Compounds: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Which of the following represents a molecule that is not a compound?

   - **A.** CO_2
   - **B.** Fe
   - **C.** O_2
   - **D.** CO

2. The difference between elements and compounds is that_____.

   - **A.** elements can be separated by physical means and compounds cannot
   - **B.** elements cannot be separated by physical means and compounds can
   - **C.** elements contain only one kind of atom and compounds contain more than one kind of atom
   - **D.** elements contain more than one kind of atom and compounds contain only one kind of atom

3. The element oxygen forms molecules that each contain two oxygen atoms. The elements carbon and oxygen form molecules that each contain one carbon atom and two oxygen atoms. Which statement is true?

   - **A.** Both oxygen and carbon dioxide are compounds.
   - **B.** Oxygen is an element while carbon dioxide is a compound.
   - **C.** Oxygen is a compound while carbon dioxide is an element.
   - **D.** Neither oxygen nor carbon dioxide is a compound.

4. Elements combine in many ways to form compounds. Which of the following is a compound?

- **A.** water
- **B.** oxygen
- **C.** nitrogen
- **D.** carbon

5. Water, H_20, contains hydrogen and oxygen. Hydrogen is an explosive gas, while oxygen is a flammable gas. How do the physical properties of water and the elements within it compare?

- **A.** Like oxygen and hydrogen, H_20 is a gas at room temperature.
- **B.** Oxygen gas is made from atoms of different elements and so is hydrogen gas.
- **C.** Unlike oxygen and hydrogen, water forms a liquid at room temperature under normal air pressure.
- **D.** The physical properties of water are exactly the same as hydrogen and oxygen gases.

6. The unique shape of a salt crystal is due to _____.

- **A.** the structure of the NaCl molecule
- **B.** the amount of water that is added to the salt to form the crystal
- **C.** the angle of the surface on which the crystal is formed
- **D.** the temperature at which the salt is dissolved in water.

7. Every molecule of water contains_____.

- **A.** one hydrogen atom and one oxygen atom
- **B.** one hydrogen atom and two oxygen atoms
- **C.** two hydrogen atoms and two oxygen atoms
- **D.** two hydrogen atoms and one oxygen atom

8. Compounds form when_____.

- **A.** atoms split apart
- **B.** atoms of different elements bond chemically
- **C.** atoms of the same element bond chemically
- **D.** molecules break apart

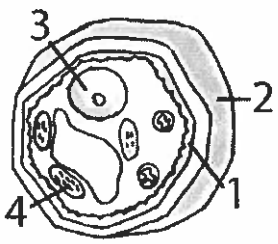
Eukaryotes and Cell Differentiation: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Which part of the cell controls reproduction for the cell?



PLANT CELL

- **A.** 1-cell membrane
- **B.** 2-cell wall
- **C.** 3-nucleus
- **D.** 4-mitochondria

2. Which of the following is true regarding the cell nucleus?

- **A.** Only prokaryotic cells have nuclei.
- **B.** Only eukaryotic cells have nuclei.
- **C.** Both prokaryotic and eukaryotic cells have nuclei.
- **D.** Neither prokaryotic nor eukaryotic cells have nuclei.

3. Under a microscope a student observed cells with a boxlike shape, green organelles, and a nucleus off to the side. What type of cells were these?

- **A.** animal cells
- **B.** plant cells
- **C.** fungal cells
- **D.** prokaryotic cells

4. In multicellular organisms, which choice ranks the level of organization from simplest to increasingly more complex?

- **A.** cells, tissues, organ systems, organs
- **B.** organs, cells, tissues, organ systems
- **C.** cells, tissues, organs, organ systems
- **D.** organs, tissues, organ systems, cells

5. The three most important **differences** between plant and animal cells are that plant cells _____.

- **A.** have small vacuoles, cytoplasm, and lack mitochondria
- **B.** have cell walls, chlorophyll, and a large, central vacuole
- **C.** vary greatly in appearance, have a cell membrane, and mitochondria
- **D.** lack chloroplasts and ribosomes, and have an irregular shape

6. Use the diagram below to answer the question.

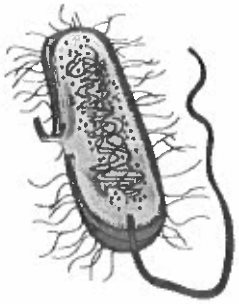
Which membrane bound organelle stores DNA?

