Acids Unit: Redox Application

1. The following reaction takes place in a closed container.

$$2SO_2(g) + O_2(g) \leftrightarrow 2SO_3(g)$$

The oxidizing agent in the reaction is _____

а	SO₂(g)
b	$O_2(g)$
С	SO ₃ (g)
d	This is not an oxidation reduction reaction

2. The following reaction takes place in a closed container.

$$2SO_2(g) + O_2(g) \leftrightarrow 2SO_3(g)$$

The reducing agent in the reaction is _____

а	SO ₂ (g)
b	O ₂ (g)
С	SO ₃ (g)
d	This is not an oxidation reduction reaction

3. Hydrogen gas is produced when magnesium metal reacts with 1.0 mol/L of ______.

а	CH₃OH(aq)
b	C ₂ H ₅ OH(aq)
С	CH₃COOH(aq)
d	$C_6H_{12}O_6(aq)$

4. Consider the following half reactions

$$ClO_3(aq) + 6H^+(aq) + 5e^- \rightarrow \frac{1}{2}Cl_2(g) + 3H_2O(l)$$
 $E^\circ = 1.47 \text{ V}$ $Cl_2(g) + 2e^- \rightarrow 2Cl^-(aq)$ $E^\circ = 1.36 \text{ V}$

A student mixes acidified solutions of KCl(aq) and KClO₃(aq). The <u>FALSE</u> observation is _____

а	Chlorine gas is produced		
b	The pH of the mixture decreases.		
С	A spontaneous reaction occurs.		
d	The concentrations of ClO ₃ ⁻ (aq) and 2Cl ⁻ (aq) both decrease.		

Solutions:

- 1. B
- 2. A
- 3. C
- 4. B