**NAME:………………………………………………………..ADM:………………………CLASS:……….**

**CHEMISTRY FORM 2**

**MID TERM 1 EXAM , 2023**

**TIME: 1HR 20 MIN**

**INSTRUCTIONS**

* ***Answer all questions in the spaces provided***
* ***All working must be clearly shown.***
1. Explain how you would obtain a pure Ammonium chloride from a mixture of Lead sulphate and Ammonium chloride. (3mks)
2. State and explain the changes in mass that occur when the following are heated separately in open crucibles. Write a chemical equation for each reaction.
3. Lead metal. (2mks)
4. Lead carbonate. (3mks)
5. Explain why a mixture of copper (ii0 oxide and magnesium reacts when heated while there is no reaction when a mixture of copper and magnesium oxide is heated. (3mks)
6. An element x has an electronic configuration of 2 8 5.
7. Sate the period and group which the element belongs. (2mks)
8. Write the formula of the most stable ion formed when element x ionizes. (1mk)
9. Explain the difference between the atomic radius of element x and its ionic radius. (2mks)
10. (i) Explain why the metals such as Magnesium and Aluminum are good conductors. (2mks)

(ii) State two reasons why Aluminum is preferred to Magnesium for Magnesium for making cooking pans. (2mks)

1. Define the following terms:
2. Atomic Number (1mk)
3. Mass Number (1mk)
4. The Isotopes (1mk)
5. Ionization energy (1mk)
6. Electron affinity. (1mk)
7. Atoms of element x exist as 14X and 12 X

6  6

1. What name is given to the two types of atoms. (1mk)
2. Use dot (.) and (x) diagrams to illustrate the atomic structure of x. (2mks)
3. Write the electron configuration of the atom in (b) hence write the formula of the compound formed when it combines with oxygen (O=8) (2mks)
4. The following table gives a summary of same properties of elements P, Q, R and S. the letters do not represent the actual symbols of the elements. Study the table and answer the question that follows.

|  |  |  |
| --- | --- | --- |
| element | Electron arrangement | valency |
| PQ R S | 2.22.72.8.22.8.8.2 | 2122 |

1. Which two elements have similar chemical properties? Explain. (2mks)
2. What is the must likely formular of a carbonate of S ? (1mk)
3. (i) Identify the element which is a non- metal. (1mk)

(ii) With an explanation, state the family and period to which the element in (i) belong. (3mks)

1. (a) What is meant by chemical family of elements. (1mk)

(b) Explain the following observations.

(i) Atomic radii generally decrease across a period. (2mks)

(ii) Melting points increase from sodium to Aluminium in the third period. (2mks)

(iii) Sodium is more reactive than magnesium. (2mks)

(iv) Chlorine is more reactive than sulphur (2mks)

1. Write equations for the following reactions
2. Burning magnesium in air.
3. Reaction of
4. Magnesium with steam
5. Sodium oxide with water
6. Aluminium with dilute sulphuric acid
7. Sulphur with oxygen