number of effective collisions
B. a decrease in volume
C. an increase in the average intermolecular distance
D. an increase in volume

6. $2H_{2(g)} + O_{2(g)} \rightarrow 2H_2O_{(g)}$

In the reaction above, what volume of hydrogen would be left over when 300 cm3 of oxygen and 1000 cm3 of hydrogen are exploded in a sealed tube?

A. 200 cm^3
B. 400 cm^3
C. 600 cm^3
D. 700 cm^3

7.

l. Evaporation.
ll. Sublimation.
lll. Diffusion.
IV. Brownian motion

Which of the above can correctly be listed as evidences for the particulate nature of matter?

A. I and lll only
B. ll and lV only
C. l, ll and lll only
D. l, ll, lll and lV

8. If the elements X and Y have atomic numbers 11 and 17 respectively, what type of bond can they form?

A. Dative
B. Covalent
C. Ionic
D. Metallic

9. A hydrogen atom which has lost an electron contains _____

A. one proton only
B. one neutron only
C. one proton and one neutron
D. one proton, one electron and one neutron

10. The electronic configuration of Mg^{2+} is _____

A. $1s^2\ 2s^2\ 2P^6\ 3s^2\ 3P^2$
B. $1s^2\ 2s^2\ 2P^6\ 3s^2$
C. $1s^2\ 2s^2\ 2p^6$
D. $1s^2\ 2s^2\ 2P^4$

11. Group VII elements are _____

A. monoatomic
B. good oxidizing agents

C. highly electropositive
D. electron donors

12. Which of the following is used to study the arrangement of particles in crystal lattices?

A. Alpha-particles
B. Beta-particles
C. Gamma-rays
D. X-rays

13.
I. It has a varied composition from one place to another.
ll. its constituents can be separated by physical means
Ill. It contains unreactive noble gases which of the above shows that air is a mixture?

A. **I** and **ll** only
B. **ll** and **lll** only
C. **I and lll only**
D. **I, ll** and **lll**

14. The chemicals used to soften hard water involves the addition of _____

A. insoluble sodium compounds which from soluble solutions of calcium and magnesium
B. soluble sodium compounds which from soluble solutions of calcium and magnesium ions
C. soluble sodium compounds which from insoluble precipitates of calcium and magnesium ions
D. insoluble precipitates of calcium and magnesium ions

15. Chlorination of water for town supply is carried out to _____

A. make the water colourless
B. remove germs from the water
C. make the water tasteful
D. remove odour from the water

16. The solubilities of different solutes in a given solvent can be compared by _____

A. plotting their solubility curves on separate axes
B. plotting their solubility curves on the same axes

C. plotting some of the solubility curves on the x-axis and others on the y-axis

D. plotting their solubility curves on the x-axis only

17. Potassium trioxochlorate (V) has a solubility of 1.5 $moldm^{-3}$ at 45°C. On cooling this solution to a temperature of 20°C, the solubility was found to be 0.5 mol dm_{-3}. What mass of $KClO_3$ was crystalized out?
[K = 39, Cl = 35.5 O =16]

A. 1.00g
B. 10.00g
C. 12.25g
D. 122.50g

18. Which of the following pollutants is associated with brain damage?

A. Carbon (ll) oxide
B. Radioactive fallout
C. Biodegradable waste
D. Sulphur (lV) oxide

19. Which of the following will produce a solution with pH less than 7 at equivalent point?

A. HNO_3 + NaOH
B. H_2SO_4 + KOH
C. HC +$Mg(OH)_2$
D. HNO_3 + KOH

20. The number of hydroxonium ions produced by one molecule of an acid in aqueous solution is its _____

A. basicity
B. acid strength
C. pH
D. concentration

21. During a titration experiment, 0.05 moles of carbon (lV) oxide is liberated. What is the volume of gas liberated?

A. 22.40 dm^3
B. 11.20 dm^3
C. 2.24 dm^3
D. 1.12 dm^3

22. A major factor considered in selecting a suitable method for preparing a simple salt is its _____

A. Crystalline form
B. melting point
C. reactivity with dilute acids
D. solubility in water

23. The oxidation number of boron in $NaBH_4$ is _____

A. -3
B. -1
C. +1
D. +3

24. $2Na_2O_{2(s)} + 2H_2O_{2(l)} \rightarrow 4 NaOH_{(s)} + O_{2(s)}$

The substance that is oxidized in the reaction above is _____

A. $2NaO_{2(s)}$
B. $NaOH_{(aq)}$
C. $H_2O_{(l)}$
D. $O_{2(g)}$

25. What number of moles of Cu^{2+} will be deposited by 360 coulombs of electricity? [f = 96500 C mol^{-1}]

A. 5.36×10^{-4} mole
B. 1.87×10^{-3} mole
C. 9.35×10^{-4} mole
D. 3.73×10^{-3} mole

26. A metal M displaces zinc from ZnCl, solution. This shows that _____

A. electrons flow from zinc to M
B. M is more electropositive than zinc
C. M is more electronegative than zinc
D. zinc is more electropositive than M

27. $CO_{(g)} + H_2O_{(g)} \rightarrow CO_{2(g)} + H_{2(g)}$
Calculate the standard heat change of the reaction above, if the standard enthalpies of formation of $CO_{2(g)}$, $H_2O_{(g)}$ and $CO_{(g)}$ and $CO_{(g)}$ in KJ mol^{-1} are -394, -242 and -110 respectively.

A. + 262 KJ mol^{-1}

B. - 262 KJ mol^{-1}

C. + 42 KJ mol^{-1}

D. - 42 KJ mol^{-1}

28. An increase in entropy can best be illustrated by _____

A. mixing of gases

B. freezing of water

C. the condensation of vapour

D. solidifying candle wax

29. The highest rate of production of carbon (IV) oxide can be achieved using _____

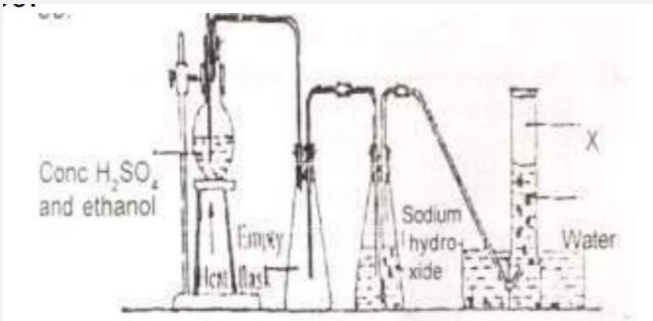
A. 0.05 mol^{-3} HCI and 5g powdered $CaCO_3$

B. 0.05 mol^{-3} HCl and 5g lump $CaCO_3$

C. 0.10 mol^{-3} HCI and 5g powdered $CaCO_3$

D. 0.025 mol^{-3} HCI and 5g powdered $CaCO_3$

30.



