HOLY TRINITY SSS NKOZI

ONLINE EXAMINATIONS

ENGLISH S.3

TIME: 2 ½ HOURS.

INSTRUCTIONS TO SEMI CANDIDATES

- This consists of **one** sections **A**
- Answer all questions in section **A**
- All questions in section **A** carry equal marks.

1. The alloy solder consist of,

A Zinc and Lead

B Copper and Lead

C Copper and Alminium

D Tin and Lead

2 . The percentage by mass of water of crystallization in $Cu\ SO_4$, $5H_2O$ is (Cu =64, S=32, O=16, H=1,)

A $\left(\frac{90x100}{250}\right)\%$ B $\left(\frac{18x100}{250}\right)\%$

C $\left(\frac{90x100}{160}\right)\%$ **16** $\left(\frac{90x100}{16x0}\right)\%$

3. Which one of the following metals will not displace lead from it salt in solution.

A Aluminum

B Calcium

C Silver

D Zinc

4. The gas produced when stem is passed over heated iron filling is,

A O_2

B N_2O

C H_2

D NO

5. The electric configuration of the atoms of elements X and Y are 2:8:3 and 2: 3 respectively. The formula of the compound formed between X and Y is,

A XY

B X_2Y_3

C X_3Y_2

D X_2Y_5

6. Which one of the following pairs of substance is used for the laboratory preparation of chlorine?

A Dilute hydrochloric acid and potassium manganite (vii)

B Concentrated Sulphuric acid and sodium chloride.

C Dilute hydrochloric acid and sodium sulphate.

D Concentrated hydrochloric acid and potassium magnate (vii).

7. Which one of the following gases does not react with water?

A Ammonia

B Chlorine

C Carbon monoxide

D Sulphur dioxide

8. The electronic configuration of the atoms of elements P, Q, R, and S, are,

P 2:1 Q 2:8:1 R 2:8 :2 and S 2:8:3

The elements which belongs to the same group in the periodic table are,

A P and Q

B P and R

C Q and R

D R and S

9. Sodium carbonate and sodium hydrogen carbonate can be separated by fraction crystallization because the two salts have different,

A Densities

B Solubilizes

C Melting point

D Boiling point

10. Which one of the following is not a constituent of fertilizer.
    A Nitrogen
    B Calcium
    C Phosphorus
    D Iodine

11. A compound with the structural formula $CH_3\ CH_1\ CH_3\ CH_3$ is called,
    A butane
    B propane
    C 2-methylbutane
    D 2-methylpropane
12. Which one of the following hydroxide is not an alkli.
    A $Cu(OH)_2$
    B KOH
    C $Ca(OH)_2$
    D NaOH
13. Rust is hydrated,
    A Iron (ii) oxide
    B Iron (ii) hydroxide
    C Iron (iii)oxide
    D Iron (iii) hydroxide
14. Which one the following compound is used as a catalyst in manufacture of sulphur trioxide from air and sulphur dioxide.
    A Alumina
    B Vanadium (v) oxide
    C Maganese (iv) oxide
    D Iron powder
15. An oxide of a metal M contains 78% of M 22% oxgyen, the empirical formula of the oxide is, (M=56, O=16)
    A MO
    B MO_2
    C $M2O_3$

D M_3O_4

16. The valency of M in $M(SO_4)_2$ is
    A .2
    B .3
    C .4
    D .5
17. What is the percentage of sulphur in iron (iii) sulphate $Fe_2(SO_4)_3$ (O=16, S=32, Fe=56)

A $\frac{32}{400} X100$ B $\frac{96}{400} X100$

C $\frac{112}{400} X100$ D $\frac{128}{400} X100$

18. When 40g of an oxide of an element X were reduced, 3.2g of X were obtained. The simplest formular of the oxide of X is (x=64)
    A X_2O
    B XO
    C XO_2
    D D X_2O_3
19. Lead (ii) nitrate reacts with potassium iodine according to the equation.

$Pb(no_3)_2$ (aq) + 2KI(aq) $\longrightarrow$ PbI_2(s) + $2KN_3$(aq)

The mass of lead (ii) iodide that will be formed when 33.2g of potassium with iodide reacts with excess lead (ii) nitrate is, (k=39, I=127, Pb=207)
    A 16.6g
    B 46.1g
    C 66.4g
    D 92.2g
20. The main components of air are,
    A Oxygen and Nitrogen
    B Oxygen and Hydrogen
    C C Nitrogen and Carbon dioxide

D D Nitrogen and the noble gases.

21. The percentage by mass of phosphorus in calcium phosphate $Ca_3(PO_4)_2$ is, (Ca=40, P=31, O=16).
    - A 8%
    - B 10%
    - C 17%
    - D 20%

22. When 6.4g of an oxide of element X was heated and hydrogen passed over it, 3.2g of X was formed . The empirical formula of the oxide is (X=32, O=6)
    - A XO
    - B XO_2
    - C X_2O
    - D X_2O_3

23. Which one of the following chlorides is deliquescent,
    - A Zinc chloride
    - B Calcium chloride
    - C Potassium chloride
    - D Magnesium chloride

24. The number of protons in the nucleus of an a tom of SB is,
    - A 5
    - B 6
    - C 11
    - D 18

25. The numbers of moles of hydrogen atoms present in one mole of ammonium sulphate, $(NH_4)_2\ SO_4$ is,
    - A 1
    - B 2
    - C 4
    - D 8

26. Which one of the following processes decrease the concentration of carbon dioxide in the atmosphere?
    - A Rusting

B Combustion

C C Respiration

D D Photosynthesis.

