

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) Rutherford's experiment with alpha particle scattering by gold foil established that _____
A) protons are not evenly distributed throughout an atom - atoms are mostly empty space.
B) electrons have a negative charge.
C) atoms are made of protons, neutrons, and electrons.
D) protons are 1840 times heavier than electrons.
E) electrons have a positive charge.
- 2) Which of the following is a nonmetal? _____
A) Bismuth, Bi, $Z = 83$
B) Mercury, Hg, $Z = 80$
C) Sodium, Na, $Z = 11$
D) Lithium, Li, $Z = 3$
E) Bromine, Br, $Z = 35$
- 3) Which element would be expected to have properties similar to calcium? _____
A) Na B) Rb C) Ba D) K E) Sc
- 4) Determine the number of electrons and identify the correct symbol for an atom with 17 protons and 18 neutrons. _____
A) 18 electrons, $^{36}_{18}\text{Ar}$ B) 18 electrons, $^{18}_{36}\text{Ar}$
C) 17 electrons, $^{35}_{17}\text{Cl}$ D) 17 electrons, $^{18}_{17}\text{Cl}$
- 5) Silicon, which makes up about 25% of Earth's crust by mass, is used widely in the modern electronics industry. It has three naturally occurring isotopes, ^{28}Si , ^{29}Si , and ^{30}Si . Calculate the atomic mass of silicon. _____

Isotope	Isotopic Mass (amu)	Abundance %
^{28}Si	27.976927	92.22
^{29}Si	28.976495	4.69
^{30}Si	29.973770	3.09

- A) 28.7260 amu
B) 29.2252 amu
C) 27.9801 amu
D) 28.9757 amu
E) 28.0855 amu

Answer Key

Testname: MINI-PRAC CH1

- 1) A
- 2) E
- 3) C
- 4) C
- 5) E