$2HCl_{(aq)} + CaCO_{3(S)} \rightarrow CaCl_{2(s)} + CO_{2(g)} + H_2O_{(l)}$

From the reaction above, which of the curves represents the production of CO_2 gas as dilute HCl is added?

A. L

B. M

C. N

D. P

31. $2CO_{(g)} + O_{2(g)} \leftrightharpoons 2CO_{2(g)}$

In the reaction above, high pressure will favour the forward reaction because _____

A. high pressure favours gas formation

B. the reaction is in dynamic equilibrium

C. the reaction is exothermic

D. the process occurs with a decrease in volume

32. A piece of filter paper moistened with lead (ll) ethanoate solution turns black when the paper is dropped into a gas likely to be _____

A. sulphur (VI) oxide
B. hydrogen chloride
C. sulphur (VI) oxide
D. hydrogen sulphide

33. Which of the following gases has a characteristic pungent smell, turns red litmus paper blue and forms dense white fumes with hydrogen chloride gas?

A. N_2
B. N_2O
C. CI_2
D. NH_3

34. Commercial bleaching can be carried out using _____

A. sulphur (IV) oxide and ammonia
B. hydrogen sulphide and chlorine
C. chlorine and sulphur (IV) oxide
D. ammonia and chlorine

35. Mineral acids are usually added to commercial hydrogen peroxide to _____

A. oxidize it
B. decompose it
C. minimize its decomposition
D. reduce it to water and oxygen

36. Which of the following compounds will burn with a brick-red colour in a nonluminous Bunsen flame?

A. LiCI
B. NaCl
C. $CaClN_2$
D. $MgClN_2$

37. The purest form of iron which contains only about 0.1% carbon is _____

A. pig iron
B. wrought iron
C. cast iron
D. iron pyrite

38. A common characteristic between zinc and the other transition elements is the ability to _____

A. have variable oxidation states
B. from complex ions
C. act as a catalyst
D. from coloured ions

39. Which of the following metals is the least reactive?

A. Pb
B. Sn
C. Hg
D. Au

40. Geometric isomerism can exist in _____

A. hex-3-ene
B. hexane
C. prop-1-ene
D. 3-methyl but -1-ene

41. Alkanals can be distinguished from alkanones by the reaction with

A. Sudan lll stain
B. starch iodide paper
C. lithium tetrahydrido aluminate (lll)
D. Fehling's solution

42. The isomers of C_3H_8O are

A. 1 - propanol and 2 - propanol
B. 1 - propanol and 1 - propanol
C. 2 - propanol and 2 - propanone
D. 2 - propanol and 1 - propanol

43. Carbohydrates are large molecules with the molecular formula $Cx(H_2O)y$. In which of the following pairs is x not equal to y?

A. glucose and starch
B. maltose and starch
C. sucrose and fructose
D. maltose and starch

44. A compound contains 40.0% C, 6.7% H 53.3% O. If the molecular mass of the compound is 180, its molecular formula is _____ [C=12, H=1, O=16]

A. CH_2O
B. $C_3H_6O_3$
C. $C_6H_6O_3$
D. $C_6H_{12}O_6$

45. The alkyne that will give a white precipitate silver trioxonitrate (V) is _____

A. $CH_3\,CH_2\,C \equiv CCH_2\,CH_3$
B. $CH_3C \equiv CCH_2\,CH_2\,CH_3$
C. $CH_3\,CH_2\,CH_2\,CH_2\,C \equiv CH$
D. $CH_3\,CH_2\,CH_2C \equiv CCH_2\,CH_3$

46. The saponification of an alkanoate to produce soap and alkanol involves _____

A. dehydration
B. esterification
C. hydrolysis
D. oxidation

47. 2 - methyl propan -2- ol is an example of a _____

A. primary alkanol
B. secondary alkanol
C. tertiary alkanol
D. quaternary alkanol

48. The final oxidation product of alkanol, alkanal and alkanoes is _____

A. alkanoic acid
B. alkanoyyl halide
C. alkanoate
D. alkanamide

49. Ethanol reacts with concentrated tetraoxosulphate (V) acid at a temperature above 170^{0}C to form _____

A. ethanone
B. ethene
C. ethyne
D. ethanal

50. An example of oxidation – reduction enzyme is _____

A. amylase

B. protease

C. lipase

D. dehydrogenase

CHECK YOUR ANSWERS

*Would you like to get or confirm the **correct answer(s) with explanations** to any or all of these questions?*

Download it NOW!

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JAMB CHEMISTRY PAST QUESTIONS (PT.3)

PAPER TYPE: I

1. Which Question Paper Type of Chemistry is given to you?

A. Type D
B. Type I
C. Type B
D. Type U

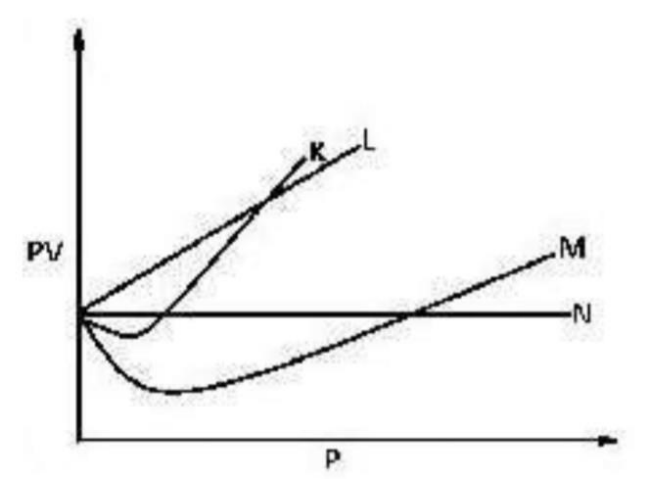
2. The presence of an impurity in substance will cause the melting point to _____

A. be zero
B. reduce
C. increase
D. be stable

3. What volume of carbon (ll) oxide is produced by reacting excess carbon with $10dm^3$ of oxygen?

A. 5 dm^3
B. 20 dm^3
C. 15 dm^3
D. 10 dm^3

4.



