SOUTH WEST REGIONAL MOCK EXAMINATION
GENERAL EDUCATION

The Teachers' Resource Unit (TRU) in collaboration with the Regional Inspectorate of Pedagogy for Science Education and the South West Chemistry Teachers' Association (SOWECTA).	**Subject code** 0515	**Paper Number** 1
CANDIDATE NAME ..... CANDIDATE NUMBER ..... CENTRE NUMBER	**Subject title** CHEMISTRY	
ORDINARY LEVEL	**DATE** Thursday Morning: 31/03/2022	

Time Allowed: One hour thirty minutes

INSTRUCTIONS TO CANDIDATES:

1. USE A SOFT HB PENCIL THROUGHOUT THIS EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the Examination begins:

3. Check that this question booklet is headed "Ordinary Level – 0515 Chemistry, Paper 1".
4. Insert the information required in the spaces provided above.
5. Without opening the booklet, pull out the answer sheet carefully from inside the front cover of this booklet. Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.
6. Insert the information required in the spaces provided on the answer sheet using your HB pencil:
   Candidate Name, Centre Number, Candidate Number, Subject Code Number and Paper Number.

How to answer questions in this examination:

7. Answer ALL the 50 questions in this examination. All questions carry equal marks.
8. Non-programmable calculators are allowed.
9. For each question there are four suggested answers, A, B, C, and D. Decide which answer is correct. Find the number of the question on the Answer sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen. For example, if C is your correct answer, mark C as shown below:

10. Mark only one answer for each question. If you mark more than one answer, you will score zero for that question. If you change your mind about an answer, erase the first mark carefully, and then mark your new answer.
11. Avoid spending much time on any question. If you find a question difficult, move to the next question. You can come back to this question later.
12. Do all rough work in this booklet using, where necessary, the blank spaces in the question booklet.
13. Mobile phones are **NOT ALLOWED** in the examination room.
14. **You must not take this booklet and answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination**

1. Elements are classified into groups based on which of the following?
A. Number of protons
B. Number of neutrons
C. number of shells
D. number of valence electrons

2. Which of the following process is the direct opposite of melting?
A. Condensation
B. Evaporation
C. Boiling
D. Freezing

3. Identify the particles in an atom that is positively charged and has a mass of 1 unit.
A. Cation
B. Proton
C. Electron
D. Neutrons

4. What is the shape of a water molecule?
A. Linear
B. Planar
C. V-shape
D. Tetrahedral

5. Name the apparatus which is used to measure a fixed volume of a solution during titration.
A. Burette
B. Measuring cylinder
C. Pipette
D. volumetric flask

6. How many neutrons are there in an atom of an element, P which has a mass number of 37 and an atomic number of 17?
A. 20
B. 17
C. 37
D. 54

7. When direct current is passed through two solutions X and Y, it is observed that X conducts electricity while Y does not. What particle could be found in X that is absent in Y?
A. X contains ions
B. X contains free electrons
C. X contains molecules
D. X contains delocalized electrons

8. A certain gas, A, dissolves in water to form a solution which turns blue litmus paper red. Gas A also turns lime water milky. Gas A is likely to be
A: Chlorine
B: Carbon dioxide
C: Nitrogen dioxide
D: Sulphur dioxide

9. Which of the following is a statement of the kinetic theory of matter?
A. The particles are in constant motion and possess energy
B. Liquid generally takes the shapes of containers
C. There are three subatomic particles in all atoms
D. Degree of movement of their matter depend on particles size

10. Select an element that is stored under paraffin oil in the laboratory?
A. Mg
B. Na
C. S
D. P

11. Give a reason why chlorine gas is collected by downward delivery
A. It is heavier than air
B. It easily displaces air
C. It is lighter than air
D. It is insoluble in water

12. Select a reaction that is a characteristic of alkene
A. Halogenation
B. Substitution
C. Addition
D. Esterification

Question 13 to 14 concern the following substances

CO_2 Mg Na S

Each letter may be used once, more than once or not at all. Select a substance

13. that is a gas at room temperature and pressure
A. Mg
B. CO_2
C. S
D. Na

14. Identify a substance that is used in the treatment of skin diseases
A. Na
B. Mg
C. S
D. CO_2

15. You are given the reaction

$CaCO_{3(s)} \rightarrow CaO_{(s)} + CO_{2(g)}$

How can the rate of the reaction be best investigated?

