

- 12 (11) -

1. Provide as much as possible of sodium chloride and barium sulphate different ways of receiving.
(3 points for each correctly written equation)
2. A fertiliser contains a mixture of ammonium sulphate and potassium sulphate. A sample of this fertiliser (mass 1g) was warmed with an excess of aqueous sodium hydroxide (50 ml 0,5 mol solution) until the evolution of ammonia ceased. The excess of sodium hydroxide was neutralised by 38,4 ml 0,5 mol/l hydrochloric acid. Write reaction equations. Calculate the composition of the fertiliser.
(9 points)
3. Write an electronic configuration of titanium atom.
(1 point)
4. To provide as much as possible different classes of substances which react with water, samples (1 point for each different material). For each of these substances write the reaction with the water equation, indicate medium of the solution: acidic, basic or neutral.
(4 points for each sample)
5. Glass bottle without air mass weight 120 g. Full of oxygen under the same conditions – 122,9 g. Full of unknown gas – 125,8 g. Calculate the molecular mass of the unknown gas. What could this gas be, if we know that it consists of two elements, one of which is oxygen?
(5 points)