**MINEDUC Date: …./ 03/ 2023**

**GATSIBO DISTRICT Duration: 3hours**

**ACADEMIC YEAR:2022/2023**

**SECOND TERM**

**CHEMISTRY EXAMINATION SENIOR ONE**

**INSTRUCTIONS:**

* **THIS EXAMINATION IS COMPOSED OF TWO SECTIONS.**
* **ATTEMPT ALL QUESTIONS IN SECTION A /70 MARKS**
* **CHOOSE THREE QUESTIONS IN SECTION B /30 MARKS**
* **PERIOODIC TABLE IS NOT ALLOWED**

**SECTIONA: Attempt all questions/70marks**

1. a) Define ( **5marks)**
2. Isotopes
3. An ion
4. Cation
5. An element
6. A compound

b) Write the symbols of the following elements: **(2marks)**

 i) potassium

 ii) Sodium

 2. Explain the trend in:

 (a) Metallic character down a group. **/2marks**

 (b)Non-metallic character across a period**./2marks**

3. what are the uses of the following apparatus **( 4marks)**

 a) Fire extinguisher

 b) Wash bottle

 c) Test tube

 d) Beaker

 4. State two types of Bunsen burner flame. **(4marks)**

 5. a) What is the meaning of Matter. (**2marks)**

 b) Mention three state of matter. **( 3marks)**

 c) Classify each of these items into the three states of matter: Books, air,

 chalk , trees, salt, milk, water and stone. **( 4marks)**

6. Describe any four safety rules of laboratory/ **4marks**

7. Enumerate the four role of chemistry in Rwandan society **/4marks**

8. a) Differentiate between pure substance and mixture. **(2marks)**

b) State two examples of heterogeneous mixture. **( 2marks)**

 c) Which is the easiest method to separate the following mixture.**( 3marks)**

 i) Water and ethanol

 ii) Iron nail and sand

 iii) Oil and water

9. State whether the following are physical or chemical changes.**/5marks**

1. Ripening of fruit
2. cooking an egg
3. Alcohol fermentation
4. Burning of paper
5. melting an ice cube

10.Name the following compounds.**/5marks**

1. Na2S
2. MgCO3
3. AlCl3
4. H2O
5. CO

11 .Given the following elements and their atomic numbers as A=3, B=9, C=12, D=16, E=18, F=20,

Find out which of these elements is:**/4marks**

 (a) A halogen

(b) Noble gas

 (c) Alkali metal

 (d) Alkaline earth metal

12. Study and complete the table below**/4marks**

|  |  |  |  |
| --- | --- | --- | --- |
| Sub atomic particle | Symbol | charge | Location |
|  |  | -1 |  |
| Neutron |  | 0 |  |
|  |  |  | Nucleus |

13.The mass number of Sodium is 23 and the number proton in its atom is 11.

 a) Calculate the number of electrons and the number of neutrons in an atom of sodium. **( 2marks)**

b) Identify the group and period of sodium. **( 2marks)**

c) State the valancy of sodium. **( 1mark)**

14. a) What are the sources of water? **( 3marks)**

b) Give one physical property of pure water. **(1mark)**

**SECTION B Attempt** **only three questions**/**30marks**

15. Complete the following table bellow

|  |  |  |
| --- | --- | --- |
| Elements  | Symbols | Valencies |
|  | Ar |  |
| Beryllium |  | 2 |
|  |  C |  |
|  | Al |  |
| Sodium |  |  |
| Chlorine |  | 1 |

S

16. . a. Define water cycle **/ 2marks**

 b. By using labeled diagram describe water cycle. **(6marks)**

c. Outline two importance of water cycle / **2marks**

17. Match the following separating method with their application.**( 2marks of each)**

 i) Fractional distraction 1. Obtaining butter from milk.

 ii) Evaporation 2. Separation of water and ethanol.

 ii) Simple distraction 3. Separation of dyes in black ink.

iv) Paper chromatography 4. Obtaining pure water from sea water

v) Centifugasion 5.Obtain salts from its solution in water

18. The following table gives the atomic numbers of elements P, Q, R, S and T. Study it and answer the questions that follow. (The letters are not the actual symbols of the elements)

|  |  |
| --- | --- |
| Element | Atomic number |
| PQRST | 3691114 |

1. Identify the elements that belong to group I.**/2marks**
2. Which elements belong to the same period? / **2marks**
3. Write electronic arrangement of Q. **(1mark)**

 (d) Give reasons for your answers in (a) and (b) above. **/ 2marks**

(e) Categorize the elements above into metals, metalloids and

non-metals. **3marks**

#  End