From the diagram above, an ideal gas is represented by _____

A. M
B. N
C. K
D. L

5. The rate of diffusion of a gas Y is twice that of Z If the relative molecular mass of Y is 64 and the two gases diffuse under the same conditions, find the relative molecular mass of Z.

A. 32
B. 4
C. 8
D. 16

6. The radioisotope used in industrial radiography for the rapid checking of faults in welds and casting is _____

A. Carbon-14
B. phosphorus-32
C. cobalt-60
D. iodine-131

7. How many unpaired electrons are in the p-orbitals of a fluorine atom?

A. 3
B. 0
C. 1
D. 2

8. The radioactive emission with the least ionization power is _____

A. α-particles
B. X-rays
C. γ-rays
D. β-particles

9. The shape of the carbon (IV) oxide molecule is _____

A. pyramidal
B. linear
C. angular
D. tetrahedral

10. Which of the following molecules is held together by hydrogen bond?

A. CH4
B. HBr
C. H_2SO_4
D. HF

11. The bond formed between two elements with electron configurations $1s^2\ 2s^2\ 2p^6\ 3s^2$ and $1s^2\ 2s^2\ 2p^4$ is _____

A. metallic
B. covalent
C. dative
D. ionic

12. The constituent of air that acts as a diluent is _____

A. nitrogen
B. carbon (IV) oxide
C. noble gases
D. oxygen

13. Steam changes the colour of anhydrous cobalt (ll) chloride from _____

A. white to red
B. blue to white
C. blue to pink
D. white to blue

14. An example of a hygroscopic substance is _____

A. $CuO_{(S)}$.
B. $MgCl_{2(S)}$.
C. $CaCl_{2(S)}$.
D. $NaOH_{(S)}$.

15. If 24.4g of lead (ll) trioxonitrate (V) were dissolved in 42g of distilled water at 20°C; calculate the solubility of the solute in gdm^{-3}.

A. 581.000
B. 0.581
C. 5.810
D. 58.100

16. The solvent used for removing grease stain is _____

A. turpentine
B. ammonia solution
C. ethanol
D. solution of borax in water

17. In a water body, too much sewage leads to _____

A. a decrease in the temperature of the water which cause in death of aquatic animals
B. an increase in the number of aquatic animals in the water
C. an increase in the bacterial population which reduces the level of oxygen in the water
D. a decrease in the bacterial population which increases the level of oxygen in the water

18. 10.0 dm^3 of water was added to 2.0 $moldm^{-3}$ of 2.5dm^3 solution

of HCl. What is the concentration of the final solution in mol dm^{-3}?

A. 0.4
B. 8.0
C. 2.0
D. 0.5

19. Three drops of a 1.0 mol dm^{-3} solution of HCl was added to 20cm^3 of a solution of pH6.4. The pH of the resulting solution will be _____

A. close to that of pure water
B. less than 6.4
C. greater than 6.4
D. unaltered

20. Which of the following substances is not a salt?

A. Aluminium oxide
B. Sodium hydrogen trioxosulphate (V)
C. Sodium trioxocarbonate (V)
D. Zinc chloride

21. An insoluble salt can be prepared by _____

A. the reaction of trioxocarbonate (V) with an acid
B. double decomposition
C. the action of dilute acid on an insoluble base
D. the reaction of metals with an acid

22. $2H_2O_{(l)} + 2F_{2(g)} \rightarrow 4HF_{(aq)} + O_{2(g)}$

In the reaction above, the substance that is being reduced is _____

A. $O_{2(g)}$
B. $H_2O_{(l)}$
C. $F_{2(g)}$
D. $HF_{(aq)}$

23. $Zn_{(s)} + CuSO_{4(aq)} \rightarrow ZnSO_{4(aq)} + Cu_{(s)}$

In the reaction above, the oxidizing agent is _____

A. $CuSO_{4(aq)}$
B. $ZnSO_{4(aq)}$
C. $Cu_{(s)}$
D. $Zn_{(s)}$

24. In an electrochemical cell, polarization is caused by _____

A. chlorine
B. oxygen
C. tetraoxosulphate (Vl) acid
D. hydrogen

25. Calculate the volume in cm^3 of oxygen evolved as s.t.p. when a current of 5 A is passed through acidified water for 193s
{F = 96500 $Cmol^{-1}$, Molar volume of a gas at s.t.p. = 22.4 dm^3}

A. 224.000 dm^3
B. 0.056 dm^3
C. 0.224 dm^3
D. 56.000 dm^3

26. In an endothermic reaction, if there is a loss in entropy the reaction will _____

A. be indeterminate
B. be spontaneous
C. not be spontaneous
D. be at equilibrium

27. $2SO_{2(g)} + O_{2(g)} \leftrightharpoons 2SO_{3(g)}$
$\Delta H = -395.7 kJmol^{-1}$

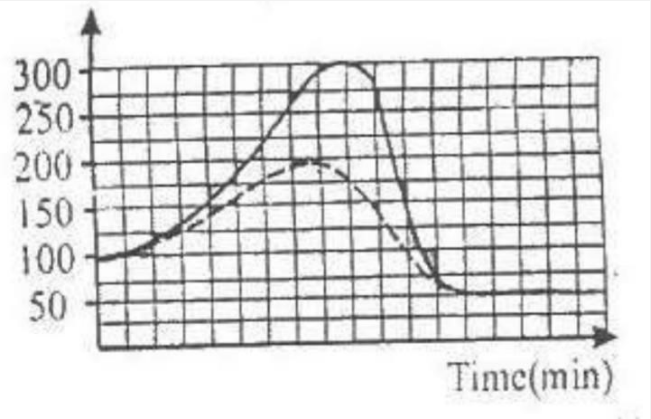
In the reaction above, the concentration of $SO_{3(g)}$ can be increased by _____

A. decreasing the pressure
B. decreasing the temperature
C. increasing the temperature
D. the addition of catalyst

28. The minimum amount of energy required for a reaction to take place is _____

A. lattice energy
B. ionization energy
C. activation energy
D. kinetic energy

29.



