**Question 1**

The diameter of a neutral helium atom is about 168 pm. Suppose we could lin up helium atoms side by side in contact with one another. Approximately how many atoms would it take to make the distance 1 cm from end to end. Round to the nearest whole number, do not include units or commas. do not use scientific notation.

**Question 2**

What is the symbol for the element that has 28 protons?

**Question 3**

How many neutrons are in an element of 243Pu?

**Question 4**

How many protons are in an atom of carbon-14?

**Question 5**

The number of protons, neutrons and electrons, respectively, in 115Cd2+ are

48, 46, and 67

48, 67, and 46

46, 67, and 48

46, 115, and 67

**Question 6**

What is the name of Al(OH)3?

**Question 7**

What is the name of the following compound?

C2O4

**Question 8**

What is the name of the following compound?

CaCl2

**Question 9**

Write formulas for the following. use the format CO2 for CO2 and H2O for H2O. Use parentheses only when necessary.

lithium hydroxide

sodium carbonate

nickel (II) sulfide

dinitrogen tetraoxide

copper (I) sulfate

**Question 10**

Which of the following is most likely to form an anion with a charge of -2?

sodium

calcium

magnesium

oxygen

more than one will carry that charge

**Question 11**

If shown the formula, give the name (do not capitalize), if shown the name, give the formula (use parentheses only when necessary, capitalize as necessary, use the format CO2 for CO2). If a compound can be written as more than one way, we will be using the format that is used in your text.

NiSO4

Al2O3

silver chloride

ammonium acetate

CO

**Question 12**

Which of the following are incorrectly matched? More than one may be chosen.

Answer

MgCO3 magnesium carbonate

NiNO3 Nickel (II) nitrate

Ca(NO3)2 calcium dinitrate

(NH4)2SO4 ammonium sulfate

Cu(OH)2 copper hydroxide

**Question 13**

What is the average atomic mass of silver according to the following data? Use four decimal places, do not include units.

|  |  |  |
| --- | --- | --- |
| isotope name | isotope mass | percentage |
| Silver-107 | 107.19119 | 51.86 |
| Silver 109 | 109.36254 | remainder |

Question 14

Fill in the following table: Assume element is neutral unless otherwise indicated.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Symbol | protons | neutrons | electrons | net charge |
| 73Li |  |  |  | 0 |
| 73Li+ |  |  |  | be sure to include sign |
| C | 6 | 8 |  | 0 |
| Cu-67 | 29 |  | 27 | be sure to include sign |

**Question 15**

How many electrons are in an atom of O2-?

**Question 16**

Which of the following is most likely to form an ion with a +1 charge? more than one may be chosen

Li

Br

K

O

**Question 17**

A quarter is 2.5 cm in diameter. How many dollars worth quarters would have to be lined up in a row to reach a length of 1 meter? Round to the nearest whole dollar, do not include

**Question 18**

How many cars are there in a long freight train if it take the entire train 2 minutes to pass a station as it travels at 40 miles/hour? Each car is 50 feet long. Round to the nearest whole number, do not include units in your answer.

**Question 19**

The price of a ream of paper is $3.30. There are 500 sheets of paper in a ream. If a sheet of paper weighs 0.500 oz, what is the price of a kg of paper (in dollars, do not include units, round to two decimal places)

What is the cost of one sheet of paper (in dollars, do not include units, round to four decimal places)

What is the mass (grams) of one sheet of paper ( do not include units, round to one decimal place)

**Question 20**

The average atomic mass of Cu is 63.55 and is found in two naturally occurring isotopes. 63Cu has an atomic mass of 62.93 and 65Cu has an atomic mass of 64.94. What is the percentage of 63Cu in the sample? Round to one decimal place, do not include units in your answer.