Name _____ Index No. _____

Class _____

233/1
Chemistry
Paper 1
Theory

18th July 2013

ALLIANCE HIGH SCHOOL
Kenya Certificate of Secondary Education Chemistry
PAPER 1
THEORY
2 HRS

INSTRUCTIONS TO CANDIDATES

1. *Answer all the questions in the provided spaces*
2. *Mathematical tables and silent electronic calculators may be used.*
3. *Show all your working clearly*
4. *This paper consist 12 printed pages. Check to ascertain that all the pages are printed as indicate that no questions are missing.*

For examiners use only.

Questions	Maximum score	Attained score
1 – 31	80	

1. a) What is the name given tot the process shown below. (1 mk)

b) Explain why the solubility of propane in water in lower than that of ethanol . (2 mks)

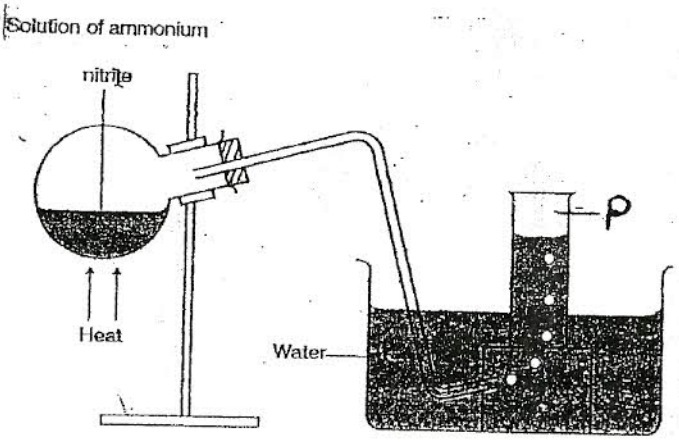
---

2. Complete the nuclear reaction below. (1 mk)

a) $^{234}_{90}$ ⟶ $^{234}_{91}$

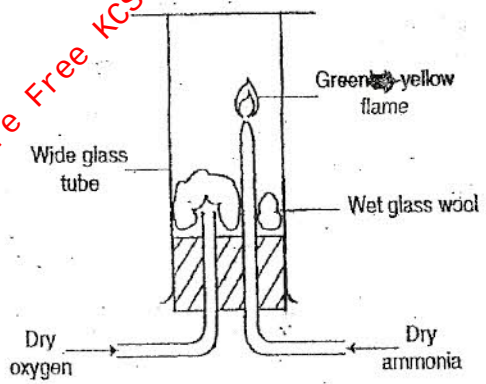
b) The half life of $^{131}_{53}I$ is 8 days, determine the mass of the iodine remaining of 50 grammes

---

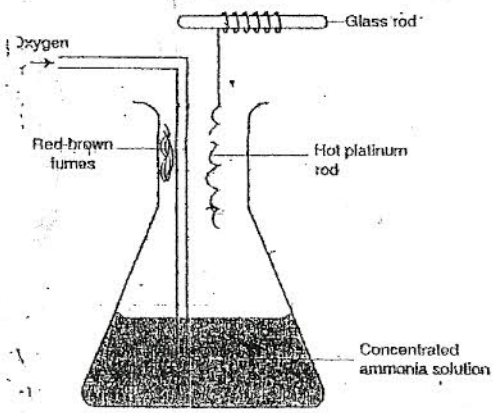


b) The nitrogen gas obtained above was dried and a burning magnesium ribbo.. in the jar to form product Q. Write a chemical equation to show how product Q would react with water. (1 mk)

4. A student set – up experiments A and B shown below. Study the figures and answer the questions that follow.



Experiment A



Experiment B.

a) Write chemicals equations for the reactions that take place in experiment A and B.
Experiment A (1 mk)

Experiment B (2 mks)

... with solid
... nitrate. (1 mk)

5. Given that the formular of fluorides of elements B,C and A are BF_2, CF AF_3 (B,C and A are not actual symbols of the elements).

a) Arrange the elements as they would occur across the periodic table (1 mk)

