

Semester Exam Review

1. Construct a chart of the 3 major subatomic particles indicating charge, location, mass, and significance.
2. Sketch and label a Dalton model of the atom.
3. Sketch and label a Thomson model of the atom.
4. Sketch and label a Rutherford model of the atom.
5. Sketch and label a Bohr model of the atom with 3 electron shells.
6. Define and tell the significance of the valence level of electrons on a Bohr model.
7. Explain why elements are placed on different Periods on the Periodic Table.
8. Explain why elements are placed in different Groups on the Periodic Table.
9. Describe the valence level of Group 1 elements.
10. Describe the valence level of Group 17 elements.
11. Describe the valence level of Group 18 elements.
12. Describe the reactivity (high, low, or non) of Group 1 elements.
13. Describe the reactivity (high, low, or non) of Group 18 elements.
14. Compare the atomic radii of Period 2 elements and Period 4 elements. Which are larger?
15. Compare the atomic radii of Group 2 elements and Group 16 elements on the same Periods. Which are larger?
16. Which section of the Periodic Table contains the most metallic elements: top right or bottom left?
17. Define compound molecule.
18. Define elemental molecule.
19. What is a synonym of "elemental molecule"?
20. In a chemical formula, what information does the coefficient tell?
21. In a chemical formula, what information do the subscripts tell?
22. How many molecules in the formula "**4CH₃COOH**"?
23. How many total atoms of Carbon in the formula "**4CH₃COOH**"?
24. How many total atoms of Oxygen in the formula "**4CH₃COOH**"?
25. How total atoms of Hydrogen in the formula "**4CH₃COOH**"?
26. Which part of a Chemical Equation is on the left?
27. Which part of a Chemical Equation is on the right?
28. What does the arrow separating the two parts mean?

29. Write the reactants part of this chemical equation: $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$.
30. Write the products part of this chemical equation: $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$.
31. Does this equation ($6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$) follow the Law of Conservation of Mass?
32. State the Law of Conservation of Mass.
33. -39. List 7 evidences of chemical reactions.
40. Define Potential Energy.
41. Define Kinetic Energy.
42. Define Thermal Energy.
43. Define Absolute Zero and tell how many degrees it is in Kelvin and Celsius.
44. Identify the Fundamental Force that holds nuclear particles together.
45. Identify the Fundamental Force that is responsible for nuclear decay.
46. Identify the Fundamental Force that follows the rule of opposite charges attract, and like charges repel.
47. Identify the Fundamental Force that is responsible for the attraction of all matter to all matter.
48. Describe the factors that determine the strength of Gravity.