Exercise 11–3: Predict reactants and products for the following redox equations. Be sure to notice whether reactions occur in acidic or basic solution. Also, all spectator ions must be eliminated.

1. Potassium permanganate solution is added to concentrated hydrochloric acid.

2. Potassium dichromate solution is added to an acidified solution of sodium sulfite.

3. Solutions of potassium iodide, potassium iodate, and dilute sulfuric acid are mixed.

4. Manganese(IV) oxide is added to warm, concentrated hydrobromic acid.

5. Chlorine gas is bubbled into cold, dilute sodium hydroxide.

6. Hydrogen peroxide solution is added to acidified potassium iodide solution.

7. Hydrogen peroxide is added to an acidified solution of potassium dichromate.

8. Sulfur dioxide gas is bubbled through an acidified solution of potassium permanganate.

9. A solution of tin(II) ions is added to an acidified solution of potassium dichromate.

10. A small amount of solid iodine is shaken with 0.1 M sodium hydroxide.