In the graph above, the activation energy of the catalyzed reaction is _____

A. 100KJ
B. 300KJ
C. 250KJ
D. 200KJ

30. $3Fe_{(S)} + 4H_2O_{(g)} \rightleftharpoons Fe_3O_{4(s)} + 4H_{2(g)}$.

The equilibrium constant, K, of the reaction above is represented as _____

A. $\frac{[Fe_3O_4][H_2]}{[Fe][H_2O]}$
B. $\frac{[H_2O]^4}{[H_2]^4}$
C. $\frac{[H_2]^4}{[H_2O]^4}$
D. $\frac{[Fe]^3[H_2O]^2}{[Fe_3O_4][H_2]^4}$

31. Which of the following compounds is a neutral oxide?

A. Carbon (IV) oxide
B. Sulphur (Vl) oxide
C. Sulphur (IV) oxide
D. Carbon (ll) oxide

32. In the laboratory preparation of ammonia, the flask is placed in a slanting position so as to _____

A. prevent condensed water from breaking the reaction flask
B. enable the proper mixing of the reactions in the flask
C. enhance the speed of the reaction
D. prevent formation of precipitate

33. Which of the gases is employed as an anaesthesia?

A. N_2O
B. NO_2
C. NH_3
D. NO

34. Sulphur (IV) oxide is a strong reducing agent in the presence of water due to the formation of _____

A. hydroxide ion
B. sulphur (Vl) oxide
C. hydrogen sulphide
D. trioxosulphate (IV) salt

35. A metal that forms soluble trioxosulphate (IV) ion is _____

A. barium
B. potassium
C. manganese
D. aluminium

36. Copper is displaced from the solution of its salts by most metals because it _____

A. is a transition element
B. is at the bottom of the activity series
C. is very reactive
D. has completely filled 3d-orbitals

37. The coloured nature of transition metal ions are associated with their partially filled _____

A. f- orbital
B. s- orbital
C. p-orbital
D. d-orbital

38. Aluminium containers are frequently used to transport trioxonitrate (V) acid because aluminium _____

A. has a silvery-white appearance
B. has a low density
C. does not react with the acid
D. does not corrode

39. 2-methylbutan-2-ol is an example of a _____

A. dihydric alkanol
B. tertiary alkanol
C. secondary alkanol
D. primary alkanol

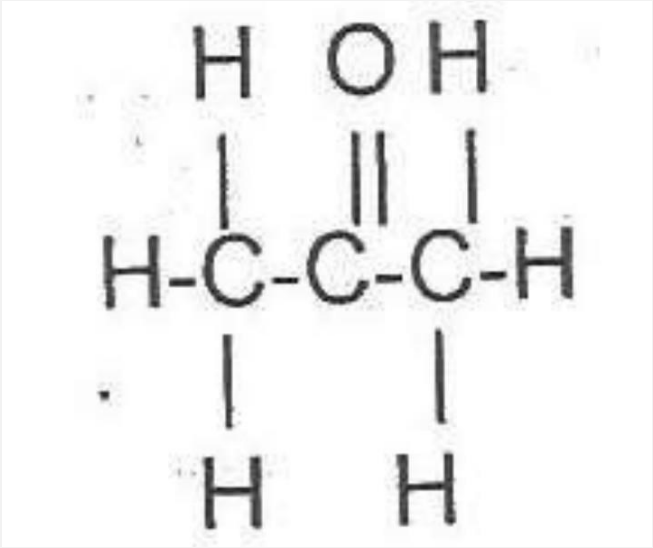
40. The reaction between ammonia and ethyl ethanoate produces _____

A. propanol and ethanamide
B. propanol and propanamide
C. ethanol and propanamide
D. ethanol and ethanamide

41. The decarboxylation of ethanoic acid will produce carbon (IV) oxide and _____

A. methane
B. ethane
C. propane
D. butane

42.



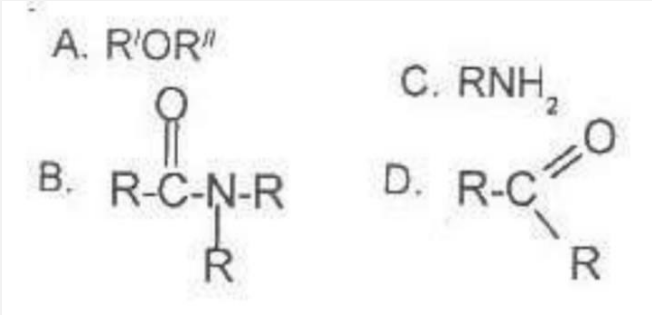
The compound above is an _____

A. alkanone
B. alkanoate
C. alkanal
D. alkanol

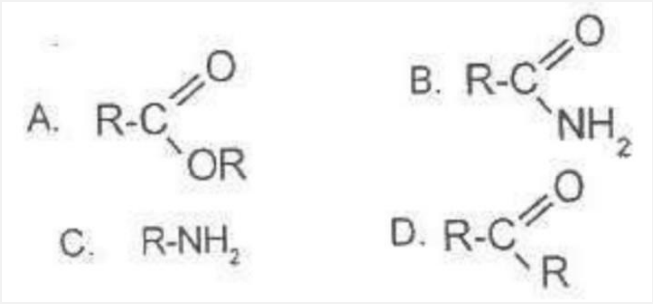
43. The compound that will react with sodium hydroxide to form salt and water is _____

