**NAME: …………………………………………………….CLASS: …….. ADM.NO. : ………..**

**CHEMISTRY END TERM EXAM**

**TERM 1 -2022**

**FORM TWO**

**TIME:**

**Answer All questions in the spaces provided.**

1. In an experiment, lead nitrate Pb(NO3)2(aq) reacted with magnesium sulphate (MgSO)4(aq)
2. Derive an ionic equation for the above reaction. (3mks)
3. Given lead (II) oxide, nitric (V) acid, sodium carbonate solution, water, explain into details how you can prepare lead II carbonate. (3mks)
4. .

BLUE SOLID

BLACK SOLID

BROWN GAS

SOLUTION K OF PH4

H2O

1. Identify:
2. Black solid –
3. Blue solid –
4. Brown –
5. Write a chemical equation between Brown gas and water to form solution K. (2mks)
6. The reactivity of alkali metals increase down the group while that of halogens increase up the group. Explain. (2mks)
7. The first and second ionization energies of sodium are 496KJMol- and 4563KJMol- respectively. Explain why the second ionization energy is far much higher than the first ionization energy. (2mks)
8. Explain the following observations:
9. Solid sodium chloride does not conduct electricity whereas molten sodium chloride and sodium chloride solution are good conductors of electricity. Explain. (2mks)
10. Sodium has a melting point of 98OC while aluminium has a melting point of 660OC (atomic numbers : Na=11, Al=13) (2mks)
11. Spots of pure pigments A and B and a mixture Z were placed on a filter paper and allowed to dry. The paper was then dipped in a solvent. The results obtained were as the paper chromatogram.

C

X

Y

W

Z

B

D

C

1. Which is the; (2mks)
2. Baseline?
3. Solvent front?
4. Which of the pure pigments was a component of Z? Explain. (2mks)
5. The diagram below shows the inter-conversions between the various states of matter. Study it and answer the questions that follow:

E

SOLID

LIQUID

GAS

A

B

C

D

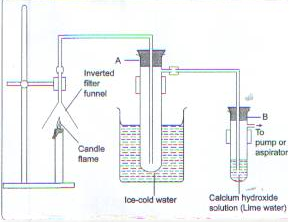
F

1. Name the processes labeled A to E. (3mks)
2. Name any two substances that can be recovered from a solid mixture using the processes labeled E and F. (2mks)
3. (a) What is rust? (1mk)

(b) Explain one advantage of rusting. (1mk)

(c) Name two methods of preventing rust. (2mks)

1. The set-up below was used to investigate the products formed when candle wax burns in air. Study it and answer the questions that follow.



1. What observations are made in:
2. Test-tube A? (1mk)
3. Test-tube B? Explain. (2mks)
4. Explain why test-tube A is dipped in cold water. (1mk)
5. The atomic numbers of elements C and D are 19 and 9 respectively. State and explain the electrical conductivity of the compound CD in:
6. Solid state. (1 ½ mks)
7. Aqueous state. (1 ½ mks)
8. What type of bond is formed when lithium and fluorine reacts? Explain. (Atomic numbers Li=3 and F=9) (2mks)
9. Iron (III) oxide was found to be contaminated with copper (II) sulphate. Describe how a pure sample of iron (III) oxide can be obtained. (3mks)
10. Using dots (.) and crosses (x) to represent electrons draw diagram to represent the bonding in; (2mks)
11. NH3
12. NH+4
13. (a) What are isotopes? (1mk)

(b) Lithium has two isotopes . Determine the number of neutrons in (2mks)

(c) If the relative atomic mass of lithium is 6.94. Which of the two isotopes is the most abundant? Give a reason. (2mks)

1. The grid shown below represents the periodic table. Study it and answer the questions that follow (the letters do not represent actual symbols of the elements)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | | | | | | | | | | |  |
| X |  |  | | | | | |  | J |  |  | B |  |
|  |  |  |  |  |  |  |  |
|  | H |  |  | P |  | T |  |  |  |  |  |  | D |
| L |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. What is the atomic number of H? (1mk)
2. Which letters represent elements in the same group? (2mks)
3. What is the name given to the group of elements in which P and T belong?(1mk)
4. Which letters represent non-metal? (3mks)
5. Which letter represents the most reactive metal? (1mk)
6. If an atom of J has 8 neutrons, state its mass number.
7. (a) What is rust? (1mk)

(b) Name three methods of rust prevention. (3mks)

1. Distinguish between ionization energy and electron affinity of an element. (2mks)
2. State one physical property shared by chlorine, neon, argon and fluorine. (1mk)
3. (a) Explain why Noble gases are generally unreactive. (1mk)

(b) State two uses of Noble gases. (2mks)

1. Give two reasons as to why most laboratory apparatus are made of glass. (2mks)