

Name: _____ **KEY**

**Science 9 – Unit Test – Matter and Chemical Change
Version 1**

Part A – Multiple Choice

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|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1. <input checked="" type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 11. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D | 21. <input type="radio"/> A <input checked="" type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 2. <input checked="" type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 12. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D | 22. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D |
| 3. <input type="radio"/> A <input checked="" type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 13. <input checked="" type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 23. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D |
| 4. <input type="radio"/> A <input checked="" type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 14. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D | 24. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D |
| 5. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D | 15. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D | 25. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D |
| 6. <input checked="" type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 16. <input checked="" type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | |
| 7. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D | 17. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D | |
| 8. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D | 18. <input checked="" type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | |
| 9. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D | 19. <input type="radio"/> A <input checked="" type="radio"/> B <input type="radio"/> C <input type="radio"/> D | |
| 10. <input type="radio"/> A <input checked="" type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 20. <input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D | |

Numerical Response

1.

1	2	3	
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 2.

1	1	2	
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 3.

1	2	.	0
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Part B – Written Response

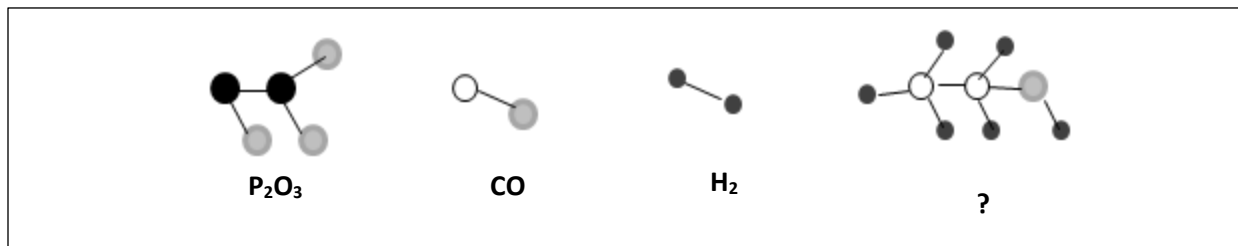
Written Response 1

Fill in the missing information from the table below (5 marks)

Chemical Formula	Type of compound (ionic or molecular?)	Chemical name
MgO	ionic	magnesium oxide
Na ₂ S	ionic	sodium sulfide
CH ₄	molecular	carbon tetrahydride
P ₂ O ₅	molecular	diphosphorus pentoxide
Be ₃ N ₂	ionic	beryllium nitride

Written Response 2

Use the following information to answer Written Response 2



a.) What is the **chemical formula** for the unknown molecule? (1 mark)

C₂H₆O

b.) Write the **chemical equation** for the combustion of the unknown molecule (*Hint: the unknown molecule is the fuel source*) (2 marks)

This question was removed from the test, but you need to know the general formulas for combustion and corrosion:

Combustion: CH₄ + O₂ → CO₂ + H₂O

Written Response 3

Corrosion: Fe + O₂ → Fe₂O₃

Use the following information to answer Written Response 3

Billy is trying to determine the chemical formula for the compound that forms between rubidium and sulfur. He does the following work:

Step 1: Rb¹⁺

S²⁻

Step 4: RbS₂

Step 2: Rb¹⁺

Answer: The compound that forms between rubidium and sulfur is

Step 3: 2+

2-

RbS₂.

Billy's friend Alice says that he is wrong, and that the right answer is Rb₂S. Who is correct?

Explain your answer. (2 marks)

Alice is right. Billy wrote steps 1-3 correctly, but he should have Rb₂S for Step 4, because two Rubidium are required to balance the 2- of sulfur.