27. Which one of the following mixture is best separated by using separating funnel?

A oil and water

B sugar and water

C Ethanol and water

D Sand and water

28. Calcium carbonate decomposes according to the following equation.

$CaCO_3(s) \longrightarrow Ca\,O(s) + CO_2(g)$

The mass of calcium oxide formed when 20g of calcium carbonate completely decomposes is,

A $\frac{20\ X\ 56}{100}$

B $\frac{44\ X\ 56}{100}$

C $\frac{44\ X\ 56}{100}$

D $\frac{44\ X\ 56}{2\ X\ 100}$

29. Brass is an alloy of,

A Tin and Copper

B Lead and Copper

C Zinc and Copper

D Aluminum and Copper

Each of the question 30-39, consists of an assertion (statement) on the left hand side and the reason on the right hand side.

Select,

A If both the assertion and the assertion are true statements and the reason is a correct explanation of the assertion.

B If both assertion and the reason are true statements but the reason is not a correct explanation of the assertion.

C If the assertion is true but the reason is not a correct statement.

D If the assertion is not correct but the reason is a true statement.

Instruction Summarized

Assertion	**Reason**
A True	True (Reason is a correct explanation.
B True	True (Reason is not a correct explanation
C True	Incorrect
D Incorrect	True

30. Carbohydrates are hydrocarbons	because	Carbohydrates react with concentrated sulphuric acid to form carbon.
31. Isotopes of an element show similar chemical reactions	because	Isotopes of an element contain the same number of neutrons.
32. The pH of an aqueous solution of carbon dioxide is greater than 7	because	Carbon dioxide reacts with water to form carbonic acid
33. Graphite conducts electricity	because	Graphite has a giant atomic structure.
34. Burning magnesium continues to burn in a jar of carbon dioxide .	because	Burning magnesium decomposes carbon dioxide into carbon and oxygen.

35. Nitric acid can be prepared in the laboratory by reacting concentrated sulphuric acid with a nitrate	because	Nitric acid is a monobasic acid
36. Manganese (iv) oxide reacts with concentrated hydrochloric acid to produce chlorine	because	Manganese (iv) oxide is a basic oxide
37. Carbon monoxide diffuses rapidly than carbon dioxide	because	The molecular mass of carbon monoxide is less than that of carbon dioxide
38. Sulphur dioxide turns moist dichromate paper green	because	It is an acidic gas.
39. Chlorine is used in the purification of water	because	Chlorine is a bleaching agent
40. Crude petroleum is refined by fractional crystallizations	Because	Its fraction have different boiling points.

In each of the questions 41 to 50 , one or more of the answers given may be correct Red each question carefully and then write the correct A , B , C or D according to the following.

A . If 1 , 2 and 3 only are correct

B . If 1 and 3 only are correct

C . If 2 and 4 only are correct

D. If 4 only is correct.

INSTRUCTIONS SUMMARISED

A	B	C	D
1 , 2 , 3	1 , 3	2 , 4	4
Only correct	only correct	only correct	only

41. The oxide(s) which will dissolve in water to give a solution with a pH greater than 7 is / are:
    1. SO3
    2. NO2
    3. CO2
    4. CaO
42. Carbon monoxide
    1. burns in air
    2. Is a reducing agent
    3. is insoluble in water
    4. Forms a white precipitate with lime water

43. Which of the following compound is / are usually used as drying agent(s)
    1. Magnesium oxide
    2. Ammonium Chloride
    3. Calcium oxide
    4. Calcium chloride
44. When a burning piece of magnesium is plunged into a jar of carbon dioxide, the following observations is/are made,
    1. The magnesium continues to burn brightly.
    2. Black particles are formed.
    3. A white ash is formed.
    4. The burning magnesium is extinguished.
45. Hydrogen,
    1 is lighter than air,
    2 burns in air producing water
    3 reduces heated iron (ii) oxide
    4 relights a growing splint .
46. Which of the following compounds has/have a multiple bond?
    1 C_4H_{10}

2 C_2H_2

3 C_2H_6

4 C_2H_4

47. Graphite,

1 Is an allotrope of carbon

2 Is an isotope of carbon

3 Conducts electricity in the solid state.

4 Consists of atoms arranged in tetrahedral shape.

48. Which of the following elements burns in oxygen to form a basic oxide.

1 Aluminum

2 Sulphur

3 Calcium

4 Carbon

49. Which of the following occur s when sodium nitrate is strongly heated?

1 It melts

2 It gains weight

3 It liberates oxygen

4 It liberates nitrogen dioxide

50. Which of the following carbonates are soluble in water.

1. Sodium carbonate
2. Potassium carbonate
3. Ammonium carbonate
4. Calcium carbonate.

END