

Mass crucible (g)	11.12
Mass of titanium (g)	8.82
Mass of crucible and product (g)	22.998

What is the empirical formula of titanium sulfide? (Mr Ti = 47.867 g mol⁻¹)

- A. TiS C. Ti₂S₂
 B. Ti₂S D. TiS₂

10. What volume of water in cm³ should be added to 10.0 cm³ of NaOH 6 M to produce a solution of NaOH 0.3 M?

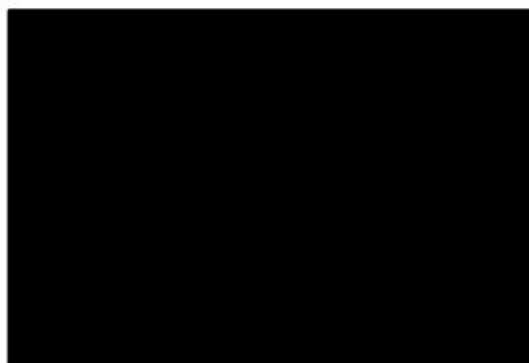
- A. 10 C. 200
 B. 190 D. 500

11. Which of the following statements is NOT true about 2 L of 0.1 M Ca₃(PO₄)₂ solution?

- A. This solution contains 0.3 mol of Ca₃(PO₄)₂
 B. This solution contains 0.8 mol of oxygen atoms
 C. 2 L of this solution produces 0.6 mole of calcium ions
 D. 500 mL of this solution contains 6.02 × 10²² phosphorus atoms

12. The density of 95% by mass of sulphuric acid, H₂SO₄, is 1.84 g mL⁻¹. Calculate the molarity of H₂SO₄ solution.

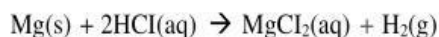
- A. 15.50 M C. 1.80 M
 B. 10.23 M D. 17.82 M



16. A 72.0 g vanadium pentoxide, V₂O₅ reacts with excess aluminium, Al at high temperature to produce vanadium metal, and aluminium oxide, Al₂O₃. Calculate the mass of vanadium produced. [Ar V: 51]

- A. 4.04 g C. 44.0 g
 B. 40.4 g D. 4.40 g

17. In an experiment, 1.46 g of magnesium is added into 160.00 mL of 0.50 mol L⁻¹ hydrochloric acid. The reaction involved is:



Determine the limiting reactant.

- A. Mg(s) C. MgCl₂ (aq)
 B. HCl (aq) D. H₂(g)

