

Wave Mechanical Model

- 1 Which statement describes a concept included in the wave-mechanical model of the atom?
 - (1) Protons, neutrons, and electrons are located in the nucleus.
 - (2) Electrons orbit the nucleus in shells at fixed distances.
 - (3) Atoms are hard, indivisible spheres.
 - (4) Electrons are located in regions called orbitals.
- 2 An orbital is a region in an atom where there is a high probability of finding
 - (1) an alpha particle (3) a neutron
 - (2) an electron (4) a positron
- 3 According to the wave-mechanical model of the atom, electrons are located in
 - (1) orbitals
 - (2) circular paths
 - (3) a small, dense nucleus
 - (4) a hard, indivisible sphere
- 4 According to the wave-mechanical model, an orbital is defined as the most probable location of
 - (1) a proton (3) a positron
 - (2) a neutron (4) an electron
- 5 Which statement describes the location of protons and neutrons in an atom of helium?
 - (1) Protons and neutrons are in the nucleus.
 - (2) Protons and neutrons are outside the nucleus.
 - (3) Protons are outside the nucleus, and neutrons are in the nucleus.
 - (4) Protons are in the nucleus, and neutrons are outside the nucleus.
- 6 Which term is defined as the region in an atom where an electron is most likely to be located?
 - (1) nucleus (3) quanta
 - (2) orbital (4) spectra
- 7 Which term identifies the most probable location of an electron in the wave-mechanical model of the atom?
 - (1) anode (3) nucleus
 - (2) orbital (4) cathode
- 8 Which statement describes a concept included in the wave-mechanical model of the atom?
 - (1) Positrons are located in shells outside the nucleus.
 - (2) Neutrons are located in shells outside the nucleus.
 - (3) Protons are located in orbitals outside the nucleus.
 - (4) Electrons are located in orbitals outside the nucleus.
- 9 According to the wave-mechanical model, an orbital is defined as the
 - (1) circular path for electrons
 - (2) circular path for neutrons
 - (3) most probable location of electrons
 - (4) most probable location of neutrons
- 10 In the wave-mechanical model of the atom, an orbital is defined as
 - (1) a region of the most probable proton location
 - (2) a region of the most probable electron location
 - (3) a circular path traveled by a proton around the nucleus
 - (4) a circular path traveled by an electron around the nucleus
- 11 According to the wave-mechanical model of the atom, an orbital is a region of the most probable location of
 - (1) an alpha particle (3) an electron
 - (2) a gamma ray (4) a proton

12 An orbital is defined as a region of the most probable location of

- (1) an electron
- (2) a neutron
- (3) a nucleus
- (4) a proton

13 An orbital of an atom is defined as the most probable location of

- (1) an electron
- (2) a neutron
- (3) a positron
- (4) a proton

14 In the wave-mechanical model of the atom, an orbital is the most probable location of

- (1) a proton
- (2) a positron
- (3) a neutron
- (4) an electron

Answer Keys

1 4

2 2

3 1

4 4

5 1

6 2

7 2

8 4

9 3

10 2

11 3

12 1

13 1

14 4