Name: _____

Unit 6 - Topic 4

Electrolytes - Acids, Bases & Salts

What is an Electrolyte?

For ionic compounds that dissolve in water, describing them as '**electrolytes**' is appropriate since the crystal will fall apart in water. ***An electrolyte is a substance that dissolves in water and forms a solution capable of conducting an electric current.*** The ability of a solution to conduct an electric current depends upon the concentration of ***ions*** that are present.

**In other words the MORE IONS there are, the BETTER the solution can conduct electricity!

Look at the picture above. Which would be the best electrolyte (best conductor)? _____

To answer this you first need to write out the formula for each compound.

Glucose	
Sodium chloride	
Calcium chloride	

In order for a substance to **CONDUCT ELECTRICITY** (like an electrolyte), 2 conditions **MUST** exist:

1. There must be ***CHARGED PARTICLES*** (ions are an example of a charged particle).
2. The charged particles must be ABLE TO ***MOVE FREELY*** (like in a water solution.

THINK!! Which of the solutions in the picture is NOT an electrolyte? _____

Why? _____

_____

Name: _____

1. Electrolytes (whether they are strong or weak) can be divided into three categories. Write a definition based on the types of ions produced for each kind of electrolyte.

Acid: _____

Base: _____

Ionic Salt: _____

2. Categorize each of the following as an acid, base, or ionic salt:
   1. HBr _____
   2. LiBr _____
   3. LiOH _____
   4. Li_2SO_4 _____
   5. H_2SO_4 _____
   6. $Ca(OH)_2$ _____

For the following compounds, check whether it is an electrolyte or a non-electrolyte. If it IS an electrolyte, label it as an ACID, BASE, or IONIC SALT. You may want to refer to Tables K and L for help.

Compound	Electrolyte	Non-electrolyte
1. NaCl		
2. CH_3OH (methyl alcohol)		
3. $C_3H_5(OH)_3$ (glycerol)		
4. HCl		
5. $C_6H_{12}O_6$ (sugar)		
6. CH_3COOH (acetic acid)		
7. NaOH		
8. C_2H_5OH (ethyl alcohol)		
10. H_2SO_4		