

Questions 45 -48.

INSTRUCTIONS: Each question consists of a statement in the left-hand column followed by another in 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 second statement is true

<i>Instructions summarized</i>		
	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	True

- | | First statement | Second statement |
|-----|---|---|
| 45. | Cu turnings would give a gaseous product when reacted with sulphuric acid | Cu displace hydrogen from dilute acids |
| 46. | Acid rain has a pH less than 5.3 | Rain water contains dissolved sulphur dioxide |
| 47. | Both alkenes and alkanes decolourise acidified potassium permanganate. | Alkenes are unsaturated hydrocarbons |
| 48. | Sodium and potassium are classified into group 1 of the periodic table. | Sodium and potassium each have one valence electron |

49. Which of the following substances can be used in the laboratory as a fuel?

- A Ethane gas
 B Ethanol
 C Coal
 D Petrol

6

50. Which of the following is **NOT** a constituent of pure air?

- A Carbon dioxide
 B Nitrogen
 C Oxygen
 D Carbon monoxide

STOP

NOW GO BACK AND CHECK YOUR WORK

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate Of Education Examination

515 CHEMISTRY 1

JUNE 2015

ORDINARY LEVEL

Centre Number	
Centre Name	
Candidate Number	
Candidate Name	

Mobile phones are NOT allowed in the examination room.

MULTIPLE CHOICE QUESTION PAPER

One and a half Hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE 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 – 515 Chemistry 1"
4. Fill in the information required in the spaces above.
5. Fill in the information required in the spaces provided on the answer sheet using your HB pencil:
Candidate Name and Number, Center Number Name.
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.

How to answer the questions in this examination

6. Answer ALL the 50 questions in this Examination.
7. Each question has FOUR suggested answers: A, B, C and D. Decide on 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:
[A] [B] [C] [D]
8. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
9. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
10. Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
11. At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet after. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.

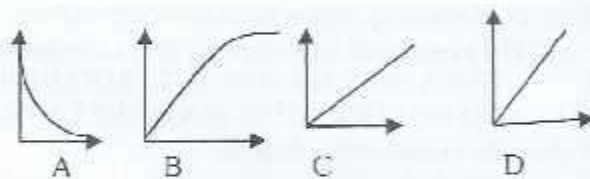
USEFUL DATA

Relative Atomic Masses	
Hydrogen (H)	– 1.0
Carbon (C)	– 12.0
Oxygen (O)	– 16.0
Sodium (Na)	– 23.0

1 Farady = 96000 coulombs.
G.M.V of any gas at r.t.p = 24000cm ³ ,
Specific heat capacity of water = 4.2J/g°C
Avogadro Number = 6.02 x 10 ²³

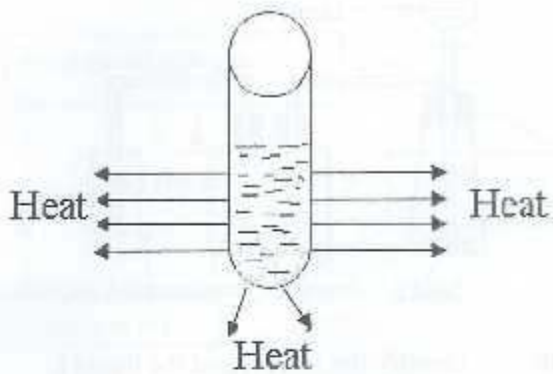
Turn Over

1. Atoms of the same element that differ in mass number are called
 A Isomers
 B Isotopes
 C Polymorphs
 D Allotropes
-
2. Name a metal that is readily extracted by heating the ore with coke.
 A Copper.
 B Iron.
 C Aluminium
 D Sodium
-
3. Which of the following is an acid that will undergo complete ionization in water?
 A H_2SO_4
 B H_3PO_4
 C H_2CO_3
 D CH_3COOH
-
4. Identify the main apparatus used to prepare a standard solution in the laboratory.
 A Flat bottom flask
 B Round bottom flask
 C 250ml beaker
 D Volumetric flask.
-
5. When an exothermic reaction takes place,
 A heat is absorbed from the surrounding
 B the activation energy is reduced
 C heat is evolved from the system
 D the products have more energy than reactants
-
6. In which of the following reactions is light used as a catalyst?
 A $\text{C}_2\text{H}_6 + \text{Cl}_2 \longrightarrow \text{C}_2\text{H}_5\text{Cl} + \text{HCl}$
 B $\text{C}_2\text{H}_2 + 2\text{Cl}_2 \longrightarrow \text{C}_2\text{H}_2\text{Cl}_4$
 C $\text{C}_3\text{H}_6 + \text{Cl}_2 \longrightarrow \text{C}_3\text{H}_6\text{Cl}_2$
 D $\text{C}_2\text{H}_4 + \text{Cl}_2 \longrightarrow \text{C}_2\text{H}_4\text{Cl}_2$
-
7. Write the electronic configuration of an element with atomic symbol ${}_{7}^{13}\text{X}$
 A 2,4
 B 2,5
 C 2,8,3
 D 2,8,8,2
-
8. Which of the following reagents will produce zinc sulphate?
 A zinc and sulphur
 B Zinc and calcium sulphate
 C Zinc and dilute sulphuric acid
 D Zinc and barium sulphate
-
9. The rate of reaction between calcium carbonate and 0.1M HCl can be increased by
 A adding water into the reaction mixture
 B increasing the particle size of the calcium carbonate
 C using 0.4M HCl instead of 0.1M HCl.
 D placing the reaction vessel in an ice bath
-
10. Which of the following graphs best shows how the volume of CO_2 evolved (on the vertical axis) varies with time when calcium carbonate is strongly heated to complete decomposition?