A. $C_6H_{12}O_6$
B. $(CH_3)_3COH$
C. $CH_3CH=CH_2$
D. CH_3CH_2COOH

44. Which of the following compounds in solution will turn red litmus paper blue?



45. The dehydration of ammonium salt of alkanoic acids produces a compound with the general formula _____



46. Which of the following fraction is used as raw material for the cracking process?

A. kerosene
B. lubricating oil
C. bitumen
D. diesel oils

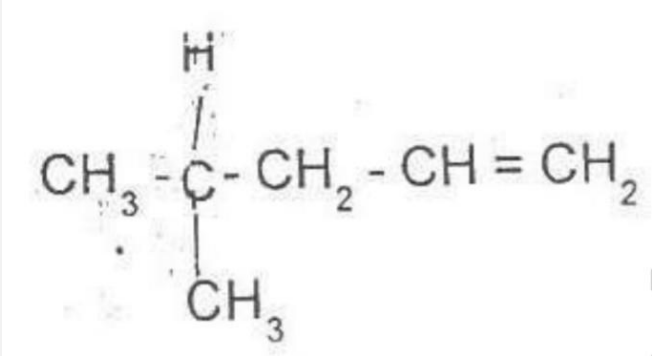
47. An organic compound with a pleasant smell is likely to have a general formula _____

A. $C_nH_{2n+1}CHO$
B. $C_nH_{2n+1}COOH$
C. $C_nH_{2n+1}COOC_nH_{2n+1}$
D. $C_nH_{2n+1}COC_nH_{2n+1}$

48. A primary amide is generally represented by the formula _____

A. RCOOR
B. $RCONH_2$
C. RCONHR
D. $RCONR_2$

49.



The IUPAC nomenclature for the compound above is _____

A. 4-methylpent-1-ene
B. 3-methylpent-2-ene
C. 2-methylpent-1-ene
D. 2-methylpent-4-ene

50. An organic compound contains 60% carbon, 13.3% hydrogen and 26.7% oxygen. Calculate the empirical formula (C=12, H =1, O=16)

A. $C_5H_{12}O$
B. C_3H_8O
C. $C_6H_{13}O_2$
D. C_4H_9O

JAMB CHEMISTRY PAST QUESTIONS (PT.4)

PAPER TYPE: E

1. Which Question Paper Type of Chemistry is given to you?

A. Type F
B. Type E
C. Type L
D. Type S

2. A mixture is different from a compound because _____

A. the properties of a compound are those of its individual constituents while those of a mixture differ from its constituents
B. a mixture is always homogeneous while a compound is not
C. the constituent of a compound are chemically bound together while those of a mixture are not
D. a mixture can be represented by a chemical formula while a compound cannot

3. What is the percentage of sulphur in sulphur (IV) oxide?

A. 66%
B. 25%
C. 40%
D. 50%

4. A gas X diffuses twice as fast as gas Y. If the relative molecular mass of X is 32, calculate the relative molecular mass of Y.

A. 128
B. 8
C. 16
D. 64

5. 200cm^3 of a gas at 25^{o}C exerts a pressure of 700 mmHg. Calculate its pressure if its volume increases 350 cm^3 at 75^{o}C.

A. 342.53 mmHg
B. 1430.54 mmHg
C. 467.11 mmHg
D. 400.00 mmHg

6. An element X has electron configuration $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$. Which of the following statements is correct about the element?

A. It has a completely filled p-orbital
B. It has 5 electrons in its outermost shell.
C. It belongs to group II on the periodic table
D. It is a halogen

7. Beryllium and aluminium have similar properties because they _____

A. are both metals
B. belong to the same group
C. belong to the same period
D. are positioned diagonally to each other

8. If the difference in electronegativity of elements P and Q is 3.0. The bond that will be formed between them is _____

A. metallic
B. covalent
C. co-ordinate
D. ionic

9. How many protons, neutrons and electrons respectively are present in the element $^{60}_{27}Co$?

A. 27, 33 and 33
B. 33, 27 and 27
C. 27, 33, and 27
D. 60, 33 and 60

10. The radioactive radiation used in studying the arrangement of particles in giant organic molecules is _____

A. γ- rays
B. α- particles
C. X- rays
D. β – particles

11. A silicon-containing ore has 92% ^{28}Si, 5% ^{29}Si and 3% ^{30}Si. Calculate the relative atomic mass of the silicon.

A. 14.00

B. 29.00

C. 28.11

D. 28.00

12. The nitrogen obtained from air has a density higher than the one from nitrogen-containing compounds because the one from air is contaminated with _____

A. water vapour

B. oxygen

C. rare gases

D. carbon (IV) oxide

13. Water is said to be temporarily hard when it contains _____

A. $Ca(HCO_3)_2$ and $Mg(HCO_3)_2$ salts

B. $Ca(HCO_3)_2$ and $CaCO_3$ salts

C. $Mg(HCO_3)_2$ and $CaSO_4$ salts

D. $CaSO_4$ and $Ca(HCO_3)_2$ salts

14. On exposure to the atmosphere, a hydrated salt loses its water of crystallization to become anhydrous. This phenomenon is referred to as _____

A. efflorescence

B. deliquescence

C. hygroscopy

D. hydrolysis

15. 16.55g of lead (ll) trioxonitrate (V) was dissolved in 100g of distilled water at 20°C, calculate the solubility of the solute in $moldm^{-3}$

[Pb = 207, N = 14, O = 16]

A. 0.05 g

B. 2.00 g

C. 1.00 g

D. 0.50 g

16. The dispersion of a liquid in a liquid medium will give _____

A. an emulsion

B. a fog

C. a gel

D. an aerosol

17. The major and most effective way of controlling pollution is to _____

A. improve machinery so that the substances released from combustion are less harmful
B. pass strict laws against it by individuals and companies
C. educate people on the causes and effects of pollution
D. convert chemical wastes to harmless substances before releasing them into the environment

18. The basicity of CH_3COOH is _____

A. 4
B. 1
C. 2
D. 3

19. The colour of litmus in a neutral medium is _____

A. purple
B. pink
C. yellow
D. orange

20. The mathematical expression of pH is _____

A. $\log_{10} [OH^-]$
B. $\log_{10} \frac{1}{H_3O^+}$
C. $\log_{10} [H_3O^+]$
D. $\log_{10} \frac{1}{[OH^-]}$

21. Which of the following salts will turn blue litmus red?

A. Sodium tetrahydroxozincate (II)
B. Potassium hydrogen tetraoxosulphate (IV)
C. Sodium trioxocarbonate (IV)
D. Zinc chloride hydroxide

22. $Zn_{(s)} + CuSO_{4(aq)} \rightarrow ZnSO_{4(aq)} + Cu_{(s)}$

In the reaction above, the oxidation number of the reducing agent changes from _____

