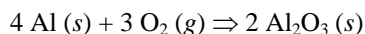


Sample Questions for the Chemistry Placement Test

The chemistry placement test is used to assess your present level of general chemistry knowledge in addition to your mathematical skills. You will be provided scratch paper (you cannot write on the test itself) and the Periodic Table of the Elements, and you will be allowed to use a calculator. You will have 45 minutes to answer 44 multiple choice questions, with the following sample questions intended only as a guideline:

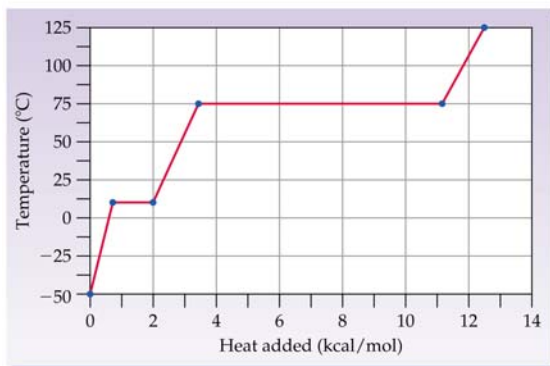
- If the formula for potassium chlorate is KClO_3 and the formula for magnesium fluoride is MgF_2 , then what is the formula for magnesium chlorate?
(a) MgClO_3 (b) Mg_2ClO_3 (c) $\text{Mg}(\text{ClO}_3)_2$ (d) $\text{Mg}_2(\text{ClO}_3)_3$
- From the periodic table, what is the atomic number of aluminum?
(a) 26.98 (b) 13 (c) 18 (d) 39.95
- Which one of the following elements does not exist as a diatomic molecule in nature?
(a) hydrogen (b) nitrogen (c) fluorine (d) neon

For questions 4. and 5., consider the following reaction:



- The reaction can be classified as which one of the following types?
(a) precipitation (b) decomposition (c) synthesis (d) double displacement
- How many moles of Al_2O_3 can be produced from the reaction of 10.0 g of Al and 19.0 g of O_2 ?
(a) 0.581 mol (b) 0.371 mol (c) 0.185 mol (d) 0.396 mol
- What volume of 12.0 M HCl is required to make 75.0 mL of 3.50 M HCl?
(a) 21.9 mL (b) 0.560 mL (c) 257 mL (d) 75.0 mL
- A fish tank holds 1.029 yd^3 of water. What is this volume in cubic meters given that 1 m = 1.093 yd?
(a) 1.062 m^3 (b) 0.9414 m^3 (c) 1.125 m^3 (d) 0.7881 m^3
- Which one of the following is a strong acid?
(a) HNO_3 (b) CaSO_4 (c) NH_3 (d) NaOH

For questions 9. and 10., consider the following heating curve of a hypothetical substance:



- What is the boiling point of the substance?
(a) 0°C (c) 12°C
(b) -50°C (d) 75°C
- What state of matter is the substance at 50°C ?
(a) gas (c) solid
(b) liquid (d) not enough information

Answers

1. (c) 2. (b) 3. (d) 4. (c) 5. (c) 6. (a) 7. (d) 8. (a) 9. (d) 10. (b)