

GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.

FORM 2 CHEMISTRY MID TERM EXAMINATION. TERM 3 2015.

Name: \_\_\_\_\_

Adm. No: \_\_\_\_\_

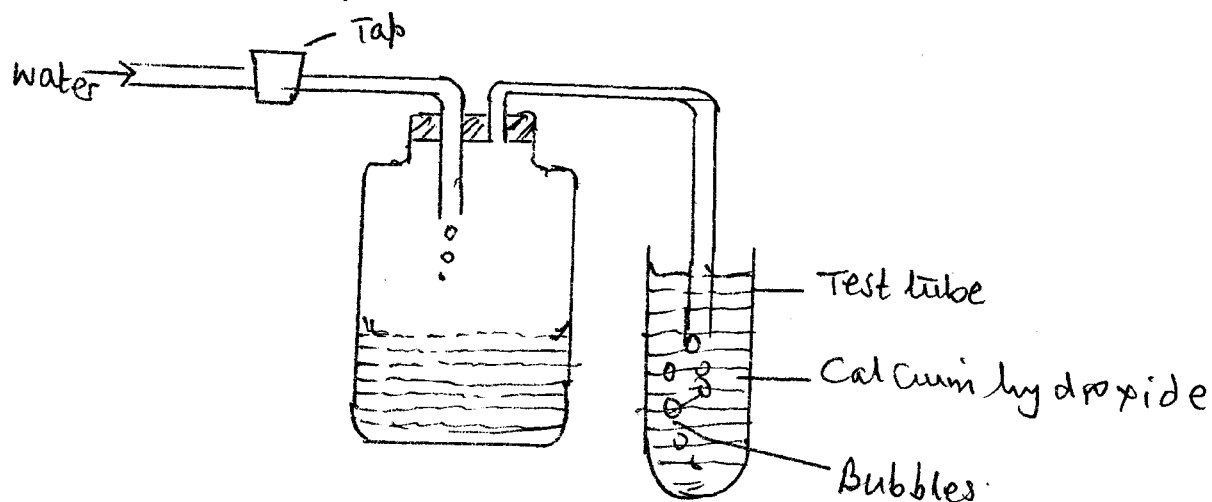
Class: \_\_\_\_\_

TIME: 2 HRS

INSTRUCTIONS:

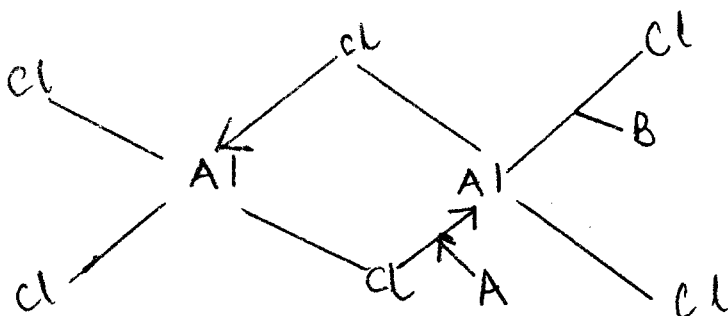
1. Write your name, adm. And class in the spaces provided above.
2. Answer all the questions in the spaces provided
3. All working must be clearly shown where necessary.

1. The figure represents a set-up of apparatus that was used to demonstrate the existence of components of air.



- i) What is the purpose of water from the tap? (1mk)
- ii) Other than bubbles, give one other observation made in the test tube. (1mk)
- iii) Name two gases that escape from the test tube. (1mk)

2. Below is a structure of aluminium chloride.



i) Identify the bonds labeled A and B. (1mk)

A: \_\_\_\_\_

B: \_\_\_\_\_

ii) When aluminium chloride is dissolved in water, the resulting solution has a pH of 3. Explain. (2mks)

3. During the preparation of copper (II) sulphate, excess copper (II) oxide is used. Explain (2mks)

4. When lead (II) nitrate and magnesium sulphate react a white precipitate is formed.

i) Identify the white precipitate. (1mks)

ii) Write an ionic equation for the reaction. (2mks)

