

Name: _____

Period: _____

Chemistry 11

Electrochemistry Sections 1, 2 & 3 - Worksheet #1

Directions: Answer in the space provided. Make sure you fully answer the questions.

1. What is the function of the salt bridge?

2. Oxidation is a _____ of electrons.
3. Reduction is a _____ of electrons.
4. Create your own "memory aid" for oxidation reduction (think LEO GER).

5. What is an oxidizing agent? What is a reducing agent?

6. How can you tell when a species has been oxidized? Reduced?

7. In the following reactions, indicate the
 - i. Species oxidized ii. Species Reduced iii. Oxidizing agent iv. Reducing agent
 - a. $\text{Cu} + 2 \text{Ag}^+ \longrightarrow \text{Cu}^{2+} + 2 \text{Ag}$

 - b. $2 \text{Fe}^{3+} + \text{Sn}^{2+} \longrightarrow 2 \text{Fe}^{2+} + \text{Sn}^{4+}$

 - c. $\text{Fe} + \text{Cu}^{2+} \longrightarrow \text{Fe}^{2+} + \text{Cu}$

 - d. $\text{Na} + \text{F} \longrightarrow \text{Na}^+ + \text{F}^-$

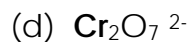
 - e. $\text{Hg}^{2+} + \text{Mn} \longrightarrow \text{Hg} + \text{Mn}^{2+}$

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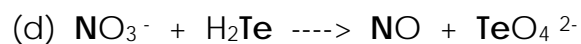
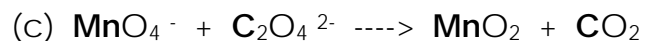
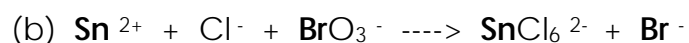
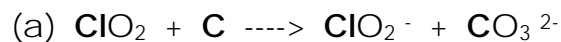
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Section 2

8. Calculate the oxidation number of the atom in **bold** type:



9. Assign oxidation numbers to the bold species in each of the following unbalanced reaction equations. Then determine which species undergoes oxidation AND reduction in each reaction.



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Section 3: Answer questions #8, 9, 10, 11 and 13-18 on pages 199/200 of Hebden

8a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

9a.

b.

c.

10a.

b.

c.

11a.

b.

c.

d.

e.

f.

g.

h.

13.

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14.

15.

16.

17.

	Fe^{2+}	Au^{3+}	Ni^{2+}	Pb^{2+}
Fe				
Au				
Ni				
Pb				

18.

	V^{2+}	Cd^{2+}	Ti^{2+}	Ga^{3+}
V		Rx	—	Rx
Cd	—		—	—
Ti	Rx	Rx		Rx
Ga	—	Rx	—	