

Name: _____ Class: _____ Date: _____

ID: A

Moles

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. How do you find formula mass?
 - a. look on the periodic table
 - b. add the masses of each atom in the compound
 - c. multiply the wavelength times the frequency
 - d. weigh it on a scale
- ____ 2. What is the unit that mass is measured in?
 - a. grams
 - b. miles
 - c. moles
 - d. particles
- ____ 3. How many atoms are present in 179.0 g of iridium?
 - a. 5.606×10^{23} atoms
 - b. 6.464×10^{23} atoms
 - c. 1.078×10^{26} atoms
 - d. 1.157×10^{26} atoms
- ____ 4. Which of these is about 2 moles?
 - a. 2.0 liters (dm^3) of H_2
 - b. 4.0 grams of H_2
 - c. 2.0×10^{23} molecules of H_2
 - d. 4.0 kilograms of H_2
- ____ 5. Helium is a noble gas which is very unreactive and highly stable. Approximately how many helium atoms would be found in 2.00 moles of helium gas?
 - a. 1.20×10^{24} atoms
 - b. 6.02×10^{23} atoms
 - c. 3.01×10^{24} atoms
 - d. 1.81×10^{24} atoms
- ____ 6. What is the mass in grams of one mole of sulfur dioxide (SO_2)?
 - a. 48.1 g
 - b. 64.1 g
 - c. 80.1 g
 - d. 96.1 g
- ____ 7. How many moles of bromine gas (Br_2) are in 37.7 grams?
 - a. 0.236
 - b. 0.472
 - c. 3.01×10^3
 - d. 79.9
 - e. none of the above
- ____ 8. How many molecules are in 0.500 mole of N_2O_5 ?
 - a. 1.20×10^{23} molecules
 - b. 3.01×10^{23} molecules
 - c. 6.02×10^{23} molecules
 - d. 3.01×10^{24} molecules

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- ____ 9. Students are given two samples of material. The first sample contains 1 mole of iron (Fe), and the second sample contains 1 mole of lithium (Li). Which of the following statements best describes how these samples compare to one another.
- Sample 1 contains more atoms than sample 2.
 - Sample 2 has a greater mass than sample 1.
 - Both samples have the same mass when placed on a scale.
 - Each sample contains the same number of atoms.
- ____ 10. What is the mass in grams of one mole of sulfur dioxide (SO₂)?
- 48.1 g
 - 64.1 g
 - 80.1 g
 - 96.1 g
- ____ 11. The number of molecules in 48.0 grams of oxygen gas (O₂) is —
- 1.81×10^{24}
 - 1.20×10^{24}
 - 9.03×10^{23}
 - 6.02×10^{23}
- ____ 12. Which of the following represents Avagadro's number?
- 6.02×10^{23}
 - 3.14
 - Atomic mass
 - Atomic number
- ____ 13. Which of the following are not formula units?
- atoms
 - ions
 - nucleus
 - molecules
- ____ 14. One mole of boron has a mass of _____ g.
- 9.012
 - 6.022×10^{23}
 - 5
 - 10.811
 - none of the above
- ____ 15. What is the mass of one mole of CO₂?
- 24 g
 - 28 g
 - 44 g
 - 56 g

Short Answer

16. $\times 10^{24}$ atoms of gold

What coefficient would complete the statement shown above for a sample of gold which contains 5.00 moles of gold? Record and bubble your answer to three significant figures in the grid on the back of your answer document.

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17. What is the mass in grams of one mole of sulfur dioxide (SO_2)? Record and bubble your answer to the nearest tenth of a gram in the grid on the back of your answer document.