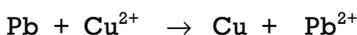
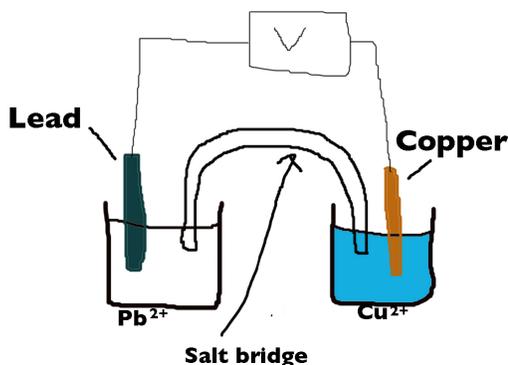


An electric moment. Name \_\_\_\_\_

- \_\_\_\_\_ 1. When an ion is reduced, A) it gains electrons and its charge increases  
B) it gains electrons and its charge decreases C) it loses electrons and its charge increases D) it loses electrons and its charge decreases
- \_\_\_\_\_ 2. Which metal will react with a solution containing  $\text{Zn}^{2+}$  ions, but not with one containing  $\text{Mg}^{2+}$  ions? A) Ca B) Al C) Fe D) Cu
- \_\_\_\_\_ 3. Which metal will **not** react with a solution of HCl? A) Zn B) Mg  
C) Au D) Na
- \_\_\_\_\_ 4. When sulfur reacts with oxygen to form  $\text{SO}_2$  gas  
A) the sulfur is oxidized B) the oxygen is oxidized  
C) the oxygen goes from an oxidation state of -2 to an oxidation state of 0  
D) the sulfur goes from an oxidation state of 0 to +2
- \_\_\_\_\_ 5. In the following reaction, the missing particle with its coefficient is  
 $\text{Al} + 3\text{Fe}^{3+} \rightarrow \text{Al}^{3+} + ?$   
A) 3 Fe B) 3  $\text{Fe}^{2+}$  C) Fe D)  $\text{Fe}^{2+}$
- \_\_\_\_\_ 6. Which species is reduced in the following reaction:  
 $\text{CuCl}_2 + \text{Zn} \rightarrow \text{ZnCl}_2 + \text{Cu}$   
A) Cu B) Zn C)  $\text{Cu}^{2+}$  D)  $\text{Cl}_2$
- \_\_\_\_\_ 7. Which half reaction correctly shows oxidation?  
A)  $\text{Cl}_2 + 2\text{e}^- \rightarrow 2\text{Cl}^-$  B)  $2\text{Cl}^- \rightarrow \text{Cl}_2 + 2\text{e}^-$   
C)  $\text{V}^{2+} \rightarrow \text{V}^{4+} + 3\text{e}^-$  D)  $\text{Zn}^{2+} + 2\text{e}^- \rightarrow \text{Zn}$
- \_\_\_\_\_ 8. In an electrolysis of molten  $\text{AlCl}_3$ , the half reaction at the - pole is  
A)  $\text{Al}^{3+} + 3\text{e}^- \rightarrow \text{Al}$  B)  $3\text{Cl}^- \rightarrow 3\text{Cl} + 3\text{e}^-$   
C)  $\text{Al} \rightarrow \text{Al}^{3+} + 3\text{e}^-$  D)  $3\text{Cl}_2 + 6\text{e}^- \rightarrow 6\text{Cl}^-$
- \_\_\_\_\_ 9. Which of the following is a redox reaction?  
A)  $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl}$   
B)  $2\text{Na} + 2\text{H}_2\text{O} \rightarrow \text{H}_2 + 2\text{NaOH}$   
C)  $2\text{HCl} + \text{Ca}(\text{OH})_2 \rightarrow 2\text{H}_2\text{O} + \text{CaCl}_2$   
D)  $\text{H}_2\text{SO}_4 + \text{H}_2\text{O} \rightarrow \text{H}_3\text{O}^+ + \text{HSO}_4^-$
- \_\_\_\_\_ 10. When 2.0 moles of Zn atoms are converted to 2.0 moles of  $\text{Zn}^{2+}$  ions,  
A) 2.0 moles of electrons are lost by the zinc atoms  
B) 2.0 moles of electrons are gained by the zinc atoms  
C) 4.0 moles of electrons are lost by the zinc atoms  
D) 4.0 moles of electrons are gained by the zinc atoms.
- \_\_\_\_\_ 11. The correct formula for pentane is A)  $\text{C}_3\text{H}_6$  B)  $\text{C}_5\text{H}_8$   
C)  $\text{C}_5\text{H}_{12}$  D)  $\text{C}_7\text{H}_5$
- \_\_\_\_\_ 12. How many carbons are there in a molecule of 2,3-dimethyl butane?  
A) 4 B) 5 C) 6 D) 7.

- \_\_\_\_\_ 13. Propene will react with chlorine to produce A) 1-chloropropene  
 B) 1,2-dichloropropene C) 1-chloropropane D) 1,2-dichloropropane



14. Draw an arrow that shows the path and direction of the electrons in the cell above.
15. Indicate in the diagram which is the - and which the + pole
16. Indicate in the diagram which pole is the anode, and which the cathode.
- \_\_\_\_\_ 17. The beaker containing the copper in copper ions is replaced by another beaker containing a different metal in a solution of its ions. The flow of electrons changes direction. The new beaker might contain A) Ag in  $\text{Ag}^+$  B) Au in  $\text{Au}^+$   
 C) Zn in  $\text{Zn}^{2+}$  D) none of these; the electrons always flow the same way
- \_\_\_\_\_ 18. Which of the following organic compounds will cause bromthymol blue to turn yellow? A)  $\text{HCOOH}$  B)  $\text{CH}_3\text{NH}_2$  C)  $\text{CH}_3\text{OCH}_3$  D)  $\text{C}_2\text{H}_6$
- \_\_\_\_\_ 19. In which type of reaction do ALL hydrocarbons form the same products?  
 A) combustion B) addition C) substitution D) polymerization
- \_\_\_\_\_ 20. Which compound is a correctly named isomer of 2 - butanone?  
 A) 3 - butanone B) butanal C) butanoic acid D) dibutyl ether
- \_\_\_\_\_ 21. One of the products of the reaction of  $\text{Cl}_2$  with  $\text{C}_2\text{H}_6$  is  
 A)  $\text{HCl}$  B)  $\text{C}_2\text{H}_6\text{Cl}_2$  C)  $\text{H}_2\text{O}$  D)  $\text{C}_2\text{H}_5\text{OH}$ .

\_\_\_\_\_ 22. Give the correct name of the compound with the formula:  
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_3$

23. Draw the structures of the following molecules:

- A: 1 - propanol      B. ethanoic acid.  
 C. the organic compound formed when 1- propanol reacts with ethanoic acid.  
 D. the inorganic compound formed in that same reaction.