

IPS HONORS CHEMISTRY UNIT EXAM PRACTICE TEST

Please read all of the questions completely and choose the best answer. Record your answers on a **separate piece of paper**. You will be provided with a periodic table to use. Do not write on this paper!

- How many neutrons does an atom of sodium have?
- How many electrons does an atom of sodium have?
- What is the atomic mass of sodium?
- What is the atomic number of sodium?
- What is the charge on an atom of sodium?
- How many energy levels does beryllium (Be) have?
- How many valence electrons does calcium (Ca) have?
- What's the ionic charge of phosphorus (P)?
- What is the name (not number) of the group that calcium is in?
- Draw the Lewis structure for nitrogen (N).
- Identify all of the chemical properties listed. More than one answer is possible.
 - Heat
 - Bubbles (gases released)
 - Color
 - Malleable/ductile
- What is the atomic mass of an element that has 44 protons, 52 neutrons, and 45 electrons?
 - 8 amu
 - 89 amu
 - 96 amu
 - 97 amu
- Which element on the periodic table has 72 protons?
 - Germanium (Ge)
 - Hafnium (Hf)
 - Radium (Ra)
 - Indium (In)
- Draw the Bohr model for carbon.
- When sulfur (S) becomes an ion, what happens to the valence shell?
 - Nothing changes
 - It loses 2 protons
 - It loses 2 electrons
 - It gains 2 electrons
- A molecule is formed from what type of bond?
 - Compound
 - Ionic
 - Covalent
 - Metallic
- What are the characteristics of metals? More than one answer is possible.
 - Shiny
 - Malleable
 - Brittle (break easily)
 - Conduct electricity
- What is the resulting element (and its mass) when Ra-226 undergoes alpha decay?
- Write a nuclear equation for the beta decay of Pb-214.
- How many atoms of which elements are present in the following compound? $\text{Mg}(\text{NO}_3)_2$
- Balance the following equation:
 $\text{N}_2\text{H}_4\text{O}_3 \rightarrow \text{N}_2 + \text{O}_2 + \text{H}_2\text{O}$
- What type of reaction is #21?
 - synthesis
 - decomposition
 - single-replacement
 - double-replacement
- What is the chemical formula when Al and O form a compound?
- What is the chemical formula when beryllium bonds with nitrate?
- Draw the Lewis structure for the ionic compound: Li_2O
- Draw the Lewis structure for the molecule: PH_3