**GATITU MIXED SECONDARY SCHOOL**

**CHEMISTRY FORM 2 OPENER EXAM TERM 2 2015**

1. Element A has atomic mass 23 and element B has atomic mass 7 and also have 12 neutrons and 4 neutrons respectively.
2. Write the electronic arrangement of A and B 1mk
3. Which element has higher ionization energy? Explain 2mks
4. An element M has two isotopes, m1 with 63 atomic mass and 65 for M2. The relative atomic mass of the naturally occurring is 63.55. Calculate the percentage of each isotope. 3mks
5. An oxide of element G has the formula as G2O3
6. state the valency of element G 1mk
7. In which group of the periodic table is element G? 1mk

1. The table below gives information about the ions T and Z2-

|  |  |  |
| --- | --- | --- |
| ION | T | Z2- |
| Electron arrangement | 2.8 | 2.8.8 |
| Number of neutrons | 12 | 16 |

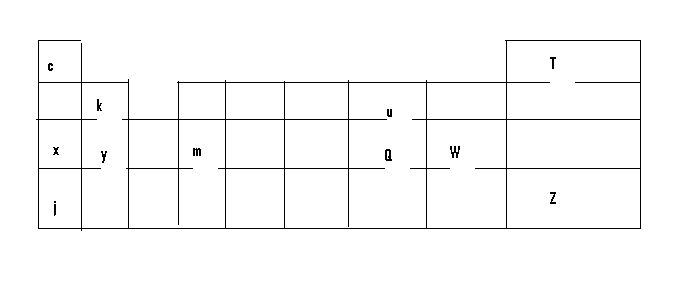
1. How many protons are there in the nucleus of:
2. Element T? 1mk
3. Element Z? 1mk
4. Element X is found in period III and group IV. It consists of two isotopes 28X and QX. a sample of x was found to consist of 90% of 28x. if the relative atomic mass of x is 28.3, work out the number of neutrons in QX. 2mks
5. Use the information in the table below to answer the questions that follow. (the letters do not represent the actual symbols of the elements .

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| element | Q | P | R | S | T |
| ATOMIC NUMBER | 18 | 5 | 3 | 5 | 20 |
| MASS NUMBER | 40 | 0 | 7 | 11 | 40 |

1. Which two letters represent the same elements? Give a reason 1mk
2. Give the number of neutrons in an atom of element R. 1mk
3. The number of protons, neutrons and electrons in atoms A to F are given in the table below the letters do not represent the actual symbol of the elements:

|  |  |  |  |
| --- | --- | --- | --- |
| atoms | protons | neutrons | electrons |
| A | 3 | 4 | 2 |
| B | 9 | 10 | 10 |
| C | 12 | 12 | 12 |
| D | 17 | 18 | 17 |
| E | 17 | 20 | 17 |
| F | 18 | 22 | 18 |

1. Choose from the table the letters that represent:
2. An atom of a metal 1mk
3. A neutral atom of non metal 1mk
4. An atom of a noble gas 1mk
5. A pair of isotopes 1mk
6. A cation 1mk
7. The grid below shows a part of the periodic table. The letters do not represent the act symbol. Use it to answer the questions that follow:



1. How does the atomic radius of element X and Y compare 1mk
2. Using crosses(x) to represent electrons draw the atomic structure of element Q. 2mks

ii.state the period and the group to which element Q belong. 1mk

1. The ionic configuration of element G is 2.8 G forms an ion of the type G-1. indicate on the grid the position of element G 1mk
2. To which chemical family does element G belong? 1mk
3. State one use of element U 1mk
4. What is the nature of the compound formed between K and U? 1mk