- **A.** vacuole
- **B.** nucleus
- **C.** ribosome
- **D.** lysosome

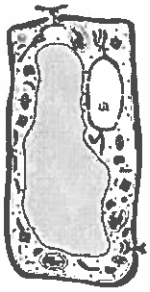
7. Which organelle provides pathways to move materials in a cell?

- **A.** Golgi body
- **B.** vacuole
- **C.** endoplasmic reticulum
- **D.** lysosome

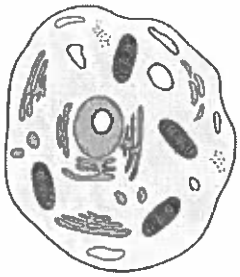
8. Look at the diagrams to answer the question.



Cell 1



Cell 2



Cell 3

Which cellular structure makes protein and is present in all the three cells?

- **A.** nucleus
- **B.** vacuole
- **C.** ribosome
- **D.** chloroplast

9. Humans start from a single cell. Eventually, as cells divide, they start to differentiate, or specialize. Some cells are specialized for movement of the human body. What type cells would these be?

- **A.** muscle cells
- **B.** nerve cells
- **C.** bone cells
- **D.** skin cells

10. Tissues are made up of a group of similar cells. The **advantage** of this type of organization is that the cells that make up a tissue:

- **A.** are coordinated to carry out one type of job.
- **B.** can do very different jobs at the same time.
- **C.** don't need any energy if they are part of an organ.
- **D.** don't need to have a nucleus or cytoplasm.

Cell Cycle and Mitosis: Practice Assessment

Student Name: _____

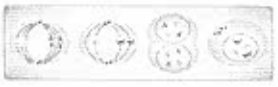
INSTRUCTIONS

Check your understanding with this practice assessment

1. For a nucleus to go through mitosis, _____.

   - **A.** it must start with two sets of chromosomes (diploid)
   - **B.** it must start with one set of chromosomes (haploid)
   - **C.** it can start with one set or two sets of chromosomes (haploid or diploid)
   - **D.** it can start with any number of chromosomes

2. Which series of diagrams correctly illustrates the stages of mitosis?

   - **A.** 
   - **B.** 
   - **C.** 
   - **D.** 

3. What is the process that cells undergo to divide?

- **A.** photosynthesis
- **B.** mitosis
- **C.** fusion
- **D.** protein synthesis

4. What happens during interphase?

- **A.** budding
- **B.** cell growth and DNA replication
- **C.** binary fission
- **D.** separation of chromatids

5. The process of duplicating DNA is called _____.

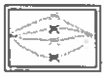
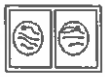
- **A.** transcription
- **B.** replication
- **C.** reading
- **D.** complimenting

6. What is the purpose of mitosis in single-celled organisms?

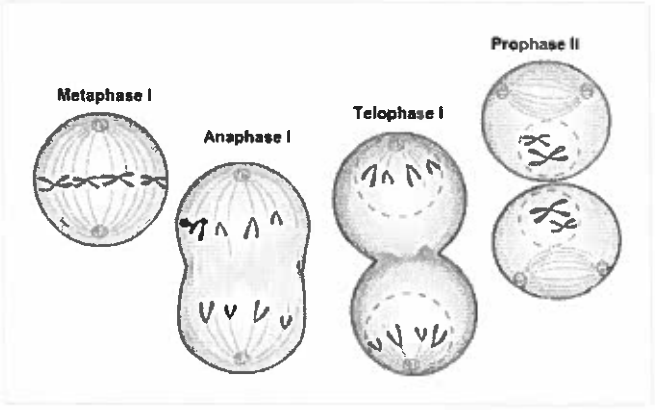
- **A.** reproduction
- **B.** replacement of worn-out cells
- **C.** growth
- **D.** repair of damaged tissues

7.