A. 0 to +4
B. 0 to +2

C. +1 to +2

D. +1 to +3

23. $H_2O_{(g)} + C_{(s)} \rightarrow H_{2(g)} + CO_{(g)}$

The oxidizing agent in the reaction above is _____

A. $CO_{(g)}$

B. $C_{(s)}$

C. $H_2O_{(g)}$

D. $H_{2(g)}$

24. Calculate the quantity of electricity in coulombs required to liberate 10g of copper from a copper compound.

[Cu=64, F = 96500 Cmol-1]

A. 32395.5

B. 30156.3

C. 60784.5

D. 15196.5

25. How many faraday of electricity is required to produce 0.25 mole of copper?

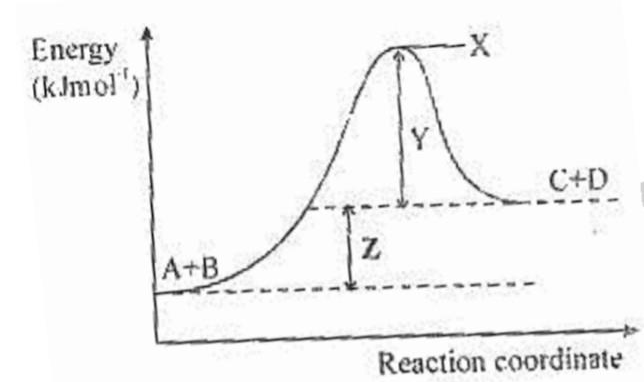
A. 1.00F

B. 0.01F

C. 0.05F

D. 0.50F

26. **Z** in diagram below represents _____



A. heat of reaction

B. activation energy

C. free energy

D. entropy of reaction

27. If the change in free energy of a system is -899 $Jmol^{-1}$ and the entropy change is 10$Jmol^{-1}k^{-1}$ at 25°C, calculate the enthalpy change.

A. +2081 $Jmol^{-1}$

B. -2081 $Jmol^{-1}$

C. -649 $Jmol^{-1}$

D. +649 $Jmol^{-1}$

28. In an equilibrium reaction, which of the following conditions indicates that maximum yield of the product will be obtained?

A. Equilibrium constant is very large
B. $\Delta H - T\Delta S = 0$
C. $\Delta H > T\Delta S$
D. Equilibrium constant is less than zero

29. In a chemical reaction, the change in concentration of a reactant with time is _____

A. entropy of reaction
B. enthalpy of reaction
C. rate of reaction
D. order of reaction

30. $Cr_2O^{2-}_{7(aq)} + H_2O_{(l)} \rightleftharpoons 2CrO^{2}_{4(aq)} + 2H^{+}_{(aq)}$

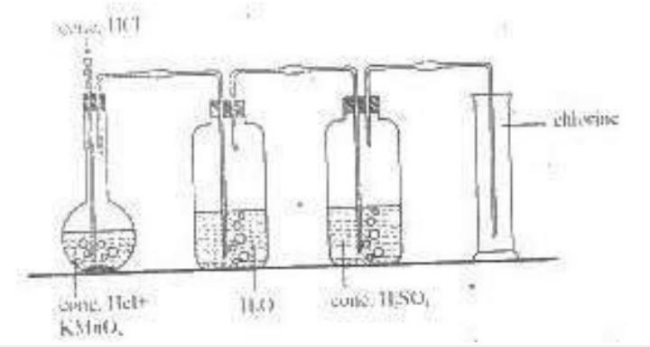
What happens to the reaction above when the hydrogen ion concentration is increased?

A. more of the products will be formed
B. the reaction will not proceed
C. the equilibrium position will shift to the right
D. the equilibrium position will shift to the left.

31. Which of the following will liberate hydrogen from dilute tetraoxosulphate (VI) acid?

A. Lead
B. Magnesium
C. Copper
D. Gold

Use the diagram below to answer question 32 and 33.



32. In the diagram, the function of the concentrated H_2SO_4 is to _____

A. purify the gas
B. dry the gas
C. liquefy the gas
D. remove odour

33. The gas that is removed by the water in the flask is _____

A. O_2
B. SO_2
C. HCl
D. H_2

34. Fluorine does not occur in the free state in nature because _____

A. it is a poisonous gas
B. it belongs to the halogen family
C. it is inert
D. of its high reactivity

35. In the extraction of sodium from fused sodium chloride, the anode is made of platinum because _____

A. sodium is formed at the anode
B. chlorine is formed at the anode
C. sodium does not react with platinum
D. chlorine does not react with platinum

36. A compound that gives a brick-red colour to a non-luminous flame is likely to contain _____

A. copper ions
B. sodium ions
C. calcium ions
D. aluminium ions

37. In the electrolytic extraction of calcium from calcium chloride, the cathode is _____

A. zinc
B. graphite
C. platinum
D. iron

38. A few drops of NaOH solution was added to an unknown salt forming a white precipitate which is insoluble in excess solution. The cation likely present is _____

A. Zn^{2+}

B. Pb^{2+}

C. Ca^{2+}

D. Al^{3+}

39. The general formula of haloalkanes where X represents the halide is _____

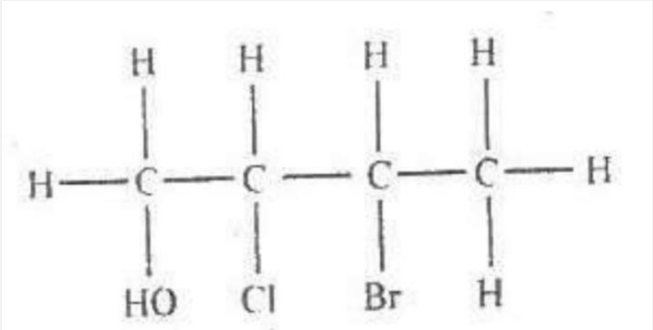
A. $C_nH_{2n-1}X$.

B. $C_nH_{2n}X$.

C. $C_nH_{2n+2}X$

D. $CnH_{2n+1}X$

40.