11. Identify the common gaseous product formed when the nitrates of groups I and II are strongly heated.
 A Nitrogen dioxide
 B Nitrogen monoxide
 C Nitrogen
 D Oxygen
-
12. Select the procedure that is most suitable for separating a solid mixture of sodium chloride and ammonium chloride.
 A Dissolve the mixture in water and use separating funnel.
 B Dissolve the mixture in water and filter
 C Dissolve the mixture in a non polar solvent and filter
 D Dissolve in water, heat to concentrate and cool to crystallize

Questions 13 to 14. The following diagram illustrates a test tube reaction.



13. Which of the following reactions can best be illustrated by the diagram?

- A $C(s) + O_2 \rightarrow CO_2$
 B $2C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O$
 C $H_2(g) + Cl_2(g) \rightarrow 2HCl(g); \Delta H = +103KJ$
 D $NaOH + HCl \rightarrow NaCl + H_2O; \Delta H = -56.4kJ$

14. Which of these statements is true about the heat content of the reactants (H_r) and that of the products (H_p)?

- A H_p is less than H_r
 B H_p is more than H_r
 C H_p is equal to H_r
 D $H_p - H_r = +ve$

15. An organic compound with empirical formula of CH_2 has a relative molecular mass of 70. What is the molecular formula of the compound?

- A C_6H_{12}
 B C_3H_6
 C C_4H_8
 D C_5H_{10}

16. Which of the following acid/base titrations involves a strong acid and a strong base?

- A HCl / Na_2CO_3
 B $H_2SO_4 / NaOH$
 C $CH_3COOH / NaOH$
 D CH_3COOH / Na_2CO_3

QUESTIONS 17 – 19 concern the following substances

- A An alkaline solution
 B An acidic solution
 C An acidic gas
 D An alkaline gas

Each letter can be used once, more than once or not at all.

Select from A to D the substance that best describes the product formed when

17. sulphur burns in air
 18. hydrogen and nitrogen react in the presence of a catalyst
 19. hydrogen chloride gas dissolves in water
 20. When dry chlorine is passed over a heated iron the formula of the compound formed is?
 A $FeCl_2$
 B $FeCl_3$
 C Fe_2Cl
 D Fe_3Cl

QUESTIONS 21-23 concern the following elements

- A Cu
 B K
 C Al
 D Zn

Each letter can be used once, more than once or not at all. Select from A to D an element

21. whose ions are coloured in aqueous solution
 22. whose oxide is amphoteric
 23. which readily dissolves in water.
 24. State one industrial use of sulphuric acid in Cameroon.
 A To make sulphate fertilizers
 B Used to prepare zinc sulphate salts
 C It is used commonly in acid/base titration
 D It is used to make TNT explosives
 25. Identify two elements that are found in proteins but absent in carbohydrates
 A N and O
 B S and N
 C S and C
 D N and H

Turn Over

QUESTIONS 26 – 29

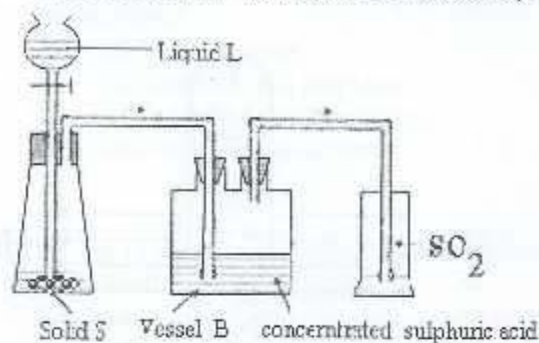
Instructions: Each question is followed by four responses numbered 1-4. One or more of these responses is (are) correct. Decide which response(s) is (are) correct then choose

