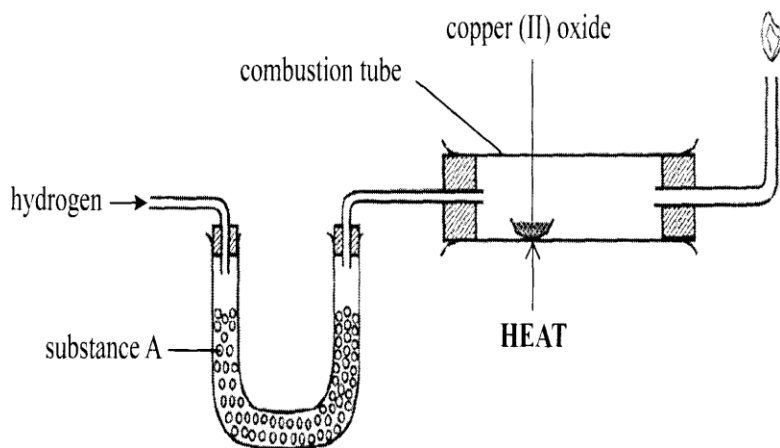CHEMISTRY FORM FOUR

KAGONDO SECONDARY SCHOOL

KCSE 2017 BOOSTER QUESTIONS

TERM 2 2017

1. The set up below was used to investigate the reaction between dry hydrogen gas and copper (II) oxide.

a) Name substance A.(1 mark)

b) State the observation made in the combustion tube.(1 mark)

c) Explain the observation made in (b) above.(1 mark)

2. One of the uses of sodium hydroxide is in the manufacture of soaps. State one other use of sodium hydroxide. (1 mark)

3. Give two ways in which sodium occurs naturally (2mks)

4. Salty lakes, seas and oceans contain large amount of dissolved sodium chloride (NaCl (aq)) solution. This solution is concentrated to form brine which is fed into an electrolytic chamber made of suspended Carbon graphite/titanium as the anode and a continuous flow of Mercury as the cathode.

a) Write the equation for the decomposition of the electrolyte during the electrolytic process.(2mks)

b) Name the ions present in brine that moves to the;

i)Anode (½ mk)

ii)Cathode (½ mk)

5.With the help of crosses (X) and dots (.) draw a diagram to represent the compound formed when Chlorine reacts with Magnesium (1mk)

6.The diagram below illustrates the structure of an element. Study it and answer the following questions.
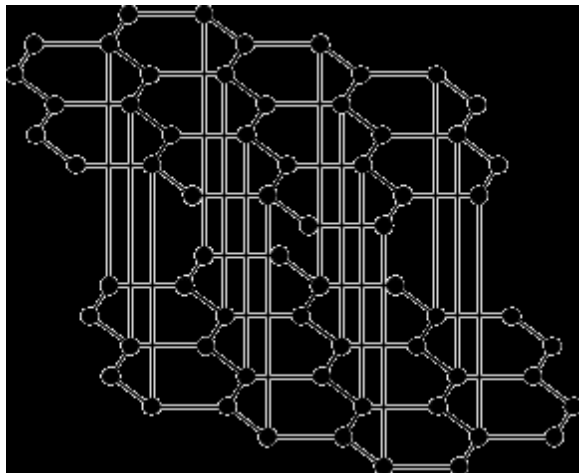
a)Identify the element to which the structure belongs (1mk)

b)Explain the bonding in the structure above (3mks)

7.a)Differentiate between diffusion and kinetic energy (1mk)

b)A student from Ndivai secondary set up an experiment to investigate the diffusion process for Ammonium gas and Hydrochloric acid gas. The student noted the observations as indicated in the set up below.
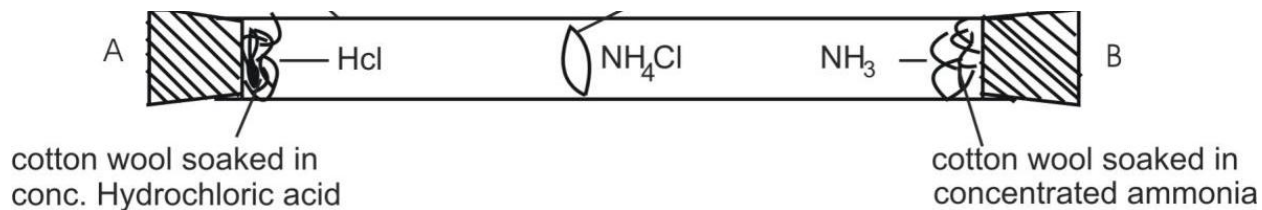
i)Account for the observations above (2mks)

ii)State the colour of Ammonium chloride (½ mk)

c)State boyles's law (1mk)

8. The grid below shows part of the periodic table. The letters are not the actual symbols of the

elements. Use it to answer the questions that follow.

i) State the name given to the group that A belongs. 1mk

ii) Write the formula of the compound formed when D and F combine. 1mk

iii) How do melting points of B and C compare.(1mk)

iv) How do the reactivity of F and H compare. Explain 2mks

v) C has a smaller atomic radius than B. explain 1mk

vi) Element J forms a divalent anion and has 16 protons in its nucleus. Place it in its position in

the grid above. 1mk

vii) When the chloride of B is dissolved in water, it forms a neutral solution but the chloride of

D forms an acid solution. Explain this difference 2mks

viii) 2.3 g of sodium metal were ignited in a gas jar of chlorine until there was no further

change. Calculate the volume of chlorine gas used in this reaction. (Na=23; MGV=24dm3)

2mks

9. A sealed glass tube containing air at s.t.p was immersed in water at 1000c. Assuming that there was no increase in the volume of the glass tube due to the expansion of the glass, calculate the pressure of the inside tube. (standard pressure =760mmHg,) (3mks)

10. Give one use of radioactive elements (1mk)