The IUPAC nomenclature of the compound above is _____

A. 2-bromo-3-chlorobutanol

B. 3-bromo-2-chlorobutanol

C. 3-chloro-2-bromobutanol

D. 2-chloro-3-bromobutanol

41. The alkanol obtained from the production of soap is _____

A. propanol

B. ethanol

C. glycerol

D. methanol

42. Ethyne is passed through a hot tube containing organo-nickel catalyst to produce _____

A. isoprene

B. polythene

C. ethanol

D. benzene

43. Due to the unstable nature of ethyne, it is stored by dissolving in _____

A. ethane-1,2-diol

B. propanol

C. ethanoic acid

D. propanone

44. The process of converting starch to ethanol is _____

A. cracking
B. distillation
C. fermentation
D. oxidation

45. The polymer used in making car rear lights is _____

A. Perspex
B. Bakelite
C. polystyrene
D. polyacrylonitrile

46. $CH_3COOC_2H_{5(l)} + H_2O_{(l)} \rightleftharpoons CH_3COOH_{(aq)} + C_2H_5OH_{(aq)}$

The purpose of H^+ in the reaction above is to _____

A. increase the yield of products
B. maintain the solution at a constant pH
C. increase the rate of the hydrolysis
D. decrease the rate of the reverse reaction

47. A hydrocarbon has an empirical formula CH and a vapour density of 39. Determine its molecular formula.
[C = 12, H = 1]

A. C_2H_6
B. C_3H_8
C. C_3H_4
D. C_6H_6

48. Polystyrene is widely used as packaging materials for fragile objects during transportation because of its _____

A. lightness
B. low density
C. high density
D. high compressibility

49. The process of converting linear alkanes to branched chain and cyclic hydrocarbons by heating in the presence of a catalyst to improve the quality of petrol is referred to as _____

A. refining
B. cracking
C. reforming

D. blending

50. The petroleum fraction that is used in heating furnaces in industries is _____

A. diesel oil
B. gasoline
C. kerosene
D. lubricating oil

CHECK YOUR ANSWERS

*Would you like to get or confirm the **correct answer(s) with explanations** to any or all of these questions?*

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JAMB CHEMISTRY PAST QUESTIONS (PT.5)

1. Which of the following statements is correct?

A. The average kinetic enemy of a gas is directly proportional to its temperature
B. At constant temperature, the volume of a gas increases as the pressure increases.
C. The pressure of a gas is inversely proportional to its volume.
D. The temperature of gas is directly proportional to its volume.

2. Which are the correct IUPAC names for H–CO_2 CH_3 and CH≡CH?

A. Methyl methanoate and ethene
B. Metanoic acid and ethyne
C. Ethyl methanoate and ethyne
D. Methyl methanoate and ethyne

3. A solution X on mixing with $AgNO_3$ solution, gives a white precipitate soluble in $NH_{3(aq)}$. A solution Y, when added to X, also gives a white precipitate which is soluble on boiling. Solution Y contains _____

A. Ag^+ ion
B. Pb^{2+} ion
C. Pb^{4+} ion
D. Zn^{2+} ion

4. Methane is a member of the homologous series called _____

A. alkenes
B. alcohols
C. esters
D. alkanes

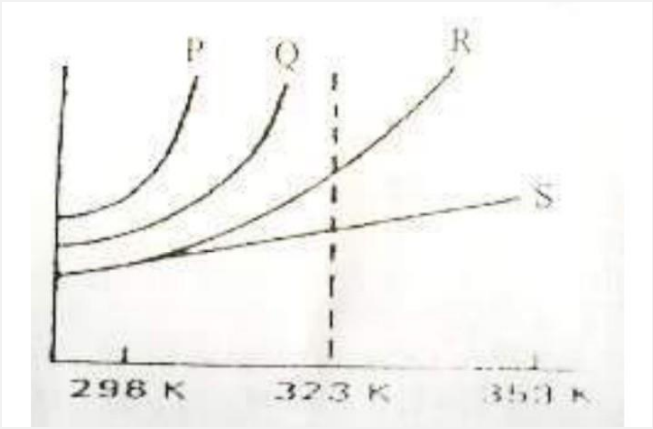
5. Which of the following bonds exists in crystalline ammonium chloride (NH_4CL)?

A. ionic covalent
B. ionic and co-ordinate
C. ionic, covalent and co- ordinate
D. covalent, co-ordinate and metallic

6. Some copper (II) sulphate pentahydrate ($CuSO_4$ $5H_2O$), was heated at 120°C with the following results: Wt of crucible = 10.00 g; Wt of crucible + $CuSO_4.5H_2O$ = 14.98g; Wt of crucible + residue = 13.54g. How many molecules of water of crystallization were lost? [H= 1, Cu = 63.5, O =16, S = 32]

A. 1
B. 2
C. 3
D. 4

7.



Which of the curves shown above represents the relationships between the volume (v) and pressure (p) of an ideal gas at constant temperature?

A. 1
B. 2
C. 3
D. 4

8. 12.0g of a mixture of potassium carbonate and potassium chloride were dissolved in a 250cm^3 standard flask. 25cm^3 of this solution required 40.00cm^3 of 0.1M HCI neutralization. What is the percentage by weight of K_2CO_3 in the mixture.
(K = 39, O = 16, C = 12)

A. 60
B. 72
C. 82
D. 92

9. Which of the following, groups of physical properties increases from left to right of the Periodic Table?

1. Ionization energy
2. Atomic radius
3. Electronegativity
4. Electron affinity

A. 1 and 2

B. 1, 2 and 3

C. 3 and 4

D. 1, 2, 3 and 4

10. An element Z, contained 90% of 8Z 16 and 10% of 8Z 18. Its relative atomic mass is _____

A. 16.0

B. 16.2

C. 17.0

D. 17.8

11. What are the possible oxidation numbers for an element if its atomic number is 17?

A. -1 and 7

B. -1 and 6

C. -3 and 5

D. -2 and 6

12. How many valence electrons are contained in the element represented by $^{31}_{15}P$?

A. 3

B. 5

C. 15

D. 31

13. 10.0 dm3 of air containing H_2S as an impurity was passed through a solution of $Pb(NO_3)_2$ until all the H_2S had reacted. The precipitate of PbS was found to weigh 5.02 g. According to the equation:

