SOUTH WEST REGIONAL MOCK EXAMINATION
GENERAL EDUCATION

The Teachers' Resource Unit (TRU) in collaboration with the Regional Pedagogic Inspectorate of Pedagogy for science Education and 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 23/03/2023(Morning)	

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

Turn Over

1. Identify a subatomic particle that ispositively charged
   A. Hydrogen ion
   B. Electron
   C. Proton
   D. Neutron

2. Which of the following metals can beobtained by heating its oxide with carbon?
   A. Aluminium
   B. Iron
   C. Sodium
   D. Magnesium

3. Which of the following elements will form coloured ions in solution?
   A. Manganese
   B. Nitrogen
   C. Sulphur
   D. Bromine

4. Name one substance that easily sublimeson heating.
   A. Limestone
   B. Sodium Chloride
   C. Copper (II) sulphate pentahydrate
   D. Ammonium chloride

5. Which of these statements best describesthe kinetic theory of matter?
   A. Matter occupies space and has mass
   B. Atoms contain 3 fundamentalsubatomic particles
   C. Matter is made up of tiny movingparticles
   D. Matter exist in three fundamentalstates

6. Identify a characteristic reaction of alkanes.
   A. Hydrogenation
   B. Substitution
   C. Addition
   D. Combustion

7. Which of the following is a step in the manufacture of sulphuric acid?
   A. Reactingsulphuric acid with ammonia togive sulphate fertilizers
   B. Dissolving sulphur trioxide in water togive oleum
   C. Burning of sulphur dioxide to givesulphur trioxide
   D. Catalytic oxidation of oleum to givesulphuric acid

8. What would you observe when a piece of sodium is dropped in ethanol?
   A. The sodium dissolves and finallydisappears
   B. Effervescence occurs and a pungent gas isevolved
   C. The resulting solution turns red litmuspaper blue
   D. Sodium hydroxide is produced insolution.

9. Which of the following polymers is suitablefor making packaging bags and electrical insulation?
   A. Terylene
   B. Polythene
   C. Polystyrene
   D. Nylon

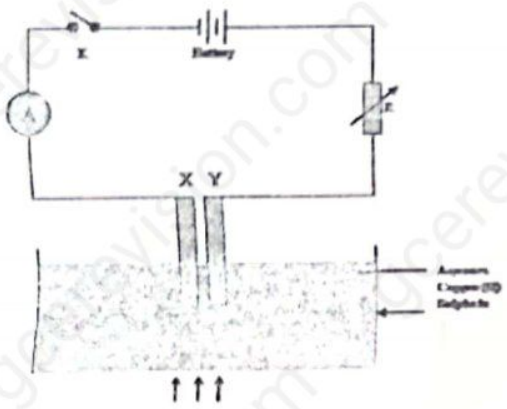
10. Identify a heavy chemical whose manufacture involves electrolysis
   A. NaOH
   B. H_2SO_4
   C. HNO_3
   D. Cu

11. Give the formula of an organic compoundthat would evolve steamy white fumes with PC l_5 and equally evolve a colourless gas with sodium carbonate.
   A. $CH_3CH_2CH_2$-OH
   B. CH_3CH=CH(OH)
   C. CH3CH2CH2-Cl
   D. CH_3CH_2COOH

12. A cation of symbol, X^{2+} contains 18 electrons. If the relative atomic mass of X is40, an atom of X contains
    A. 18 protons and 22 neutrons
    B. 18 electrons and 22 neutrons
    C. 20 protons and 20 neutrons
    D. 18 protons and 18 electrons

13. The method used to separate the green pigments in leaves is called
    A. Crystallisation
    B. Distillation
    C. Sedimentation
    D. Chromatography

Questions 14-16 concern the following circuitdiagram.



14. If Y is made of graphite, identify theproducts at Y when the key K is closed
    A. Water
    B. Water and oxygen
    C. Water and hydrogen
    D. Hydrogen and oxygen

15. State what would be observed at Y, if it is made of copper?
    A. Y dissolves and gradually reduces in size
    B. Effervescence occurs, colourless gasevolved
    C. The blue colour of the solution fades.
    D. The solution becomes more acidic

16. What is the function of R?
    A. To measure the amount of current flowing through the circuit
    B. To initiate the ionisation of the copper (II) sulphate
    C. To regulate the amount of current enteringor leaving the solution
    D. To provide current needed to decompose the Copper (II) sulphate.