_____

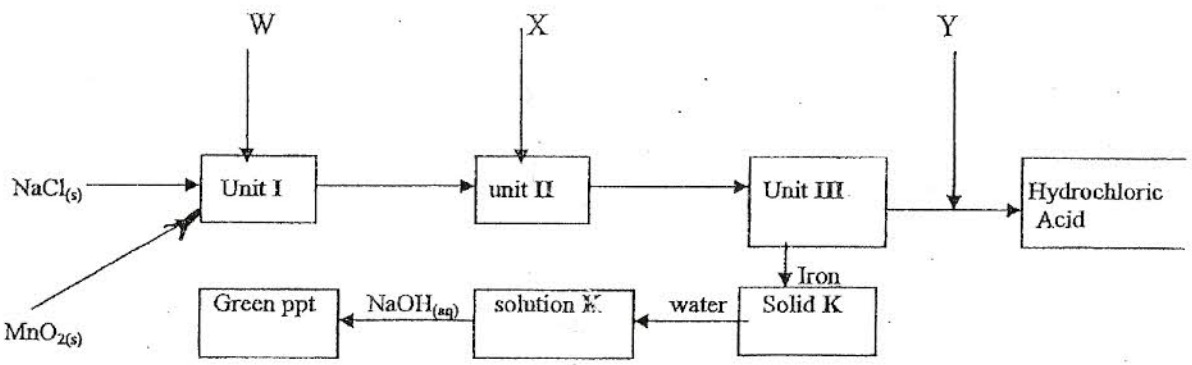
_____

b) How would the melting points of elements A and C compare. Explain. (2 mks)

_____

_____

5. Study the scheme below and answer the questions that follow.



a) Identify substances. (2 mks)

W_____

X_____

b) State the role of MnO_2 in the scheme above. (1 mk)

_____

c) Write the chemical equation for the reaction forming solid. K. (1 mk)

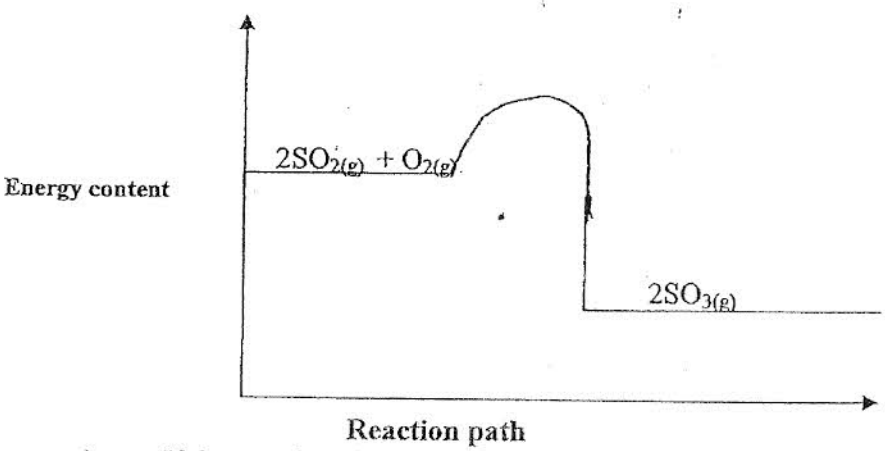
b) Write the equation for the reaction that takes place at the positive terminal. (1 mk)

c) What is the role of manganese (iv) oxide in the cell above. (1 mk)

d) Name the material that makes up the part laballed R. (1 mk)

9. The following is an energy level diagram for the following reaction.

$$2SO_{2(g)} + O_{(g)} \rightleftharpoons 2SO_{3\,(g)}$$



a) If the reaction above was carried out without a catalyst, on the same set of axis, show the effect if the experiment was repeated using a catalyst. (1 mk)

7. Use the information below to answer the question that follow.

ΔH^{θ}_{C} Ethane = - 1560kJ/ mole

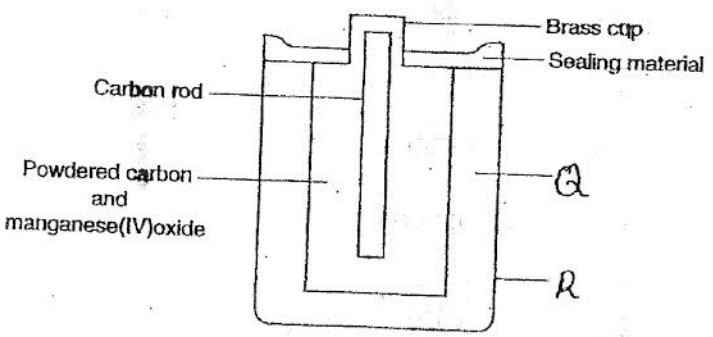
ΔH^{θ}_{C} Graphite = - 393 kJ/ mole

ΔH^{θ}_{C} Hydrogen = -286 kJ/Mole

a) Draw an energy level diagram for the reaction that gives the – 1560kJ of energy above. (2 mks)

b) Calculate the standard enthalpy of formation of ethane. (2 mks)

8. The figure below shows the structure of the Le Clanche cell. Study it and answer the questions that follow.



a) Name the substances (s) that makes up the part laballed Q. (1 mk)