5. Name the following processes.

a) When anhydrous calcium chloride is left in an open beaker over night a solution was formed. (1mks)

b) When sodium carbonate decahydrate crystals are left in an open beaker for some days it turned into a powder. (1mks)

6. An element Y has an electron arrangement of 2.8.5

i) State the period and group which the element belongs. (1/2 mks)

Period

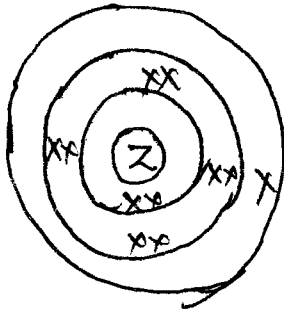
Group

(1/2 mks)

ii) Write the formula of the most stable ion formed when element Y ionizes. (1mk)

- iii) Explain the difference between the atomic radius <sup>of</sup> element Y and its ionic radius. (2mks)

7. A student represented an atom of element Z as in the diagram.



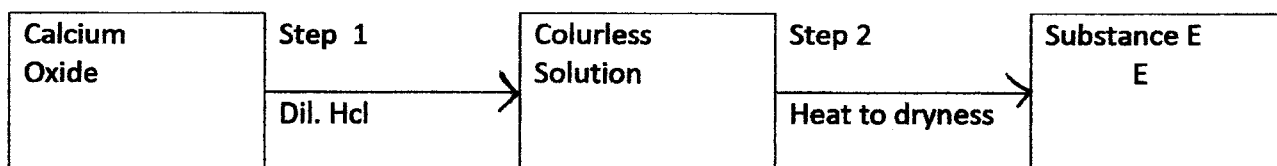
- i) What is the atomic number of element Z? (2mks)  
Explain
- ii) If element Z conducts electricity, state the particles responsible for electrical conductivity. (1mk)
- iii) Write the formulae of the most stable ion of Z. (1mk)
8. Atoms of element X exist as  ${}^{14}_6\text{X}$  and  ${}^{12}_6\text{X}$ .  
a) What name is given to the two types of atoms. (1mk)

b) Use dot ( • ) and ( X ) diagrams to illustrate the atomic structure of X. (2mks)

C(i) Write the electron configuration of the atom in (b) above. (1mk)

ii) Write the formula of the compound formed when it combines with oxygen ( O = 8 ) (1mk)

9. Study the flow chart below and answer the question that follow:



i) Name the process that taken place in step 1 (1mk)

ii) State one commercial use of substance E (1mk)

iii) Explain why a colourless solution would not be formed if in step I. Dilute sulphuric acid was used instead of dilute Hydrochloric acid. (2mks)

10. The grid below show part of the periodic table. Use it to answer the question that follow. The letters do not represent actual symbols.

P	R					S	U	V
Q						T		W

a) Which of the element has the highest atomic radius? Explain

(2mks)

b) Identify the most reactive non-metal. Explain

(2mks)

c) Give the electron configuration of

i) Element S

(1mk)

ii) Element Q

(1mk)

- d) Compare the atomic radius of P and R. Explain (2mks)
- e) Given that the atomic mass of W is 40. Write down the composition of its nucleus. (1mk)
- f) Write the formula of the compounds formed between.
- i) Element P and S (1mk)
- ii) Element R and T (1mk)
- g) Given the formula of one stable ion with an electron arrangement of 2.8 which is.
- i) Negatively charged. (1mk)
- ii) Positively charged. (1mk)
11. State and illustrate the bond type in each of the following compounds. (Use dots (•) and cross (X)).
- a) Calcium fluoride ( Ca F<sub>2</sub>) (2mks)

b) Methane (CH<sub>4</sub>) (2mks

c) Carbon (II) Oxide (CO) (2mks

d) Hydroxonium ion (H<sub>3</sub>O<sup>+</sup>) (2mks