

# LESOTHO COLLEGE OF EDUCATION

SCI 1301P-A

ASSIGNMENT 1

4<sup>th</sup> March, 2020

Due date: Monday, 9<sup>th</sup> March, 2020

Marks: 55

1. An element has an atomic number of 19.
  - a) In which group is this element? [1]
  - b) In what period is this element? [1]
  - c) Identify the element by name. [1]
  - d) What is this element's mass number? [2]
  - e) Is this element a metal or a non-metal? Explain your answer. [5]
2. Which of the following pairs of elements would have stronger ability to gain electrons? Explain clearly why?
  - a) Na or F [3]
  - b) Li or Cl [3]
  - c) O or Mg [3]
  - d) H or O [3]
  - e) Ca or Ar [3]
3. Thabiso has the following substances in the Science Laboratory. For each one of them say whether it is an element or a compound, give reasons.
  - a) NaCl [2]
  - b) SO<sub>2</sub> [2]
  - c) H<sub>2</sub> [2]
  - d) Cl<sub>2</sub> [2]

e) CO<sub>2</sub> [2]

4. Give three trends of the Periodic table and explain what each one of them means. [6]

5. Draw an atomic structure of Phosphorus, show how the electrons are filled in the shells. [4]

6. Draw and complete following table appropriately: [10]

|                            | <b>Solid</b> | <b>Liquid</b>               | <b>Gas</b> |
|----------------------------|--------------|-----------------------------|------------|
| Forces between particles   | Strong       |                             |            |
| Motion                     |              | random motion<br>throughout |            |
| Fixed/stable Shape         | Yes          |                             |            |
| Fixed volume               |              | No                          |            |
| Distance between particles | small        |                             |            |