Which diagram correctly represents the second stage of mitosis that is missing in number 2?

- **A.** 
- **B.** 
- **C.** 
- **D.** 

8. When a cell goes through mitosis and cell division, the two new cells have_____.



- **A.** fewer chromosomes than the original cell
- **B.** more chromosomes than the original cell
- **C.** sometimes fewer and sometimes more chromosomes than the original cell
- **D.** the same number of chromosomes as the original cell

9. During anaphase of mitosis, the chromosomes split at the centromere and single strands are pulled to opposite ends of the cells. What cell structures are responsible for moving the chromosomes?

- **A.** the nuclei
- **B.** the ribosomes
- **C.** the spindle fibers
- **D.** the mitochondria

10. Yeast cells reproduce asexually by producing a smaller daughter cell that may eventually break off from the parent cell. This type of reproduction is known as:

- **A.** budding.
- **B.** sprouting.
- **C.** meiosis.
- **D.** regeneration.

Cell Theory: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Mitosis is a kind of _____.

   - **A.** cell division
   - **B.** nuclear division
   - **C.** cell addition
   - **D.** cell respiration

2. Which statement below about cells is true?

   - **A.** All things are composed of cells.
   - **B.** All cells come from other cells.
   - **C.** All cells have a nucleus.
   - **D.** All cells contain organs and tissues.

3. Which part of the cell theory did Schleiden help establish with his observation of plant material?

   - **A.** Cells were named by Robert Hooke.
   - **B.** Nonliving things are made up of cells.
   - **C.** All cells come from existing cells.
   - **D.** All organisms are made of one or more cells.

4. What is the smallest unit of an organism that is classified as living?

- **A.** an atom
- **B.** a molecule
- **C.** an organ
- **D.** a cell

5. Which of the following is the characteristic that all organisms have in common?

- **A.** All organisms are made up of cells.
- **B.** All organisms are multicellular.
- **C.** All organisms can make their own food.
- **D.** All organisms have cells with a nucleus.

6. Meiosis is the process of _____.

- **A.** cell division
- **B.** nuclear division
- **C.** cell replication
- **D.** chromosome replication

7. Cell theory has three parts: The cell is the basic unit of life in all living things, all cells come from existing cells, and _____.

- **A.** nonliving things are composed of cells
- **B.** the cell was discovered by Robert Hooke
- **C.** all organisms are made of one or more cells
- **D.** all cells are microscopic in size

8. In multicellular organisms, groups of cells that work together are called:

- **A.** cytoplasm.
- **B.** organelles.
- **C.** nuclei.
- **D.** tissues.

9. Which observation directly contributed to the cell theory stating that all organisms are made of one or more cells?

- **A.** Theodor Schwann's observation with a microscope of animal tissues
- **B.** Rudolf Virchow's observation with a microscope of cells dividing
- **C.** Robert Hooke's observation of tiny boxlike structures
- **D.** Anton van Leeuwenhoek's observation of pond scum

10. Schleiden and Schwann determined which of the following statements regarding the cell theory?

- **A.** All cells come from existing cells.
- **B.** All cells are microscopic in size.
- **C.** The cell was discovered by Anton van Leeuwenhoek.
- **D.** The cell is the basic unit of life in all living things.

