**CHEMISTRY**

**FORM 2**

**MID TERM TERM 1 2021**

**TIME: 45 MINUTES**

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

***Instructions*:**

***Answer all the questions in the spaces provided***

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1. An element X exists in two isotopic forms i.e 47X and 47X, If their relative abundance are in ratio of 3:1 respectively, calculate the atomic mass of the other isotope 47X given the relative atomic mass of X is 107.5. (3mks)

n

1. Define the following terms. (3mks)
2. Atomic number
3. Mass number
4. Ion
5. Explain these chemical expressions that elements before reaction are electrically neutral. (2mk)
6. The table below shows the atomic numbers of some elements represented by letters which are not their chemical symbols, Study it and answer questions that follow.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Element | J | K | L | M | N | P | Q |
| Atomic numbers | 11 | 17 | 15 | 14 | 12 | 20 | 19 |

1. Write down the electronic configuration of: (2mks)
2. M
3. P2+
4. Write the formulae of the compound formed when K and M reacts (1mk)

ii. What type of bond is formed when K and M reacts. (1mk)

1. How would reactivity of N and P with chlorine compare. Explain. (2mks)
2. Select the most reactive metal and non-metal from the above list and give reason for your answer. (4mks)

I. Metal

Reason

II. Non-metal

Reason

1. Place the elements in their immediate groups and periods.

|  |  |  |
| --- | --- | --- |
| **Element** | **Group** | **Period** |
| J |  |  |
| L |  |  |
| Q |  |  |

1. Complete and balance the following chemical equations: (4mks)

Zn(s) + HCl(aq)

Na2CO3 + H2SO4

Ca(OH)2 + HNO3

C2H6 + O2

b. Explain the following observations:

i. Nitric acid is not used in preparation of Hydrogen gas by reacting metals and nitric acid. (2mks)

ii. Copper as metals does not react with dilute sulphuric acid. (2mks)

1. Using (.) and (x) notations show the bonding in MgCl2. (3mks)
2. Suggest the type of bonds which is most likely to exist between the following compounds. (2mks)
3. NaCl
4. AlCl
5. NH+4 ion
6. Cl2(g)