

1. _____ Dalton thought atoms were like billiard balls that were solid spheres.
2. _____ In Thomson's raisin bun model, the raisins were protons.
3. _____ In the beehive model, electrons were the bees and the nucleus was the hive.
4. _____ The most accurate of the early models was the solar system model.
5. _____ Rutherford shot tiny particles called "gamma" rays.
6. _____ The particles shot by Rutherford were negatively charged.
7. _____ Rutherford shot the particles at a thin sheet of gold foil.
8. _____ Particles that hit other particles in the nucleus passed through unaffected.
9. _____ Rutherford discovered protons!
10. _____ In the modern Bohr-Rutherford atom, electrons occur outside the nucleus in orbitals.
11. _____ Inside the atom are positive protons and negative neutrons.
12. _____ A neutral hydrogen atom has 1 proton, 1 neutron, and 1 electron.
13. _____ There may be many electrons in many orbitals occurring at a fixed distance from the nucleus.
This region is called an energy shell or level.
14. _____ All energy shells can hold a maximum of 2 electrons.
15. _____ Helium has 2 electrons: 1 in the first shell and 1 in the second shell.
16. _____ Carbon has 6 electrons: 2 in the first shell and 4 in the second shell.
17. _____ An aluminum atom has 3 valence electrons.
18. _____ All alkali metals have a valence of 2.
19. _____ Elements in the same chemical family have the same number of valence electrons.
20. _____ It is only the innermost electrons of an atom that are involved in bonding.
21. _____ If the atomic # = 7 and mass # = 10, an atom has 7 protons, 7 electrons, 3 neutrons.
22. _____ Isotopes are varieties of the same element with different numbers of neutrons.
23. _____ Electrons contribute extremely little to the mass of an atom.
24. _____ A gas discharge tube has 2 electrodes: a positive cathode and a negative anode.
25. _____ Cathode rays are positively charged particles.
26. _____ Cathode rays are attracted to a negatively charged plate brought close to a discharge tube.
27. _____ Cathode rays are actually electrons.
28. _____ Thomson discovered the electron!
29. _____ Sodium is so reactive because it only has to lose 2 electrons to achieve stability.
30. _____ Fluorine is so reactive because it only has to gain 1 electron to achieve stability.
31. _____ Atoms only bond by losing electrons.
32. _____ If an atom loses 2 electrons, it becomes an ion with a 2+ charge.
33. _____ Oppositely charged ions repel each other.
34. _____ An ionic bond forms when one atom loses electrons and the other atom gains electrons.
35. _____ An ionic bond is actually a form of electrical attraction between ions.
36. _____ Ionic bonds form between 2 metals.
37. _____ Covalent bonds form between 2 non-metals.
38. _____ Examples of ionic compounds are: NaCl, CaF, H₂O, and CO₂.
39. _____ Ionic compounds easily separate into ions in water and can conduct electricity.
40. _____ You'd get more of a shock if you took a bath in sea water rather than tap water if you dropped in the toaster!
41. _____ The correct formula for magnesium oxide is: MgO.
42. _____ The correct formula for potassium oxide is: K₂O.
43. _____ The correct formula for aluminum bromide is: AlBr₃.
44. _____ Plants need fluorine in order to produce amino acids and nucleic acids such as DNA.
45. _____ Plants can obtain this element due to bacteria living in the soil.
46. _____ Chemical fertilizer is applied to the soil to stimulate the bacteria into producing this element.
47. _____ An element that enables plants to resist infection is potassium.
48. _____ To make supermarket produce look fresh and ripe, plants can be sprayed with DDT.
49. _____ The first drugs used to treat illnesses were plants.
50. _____ An ingredient in the willow tree was used to make acetylsalicylic acid, called Aspirin today.