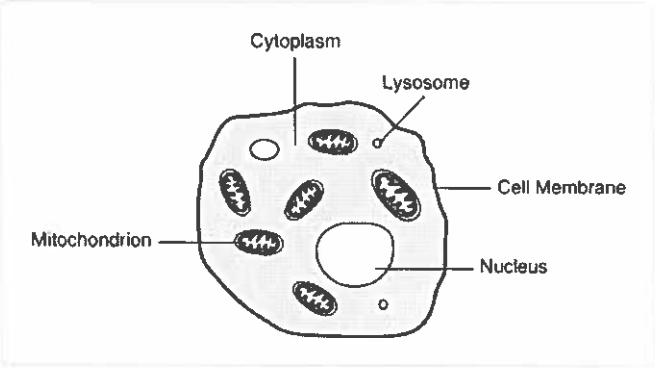
Cellular Respiration: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Use the diagram below to answer the question.



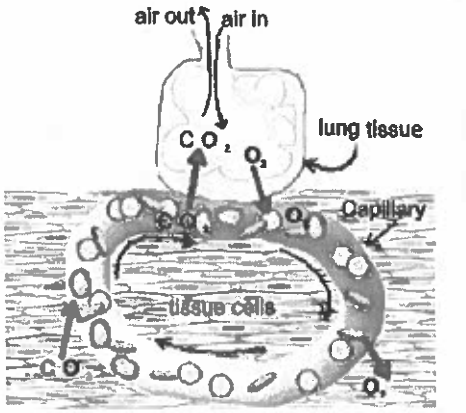
Which structure releases energy for carrying out cellular activities?

- **A.** vacuole
- **B.** lysosome
- **C.** cytoplasm
- **D.** mitochondria

2. Fermentation does not require oxygen. Which type of human cell is the most common site for fermentation?

- **A.** skin cells
- **B.** muscle cells
- **C.** nerve cells
- **D.** bone cells

3. Which of the following is an important connection between breathing and cellular respiration?



- **A.** cellular respiration requires CO_2 (carbon dioxide)
- **B.** cellular respiration requires $C_6H_{12}O_6$ (glucose)
- **C.** cellular respiration requires O_2 (oxygen)
- **D.** cellular respiration requires H_2O (water)

Diffusion and Osmosis: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Osmosis is the diffusion of _____ into or out of the cell through the cell membrane.

   - **A.** waste
   - **B.** water
   - **C.** oxygen
   - **D.** food

2. Osmosis is described as _____ .

   - **A.** movement of water through a membrane
   - **B.** movement of a solution through a pipette
   - **C.** active transport of a compound
   - **D.** movement of a chemical through a porous membrane

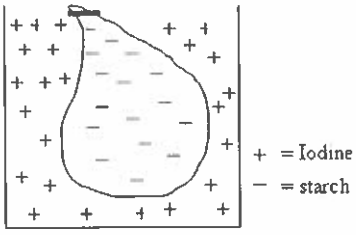
3. What will happen to a fresh cut flower when it is placed in a salt water solution?

   - **A.** The flower will stay fresh for 2 to 3 days.
   - **B.** The leaves will turn different colors.
   - **C.** The flower will shrivel and die.
   - **D.** The flower petals will swell up.

4. If a cucumber slice is placed into pure water, which way will the water move?

- **A.** out of the cucumber cells
- **B.** into the cucumber cells
- **C.** water will move in and out equally
- **D.** water will not move

5. The diffusion of water through a cell membrane is called _____.



- **A.** osmosis
- **B.** facilitated diffusion
- **C.** active transport
- **D.** endocytosis

6. When a plant cell is placed in distilled water, water molecules move into the cell. When a plant cell is placed in salt water, it loses water to the surrounding solution. Why does this occur?

- **A.** The water molecules are moving from an area of low concentration to an area of high concentration.
- **B.** Water molecules diffuse from areas of high concentration to areas of low concentration.
- **C.** The movement of water is associated with the temperature of the water.
- **D.** The salt eats away at the cell membrane and causes it to collapse.

7.

Concentration of Water and Solutes in Four Adjacent Cells

A water-low solutes-low	**B** water-low solutes-high
C water-high solutes-low	**D** water-high solutes-high

In the system shown in the diagram above, water molecules are most likely to diffuse in which direction?

