

Name Centre/ index No.....

Signature

545/1

CHEMISTRY

Paper 1

July – August 2013

1½ Hours

BUGIRI DISTRICT SECONDARY SCHOOLS EXAMINATIONS BOARD

(BUDSSEB)

UGANDA CERTIFICATE OF EDUCATION

MOCK EXAMINATIONS 2013

CHEMISTRY

PAPER 1

1 Hour 30 Minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of 50 objective type questions.

Answer all questions.

You are required to write the correct answer A, B, C, or D in the box provided on the right hand side of each question.

Do not use a pencil

1. The valency of R in $R_2(SO_4)_3$ is
 A. 2 B. 4 C. 3 D. 5
2. The biggest percentage of biogas is
 A. Butane B. ethane C. ethane D. methane
3. The following process is NOT an example of oxidation
 A. The burning of methane in air
 B. The rusting of iron nails
 C. The melting of candle wax
 D. The smoulding of phosphorus
4. The atomic number of element S is 17. In which group of the periodic table is S.
 A. I B. II C. V D. VII
5. Which of the following is a monomer of a protein?
 A. Glucose B. Amino acid C. Isoprene D. Ethene
6. Which of the following gasses is an oxidizing agent?
 A. CO B. H_2S C. Cl_2
 NH₃
7. Isotopes of an element have got
 A. Same number of protons and neutrons
 B. Same number of electrons and protons
 C. Different number of electrons and protons
 D. Same number of electrons and protons
8. A gas is collected by upward delivery when
 A. It is slightly soluble in water
 B. It is less dense than air
 C. It is a gas with low boiling point
 D. It forms a reaction with water
9. Which of the following solutions would dissolve in water to form a solution that will turn red litmus blue?
 A. Sodium chloride B. Sodium hydroxide C. Sodium sulphate D. sodium nitrate
10. Which one of the following reagents can be used to differentiate between Pb^{2+} and Al^{3+} ?
 A. Lead nitrate B. Sodium hydroxide C. potassium iodide D. Ammonia
11. Element M reacts with chlorine to form a compound with formula MCl_4 . The formula of oxide of M is
 A. M_2O B. MO C. MO_4 D. MO_2
12. The following is the order of reactivity of metals with water from highest to lowest
 A. Sodium \longrightarrow magnesium \longrightarrow lead \longrightarrow copper
 B. Magnesium \longrightarrow sodium \longrightarrow copper \longrightarrow lead
 C. Copper \longrightarrow lead \longrightarrow magnesium \longrightarrow sodium
 D. Lead \longrightarrow copper \longrightarrow sodium \longrightarrow magnesium

13. Which of the following ions reacts with $\text{NH}_3(\text{aq})$ to form a precipitate that dissolves in excess ammonia solution to form a deep blue solution
- A. $\text{Pb}^{2+}(\text{aq})$ B. $\text{Fe}^{3+}(\text{aq})$ C. $\text{Ca}^{2+}(\text{aq})$ D. $\text{Cu}^{2+}(\text{aq})$
14. Zinc reacts with hydrochloric acid according to the following equation

$$\text{Zn}(\text{aq}) + 2\text{HCl}(\text{aq}) \longrightarrow \text{ZnCl}_2(\text{aq}) + \text{H}_2(\text{g})$$
The number of moles of hydrochloric acid required to react completely with 7.0g of Zinc is (R.A.M of Zinc is 65, H = 1)
- A. $\frac{65 \times 2}{7.0}$ B. $\frac{7.0 \times 65}{2}$ C. $\frac{7.0 \times 2}{65}$ D. $7.0 \times 65 \times 2$
15. The separation of ink substances by chromatography depends on the following
- A. Size of chromatography paper
B. Solubilities of substance in a solvent
C. Freezing points of substances
D. Osmotic pressure of the solution of ink
16. The following carbonate decomposes to give a colourless gas which is alkaline
- A. Calcium carbonate B. Zinc carbonate C. Potassium carbonate D. Ammonium carbonate
17. Carbon burns in excess oxygen according to the equation
- $$\text{C}(\text{s}) + \text{O}_2(\text{g}) \longrightarrow \text{CO}_2(\text{g}) \quad \Delta H = -393 \text{ KJ mol}^{-1} \quad \text{C} = 12, \text{O} = 16$$
- What mass of carbon in (g) would produce 750 KJ of energy?
- A. $\frac{393 \times 12}{750}$ B. $\frac{750 \times 12}{393000}$ C. $\frac{750 \times 12}{393}$ D. $\frac{750 \times 393}{12}$
18. The catalyst used in the manufacture of nitric acid is
- A. Iron B. Platinum C. Iron(ii)sulphate D. Vanadium(v)oxide
19. Which of the following salts when in solution forms a white precipitate with acidified Barium nitrate solution
- A. Na_2CO_3 B. ZnSO_4 C. NaCl D. $\text{Ca}(\text{NO}_3)_2$
20. Most metals react with dilute mineral acids to form
- A. Hydrogen gas only C. The salt of the metal only
B. Salt of metal and water D. Salt of the metal and hydrogen gas
21. The following causes hardness of water except
- A. Calcium sulphate C. Magnesium sulphate
B. Sodium hydrogen carbonate D. Calcium hydrogen carbonate
22. Which of the following ions forms a green precipitate with excess sodium hydroxide
- A. $\text{Fe}^{3+}(\text{aq})$ B. $\text{Fe}^{2+}(\text{aq})$ C. $\text{Cu}^{2+}(\text{aq})$ D. $\text{Zn}^{2+}(\text{aq})$
23. An oxide R_2SO_4 ionises as $\text{R}_2\text{SO}_4(\text{aq}) \longrightarrow 2\text{H}^+(\text{aq}) + \text{SO}_4(\text{aq})$. The basicity of the acid is
- A. 1 B. 2 C. 3 D. 4
24. 20 cm^3 of 0.2M HCl react with 25 cm^3 of sodium hydroxide solution. The molarity of the oxide is

