**CHEM 102 Recitation Ch 19 Name**

**Q1**. Consider the reaction: CuO(*s*) + H2(*g*) → Cu(*s*) + H2O(*l*). Which substance is the oxidizing agent?

A) H2O B) H2 C) Cu D) CuO

**Q2.** When the following redox reaction that occurs in an *acidic* medium is balanced (with smallest whole-number ratio): CH3OH (*aq*) + Cr2O72− (*aq*) → CH2O (*aq*) + Cr3+ (*aq*)

then the coefficient of **H+** ions in the final equation is:

A) 4 B) 8 C) 12 D) 16 E) 20

**Q3.** A voltaic cell with the following notation **Cu(s) | Cu2+ (aq) || Ag+(aq) | Ag(s)**

is prepared using copper and silver. Which of the following processes occurs at the cathode?

|  |  |
| --- | --- |
| A) | Ag*(s)* 🡪 Ag+*(aq)* + e- |
| B) | Cu2+*(aq)* + 2e- 🡪 Cu*(s)* |
| C) | Ag+*(aq)* + e- 🡪 Ag*(s)* |
| D) | Cu*(s)* 🡪 Cu2+*(aq)* + 2e- |

**Q4.** Which equation represents an oxidation-reduction reaction?

(A) H2SO4 + 2NH3 🡪 (NH4)2SO4

(B) H2SO4 + Na2CO3 🡪 Na2SO4 + H2O + CO2

(C) 2K2CrO4 + H2SO4 🡪 K2Cr2O7 + K2SO4 + H2O

(D) 2H2SO4 + Cu 🡪 CuSO4 + 2H2O + SO2

**Q5.** What is the value of the **equilibrium constant** for the cell reaction below at 25°C?

2Cr(*s*) + 3Pb2+(*aq*)  3Pb(*s*) + 2Cr3+(*aq*) [6.7 × 1061]

|  |  |
| --- | --- |
| Given  **Reaction** | ***E*o** |
| Pb2+*(aq)* + 2*e*–  🡪 Pb*(s)* | –0.13 V |
| Cr3+*(aq)* + 3*e*–  🡪 Cr*(s)* | –0.74 V |

**Q6.** How long would it take to deposit **21.4 g** of **Ag** from a solution of **AgNO3** using a current of 10 A. [0.532 hours]