- 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

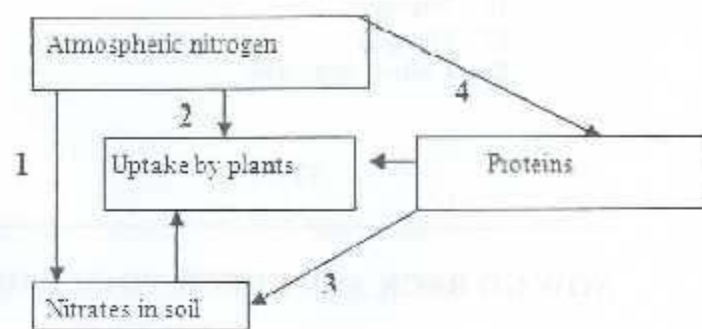
26. Ethanol can be produced in large scale
- 1 by fermentation of starch
 - 2 from ethene by simple dissolution in water at room temperature
 - 3 by dehydration of ethene
 - 4 by cracking of petroleum products
27. The atomic number of an element is equal to the number of
- 1 protons plus neutrons
 - 2 electrons in the neutral atom
 - 3 protons plus electrons
 - 4 Protons in the nucleus
28. When a sodium atom is ionized,
- 1 an electron is gained into the valence shell
 - 2 an electron is lost from the second shell
 - 3 the mass number drops by 1 unit
 - 4 the sodium atom acquires a positive charge
29. During silver plating of an iron spoon using electrolysis,
- 1 the electrolyte is made of silver sulphate
 - 2 the anode is made of silver
 - 3 the iron spoon is placed at the cathode
 - 4 the silver cathode dissolves

Questions 30-32 The following set up is used to prepare and collect sulphur dioxide in the laboratory.



30. Identify the solid S and the liquid L.
- A Sodium sulphite and dilute sulphuric acid
 - B Calcium carbonate and dilute sulphuric acid
 - C Iron(II) sulphide and dilute hydrochloric acid
 - D Sodium sulphate and dilute hydrochloric acid
31. State the role of concentrated sulphuric acid in vessel B
- A To ensure complete reaction
 - B To dry the gas
 - C To purify the gas
 - D To acidify the gas
32. Why is the SO_2 collected by this method?
- A The gas is lighter than air
 - B The gas is insoluble in water
 - C The gas is heavier than air
 - D The gas does not react with water
33. From which of the following sources can we obtain only one raw material in the manufacturing industry?
- A Air
 - B Soil
 - C Coal
 - D Sea water

QUESTIONS 34-36 concern the following diagram of a Nitrogen cycle. The different processes are represented by 1, 2, 3 and 4



34. Which of these processes involve nitrogen fixation?
- A 1, 2 and 4
 B 1, 2, 3 and 4
 C 2 and 3
 D 2 and 4
35. What naturally causes the process 2 to occur?
- A Azobacter bacteria in the soil
 B Rhizobium bacteria in root nodules
 C Lightning
 D Thunderstorm
36. During which process do decomposers play a role?
- A 1
 B 2
 C 4
 D 3

QUESTIONS 37-39.

1.06g of anhydrous sodium carbonate is weighed and dissolved in distilled water. The resulting solution is made up to 250 cm³.

37. What name is used to describe the solution prepared?
- A An aqueous solution
 B A Saturated solution
 C A Standard solution
 D A pure solution
38. Calculate the molarity (in mol.dm⁻³) of the solution of sodium carbonate prepared
- A 0.04M
 B 0.05M
 C 0.01M
 D 0.004M

39. What will be the effect of this solution on litmus paper?
- A Solution turns red litmus paper blue
 B Solution has no effect on blue litmus paper
 C Solution turns blue litmus paper red
 D Solution has not effect on both blue and red litmus paper

40. Which of the following organic compounds will evolve white fumes with PCl₅ but has no effect on blue and red litmus paper?
- A CH₃COOH
 B C₂H₅OH
 C C₂H₄
 D CH₃CHO

41. Which of the following substances is used in the purification of bauxite during extraction?
- A Lime
 B Slaked lime
 C Lime water
 D Caustic soda

42. Two elements A and B have electronic configurations 2.8.5 and 2.8.2 respectively. Identify the type of bonding between A and B
- A Covalent
 B Ionic
 C Dative covalent
 D Metallic

43. A mixture of petrol and kerosene is separated by use of a separating funnel. What physical property is used in the separation?
- A Difference in solubility
 B Difference in volatility
 C Difference in density
 D Difference in density

44. When aqueous sodium hydroxide is added to a solution of Copper(II) sulphate,
- A A blue solution is formed
 B A white precipitate is formed
 C A green precipitate is formed
 D A bluish green precipitate is formed

Turn Over