

Show all work for problems that require calculations.

1. How many atoms are there in one mole of carbon?

Ans. _____

2. What is the mass of one mole of carbon atoms?

Ans. _____

3. What is the mass of one mole of carbon dioxide (CO₂)?

Ans. _____

4. How many moles of tin atoms are there in 250 grams of tin?

Ans. _____

5. How many atoms are there in 250 grams of tin?

Ans. _____

6. How many atoms are there in 5.0 grams of gold?

Ans. _____

7. What is the mass of one mole of water (H₂O)?

Ans. _____

8. How many moles of water molecules are there in 39 grams of water?

Ans. _____

9. How many molecules are there in 39 grams of water?

Ans. _____

10. What is the mass of 6.02×10^{23} atoms of aluminum?

Ans. _____

11. What is the mass of 3.01×10^{23} molecules of oxygen?

Ans. _____

12. What is the mass of a single uranium atom?

Ans. _____

13. What is the mass of one mole of oxygen molecules?

Ans. _____

14. What is the mass of one mole of $\text{Ba}(\text{NO}_3)_2$ (barium nitrate)?

Ans. _____

15. What is the mass of one mole of pennies? (each penny has a mass of about 2.2 grams)

Ans. _____

16. How many moles of SO_2 is present in 0.45 grams of sulfur dioxide?

Ans. _____

17. What is the mass of 4.00 moles of oxygen gas?

Ans. _____

18. How many carbon dioxide molecules are there in 3.25 moles of carbon dioxide?

Ans. _____

19. What is the mass of 3.40 moles of $\text{Cu}(\text{NO}_3)_2$?

Ans. _____

20. How many atoms are there in 125 grams of sugar molecules ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$)?

Ans. _____