- **A.** from B to D
- **B.** from A to B
- **C.** from C to A
- **D.** from C to D

Function of Life: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. The process by which plant cells produce glucose is:

   - **A.** photosynthesis.
   - **B.** respiration.
   - **C.** protein synthesis.
   - **D.** diffusion.

2. Cells store water and other substances in which organelles?

   - **A.** mitochondria
   - **B.** ribosomes
   - **C.** vacuoles
   - **D.** chloroplasts

3. The process by which cells get rid of waste products is called:

   - **A.** synthesis.
   - **B.** oxidation.
   - **C.** reproduction.
   - **D.** excretion.

4. Organelles in cells are like ____ in large organisms.

- **A.** vacuoles
- **B.** organs
- **C.** cells
- **D.** chemicals

5. The brain of a large animal is like the ____ of a cell.

- **A.** cytoplasm
- **B.** nucleus
- **C.** mitochondria
- **D.** cell membrane

6. Photosynthesis takes place in which cell organelles?

- **A.** pseudopods
- **B.** mitochondria
- **C.** chloroplasts
- **D.** ribosomes

7. Respiration is the process by which cells obtain ____ from glucose.

- **A.** minerals
- **B.** water
- **C.** oxygen
- **D.** energy

8. Which of the following statements is true?

- **A.** Cells carry out life functions, but large organisms do not.
- **B.** Large organisms carry out life functions, but cells do not.
- **C.** Both large organisms and cells carry out similar life functions.
- **D.** All cells and large organisms carry out all the same life functions.

9. Nutrients and oxygen enter cells through the:

- **A.** cell membrane.
- **B.** mitochondria.
- **C.** ribosomes.
- **D.** nucleus.

Structure of Life: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Both plant and animal cells contain:

   - **A.** pseudopods.
   - **B.** cilia.
   - **C.** a nucleus.
   - **D.** chloroplasts.

2. Which of the following structures is found in both plant and animal cells?

   - **A.** cell membrane
   - **B.** cell wall
   - **C.** large, water-filled vacuole
   - **D.** chloroplast

3. Which of the following is in order from the most complex to the simplest?

   - **A.** cell, tissue, organ, organ system
   - **B.** tissue, cell, organ system, organ
   - **C.** organ system, organ, tissue, cell
   - **D.** organ system, tissue, cell, organ

4. Tissues are composed of groups of:

- **A.** unicellular organisms.
- **B.** specialized cells.
- **C.** specialized organs.
- **D.** organisms.

5. Cells can only come from:

- **A.** minerals.
- **B.** water.
- **C.** carbohydrates.
- **D.** other cells.

6. In multicellular organisms, groups of tissues form:

- **A.** vacuoles.
- **B.** organs.
- **C.** cells.
- **D.** organelles.

7. Which of the following is likely to be found in a cell from a maple leaf but not in a human nerve cell?

- **A.** cell wall
- **B.** mitochondria
- **C.** cell membrane
- **D.** cytoplasm

8. The simplest structures that can carry out all of the activities characteristic of life are:

- **A.** cells.
- **B.** atoms.
- **C.** molecules.
- **D.** crystals.

9. Which of the following is made of cells?

- **A.** a rock
- **B.** a snowflake
- **C.** a raindrop
- **D.** a leaf

States of Matter: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Which of the following statements best describes the movement of particles in a liquid?

   - **A.** they do not move
   - **B.** they vibrate
   - **C.** they slide around each other
   - **D.** they fly around freely

2. Which of the following statements best describes the movement of particles in a gas?

   - **A.** They do not move.
   - **B.** They vibrate.
   - **C.** They slide around each other.
   - **D.** They fly around freely.

3. In which state of matter would the molecules be closest together?

   - **A.** a solid
   - **B.** a cold liquid
   - **C.** a warm liquid
   - **D.** a gas

4. Which of the following statements best describes the movement of particles in a solid?

- **A.** They do not move.
- **B.** They vibrate.
- **C.** They slide around each other.
- **D.** They fly around freely.

