S4 Chemistry Quiz
Concentrated Hydrochloric Acid & Nitric Acid

Write balanced chemical (ionic) equation for the following reactions:

1. $Cu(s)$ + dilute $HCl(aq)$
2. $CuCO_3(s)$ + conc. $HNO_3(aq)$
3. $Cu(s)$ + conc. $HNO_3(aq)$
4. $CuO(s)$ + conc. $HCl(aq)$
5. $Cu(s)$ + dilute $HNO_3(aq)$
6. $Cu(s)$ + very dilute $HNO_3(aq)$
7. $Cu(OH)_2(s)$ + conc. $HCl(aq)$
8. $CuCO_3(s)$ + very dilute $HNO_3(aq)$

Suggested Answer:

1. $Cu(s) + \text{dilute } HCl(aq) \longrightarrow \text{No reaction}$
2. $CuCO_3(s) + 2HNO_3(aq) \longrightarrow Cu(NO_3)_2(aq) + CO_2(g) + H_2O(l)$
3. $Cu(s) + 2HNO_3(aq) + 2H^+(aq) \longrightarrow Cu^{2+}(aq) + 2NO_2(g) + 2H_2O(l)$
4. $CuO(s) + 2HCl(aq) \longrightarrow CuCl_2(aq) + H_2O(l)$
5. $3Cu(s) + 2HNO_3(aq) + 6H^+(aq) \longrightarrow 3Cu^{2+}(aq) + 2NO(g) + 4H_2O(l)$
6. $Cu(s) + \text{very dilute } HNO_3(aq) \longrightarrow \text{No reaction}$
7. $Cu(OH)_2(s) + 2HCl(aq) \longrightarrow CuCl_2(aq) + 2H_2O(l)$
8. $CuCO_3(s) + 2HNO_3(aq) \longrightarrow Cu(NO_3)_2(aq) + CO_2(g) + H_2O(l)$