

Unit 2 Free Response Questions

Your class will select three questions from the following set that you must answer. Your answer to each question is worth a maximum of ten points each. Points are earned in the following ways:

Up to 3 pts: English writing conventions – the student writes complete sentences with proper punctuation and grammar. The question is restated in the context of the answer.

Up to 4 pts: The answer addresses the question that was asked. Required examples, explanations and illustrations are provided, though they might not be correct.

Up to 3 pts: The answer is conceptually correct.

- While writing complete sentences, identify each property below as more characteristic of a metal or a nonmetal.
 - a gas at room temperature
 - brittle
 - malleable
 - poor conductor of electric current
 - shiny
- What happens to atomic radius as you move down a group (family) of elements on the periodic table? Explain why the property changes in the way that it does.
- Write the electron configuration for the element potassium, K (atomic #19). Explain in terms of its electron configuration why this element is never found pure in nature.
- A coach tells an athlete to “get more potassium” to prevent cramps during exercise. The athlete, knowing that potassium is a very reactive metal, wants to know why it is safe to consume potassium in bananas and other food sources. Provide an explanation.
- Hydrogen is placed in Group 1 on our periodic table. Give the “Family” name of Group 1 and explain the reasoning for placing hydrogen in that group. Name at least two properties of the Group 1 elements that hydrogen DOES NOT possess.
- Orbital diagrams of two elements are shown below. Explain how you determine what is incorrect in each diagram. Then, **explain and draw** the correct diagrams for each element.

