1. Which is the correct value for the standard potential for a gold-rhodium voltaic cell?
The standard half cell potential at $298\ K$ are:
$Rh^{3+}(aq) + 3e^- \rightarrow Rh(s);\ E^o_{red} = 0.76\ V$
$Au^+(aq) + e^- \rightarrow Au(s);\ E^o_{red} = 1.69\ V$

   A. $2.45\ V$

   B. $0.93\ V$

   C. $5.83\ V$

   D. $4.31\ V$

2. KCl is used in salt bridge because:

   A. It forms a good jelly with agar-agar

   B. It is a strong electrolyte

   C. It is a good conductor of electricity

   D. Mobility of K^+ and Cl^- ions are almost same

3. The value for the standard emf (electromotive force) of a galvanic cell described by the balanced chemical equation is $0.79\ V$. Determine the value of the standard half-cell potential for the I^-/I_2 couple.
$Cr_2O_7^{2-}(aq) + 2I^-(aq) \rightarrow I_2(g) + Cr^{3+}(aq)$
$E^\circ_{Cr_2O_7^{2-}/Cr^{3+}} = 1.33\ V$

   A. $+0.18\ V$

   B. $-0.18\ V$

   C. $0.54\ V$

   D. $-0.54\ V$

4. The electrode with reaction
$Cr_2O_7^{2-}(aq) + 14H^+(aq) + 6e^- \rightarrow 2Cr^{3+}(aq) + 7H_2O(l)$
can be represented as:
[If needed, use platinum as an inert electrode]

A. $Pt(s)|H^+(aq), Cr_2O_7^{2-}(aq)$

B. $Pt(s)|H^+(aq)||Cr_2O_7^{2-}(aq), Cr^{3+}(aq)$

C. $Pt(s), H_2(g)|H^+(aq), Cr_2O_7^{2-}$

D. $H^+(aq), Cr_2O_7^{2-}(aq), Cr^{3+}(aq)|Pt(s)$

5. The standard reduction potential of the half cells at $298\ K$ are,
$Ni^{2+}(aq) + 2e^- \rightarrow Ni(s); E^o = -0.28\ V$
$Mg^{2+}(aq) + 2e^- \rightarrow Mg(s); E^o = -2.37\ V$

The standard cell potential for a voltaic cell constructed using the two half reaction is

A. $-2.65\ V$

B. $-2.09\ V$

C. $+2.65$

D. $2.09\ V$