5. In which state of matter would the molecules be farthest apart?

- **A.** a cold solid
- **B.** a warm solid
- **C.** a liquid
- **D.** a gas

Changes in States: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. What is the sea level boiling point of water in degrees Celsius?

   - **A.** 0 degrees Celsius
   - **B.** 32 degrees Celsius
   - **C.** 100 degrees Celsius
   - **D.** 212 degrees Celsius

2. The temperature at which a liquid changes to a gas is its _____.

   - **A.** boiling point
   - **B.** melting point
   - **C.** coefficient of heat
   - **D.** specific heat

3. If a gas is cooled to just below its boiling point, it will:

   - **A.** freeze.
   - **B.** melt.
   - **C.** evaporate.
   - **D.** condense.

4. What happens when water boils?

- **A.** The molecules move with increasing speed.
- **B.** The molecules slow down.
- **C.** The molecules break apart into hydrogen and oxygen.
- **D.** The molecules disappear.

5. When a substance loses heat energy, _____.

- **A.** its molecules slow down
- **B.** its molecules speed up
- **C.** its molecules are not affected
- **D.** its molecules break apart

6. What is the name of the change that occurs when a gas turns into a liquid?

- **A.** condensation
- **B.** melting
- **C.** sublimation
- **D.** vaporization

7. The temperature at which a liquid turns into a solid is called the _____.

- **A.** freezing point
- **B.** boiling point
- **C.** vaporization point
- **D.** sublimation point

8. When a liquid turns into a solid, which of the following also changes?

- **A.** chemical composition
- **B.** mass
- **C.** size of molecules
- **D.** energy

9. _____ must be added to a substance to cause melting or evaporation.

- **A.** Matter
- **B.** Energy
- **C.** Oxygen
- **D.** Pressure

Straight Line Motion: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. The speed and direction of an object's motion is its:

   - **A.** velocity.
   - **B.** inertia.
   - **C.** momentum.
   - **D.** acceleration.

2. If a force acting on a moving object stops acting, the object will:

   - **A.** stop moving.
   - **B.** move at a slower speed.
   - **C.** speed up.
   - **D.** keep moving at a constant speed.

3. Facing north, a mountain range is on your right. Turning west, where will the mountain range be?

   - **A.** in front of you
   - **B.** behind you
   - **C.** on your left
   - **D.** on your right

4. If a force acts constantly on a stationary object, the object will:

- **A.** remain stationary.
- **B.** accelerate in the direction of the force.
- **C.** move at a constant speed in the direction of the force.
- **D.** accelerate in the opposite direction of the force.

5. Velocity is the _____ of an object.

- **A.** speed
- **B.** direction
- **C.** momentum
- **D.** speed and direction

6. A change in position of an object is its:

- **A.** motion.
- **B.** acceleration.
- **C.** speed.
- **D.** momentum.

7. If a force acting on a moving object stops acting, and no other force acts on it, the object will _____.

- **A.** stop moving
- **B.** slow down
- **C.** speed up
- **D.** keep moving in the same direction

Potential and Kinetic Energy: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Which of the following has the greatest kinetic energy?

   - **A.** a slice of pizza
   - **B.** a person at the top of the stairs
   - **C.** wind
   - **D.** a book on a table

2. Which of the following devices could be used to measure a change in kinetic energy?

   - **A.** a ruler
   - **B.** a speedometer
   - **C.** a thermometer
   - **D.** All of the above.

3. A rubber ball falling vertically bounces off a concrete floor. Just as the ball begins to bounce up, all of its energy is kinetic. According to the law of conservation of energy, what forms of energy will this kinetic energy convert to?

   - **A.** thermal energy, sound energy, radiant energy
   - **B.** chemical potential energy, thermal energy, radiant energy
   - **C.** gravitational potential energy, thermal energy, sound energy
   - **D.** gravitational potential energy, chemical potential energy, sound energy

4. Which forms of energy increase as a rocket blasts off?

- **A.** chemical potential and gravitational potential energy
- **B.** gravitational potential and kinetic energy
- **C.** kinetic and thermal energy
- **D.** chemical potential and kinetic energy

5. A student listed three systems:

1—light from the sun shining on a parking lot
2—a cart rolling with increasing speed down a hill
3—iron atoms in a skillet after it has been used to fry potatoes

Which of these systems has kinetic energy?