$Pb(NO_3)_2 + H_2S \rightarrow PbS + 2HNO_3$

The percentage by volume of hydrogen sulphide in the air is _____

A. 50.2

B. 47.0

C. 4.70

D. 0.47

14. A quantity of air was passed through a weighed amount of alkaline pyrogallol. An increase in the weight of the pyrogallol would result from the absorption of _____

A. nitrogen
B. neon
C. argon
D. oxygen

15. Water for town supply is chlorinated to make it free from _____

A. bad odour
B. bacteria
C. temporary hardness
D. permanent hardness

16. 4.0 g of sodium hydroxide in 250cm^3 of solution contains _____

A. 0.40 moles per dm^3
B. 0.10 moles per dm^3
C. 0.04 moles per dm^3
D. 0.02 moles per dm^3

17. A major effect of oil pollution in coastal waters is the _____

A. destruction of marine life
B. desalination of the water
C. increase in the acidity of the water
D. detoxification of the water

18. In general, an increase in temperature increases the solubility of a solute in water because _____

A. more solute molecules collide with each other
B. most solutes dissolve with the evolution of heat
C. more solute molecules dissociate at higher temperatures
D. most solutes dissolve with absorption of heat

19. The relatively high boiling points of alkanols are due to _____

A. ionic bonding
B. aromatic character
C. covalent bonding
D. hydrogen bonding

20. Given that 15.00cm^3 of H_2SO_4 was required to completely

neutralize 25.00cm^3 of 0.125 mol dm3 NaOH, calculate the molar concentration of the acid solution.

A. 0.925 mol dm^3
B. 0.156 mol dm^3
C. 0.104 mol dm^3
D. 0.023 mol dm^3

21. What volume of 0.1 mol dm3 solution of tetraoxosulphate (VI) acid would be needed to dissolve 2.86g of sodium trioxocarbonate (IV) decahydrate crystals?

A. 20cm^3
B. 40cm^3
C. 80cm^3
D. 100cm^3
[H=1, C=12, O=16, S=32, Na=23]

22. The solution with the lowest pH value is _____

A. 5 ml of M/10 HCL
B. 10 ml of M/10 HCL
C. 15 ml of M/5 HCL
D. 20 ml of M/8 HCL

23. In which order are the following salts sensitive to light?

A. AgI > AgCl > AgBr
B. AgCl> AgI > AgBr
C. AgBr > AgCI > AgI
D. AgCI > AgBr > AgI

24. A metal m displaces Zinc from Zinc chloride solution. This shows that _____

A. M is more electronegative than Zinc
B. Zinc is above hydrogen in the series.
C. M is more electropositive than zinc.
D. electrons flow from zinc to m.

25. Steam changes the colour of anhydrous cobalt (II) chloride from _____

(A) blue to pink
(B) white to red
(C) white to green
(D) blue to white

26. When at equilibrium, which of the reactions below will shift to the right if the pressure is increased and the temperature is kept constant?

A. $2SO_{3(g)} === 2SO_{2(g)} + O_{2(g)}$
B. $2CO_{2(g)} === 2CO_{(g)} + O_{2(g)}$
C. $2H_{2(g)} + O_{2(g)} === 2H_2O_{(g)}$
D. $2NO_{(g)} === N_{2(g)} + O_{2(g)}$

27. $2CO_{(g)} + O_{2(g)} \rightarrow 2Co_{2(g)}$

Given that ΔH [CO] is -110.4 $kJmol^{-1}$ and ΔH [CO_2] is -393.0 $kJmol^{-1}$, the energy change for the reaction above is _____

A. -503.7 kJ
B. -282.6 kJ
C. +282.6 kJ
D. +503.7 kJ

28. Which of these properties gives a solid its definite shape?

A. Strong intermolecular attraction
B. High melting point
C. High boiling point
D. Weak intermolecular attraction

29. When a crystal was added to the clear solution of its salt, the crystal did not dissolve and the solution remained unchanged. This showed that the solution was _____

A. supersaturated
B. concentrated
C. unsaturated
D. saturated

30. If the electron configuration of an element is $1s^2\ 2s^2\ 2p^5$, how many unpaired electrons are there?

A. 2
B. 5
C. 1
D. 4

31. The substance that is used in the steel industry for the removal of carbon, sulphur and

phosphorus impurities from pig iron is _____

A. oxygen
B. chlorine
C. nitrogen
D. hydrogen

32. Hydrogen sulphide gas can act as _____

A. an oxidizing agent
B. a dehydrating agent
C. a bleaching agent
D. a precipitating agent

33. Which of the following is used as a rocket fuel?

A. HNO_3
B. CH_3COOH
C. H_2SO_4
D. HCI

34. The bleaching action of chlorine is effective due to the presence of _____

A. Hydrogen chloride
B. Water
C. Air
D. Oxygen

35. Mineral acids are usually added to commercial hydrogen peroxide to _____

A. Oxidize it
B. decompose it
C. minimize its decomposition
D. reduce it to water and oxygen

36. Aluminium containers are frequently used to transport trioxonitrate (v) acid because aluminium _____

A. has a low density
B. does not react with the acid
C. does not corrode
D. has a silvery-white appearance

37. Ethyne is passed through a hot tube containing organo-nickel catalyst to produce _____

A. Isoprene
B. polythene

C. ethanol

D. benzene

38. The process of converting starch to ethanol is _____

A. cracking

B. distillation

C. fermentation

D. oxidation

39. An endothermic reaction is one during which heat is _____ and can be represented by the symbol _____. Which of the following combinations can be used accurately to complete the above definition?

A. liberated, -ΔH

B. liberated, +ΔH

C. absorbed, -ΔH

D. absorbed, +ΔH

40. Consider the following exothermic reaction $2SO_{2(g)} + O_{2(g)} = 2SO_{3(g)}$. If the temperature of the reaction is reduced from 800ºC to 500°C, and no other change takes place, then _____

A. the reaction rate increases

B. concentration of SO_2 decreases

C. concentration of SO_2 increases

D. SO_2 gas becomes unreactive

~~DISCLAIMER~~

These are **not** JAMB expo questions for this year, but past questions of previous years.

You are advised to study these past questions and know their **correct answers** as well as how the answer to each question was gotten to be well-prepared for your JAMB exam.

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