

Name _____

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

- 1) Which of the following are electrically neutral?
 - A) proton
 - B) ion
 - C) electron
 - D) neutron
 - E) none of these

- 2) Which of these atoms has the most mass?
 - A) iron
 - B) uranium
 - C) hydrogen
 - D) lead
 - E) All have the same mass.

- 3) What makes an element distinct?
 - A) the total mass of all the particles
 - B) the number of electrons
 - C) the number of protons
 - D) the number of neutrons
 - E) none of these

- 4) In an electrically neutral atom, the number of protons in the nucleus is balanced by an equal number of
 - A) neutrons.
 - B) orbital electrons.
 - C) quarks.
 - D) all of these
 - E) none of these

- 5) Solid matter is mostly empty space. The reason solids don't fall through one another is because
 - A) of gravitational forces.
 - B) of electrical forces.
 - C) of nuclear forces.
 - D) atoms are constantly vibrating, even at absolute zero.
 - E) none of these

- 6) Compared to the atoms that make up the body of an elderly person, the atoms that make up the body of a newborn baby are
 - A) the same age. B) newer. C) actually older.

- 7) The reason a granite block is mostly empty space is that the atoms in the granite are
- A) mostly empty space themselves.
 - B) invisible.
 - C) not as close together as they could be.
 - D) in perpetual motion.
 - E) held together by electrical forces.
- 8) How many different elements are in a water molecule?
- A) one B) four C) none D) two E) three
- 9) The smallest particle of those listed below is
- A) a proton.
 - B) a neutron.
 - C) a molecule.
 - D) a quark.
 - E) an atom.
- 10) When a chocolate bar is cut in half, its density is
- A) unchanged. B) halved. C) doubled.
- 11) Compared to the density of a kilogram of feathers, the density of a kilogram of lead is
- A) the same. B) more. C) less.
- 12) If a loaf of bread is compressed, its
- A) surface tension becomes less.
 - B) density decreases.
 - C) molecules become harder.
 - D) density increases.
 - E) none of these
- 13) Compared to the volume of a kilogram of feathers, the volume of a kilogram of lead is
- A) more. B) the same. C) less.
- 14) Which has the greater density, a lake full of water or a cup full of lake water?
- A) the cup full of lake water
 - B) the lake full of lake water
 - C) Both have the same density.
 - D) It is impossible to tell without knowing the size of the lake.

- 15) Which geometrical shape has the least surface area for a given volume?
- A) cylinder
 - B) pyramid
 - C) cube
 - D) sphere
 - E) none of these
- 16) A solid glass ball weighs 1 newton. One with twice the diameter weighs
- A) 3 N.
 - B) 1 N.
 - C) more than 4 N.
 - D) 4 N.
 - E) 2 N.
- 17) Which potatoes when peeled produce the most peelings?
- A) 10 kg of large potatoes
 - B) 10 kg of small potatoes
 - C) They both produce the same amount.
- 18) Which has more skin, an elephant or a mouse?
- A) elephant
 - B) mouse
 - C) typically, both the same
- 19) Which has more skin compared to its body weight, an elephant or a mouse?
- A) elephant
 - B) mouse
 - C) typically, both the same
- 20) A dome-shaped house is more heat efficient than a rectangular house because a dome has
- A) no corners to radiate.
 - B) less area compared to its volume.
 - C) less inner space.
 - D) all of these
 - E) none of these