- A. $\frac{25 \times 0.2}{20}$ B. $\frac{20 \times 0.2}{25}$ C. $\frac{25}{20 \times 0.2}$ D. $\frac{20}{25 \times 0.2}$
25. Which of the following substances below conducts electricity in solid state
 A. Graphite B. Sulphur C. Iodine D. Phosphorus
26. The colourless gas produced during the fermentation of sugar is
 A. Ammonia B. Carbon dioxide C. Hydrogen D. Oxygen
27. Graphite is used as an electrode in electrolysis because it
 A. Has hexagonal carbon rings C. Has mobile electrons
 B. Is soft D. Is opaque
28. Chlorine atom has electronic configuration 2:8:7. The electronic configuration of (Cl^{-1}) is
 A. 2:8:7 B. 2:8:8 C. 2:8:6 D. 2:8:5
29. Which of the following can be used to taste for ethane
 A. Lime water B. Bromine water C. glowing splint D. Potassium dichromate
30. Brass is an alloy of;
 A. Tin and copper C. Zinc and copper
 B. Lead and copper D. Aluminum and copper
31. An example of a non biodegradable substance is
 A. Silk B. Wool C. Polythene D. Paper
32. The agent used to identify sulphate ion present in an Acidified solution is
 A. Potassium Iodide C. Silver Nitrate
 B. Barium Nitrate D. Ferrous sulphate
33. The number of neutrons in the nucleus of an atom ${}_{17}^{37}\text{X}$ is
 A. 17 B. 20 C. 37 D. 54
34. Which of the following cations are soluble in excess Sodium hydroxide solution and in excess aqueous ammonia
 A. $\text{Pb}^{2+}_{(\text{aq})}$ B. $\text{Zn}^{2+}_{(\text{aq})}$ C. $\text{Al}^{3+}_{(\text{aq})}$ D. $\text{Fe}^{2+}_{(\text{aq})}$
35. Which one of the following mixtures is best separated by chromatography
 A. Ink B. Crude petroleum C. Water and oil D. Water and ethanol
36. Atoms of elements in the same group of the periodic table have the same number of
 A. Outer shell electrons C. Protons in the nucleus
 B. Electrons outside the nucleus D. Neutrons in the nucleus
37. The process by which water vapour is changed into dew is called
 A. Distillation B. Efflorescence C. Condensation D. Evaporation
38. Rust is hydrated
- A. Iron oxide B. Iron(III)hydroxide C. Iron(II)oxide D. Iron(II)hydroxide
39. Magnesium is in group(II) of the periodic table. The valency of magnesium is
 A. 3 B. 2 C. 4 D. 2
40. In the preparation of hydrogen from Zinc and hydrochloric acid. The rate of reaction is increased by adding
 A. Nickel B. Copper sulphate C. Platinum D. Magnesium dioxide

Each of the following questions 41 to 45 consists of an Assertion (statement) on the left hand side and a reason on the right hand side.

Select

- A. If both Assertion and the reason are true statements and the reason is a correct explanation of the Assertion.
- B. If both the Assertion and the reason are true statements but the reason is not a correct explanation of the Assertion
- C. If the Assertion true but the reason is NOT a correct statement
- D. If the Assertion is NOT correct but the reason is a correct statement

Assertion	Reason
A	True(Reason is a correct explanation)
B	True(Reason is not a correct explanation)
C	Incorrect
D	Correct

41. Graphite and diamond are BECAUSE They are both black allotropes of carbon
42. Soap can remove both dirt and oil from cloth BECAUSE Soap is nitrate from cooking oil
43. Water and alcohol can be separated BECAUSE They have different boiling points By fractional distillation
44. Concentrated sulphuric Acid is BECAUSE Ammonia is alkaline not used for drying of Ammonia
45. Ethene can form a polymer BECAUSE It is a hydrocarbon

In each of the following questions 46 to 50. One or more of the answers may be correct. Read each question carefully and then indicate the correct answer 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.

46. The oxide(s) which/are soluble in excess ammonia solution is/are
1. Lead(ii)hydroxide
 2. Zinc hydroxide
 3. Aluminum hydroxide
 4. Copper(ii)hydroxide
47. The element with atomic number 7
1. Is a non metal

2. Has atomic mass 7
 3. Forms acidic oxides
 4. Reacts by loss of electrons.
48. When potassium chlorate is heated with manganese dioxide it decomposes to give
1. Oxygen
 2. Chlorine
 3. Potassium chloride
 4. Manganese chlorides
49. Iron is prevented from rusting by
1. Greasing
 2. Electroplating
 3. Galvanizing
 4. Chlorinating
50. 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.