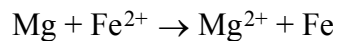


- _____ 1) According to Reference Table J, which metal will react spontaneously with hydrochloric acid?
- 1) gold 3) copper
2) silver 4) zinc
- _____ 2) According to Reference Table J, which metal will reduce Ni^{2+} to Ni(s) ?
- 1) Fe(s) 3) Ag(s)
2) Cu(s) 4) Au(s)
- _____ 3) Based on Reference Table J, which of the following elements is the most actively oxidized?
- 1) Fe 2) Sr 3) Cu 4) Cr
- _____ 4) According to Reference Table J, which ion will oxidize Fe?
- 1) Zn^{2+} 3) Mg^{2+}
2) Ca^{2+} 4) Cu^{2+}
- _____ 5) According to Reference Table J, which ion is most easily reduced?
- 1) Au^{3+} 3) Al^{3+}
2) Ni^{2+} 4) Mg^{2+}
- _____ 6) According to reference Table J, which reaction will occur spontaneously?
- 1) $\text{Co}^{2+} + \text{Cu(s)} \rightarrow \text{Co(s)} + \text{Cu}^{2+}$
2) $\text{Ag}^+ + \text{Cu(s)} \rightarrow \text{Ag(s)} + \text{Cu}^+$
3) $\text{Fe}^{2+} + \text{Hg(l)} \rightarrow \text{Fe(s)} + \text{Hg}^{2+}$
4) $\text{Mg}^{2+} + \text{Sn}^{2+} \rightarrow \text{Mg(s)} + \text{Sn}^{4+}$
- _____ 7) Which element below can be used to replace chromium from its compound Cr_2O_3 ?
- 1) Cu 2) Pb 3) Sn 4) Al
- _____ 8) Given the reaction:
- $$\text{Zn(s)} + \text{Cu}^{2+}(\text{aq}) \rightarrow \text{Zn}^{2+}(\text{aq}) + \text{Cu(s)}$$
- Which half-cell reaction represents the reduction that occurs?
- 1) $\text{Zn(s)} \rightarrow \text{Zn}^{2+}(\text{aq}) + 2\text{e}^-$
2) $\text{Zn}^{2+}(\text{aq}) + 2\text{e}^- \rightarrow \text{Zn(s)}$
3) $\text{Cu}^{2+}(\text{aq}) + 2\text{e}^- \rightarrow \text{Cu(s)}$
4) $\text{Cu(s)} \rightarrow \text{Cu}^{2+}(\text{aq}) + 2\text{e}^-$

- _____ 9) Given the reaction:
- $$\text{Ca(s)} + \text{Cu}^{2+}(\text{aq}) \rightarrow \text{Ca}^{2+}(\text{aq}) + \text{Cu(s)}$$
- What is the correct reduction half-reaction?
- 1) $\text{Cu}^{2+}(\text{aq}) + 2\text{e}^- \rightarrow \text{Cu(s)}$
2) $\text{Cu}^{2+}(\text{aq}) \rightarrow \text{Cu(s)} + 2\text{e}^-$
3) $\text{Cu(s)} + 2\text{e}^- \rightarrow \text{Cu}^{2+}(\text{aq})$
4) $\text{Cu(s)} \rightarrow \text{Cu}^{2+}(\text{aq}) + 2\text{e}^-$
- _____ 10) In the reaction $\text{Mg} + \text{Cl}_2 \rightarrow \text{MgCl}_2$, the correct half-reaction for the oxidation that occurs is
- 1) $\text{Mg} + 2\text{e}^- \rightarrow \text{Mg}^{2+}$
2) $\text{Cl}_2 + 2\text{e}^- \rightarrow 2\text{Cl}^-$
3) $\text{Mg} \rightarrow \text{Mg}^{2+} + 2\text{e}^-$
4) $\text{Cl}_2 \rightarrow 2\text{Cl}^- + 2\text{e}^-$
- _____ 11) Given the reaction:
- $$\text{Zn(s)} + 2\text{HCl(aq)} \rightarrow \text{ZnCl}_2(\text{aq}) + \text{H}_2(\text{g})$$
- Which equation represents the correct oxidation half-reaction?
- 1) $\text{Zn(s)} \rightarrow \text{Zn}^{2+} + 2\text{e}^-$
2) $2\text{H} + 2\text{e}^- \rightarrow \text{H}_2(\text{g})$
3) $\text{Zn}^{2+} + 2\text{e}^- \rightarrow \text{Zn(s)}$
4) $2\text{Cl}^- \rightarrow \text{Cl}_2(\text{g}) + 2\text{e}^-$
- _____ 12) Given the reaction:
- $$3\text{Sn}^{4+}(\text{aq}) + 2\text{Cr(s)} \rightarrow 3\text{Sn}^{2+}(\text{aq}) + 2\text{Cr}^{3+}(\text{aq})$$
- Which half-reaction correctly represents the reduction that occurs?
- 1) $\text{Sn}^{4+}(\text{aq}) + 2\text{e}^- \rightarrow \text{Sn}^{2+}(\text{aq})$
2) $\text{Sn}^{2+}(\text{aq}) \rightarrow \text{Sn}^{4+}(\text{aq}) + 2\text{e}^-$
3) $\text{Cr(s)} \rightarrow \text{Cr}^{3+}(\text{aq}) + 3\text{e}^-$
4) $\text{Cr}^{3+}(\text{aq}) + 3\text{e}^- \rightarrow \text{Cr(s)}$

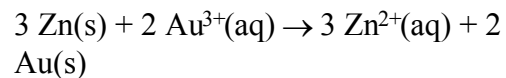
13) Given the reaction:



What is the net cell potential (E°) for the overall reaction?

- 1) 0.45 V 3) 2.37 V
2) 1.92 V 4) 2.82 V

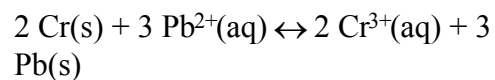
14) Given the reaction:



What is the maximum cell voltage (E°) for the overall reaction?

- 1) +1.50V 3) +5.28 V
2) +2.26 V 4) +0.74 V

15) Given the reaction:



The cell voltage (E°) for the overall reaction is

- 1) 0.61 volt 3) 1.09 volts
2) 0.87 volt 4) 1.87 volts
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