

**ASSIGNMENT**

At the top of your assignment, please print “**T16 – Defining Characteristics of Compounds**”, your **LAST then First name, block and date**. Complete these questions in the order given here. *[Marks indicated in italicized brackets.]*

- List three distinguishing physical properties for each of ionic and molecular compounds. *[3]*
- What characteristic of ionic compounds makes them electrolytes? *[1]*
- Write dissociation equations for these ionic compounds. *[2]*
  - $\text{KI}_{(s)}$
  - $\text{Na}_2\text{S}_{(s)}$
- Describe a diagnostic test to distinguish ionic from molecular compounds. *[3]*
- A student hypothesizes that an unknown compound is an ionic compound. Create a procedure to test her hypothesis. *[2]*
- A student collected and organized the experimental results of tests on 5 different compounds in the table below. Classify each compound as ionic or molecular. Use the data to justify your classifications. *[5]*

Compound	SATP State	Conductivity of solutions
A	solid	yes
B	liquid	no
C	gas	yes
D	solid	yes
E	solid	no

- Write the chemical name, symbol and orbital diagram for this particle:  $18 e^-$  &  $3-$  charge. *[3]*
- Classify these elements as alkali metal, alkaline earth metal, halogen, transition metal or noble gas. *[5]*
  - A metal that is a liquid at SATP.
  - An element that forms oxides with the general formula XO.
  - An element with 7 valence electrons.
  - Elements with very low first ionization energies.
  - An element that reacts very vigorously with water to produce hydrogen.
- A pure sample of magnesium is analyzed and found to consist of 78.90% Mg-24, 10.13% Mg-25 and 11.17% Mg-26. Calculate its average atomic mass to two decimal places. *[2]*

*[26 marks in total]*

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**BE SURE YOU PREPARE FOR MEMORY CHALLENGE-2 ON T1 – T16!!**