A. Measuring the total volume of gas produced
B. Take and record the volume of gas produced over an interval of time
C. Taking and recording the increase in mass for an interval of time
D. Measuring and recording the total time of reaction

16. Determine the valency of an element with an atomic number of 12.

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

17. Which of the following represents a displacement reaction of halogens?

A. $Na + Cl_2 \rightarrow NaCl$
B. $H_2 + Cl_2 \rightarrow 2HCl$
C. $2NaBr + Cl_2 \rightarrow 2NaCl + Br_2$
D. $NaOH + HCl \rightarrow NaCl + H_2O$

18. Identify a heavy chemical whose production does **NOT** involve a reversible reaction.

A. H_2SO_4
B. NH_3
C. HNO_4
D. NaOH

19. An organic compound W, with molecular formula $C_4H_{10}O$ forms an ester with an organic acid. W is likely;

A. $CH_3CH_2CH_2CH_2COOH$
B. $CH_3CH_2COOCH_3$
C. $CH_3\ CH_2CH_2CH_2OH$
D. $CH_3CH_2CH_2COOH$

20. Identify the part of an electrolytic cell through which current enter the electrolyte?

A. DC supply
B. Cathode
C. Anode
D. A negative electrode

21 An element X has atomic number of 19. Write the formula of the compound it forms with oxygen.

A. XO
B. X_2O_3
C. XO_2
D. X_2O

22. Scum is formed with soap when washing clothes with water containing

A. Chlorine
B. Magnesium and calcium ions
C. Sodium hydrogen carbonate
D. Carbonic acid from rain water

23 What mass of copper was deposited at the cathode when 0.0038F was passed through an aqueous solution of copper (II) sulphate? (RMM of Cu =64g/mol)

A. 0.122g
B. 0.117g
C. 0.21g
D. 0.938g

24. Why is copper used in making jewelry?

A. It is very durable and heavy
B. It is shiny and does not easily corrode
C. It is very malleable and ductile
D. It is very abundant and cheap

25. Which of the following best describes the **underlined** substance in the equation below:

$NaOH + H_2SO_4 \rightarrow \underline{NaHSO_4} + H_2O$

A. A double salt
B. A normal salt
C. Basic salt/
D. An acid salt

QUESTIONS 26-27: Instructions:

For each of the questions, ONE or MORE of the responses given is/are correct. Decide which of the responses is/are correct, then choose;

A. If 1,2 and 3 are correct
B. If 1 and 3 are correct
C. 2 and 4 are correct
D. If 4 only is correct

INSTRUCTIONS SUMMARIZED			
A	**B**	**C**	**D**
1, 2, 3 only	**1 and 2 only**	**2 and 4 only**	**4 only**

26. Which of the following is(are) natural source(s) of good drinking water?

1) Lakes and rain water
2) Spring and tap water
3) Stream and rivers
4) Springs and underground wells

27. Identify a substance that gives only one gaseous product when heated.

1) Calcium nitrate
2) Potassium nitrate
3) Magnesium nitrate
4) Sodium nitrate

28. State the laboratory test for nitrogen.

A. It extinguishes a lighted splint
B. It relights a glowing splint
C. It is colourless and odorless
D. It burns with a pop sound.

29. Consider the reaction

$Zn_{(s)} + 2HCl(aq) \rightarrow ZnCl_2 + H_2(g)$

What would you observe during this reaction?

