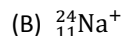
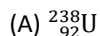


For all problems except multiple choice/fill-in-the-blank, please show all of your work. The steps you show to solve each problem are as important as the final answer. Notecards and calculators are allowed.

1. Which statement concerning the structure of the atom is correct?

- (A) Protons and neutrons have most of the mass and occupy most of the volume of the atom.
- (B) Electrons have most of the mass and occupy most of the volume of the atom.
- (C) Electrons have most of the mass but occupy very little volume of the atom.
- (D) Protons and neutrons have most of the mass but occupy very little of the volume of the atom.

2. How many protons, neutrons, and electrons are there in each of the following?



3. At room temperature, the density of gold is $19,300 \text{ kg/m}^3$. What is the mass in grams of a block of gold that is 5.00 cm by 5.00 cm by 5.00 cm? Report your final answer using the correct number of significant figures.

4. Consider a graph of a standard curve generated from known aqueous NaCl solutions where density is on the y-axis and mass % is on the x-axis. The best-fit line is represented by the equation $y = 0.00810x + 0.988$. If you have an unknown solution with a density of 1.07 g/mL, what is the mass percent of the unknown solution? Report your final answer using the correct number of significant figures.