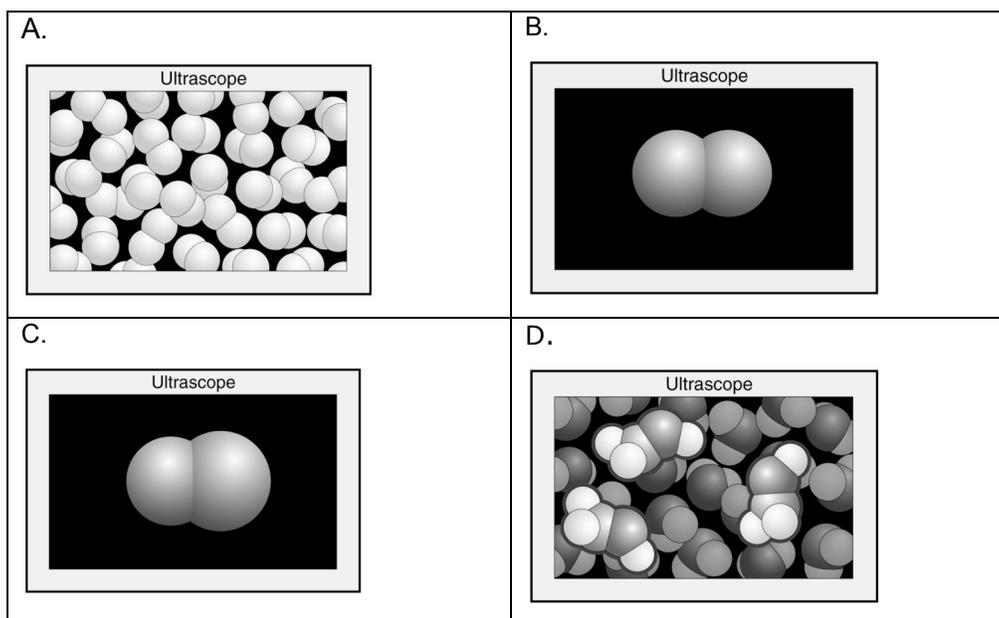


## ***InterActions* Unit 6 Sample Quiz**

**See the Scientists' Consensus Sheets for assistance.**

1. An element consists of
  - a. different types of atoms that make up a molecule
  - b. one type of atom.
  - c. atoms of different molecules.
  - d. one type of compound.
  
2. Which of the following statements is TRUE in the Small Particle Theory?
  - a. Air fills the space between particles.
  - b. There is nothing between particles.
  - c. Something fills the space between particles, but it is not air.
  - d. There is nothing between gas particles. Liquids and Solids don't have any space between their particles.

**Images for Questions 3 and 4**



3. Which of the Ultrascope images above represents a compound?

- a. A and B
- b. C & D
- c. C only
- d. D only

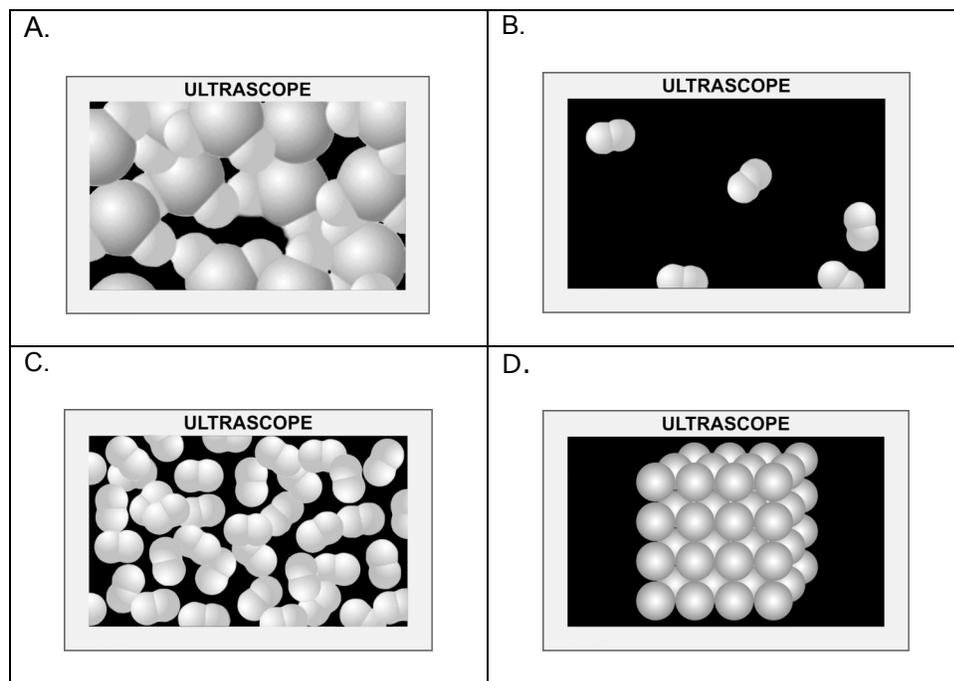
4. Which of the images above represents an element?