- **A.** 2 only
- **B.** 2 and 3 only
- **C.** 1 and 3 only
- **D.** 1, 2, and 3

6. Which of the following is NOT an example of increasing potential energy?

- **A.** pulling a pendulum to a greater height before letting go
- **B.** burning wood to make heat in a fire
- **C.** carrying more wood to a campfire
- **D.** climbing higher up a hill before riding down it on a bicycle

7. What will happen to the gravitational potential energy of a rock as it moves down a hill during a landslide?

- **A.** It will decrease.
- **B.** It will increase.
- **C.** It will not change.
- **D.** It will be converted to kinetic energy.

Atomic Structure and Elements: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Why is copper a good conductor of electricity?

   - **A.** Copper atoms hold onto their electrons very tightly.
   - **B.** Electrons can move easily between copper atoms.
   - **C.** Copper atoms are bonded together in molecules.
   - **D.** Copper atoms can flow quickly along a wire.

2. How are protons and neutrons different?

   - **A.** Protons are in the nucleus of the atom, while neutrons orbit the nucleus.
   - **B.** Neutrons are in the nucleus of the atom, while protons orbit the nucleus.
   - **C.** Protons have a positive charge, while neutrons have a negative charge.
   - **D.** Protons have a positive charge, while neutrons have no charge.

3. A sodium atom can easily lose an electron. What happens to this electron?

   - **A.** It is converted into thermal energy.
   - **B.** It is destroyed.
   - **C.** It is transferred to an atom of a different element.
   - **D.** It is transferred to another sodium atom.

4. Which statement about electrons is true?

- **A.** Electrons are much smaller than protons and neutrons.
- **B.** Electrons are located in the nucleus of the atom.
- **C.** Electrons have a positive electric charge.
- **D.** Electrons are the largest subatomic particle.

5. Which of the following is made of only one kind of atom and cannot be broken down into simpler substances?

- **A.** a molecule
- **B.** a compound
- **C.** an element
- **D.** a mixture

6. The smallest part of an element that still has the properties of that element is:

- **A.** a proton.
- **B.** a molecule.
- **C.** an atom.
- **D.** a quark.

7. How are electrons different from protons and neutrons?

- **A.** Electrons are larger than protons and neutrons.
- **B.** Electrons are not found in the nucleus of the atom.
- **C.** Electrons have no electric charge.
- **D.** Electrons are a different color than protons and neutrons.

8. Suppose a neutral atom were to lose an electron. What would happen to the atom?

- **A.** It would become negatively charged.
- **B.** It would become positively charged.
- **C.** It would remain neutral.
- **D.** It would also lose a proton.

9. Potassium has an atomic number of 19 and a mass number of 39. How many neutrons are in the nucleus of a typical potassium atom?

- **A.** 19
- **B.** 20
- **C.** 39
- **D.** 58

10. A typical atom of aluminum has 13 electrons and 14 neutrons. How many protons does the atom have?

- **A.** 1
- **B.** 13
- **C.** 14
- **D.** 27

Molecules: Practice Assessment

Student Name: _____

INSTRUCTIONS

Check your understanding with this practice assessment

1. Starch is a polymer made up of chains of _____ molecules.

   - **A.** glucose
   - **B.** glycogen
   - **C.** carbon
   - **D.** fat

2. A molecule is:

   - **A.** two or more substances that are mixed together.
   - **B.** two or more atoms that are chemically bonded.
   - **C.** a particle found in the nucleus of an atom.
   - **D.** the smallest part of an element that still has the properties of that element.

