

CH102 // Spring 2019 Thursday (7 minutes)  
Discussion Quiz #9

Name: \_\_\_\_\_

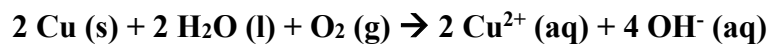
TF: \_\_\_\_\_

Time: \_\_\_\_\_

Cu(s) is oxidized to Cu<sup>2+</sup>(aq) by oxygen gas in a basic solution. *Hint: Remember to balance oxygens using water.*

$$[E^{\circ}_{\text{red}}(\text{Cu}^{2+}/\text{Cu}) = 0.34\text{V}, E^{\circ}_{\text{red}}(\text{O}_2/\text{OH}^-) = 0.40\text{V}].$$

1. (3 points) Write the balanced net chemical reaction in basic media.



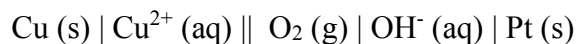
2. (2 points) Calculate  $E^{\circ}_{\text{cell}}$ .

$$E^{\circ}_{\text{cell}} = 0.40 - 0.34 = 0.060\text{V}$$

**R or W**

$$E^{\circ}_{\text{cell}} 0.060\text{V}$$

3. (4 points) Write the line notation for this reaction. Be sure to include phases.



4. (1 point) For each of the following, circle each relation that must be true.

a. If  $Q = 1$ , then ...

**R or W**

$$E < 0$$

$$E = 0$$

$$E > 0$$

$$\underline{E^{\circ} = E}$$

$$E > E^{\circ}$$

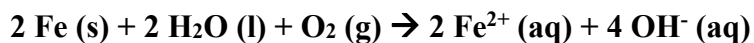
$$E < E^{\circ}$$

**Friday:**

Fe(s) is oxidized to Fe<sup>2+</sup>(aq) by oxygen gas in a basic solution. *Hint: Remember to balance oxygens using water.*

$$[E^{\circ}_{\text{red}}(\text{Fe}^{2+}/\text{Fe}) = -0.44\text{V}, E^{\circ}_{\text{red}}(\text{O}_2/\text{OH}^-) = 0.40\text{V}].$$

1. (3 points) Write the balanced net chemical reaction in basic media:

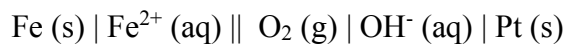


2. (2 points) Calculate  $E^{\circ}_{\text{cell}}$ .

$$E^{\circ}_{\text{cell}} = 0.40 - (-0.44) = 0.84\text{V} \quad \mathbf{R \text{ or } W}$$

$$E^{\circ}_{\text{cell}} 0.84\text{V} \quad \mathbf{V}$$

3. (4 points) Write the line notation for this reaction. Be sure to include phases.



4. (1 point) For each of the following, circle each relation that must be true.

b. If  $Q = 1$ , then  $\mathbf{R \text{ or } W} \dots$

$$E < 0 \quad E = 0 \quad E > 0 \quad \underline{E^{\circ} = E} \quad E > E^{\circ} \quad E < E^{\circ}$$