- a. A and B
- b. C and D
- c. A only
- d. C only

5. An atom is about \_\_\_\_\_ wide.
- 0.001 m
  - 0.000,001 m
  - 0.000,000,000,1 m
  - 0.000,000,000,000,000,1 m
6. Atoms/Molecules of a substance
- are constantly moving.
  - only move when they collide with another atom/molecule.
  - move in gases and in liquids, but not in solids.
  - only move in the direction that the substance is moved.
7. Gases are
- difficult to compress and have no definite volume.
  - are easy to compress and have a definite shape.
  - are easy to compress and have no definite volume.
  - Are difficult to compress and have no definite shape.
8. Liquids are
- difficult to compress and have no definite volume.
  - are easy to compress and have a definite shape.
  - are easy to compress and have no definite volume.
  - are difficult to compress and have no definite shape.

9. During a collision interaction between two identical gas particles
- they bounce apart in different directions.
  - they stick together and move in a different direction.
  - they stick together and stop.
  - they bounce apart and move in the same direction.
10. A cohesion interaction is
- an attractive interaction between particles of an element or compound.
  - a repulsive interaction between particles of an element or compound.
  - an attractive interaction between particles within an element
  - a repulsive interaction between particles within an element.
11. A cohesion interaction between particles of a substance is related to
- a gravitational interaction between the particles.
  - a chemical interaction between the particles.
  - an electric-charge interaction between the particles.
  - a magnetic interaction between the particles.
12. Which of the following correctly lists the cohesion interaction in order of increasing strength (weakest to strongest) for substances at room temperature:
- gas, solid, liquid.
  - solid, liquid, gas.
  - solid, gas, liquid
  - gas, liquid, solid

13. Which of the images is a liquid compound?



14. If the temperature of a substance is increasing then

- a. the stored cohesive bond energy is decreasing.
- b. the stored phase energy is constantly decreasing.
- c. the average motion energy of the particles is increasing.
- d. the stored volume energy is decreasing.

15. When the temperature of a solid increases it

- a. contracts because the particles don't move as fast and move closer together because of the cohesive attraction between particles.
- b. doesn't change its size because the particles are in fixed positions.
- c. doesn't change its size because even though the particles move more, they are more attracted to each other.
- d. expands because the particles move faster and the average spacing between particles increases.

16. Air pressure is caused by

- a. the force of the air pushing on each unit area of an object.
- b. the suction of empty space (vacuum) pulling on each unit area of an object.
- c. the gravitational interaction between particles.
- d. the force exerted on each air particle by other particles.

### **Learning About Activities**

#### **Activity 12**

17. The bubbles that form on the bottom of a pan of boiling water are

- a. air particles that have formed during heating.
- b. air particles that have formed during a chemical interaction between the water and the metal of the pot.
- c. made of water vapor as the water molecules move further apart during heating.
- d. made of hydrogen and oxygen gas as the water breaks down to its elements.

#### **Activity 13**

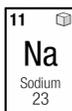
18. Electrons are

- a. negatively charged particles that move around the nucleus.
- b. positively charged particles that move around the nucleus.
- c. negatively charged particles in the nucleus.
- d. positively charged objects in the nucleus.

19. Essentially all the mass of an atom comes from

- a. the electrons.
- b. the neutrons.
- c. the protons.
- d. the protons and neutrons.

**Activity 14**



20. The following element is sodium. It has

- a. 23 electrons, 23 neutrons, and 11 protons.
- b. 12 electrons, 12 neutrons, and 11 protons.
- c. 11 electrons, 23 neutrons, and 11 protons.
- d. 11 electrons, 12 neutrons, and 11 protons.

**Activity 15**

21. A beta decay occurs when

- a. an electron is released when a proton decays into a neutron and an electron.
- b. an electron is released when a neutron decays into a proton and an electron.
- c. radiation is released when a proton and electron turn into a neutron.
- d. radiation is released when a neutron turns into a proton and an electron.