

**2011 AP<sup>®</sup> CHEMISTRY FREE-RESPONSE QUESTIONS**

- (b) Excess hydrochloric acid is added to a solution of cobalt(II) nitrate to produce a coordination complex.

(i) Balanced equation:

(ii) Which species in the reaction acts as a Lewis base?

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- (c) A copper wire is dipped into a solution of silver(I) nitrate.

(i) Balanced equation:

(ii) Describe what is observed as the reaction proceeds.

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**YOU MAY USE THE SPACE BELOW FOR SCRATCH WORK, BUT ONLY EQUATIONS THAT ARE WRITTEN IN THE ANSWER BOXES PROVIDED WILL BE SCORED.**