

NAME: ADM NO: CLASS:
CHEMISTRY
FORM TWO
ENDTERM 1 YEAR 2020
TIME: 1¼ hrs

Answer all the questions in the spaces provided.

1. How many atoms of each element are present in each of the following compounds:
 (a) Ammonium carbonate - (2 mks)
 (b) Zinc chloride - (2 mks)

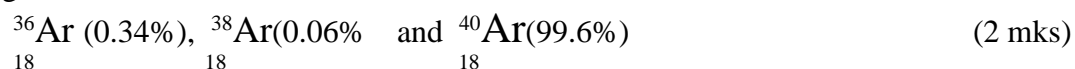
2. The table below shows some elements in the periodic table. Use it to answer questions that follow. The letters are not the actual symbols of the elements.

P								Q	R
								S	T
V									

- (a) An element K has an atomic number of 20. Indicate its position in the grid. (1 mk)
- (b) Write the formula of the compound formed between V and S. (1 mk)
- (c) Which element belongs to period 2 and group VIII? (1 mk)
- (d) Write the electron configuration of: (3 mks)
 (i) P –
 (ii) Q
 (iii) S –
- (e) Using cross (x) or a dot (•) diagram to represent electrons, draw;
 (i) Atomic structure of V. (2 mks)
- (ii) Ionic structure of T. (2 mks)

3. Determine the relative atomic mass of the following elements whose isotopic compositions occur in the proportions given:

(a) Argon



(b) Potassium ${}_{19}^{40}\text{K}$ (0.01%), ${}_{19}^{39}\text{K}$ (93.1%) and ${}_{19}^{41}\text{K}$ (6.89%) (2 mks)

4. The following table gives a summary of some properties of elements PQR and S. The letters do not represent the actual symbols of the elements. Study the table and answer the questions that follow.

Element	Electron arrangement	Valency
P	2.2	2
Q	2.7	1
R	2.8.2.	2
S	2.8.8.2	1

(a) Which two elements have similar chemical properties? Explain. (2 mks)

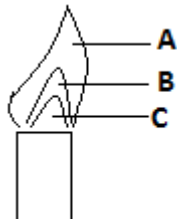
(b) What is the most likely formula of a carbonate of S? (1 mk)

(c) (i) Identify the element which is a non-metal. (1 mk)

(ii) With an explanation, state the family and the period to which the element in (i) above belongs. (2 mks)

5. Name the elements present in the following compounds. (2 mks)
- (i) Zinc sulphide – (2 mks)
- (ii) Sodium nitrate -

6. The figure below shows a type of the flame produced by a bunsen burner. (3 mks)



- (a) Name the parts of the flame labeled A, B and C. (3 mks)
- (b) Name the type of the flame. (1 mk)
- (c) Which of the parts in the above flame is the hottest? (1 mk)
7. Explain why most of the apparatus in the laboratory are made of glass. (2 mks)

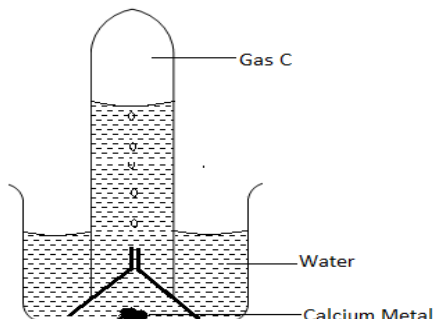
8. Solutions may be classified as strong base, neutral, strong acid, weak base or weak acid. The information below gives some solutions and their pH values. Study it and answer the questions that follow.

Solution	pH
A	0.5
B	7
C	14
D	9

Classify the solutions in the table using the stated classification: (2 mks)

- A –
- B –
- C –
- D –

9. Below is a set up used to investigate the reaction of calcium with water.



- (a) State the observation made in solution. (1 mk)
- (b) Identify gas C and state its test. (2 mks)
- (c) (i) Write a balanced equation for the reaction between calcium and water. (2 mks)
- (ii) State the effect of the solution in C(i) on phenolphthalein indicator. (1 mk)
- (iii) State one laboratory application of the solution formed in the reaction. (1 mk)
10. (a) Name the particles that are found in an atom. (1 mk)
- (b) Atoms are said to be electrically neutral. Explain. (2 mks)
- (c) Distinguish between Atomic number and atomic mass. (2 mks)