17. In the reaction
$A(g) + B(g) \leftrightarrow AB(s)$
The yield of the product, AB, is favoured by:
    A. Increase in pressure
    B. Increase in temperature
    C. Decrease in pressure
    D. Decrease in temperature

18. Ethanol is easily manufactured by
    A. Catalytic oxidation of methane
    B. Destructive distillation
    C. Fermentation of starch
    D. Oxidation of ethanoic acid

19. The element silicon is a basic constituentof
    A. Limestone
    B. Clay
    C. Chalk
    D. Sand

20. Using the equation
$C + O_2 \rightarrow CO_2 \quad \Delta H = -396KJ/mole$
Calculate the heat evolved when 3g of carbonis completely burnt in excess oxygen.
    A. 36 KJC
    B. 99 KJ
    C. 396 K
    D. 396000 KJ

21. State one precaution usually taken duringan acid -base titration in which the base is in the conical flask?
    A. The indicator is put into the conical flask containing the base
    B. The end point is marked by a sharp colour change
    C. The conical flask is washed with distilled water and rinsed with the base
    D. The burette is washed with water and rinsed with the acid.

22. Which of the following reaction will **NOT** take place?

A. $Cl_2(g) + 2KI(aq) \rightarrow 2KCl(aq) + I_2(aq)$
B. $I_2(aq) + 2KBr(aq) \rightarrow 2KI(aq) + Br_2(l)$
C. $Br_2(l) + 2KI(aq) \rightarrow 2KBr(aq) + I_2(l)$
D. $Cl_2(g) + 2KBr(aq) \rightarrow 2KCl(aq) + Br_2(l)$

23. Name one element that is used today as roofing sheets in Cameroon.

A. Magnesium
B. Aluminium
C. Zinc
D. Potassium

24 .The rate of the reaction between solid calcium carbonate and 0.1M hydrochloric acid can be increased by

A. Reducing the surface area of the solid
B. Increasing the pressure of the system
C. Using 0.2M hydrochloric acid instead of 0.1M
D. Increasing the surface area of hydrochloric acid

25. Two elements X and Y have atomic numbers 15 and 12 respectively. Identify the bond type in the compound formed between X and Y.

A. Covalent
B. Dative
C. Ionic
D Hydrogen bonding

Questions 26-27

In order to prepare hydrogen gas, Liquid **S** is run from a thistle funnel into a conical flask containing Solid **T**.

26. Identify solid **T** and Liquid **S**

	Solid T	Liquid S
A	Copper	H_2SO_4
B	Magnesium ribbon	H_2SO_4
C	Limestone	HCl
D	Copper(II) oxide	Dil. HCl

27. State the laboratory test for hydrogen

A. It is colourless and odourless
B. It relights a glowing splint
C. It burns to give water
D. It burns with a pop sound

28. Esterification is a reaction catalysed by conc. sulphuric acid. Which of the following equations represents esterification?

A. $HCOOH(aq) + CH_3OH \rightarrow HCOOCH_3 + H_2O$
B. $HCOOH(aq) + H_2SO_4 \rightarrow CO_2 + H_2O$
C. $2NaOH + H_2SO_4(aq) \rightarrow Na_2SO_4(aq) + H_2O$
D. $CH_2CH_2 + H_2SO_4(aq) \rightarrow CH_3CH_2HSO_4(aq)$

29. A certain mineral on heating decomposes evolving a colourless gas with the smell of a burning match. A flame test on a sample of the mineral gives an intense yellow flame. This mineral is likely to contains

A. Calcium sulphite
B. Sodium sulphite
C. Potassium sulphate
D. Sodium sulphide

30. A current of 0.5A is passed through a solution of a metal chloride for 15 minutes. Calculate the quantity of electricity passed in farads.

A. 450 F
B. 0.009 F
C. 0.000078 F
D. 0.0047 F

31. The relative atomic masses of sodium and iodine are 23 and 127 respectively. From these information, it may be deduced that

A. 23g of sodium occupies the same volume as 127g of iodine atoms
B. 23atoms of sodium and 127 atoms of iodine weigh the same
C. 1g of sodium contains 23atoms while 1g of iodine contains 127 atoms
D. 3g of sodium contains the same number of atoms as 127g of iodine

32. Metals are good conductors of electricity because

A. They melt at high temperature
B. The valence electrons are delocalised
C. They contain free mobile ions
D. They are malleable and ductile

QUESTIONS 33 – 35

Instructions:

Each question is followed by four responses numbered **1-4**. One responses or more of these is (are) correct. Decide which responses is (are) correct then choose