3. A molecule that contains only hydrogen and carbon is a _____.

Name	Number of carbon atoms
Methane	1
Ethane	2
Propane	3
Butane	4
Pentane	5
Hexane	6

- **A.** element
- **B.** carbohydrogen
- **C.** oxide
- **D.** hydrocarbon

4. A pure substance that contains two or more elements that are chemically bonded is _____.

A. C-C B. C=C

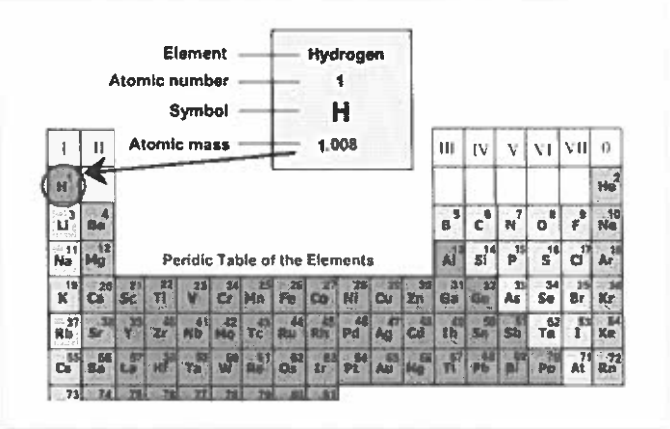
C. C-C-C D. C-H

- **A.** an atom
- **B.** an ionic bond
- **C.** organic
- **D.** a compound

5. A diatomic molecule is made from _____.

- **A.** any atom
- **B.** more than one kind of atom
- **C.** two atoms from the same element
- **D.** unstable atoms

6. With the atomic number 1 and an atomic mass of 1.0079, hydrogen has _____.



- **A.** 2 energy levels
- **B.** 1 neutron
- **C.** 1 proton
- **D.** 2 electrons

7. Identify which of the following is an artificial polymer.

- **A.** plastic
- **B.** cotton
- **C.** protein
- **D.** DNA

8. Water is made of two common ions. These ions are hydroxide and _____.

- **A.** oxide
- **B.** oxygen
- **C.** hydrogen
- **D.** hydroxide

9. Polypropene is a polymer made for a chain of which monomer?

- **A.** polypropane
- **B.** propane
- **C.** C-H
- **D.** propene

10. At room temperature, oxygen is a gas and hydrogen is a gas. When they combine at room temperature, they form a _____.

- **A.** solid
- **B.** liquid
- **C.** gas
- **D.** solution

11. The separation of ions that occurs when an ionic compound dissolves in a solution is known as _____.

- **A.** association
- **B.** dissociation
- **C.** associative principle
- **D.** molecular association

12. A(n) _____ bond is when atoms share electrons.

- **A.** ionic
- **B.** metallic
- **C.** covalent
- **D.** polar

13. When dissolved into water, a molecule of potassium chloride _____.

- **A.** combines with the water molecules
- **B.** separates into ions of potassium and ions of chlorine
- **C.** separates into two molecules
- **D.** forms a new molecule

14. On the periodic table, calcium is located in group 2, period 4. How many electrons are located in the outer electron shell of calcium atoms?

- **A.** 2
- **B.** 4
- **C.** 6
- **D.** 8

15. The properties of _____ are different from the properties of the elements in it.

- **A.** compounds
- **B.** atoms
- **C.** isotopes
- **D.** ions

16. When water becomes ice, the molecules spread out to form a specific shape. What determines this shape?

- **A.** the number of water molecules in the ice
- **B.** the temperature of the ice
- **C.** the structure of the water molecules
- **D.** the mass of the ice cube produced

17. How many atoms are in each molecule of the compound CO_2?

- **A.** 1
- **B.** 2
- **C.** 3
- **D.** 4

18. Proteins are polymers made of long strands of _____.

- **A.** carbohydrates
- **B.** amino acids
- **C.** carbons
- **D.** sugars

19. Which of the following represents a molecule?

- **A.** Ca
- **B.** Co
- **C.** CO
- **D.** Cu