

# Worksheet: The Structure of the Atom



**Q1:** Subatomic particles can have a charge.

► What is the charge of a proton?

A 2+

B 1-

C 2-

D 1+

E 0

► What is the charge of a neutron?

A 2+

B 1-

C 2-

D 0

E 1+

► What is the charge of an electron?

A 2+

B 0

C 2-

D 1-

E 1+

**Q2:** Which of the following has the smallest mass?

A A neutron

B An electron

C A nucleus

D An atom

E A proton

**Q3:** Opposite charges attract each other via the electromagnetic force. Which of the following pairs of subatomic particles attract each other in this way?



Question Video

- A Protons and protons
- B Protons and neutrons
- C Electrons and neutrons
- D Protons and electrons
- E Electrons and electrons

**Q4:** Like charges repel each other via the electromagnetic force. Which of the following pairs of subatomic particles repel each other in this way?

- A Protons and neutrons
- B Protons and protons
- C Neutrons and neutrons
- D Protons and electrons
- E Neutrons and electrons

**Q5:** What is the mass of an electron as a fraction of the mass of a proton or neutron?

A  $\frac{1}{195}$

B  $\frac{1}{7290}$

C  $\frac{1}{408}$

D  $\frac{1}{1840}$

E  $\frac{1}{9}$

**Q6:** Where is most of the mass of an atom located?

A In the space between the nucleus and the electron shells

B In the electron shells

C In the nucleus

**Q7:** Where are the neutrons in an atom?

A The nucleus

B The nucleosome

C The nuclide

D The space around the nucleus

E The shells

**Q8:** Which particles can be found in the nucleus of an atom?

- A Protons and electrons
- B Positrons and neutrons
- C Protons and neutrons
- D Positrons and electrons
- E Neutrons and electrons

**Q9:** Fill in the blanks: An atom is a \_\_\_ combination of a dense nucleus, containing \_\_\_ and neutrons, and bound \_\_\_ in the shells around the nucleus.

- A positively charged, protons, electrons
- B neutral, electrons, protons
- C negatively charged, positrons, electrons
- D neutral, protons, electrons
- E negatively charged, electrons, protons

**Q10:** Where are the protons in an atom?

A The shells

B The space around the nucleus

C The nuclide

D The nucleosome

E The nucleus

**Q11:** Approximately how large is the radius of an atomic nucleus compared to the radius of the atom,  $R$ ?

A  $R$

B  $\frac{R}{1\,000}$

C  $\frac{R}{10\,000}$

D  $\frac{R}{100\,000}$

E  $\frac{R}{100}$

**Q12:** Where are the electrons in an atom?

- A The space around the nucleosome
- B The nucleosome
- C The space around the nucleus
- D The nucleus
- E The nuclide