**Pandemic Periodic Table**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1****Q****Quarantine****1.0** |  |  |  |  |  |  | **2****Co****Covid****2.1** |
| **3****Cr****Corona****4.7** | **4****V****Virus****6.9** | **5****N****Nineteen****8.7** | **6****B****Bored****10.0** | **7****S****Social****14.3** | **8****D****Distancing****17.2** | **9****Fm****FaceMask****19.9** | **10****W****WashHands****21.0** |

**Use the Pandemic Periodic Table to complete the following:**

**Unit 1: Matter and its Properties**

1. Covid is a Nobel Gas. What are the other two states of matter that the Pandemic Elements can be found at room temperature?
2. Label the following properties of the element Nineteen as either intensive (I) or extensive (E).

 \_\_\_\_ 6 cm in length \_\_\_ yellow \_\_\_ density 2.5 g/ml \_\_\_ oval \_\_\_ solid \_\_\_\_ melting at 340’C

1. If you had a block of Corona matter that was 2cm x 3cm x 4 cm and had a mass of 26g, **what is the density** of Corona? Be sure to label your answer!
2. Density is an intensive property. Therefore, if you had a block of Corona element that was 2 times the size (4cm x 3cm x 8 cm), what is the density of this new sample of material? Be sure to label your answer!
3. Classify as a pure substance (P) or mixture (M)

\_\_\_\_ Co \_\_\_ QFm & VD \_\_\_ D \_\_\_ Cr2D \_\_\_ NFm3 & Cr & VD \_\_\_\_ B2D4

1. Classify as an element (E), compound (C), or mixture (M):

\_\_\_\_ Co \_\_\_ QFm & VD \_\_\_ D \_\_\_ Cr2D \_\_\_ NFm3 & Cr & VD \_\_\_\_ B2D4

**Unit 2: Atomic Structure and Nuclear:**

1. What element has 9 protons?
2. What element has 3 electrons?
3. What element has 10 neutrons?
4. Average Atomic Mass - What element has 2 isotopes with the mass number of 8 and 9?
5. Isotopes - What are the two isotope names for the question above?
6. Alpha Decay - What isotope undergoes alpha decay $$ to become Distancing-18, $$?
7. Beta Decay - What isotope undergoes beta decay $$ to become Distancing-18, $$?
8. Electron Capture - What isotope undergoes electron capture $$ to become Distancing-18, $$?
9. Positron Emission - What isotope undergoes positron emission $$ to become Distancing-18, $$?
10. Gamma Decay - What isotope undergoes gamma decay $$ to become Distancing-18, $$?

**Unit 3: Periodic Trends**

1. What element has 4 valence electrons?
2. What element has 2 energy levels with 6 valence electrons?
3. What element has a full octet?
4. What element has a Nobel Gas configuration of [Co] 2s2 2p1?
5. What element has only 1 paired p orbital?
6. What element has the largest radius?
7. What element likes to gain 1 electron?
8. What element loses 2 electrons?
9. What is the color used in the table for metals?
10. What is the color used in the table for nonmetals?

**Unit 4: Ionic Molecules**

1. What is an element that can form a cation?
2. What would that cation’s charge be?
3. Did the cation gain or lose electrons?
4. What is an element that can form an anion?
5. What would that anion’s charge be?
6. Did the anion gain or lose electrons?
7. What elements did we not focus on in class because they do not form ions?
8. Make several ionic compounds (using cations and anions) and name them. Try to be creative and actually use different charges…remember this is a competition!

|  |  |  |  |
| --- | --- | --- | --- |
| **Two elements Used** | **Formula** | **Name -**might be… | **Dot Diagram** |
| V and Fm |  VFm2 | Virus Facemide | V Fm Fm |
| You make….2nd |  |  |  |
| You make ….3rd |  |  |  |

**Unit 5: Covalent Molecules**

1. What elements can make covalent molecules?
2. How is a covalent compound different from an ionic compound? Explain using the word “electrons”.
3. Make several covalent compounds (using prefixes) and name them. Try to be creative and actually use several different prefixes…remember this is a competition!

|  |  |  |
| --- | --- | --- |
| **Two elements Used** | **Formula** | **Name -**might be… |
| S and Fm | SFm2 | Social Difacemide |
| You make….2nd |  |  |
| You make ….3rd |  |  |
| You make….4th |  |  |

 \*DO NOT USE THE FORMULAS IN OTHER QUESTIONS FOR THIS SECTION! Create your own.

1. What is the Lewis Dot Structure for social triquarantide?
2. If the electronegativity of Bored is 2.2 and the electronegativity of facemask is 4.0, determine if the is ionic, polar, or non-polar, and show how you got the answer.
3. Use the Lewis dot diagram of **bored tetrafacemide** below to determine if the bond it polar. If polar, show which side is positive, , and negative, . Then justify the type of intermolecular force.

 **Fm**

**Fm B Fm**

 **Fm**

1. How much energy to **make** and **break** the molecule known as **bored tetrafacemide** shown above if the energy of the bond energy for a **B-Fm** bond is 227 kj/mol?

**Unit 6: Chemical Reactions**

Sample:

Corona facemide + virus distancide 🡪 corona distancide + virus facemide

Cr+1 Fm-1  V+2 D**-2**  Cr+1 D**-2** V+2 Fm-1

 CrFm + VD 🡪 Cr2D + VFm2 Cheater method of swap and drop

2CrFm + VD 🡪 Cr2D + VFm2 2 coefficient to balance

1. What type of chemical reaction is the reaction above?
2. What is the law that required me to “balance” the above reaction?
3. What does that law state?

**2Q2 + D2 🡪 2Q2D Bond energy kj/mol**

Q-Q + D=D 🡪 Q- D-Q Q-Q 460 D=D 699

Q-Q Q- D-Q Q-D 294

1. What type of chemical reaction is the reaction above?
2. Determine if the following reaction is endothermic or exothermic
3. Both Quarantine and Distancing has 2 atoms of the same element covalently bonded together. What is the term used to describe this?

Your turn…corona + virus distancide 🡪 corona distancide and virus

1. What are the reactants?

*I have separated this into parts so that you will know what part is wrong when you ask me to check it. You will have 3 tries to win.*

1. What are the products?
2. What is the entire balanced reaction?
3. What type of chemical reaction is this?

**Unit 7: The Mole**

1. What is Avogadro’s number?
2. What is the mass of 1 mole of Carbon-12? Carbon-13? Carbon-14?
3. What is the molar mass of the element social?
4. What is the molar mass of the element covid?
5. What is the molar mass of Nineteen Distancide, N2D3?
6. What is the molar mass of Nineteen Soc**ite**, N2(SD3)3?