

普通化學試題

(限用答案本作答)

請自行使用計算機

1. What is the pH of a 0.400 M ammonia solution? $K_b=1.8 \times 10^{-5}$ (15%)
2. Write chemical formulas or inorganic cations for these compounds: (a) methane (b) sodium chloride (c) ethanol (d) Aluminum (e) Calcium (f) ferrous (g) cadmium (h) lead (i) silver (j) nitrate (20%)
3. What is the molarity of an 85.0 mL ethanol (C_2H_5OH) solution containing 1.77g of ethanol? (15%)
4. Describe how you would prepare 250 mL of 2.5 M H_2SO_4 solution, starting with 10 M stock solution of H_2SO_4 . (15%)
5. The reaction between nitric oxide (NO) and Oxygen to form nitrogen dioxide (NO_2) is a key step in photochemical smog formation
$$2 NO(g) + O_2 \rightarrow 2NO_2(g)$$
 - (a) How many moles of NO_2 are formed by the complete reaction of 2.54 mole of O_2 ?
 - (b) How many grams of NO_2 are formed by the complete reaction of 1.44 g of NO? (20%)
6. What is the property of (a) methane (b) NO (c) CO_2 in the environment? (15%)

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