

Chapter 4 Study Game

Name: _____

Rules:

1. Read ALL rules before starting.
2. Your group has 25 minutes to complete as many of the following problems as you can.
 - a. Your group must designate which sheet is your “final sheet” and which is your “correcting guide”
 - i. You will be turning in the “final sheet” to Mr. Gunkelman after the 25 minutes has expired so it MUST be legible
 - b. Your group must ALSO designate a “correcting guide” that also contains all of your answers
3. After 25 minutes, you will turn your “final sheet” into Mr. Gunkelman.
4. Mr. Gunkelman will give you another groups sheet and you will use your “correcting guide” to correct their “final sheet”
 - a. You will have 10 minutes to complete this
 - b. You must correct (with explanation/work) any problems that are wrong
5. After the 10 minutes has expired, combine into a larger group and discuss any wrong answers.

Questions:

1. How many neutrons are there in the following...
 - a. Magnesium _____
 - b. Zn-67 _____
 - c. Silver _____
 - d. Nitrogen _____
 - e. Sn-115 _____
2. What did Rutherford discover?
3. Which of the following is the more common isotope? (circle the correct answer)
 - a. K-39 or K-40
 - b. Cu-63 or Cu-64
 - c. Lead-207 or lead-208
4. Where are electrons located and what are their charge?
5. How many grams of HgO are there in 88 moles of HgO?
6. What did Thomson discover and what did he use to help him make this discovery?

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7. What is Avogadro's number and what do we use it for?
8. Where are neutrons located and what are their charge?
9. How many protons are there in the following...
- Silver _____
 - Iron _____
 - Ca-41 _____
 - P-32 _____
 - Tin _____
10. What is the molar mass for the following?
- HgO _____
 - Gold _____
 - Water _____
 - $C_{12}H_{22}O_{11}$ _____
11. What is the average atomic mass for the following examples?
- 1/3 of the atoms are X-45 and 2/3 of the atoms are X-44 _____
 - Gn-9 (12%), Gn-10 (73%), Gn-12 (15%) _____
 - Uux-281 (97.2%), Uux-282 (2.8%) _____
12. How many valence electrons do the following have?
- Carbon _____
 - Ca-40 _____
 - Oxygen _____
 - Argon _____
 - Sulfur _____
13. What are the 4 orbital shapes? _____
14. How many particles are there in 789 grams of $C_{12}H_{22}O_{11}$?
15. Who came up with the "plum pudding" model for an atom?

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16. How many moles are iron are present in 4560 grams of iron?

17. How many electrons are in the following...

- a. Carbon _____
- b. Copper _____
- c. Li-7 _____
- d. N-15 _____

18. What is a proton and where is it located?

19. How many grams of water are there in 3.36×10^{26} molecules of water?

20. What does the atomic number tell you?

21. Who first stated the universe was made of indivisible particles? _____

22. What happens to an electron when it absorbs a photon?

23. How many moles are there in 800 grams of MgF_2 ?

24. How many particles are there in 6 grams of Helium?