

**PART A: MULTIPLE CHOICE (10 MARKS)**

Choose the best response in each case and place your answer in the appropriate space on your answer sheet.

- Which of the following combinations best describes the electron in the modern atomic model?
  - positive charge and insignificant mass
  - positive charge and significant mass
  - negative charge and insignificant mass
  - negative charge and significant mass
- A solid element looks silvery and shiny when its surface has been freshly sanded and polished. It will stretch without breaking if enough pulling force is applied. This element is most likely classed as a:
  - metal
  - nonmetal
  - halogen
  - noble gas
- Which of the following is a property of nonmetals?
  - brittleness
  - shiny lustre
  - malleability
  - ductility
- Heavy metals are elements that show the typical properties of metals as well as:
  - having very low densities.
  - having very high densities.
  - being able to conduct electricity.
  - being dull and brittle.
- Which of the following is used to organize the modern periodic table?
  - atomic mass
  - atomic number
  - number of neutrons
  - atomic size

Use the hypothetical periodic table below to answer questions 6 and 7.

(a)	(b)			(c)	(d)
Y					O
S	C	I	En	C	E
R	U	L	E	S	!

- The most unreactive group of elements would consist of the elements in which column?
  - nonmetals
  - metals
  - noble gases
  - metalloids
- The most reactive group of nonmetals would consist of the elements in which column?
  - nonmetals
  - metals
  - noble gases
  - metalloids
- Which of the following elements form the majority of the periodic table?
  - nonmetals
  - metals
  - noble gases
  - metalloids
- In a chemical reaction, a nonmetallic element usually:
  - loses protons
  - gains protons
  - loses electrons
  - gains electrons
- The chemical formula for carbon dioxide is  $\text{CO}_2$ . In one molecule of carbon dioxide there is:
  - 1 carbon and 1 oxygen
  - 2 carbon and 2 oxygen
  - 1 carbon and 2 oxygen
  - 2 carbon and 1 oxygen

**PART B: MATCH (5 MARKS)**

Match the definition from the 1<sup>st</sup> column to the best term in the 2<sup>nd</sup> column and place the matching letter in the appropriate space on your answer sheet.

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|--|------------------------|
| 1. Elements that possess both metallic and nonmetallic properties.   | A) alkali metals       |
| 2. A horizontal row of elements in the periodic table.   | B) atomic radius       |
| 3. An organized arrangement of elements that explains and predicts physical and chemical properties.               | C) composite           |
| 4. A material formed by combining two other materials.   | D) group               |
| 5. Reactive nonmetals that occur in different states and occupy the 17 <sup>th</sup> column of the periodic table. | E) halogens            |
|  | F) metalloids          |
|  | G) modern periodic law |
|  | H) noble gases         |
|  | I) period              |
|  | J) periodic table      |

## PART A: MULTIPLE CHOICE (10 MARKS)

1	2	3	4	5	6	7	8	9	10
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## PART B: MATCH (5 MARKS)

1	2	3	4	5
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## PART C: SHORT ANSWER (25 MARKS)

Use the periodic table in your textbook to answer the following questions. Place your answers in the space provided. If more space is needed, use the back of this sheet.

- {2} 1. Examine the following: **hydrocarbon + oxygen → carbon dioxide + water**
- (a) List one product: \_\_\_\_\_ (b) List one reactant: \_\_\_\_\_
- {2} 2. What colour background do the following possess? (a) metals \_\_\_\_\_  
(b) metalloids \_\_\_\_\_
- {2} 3. In what column are the following located? (a) noble gases \_\_\_\_\_  
(b) alkali metals \_\_\_\_\_
- {2} 4. Name two elements that are liquid at room temperature. ① \_\_\_\_\_  
② \_\_\_\_\_
- {1} 5. What is the atomic number of the element gold (Au)? \_\_\_\_\_
- {1} 6. What is the symbol of the element with atomic number 33? \_\_\_\_\_
- {1} 7. What is the atomic mass of the element aluminum (Al)? \_\_\_\_\_
- {1} 8. What is the chemical symbol of the element with atomic mass 40.1? \_\_\_\_\_
- {1} 9. What is the name of the element with the lowest melting temperature? \_\_\_\_\_
- {1} 10. What is the name of the element with the greatest density? \_\_\_\_\_
- {4} 11. Over the centuries, what 4 general types of materials have people used to make everything they need? ① \_\_\_\_\_ ③ \_\_\_\_\_  
② \_\_\_\_\_ ④ \_\_\_\_\_
- {2} 12. In the space given to the right draw a B-R diagram for the element nitrogen.
- {1} (a) What is the symbol of the noble gas that has the closest atomic #? \_\_\_\_\_
- {1} (b) Does nitrogen need to lose or gain e's to form a stable ion? \_\_\_\_\_
- {1} (c) How many e's must nitrogen lose or gain to form a stable ion? \_\_\_\_\_
- {2} (d) What charge (sign and number) of ion will result? \_\_\_\_\_