#### Chemistry: 2019-2020

# **Question 1**

Multiple choice (one answer)

The Octet Rule states that

- $\bigcirc$  "Energy cannot be created or destroyed. It can only be converted from one form to another."
- $\bigcirc$  "An atom will react to achieve a noble gas electron configuration"
- "Opposite charges attract, and like charges repel"
- $\bigcirc$  "Two wrongs don't make a right"

## **Question 2**

Multiple choice (one answer)

An atom is considered stable when its electron configuration resembles

- $\bigcirc$  its grandmother
- $\bigcirc$  the electron configuration of a Group 2 element
- $\bigcirc$  the electron configuration of a noble gas
- $\bigcirc$  the electron configuration of a transition metal.

# **Question 3**

True or false

Two ways that an atom can react to achieve a noble gas electron configuration is through 1. Ion Formation and 2. Covalent Bonding.

True  $\bigcirc$  False  $\bigcirc$ 

# **Question 4**

Multiple choice (one answer)

Two ways that an atom can achieve a noble gas electron configuration include 1. Ion Formation and 2.

- Quenching
- Annealing
- Covalent Bonding
- $\bigcirc$  Dissolving in water

Multiple choice (one answer)

Two ways that an atom can achieve a noble gas electron configuration include 1. \_\_\_\_\_ and 2. Covalent Bonding

- High Melting
- $\bigcirc$  Ion formation
- Brittleness
- Electron sharing

# **Question 6**

Multiple choice (one answer)

In Ion formation, an atom gain or lose electrons so that it has an \_\_\_\_\_\_. This means that it is surrounded by 8 electrons, or 2 electrons if the atom is small enough.

- $\bigcirc$  Octavius
- $\bigcirc$  Octopus
- O Octet
- Octagon

# **Question 7**

True or false

True or False: atoms share electrons in a covalent bond so that each atom has a full octet.

True  $\bigcirc$  False  $\bigcirc$ 

# **Question 8**

Multiple choice (one answer)

Which of these is true about covalent bonding?

- $\bigcirc$  Electrons are shared in covalent bonding.
- $\bigcirc$  Covalent bonding results in the formation of molecular compounds.
- $\bigcirc$  The smallest unit of a substance with covalent bond is a molecule.
- Covalent bonding typically involves non-metals. sharing electrons.
- Covalent compounds can be solids, liquids, or gases at room temperature.
- $\bigcirc$  Solid covalent compounds have relatively low melting temperatures.
- $\bigcirc$  All of these statements are true about covalent bonding.

True or false

Covalent bonding involves atoms gaining or losing electrons so that it forms an octet.

```
True O False O
```

# **Question 10**

True or false

In covalent bonding, atoms share electrons so that each atom has a full octet.

True O False O

# **Question 11**

#### True or false

Covalent bonding typically involves non-metals sharing electrons.

```
True O False O
```

# **Question 12**

True or false

Covalent bonding typically involves a metal and a nonmetal sharing electrons.

True O False O

# **Question 13**

True or false

True or False: The smallest unit of a covalent compound is the ionic lattice.

True  $\bigcirc$  False  $\bigcirc$ 

# **Question 14**

True or false

True or False: The smallest unit of a substance with covalent bonds is a molecule.

True or false

True or False: It is common for molecular compounds (those that contain covalent bonds) to be solids, liquids, or gases at room temperature.

True O False O

### **Question 16**

True or false

True or False: Molecular compounds are almost always solids at room temperature.

True O False O

# **Question 17**

True or false

True or False: Molecular compounds (or those with covalent bonds) have unusually high melting temperatures.

True O False O

# **Question 18**

True or false

True or False: Molecular solids (or those with covalent bonds) have relatively low melting temperatures.

True O False O

#### **Question 19**

True or false

True or False: The bond strength within a covalent bond between two atoms sharing electrons are very strong, however forces between MOLECULES are weak.

True O False O

True or false

True or False: Forces between atoms within a covalent bond are strong.

```
True O False O
```

# **Question 21**

True or false

True or False: Forces between atoms within a covalent bond are weak.

True O False O

# **Question 22**

True or false

True or False: Forces between MOLECULES in a molecular compound are weak.

True O False O

# **Question 23**

True or false

True or False: Forces between MOLECULES of a molecular compound are strong

True  $\bigcirc$  False  $\bigcirc$ 

# **Question 24**

Multiple choice (one answer)

A measure of the ability of an atom to attract electrons toward itself in a bond is called \_\_\_\_\_.

 $\bigcirc$  octetivity

- $\bigcirc$  electron affinity
- $\bigcirc$  electronegativity
- $\bigcirc$  ion affinity

# **Question 25**

Multiple choice (one answer)

The most electronegative element is \_\_\_\_\_ with an electronegativity of \_\_\_\_\_.

○ cesium ..... 4.0

○ fluorine.....0.7

○ fluorine ...... 4.0

○ cesium.....0.7

# **Question 26**

Multiple choice (one answer)

Electrons are shared equally in \_\_\_\_\_ covalent bonds.

 $\bigcirc$  ionic

 $\bigcirc$  metallic

 $\bigcirc$  non-polar

 $\bigcirc$  polar

# **Question 27**

Multiple choice (one answer)

A covalent bond between two atoms that have the same electronegativity will be

 $\bigcirc$  metallic

 $\bigcirc$  ionic

 $\bigcirc$  non-polar

 $\bigcirc$  polar

### **Question 28**

Multiple choice (one answer)

What type of covalent bonding results in sharing electrons UNEQUALLY because of different electronegativity values?

 $\bigcirc$  metallic bonding.

 $\bigcirc$  ionic bonding

 $\bigcirc$  polar covalent bonding

 $\bigcirc$  non-polar covalent bonding

# **Question 29**

Multiple choice (one answer)

https://ofhs.neolms.com/quiz\_question\_bank/print/2812726?container\_id=10799100&print=true

Electrons being shared unequally between atoms results in

- $\bigcirc$  brittle substances
- $\bigcirc$  regions of partial charge on molecules
- $\bigcirc$  malleability and ductility
- $\bigcirc$  electrical conductivity

# **Question 30**

Multiple choice (one answer)

An arrow drawn above a polar covalent bond is called a \_\_\_\_\_

 $\bigcirc$  arrow

 $\bigcirc$  dipole

 $\bigcirc$  directional signal

 $\bigcirc$  nonpolar bond

# **Question 31**

Multiple choice (one answer)



Which of these elements has a higher electronegativity?

○ oxygen

- $\bigcirc$  chlorine
- hydrogen
- $\bigcirc$  fluorine

# **Question 32**

Multiple choice (one answer)

Which end of this molecule will have a partial negative charge?



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- $\bigcirc$  the bottom end
- $\bigcirc$  fluorine
- $\bigcirc$  the top end
- $\bigcirc$  hydrogen