Redox Check for Understanding

Half-cell 1: strip of Al(s) in 1.00M Al(NO3)3

Half-cell 2: strip of Cu(s) in 1.00M Cu(NO3)2

Half –cell 3: strip of Fe(s) in 1.00M Fe(NO3)2

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| Galvanic Cell | Half-cells | Cell Reaction | E◦cell (V) |
| X | 1 and 2 | 2Al(s) + 3Cu+2(aq) 🡪 2Al+3(aq) + 3Cu(s) | 2.00 |
| Y | 1 and 3 | 2Al(s) + 3Fe+2(aq) 🡪 2Al+3(aq) + 3Fe(s) | 1.22 |
| Z | 2 and 3 | Fe(s) + Cu+2+(aq) 🡪 Fe+2(aq) + Cu(s) | ? |

1. What is the standard cell potential of galvanic cell Z?

A. 0.26V

B. 0.78V

C. 2.34V

D. 3.22V

2. In galvanic cells Y and Z, which of the following takes place in half-cell 3?

A. Reduction occurs in both cell Y and cell Z.

B. Oxidation occurs in both cell Y and cell Z.

C. Reduction occurs in cell Y, and oxidation occurs in cell Z.

D. Oxidation occurs in cellY, and reduction occurs in cell Z.

3. In the half-cell containing 1.00M Fe(NO3)2(aq) in galvanic cells Y and Z is rep[laced with a half-cell containing 5.00M Fe(NO3)2(aq), what will be the effect on the cell voltage of the two galvanic cells?

A. The voltage will increase in both cells.

B. the voltage will decrease in both cells.

C. The voltage will increase in cell Y and decrease in cell Z.

D. the voltage will decrease in cell Y and increase in cell Z.