

Chapter 17 Test Review Physical Science

Answer the following questions on a separate piece of paper. If you are working on a problem make sure to show your work to receive credit! If the answer requires units, **make sure to include the unit.**

1. What makes isotopes the same?
2. What makes isotopes different?
3. How many valence electrons do noble gases have?
4. What makes noble gases stable?
5. How many quarks are there?
6. What is the charge on an up quark?
7. What is the charge on a down quark?
8. How many and what type of quarks are needed to make a proton?
9. How many protons are in Ar-40?
 - a. How many neutrons are there?
 - b. What is the mass number?
 - c. What is the atomic number?
 - d. How many electrons are there?
10. If an element had a mass number of 31 and an atomic number of 28, how many neutrons would it have?
 - a. What element is this?
 - b. How many protons will this have?
11. What is the atomic number for Calcium?
 - a. What is its atomic mass?
12. Which period is Iodine in?
 - a. What group is it in?
13. Is Silicon a metal, nonmetal, or metalloid?
14. Is Barium a metal, nonmetal, or metalloid?
15. What are three properties of a metal?
16. What is the center of the atom referred to as?
 - a. What subatomic particles are found here?
17. What are the names of the subatomic particles?
 - a. Which of these have about the same mass?
18. How do you define an isotope?
19. What does the word periodic mean when used in “periodic table”?
20. Are magnesium and sulfur in the same family or same period, or neither?
 - a. Do these elements have similar properties?
 - b. At room temperature, what phase (solid, liquid, gas) are these in?
 - c. Classify these elements as a metal, nonmetal, or metalloid.

21. What is the importance of Dalton in atomic history?
 - a. Draw what his model looked like.
22. What is the importance of Thomson in atomic history?
 - a. Draw what his model looked like.
23. What is the importance of Rutherford in atomic history?
 - a. Draw what his model looked like.
24. What is the importance of Bohr in atomic history?
 - a. Draw what his model looked like.
25. Draw the current model of the atom.
26. What was the important word that Democritus used?
 - a. What does that word mean?
27. Who used the gold foil experiment to discover that an atom was mostly empty space?
28. Who used the cathode ray to prove that the atom contained charged particles?
29. A sample of iron contains Fe-54, Fe-56, Fe-57, and Fe-58. Why can these iron atoms have different mass numbers?
 - a. Do these have the same atomic number? Why?
30. How many electrons will fit in the first energy level of an atom?
 - a. How many electrons will fit in the second energy level of an atom?
 - b. How many electrons will fit in the third energy level of an atom?
31. In a neutral atom of Phosphorus, how many electrons are in energy levels one, two, and three.