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

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

33. In which reaction is the **underlined** substance oxidised?

1. $\underline{ZnO} + C \rightarrow Zn + CO$
2. $\underline{2Fe^{2+}} + Cl_2 \rightarrow 2Fe^{3+} + 2Cl^-$
3. $\underline{C_2H_4} + H_2 \rightarrow C_2H_6$
4. $\underline{C} + O_2 \rightarrow CO_2$

A
B
C
D

34. An element, W, has electronic configuration **2, 8, 7.** Which of the following is **TRUE** of W?

1. W forms a basic oxide
2. An atom of W has 17 protons
3. W belongs to group III
4. The atoms of W are covalently bonded.

A
B
C
D

35. Which of the following gases would turn moist blue litmus paper red?

1. Carbon dioxide
2. Hydrogen chloride
3. Sulphur dioxide
4. Ammonia gas

A
B
C
D

36. You are given the equation:

$CuCO_3 + H_2SO_4 \rightarrow CuSO_4 + CO_2 + H_2O$

What volume of 0.1M Sulphuric acid would be required to react exactly with 1.24 g of Copper(II) carbonate (Molar mass of $CuSO_4$ = 160g/mol)

A. 5 cm^3
B. 100 cm^3
C. 10 cm^3
D. 50cm^3

37. Identify a substance that gives only one gaseous product on heating.

A. Sodium nitrate
B. Calcium nitrate
C. Magnesium nitrate
D. Potassium carbonate

QUESTIONS 38 – 39

Excess Magnesium ribbon reacts with dil HCl acid to give a salt.

38. Why is the magnesium used in excess?

A. To increase the yield of the salt
B. To ensure the salt is pure
C. To ensure complete reaction
D. The ribbon is cut into many pieces

39. How is the pure salt crystals easily recovered from the salt solution?

A. By evaporation to dryness
B. Concentrate and cool solution to crystallize
C. By simple filtration using filter paper
D. By washing with distilled water

40. The method used to separate water from a mixture of kerosene and water

A. Filtration
B. Simple Distillation
C. Use of separating funnel
D. Crystallization

41. Identify the 2 main raw materials used to make soap

A. Sodium chloride and caustic soda
B. Sodium chloride, fats and oils
C. Caustic soda, fats and oils
D. Glycerol, caustic soda and fatty aci

Questions 42-44

INSTRUCTIONS: Each question consists of a statement in the left-hand column followed by another on the right-hand column. Decide whether each of the statements is true or false. Then on your answer sheet, choose

A If both statements are true and the second statement is the correct explanation of the first

B. If both statements are true but the second statement is **NOT** the correct explanation of the first.

C. If the first statement is true but the second statement is false

D If the first statement is false but the secondstatement is true

	First Statement	Second statement
A	True	True. Second statement is the correct explanation of the first
B	True	True. Second statement is **NOT** the correct explanation of the first
C	True	False
D	False	False

	First Statement	Second statement
42.	Ammonium sulphate is a common fertilizer usedby Cameroonian farmers	Ammonium sulphate contains Nitrogen, oxygen and sulphur chemically combined together
43.	Both C_3H_8O and CH_3COOHevolve steamywhite fumes with Phosphorus pentachloride	C_3H_8O and CH_3COOH bare alcohols
44.	During the electrolysis of dilute NaCl a colourless neutral gas is evolved at the anode	OH^- ions are discharged in preference to Cl^- ions at the anode.

45. Identify a metal that is extracted byelectrolysis
   A. Zn
   B. Na
   C. Fe
   D. C

46. State one industrial use of phosphorus
   A. Treatment of water
   B. Used to make fireworks
   C. Use as material for electrodes
   D Use as match

47. This question concerns the elements A-D with their atomic numbers

Element	Atomic number
A	20
B	8
C	10
D	6

Which of these pair of elements would likelynot form a compound?
   A. A and D
   B. A and C
   C. B and D
   D. B and A

48. Which of the following is a weak mineral acid?
   A. CH_3COOH
   B. HNO_3
   C. H_2SO_4
   D. H_2CO_3

49. Name the main pollutant in air that causesacid rain
   A. Nitric acid
   B. Sulphur dioxide
   C. Carbon dioxide
   D. Nitrogen

50. Give a reason why our tap water is usually chlorinated?
   A. To give it a nice flavor
   B. To remove sandy particles
   C. To purify the water
   D. To kill bacteria and viruses

END.

GO BACK AND CHECK YOUR WORK