A. H_2 is produced
B. The solid Zn reduces in size
C. The acid HCl is diluted
D. The temperature does not change

30. Write an equation for the reaction of bromine with ethane

A. $C_2H_6 + Cl_2 \rightarrow C_2H_5Cl + HCl$
B. $C_2H_4 + Br_2 \rightarrow C_2H_4Br_2$
C. $C_2H_6 + Br_2 \rightarrow C_2H_5Br + HBr$
D. $C_2H_4 + Br_2 \rightarrow C_2H_4Br + Br$

QUESTIONS 31-33: Instructions: Each of the following questions consists of two statements (1) and (2). Study each statement carefully and decide whether it is TRUE OR FALSE then on your answer sheet mark

A. If both statements are **TRUE** and (2) is the correct explanation of (1)
B. If both statements are **TRUE** and (2) is **NOT** a correct explanation of (1)
C. If statement (1) is **TRUE** and (2) is **FALSE**
D. If statement (2) is **TRUE** and (1) is **FALSE**

Instructions summarized

	Statement (1)	**Statement (2)**
A	True	True if (2) explains (1)
B	True	True if (2) does not explain (1)
C	True	False
D	False	True

	Left hand statement	**Right hand statement**
31	alkenes decolorize bromine water	alkenes are unsaturated
32	NPK-20-10-10 is a common fertilizer used by farmers	NPK-20-10-10 contain phosphorus
33	During an exothermic reaction heat is absorbed	For an exothermic reaction, enthalpy of products is less than that of reactants.

34. Determine the atomic number of an element if the electronic configuration of the neutral atom is 2,8,8,1.

A. 10
B. 20
C. 19
D. 18

35. Identify the reducing agent in the following reaction

$2NH_3 + 3CuO \rightarrow 3Cu + N_2 + 3H_2O$

A. NH_3
B. CuO
C. Cu
D. N_2

4/6

36. Determine the percentage composition by mass of Sulphur in ammonium sulphate, $(NH_4)_2SO_4$ (R.M.M =132g/mol.)

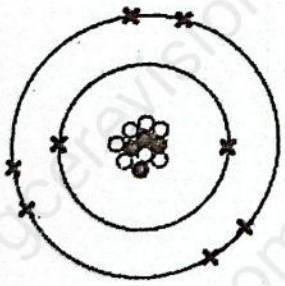
A. 56.1%
B. 18.0%
C. 39.0%
D. 24.2%

37. The alkaline hydrolysis of fats and oils produces soap. Identify the other product
A. Esther
B. Sodium Chloride
C. glycerol
D. Sodium hydroxide

38. Select a method that can be used to separate a mixture of water and petrol.
A. Evaporation to dryness
B. Sublimation
C. Separating funnel
D. Simple distillation

39. What is the flame colour of a copper (II) salt?
A. Brick red
B. Golden yellow
C. Apple green
D. Bluish green
E. 40. Which of the following is a monomer of polyethene?
A. Ethane
B. Ethene
C. Ethanol
D. Ethyne

Questions 41-42 concern this diagram of an atom of an element **A**



41. Identify the bond type when **A** combines with hydrogen.
A. Ionic bonding
B. Hydrogen bonding
C. Covalent bonding
D. Metallic bonding

42. Write the formula of the compound formed between sodium and A
A. Na_2A
B. NaA
C. NaA_2
D. NaA_6

43. Equilibrium is said to be attain in a reversible reaction when
A. All the reactants have been used up
B. All the products have been formed
C. There is no further change in temperature
D. The rate of the forward and backward reactions is equal

44. According to Boyle's law, which of the following statement is correct?
A. The temperature is constant
B. The volume is constant
C. The volume varies with temperature
D. The pressure is constant

45. Which of the following is a mixture?
A. soap
B. air
C. water
D. Calcium carbonate

46. Identify the catalyst that is used in the manufacture of Ammonia
A. V_2O_5
B. finely divided Ni
C. Fe
D. Pt

47. Which of the following is a crystalline form of Carbon?
A. coal
B. Soot
C. Coke
D. graphite

48. What would you observe at the cathode during the electrolysis of copper (II) sulphate using graphite electrode?
A. The Cathode reduces in size
B. The cathode is coloured brown
C. Gas bubbles are seen
D. The cathode increases in size

49. Identify an element that does not react with cold water but with steam

A. Na
B. K
C. Ca
D. Mg

50. What is the function of chlorine in the purification of water?

A. To kill germs
B. To precipitate solid particle
C. To remove smell and taste
D. To sediment smaller particle

END

GO BACK AND CHECK YOUR WORK