

Grade 9 Science Exam: True-False Review

1. _____ The atomic # of Carbon is 6 which means it has 6 protons and 6 electrons.
2. _____ The # of neutrons = mass # - atomic #.
3. _____ Isotopes are the same elements with different numbers of electrons.
4. _____ The following are correct electric symbols: Q = charge, I = voltage, E = energy.
5. _____ The following are correct electric units: charge in coulombs, energy in joules.
6. _____ A neutral object is repelled by a charged object.
7. _____ A negative object is repelled by another negative object.
8. _____ The density of an object is calculated by: mass x volume.
9. _____ $M = D/V$.
10. _____ A Bohr (shell) diagram for nitrogen would have 2 electrons in the first shell and 7 electrons in the second shell.
11. _____ The second shell of an atom can hold a maximum of 8 electrons.
12. _____ Outer electrons of an atom are called "valence" electrons.
13. _____ Using the "cross-down method" the correct formula for sodium oxide would be Na_2O_3 .
14. _____ Using the "cross-down method" the correct formula for barium chloride would be $BaCl_2$.
15. _____ During ionic bond formation, a metal atom loses electrons (which becomes negatively charged) to a non-metal atom (which becomes positively charged).
16. _____ In ionic bond formation between sodium and chlorine, sodium become Na^+ and chlorine becomes Cl^- and the 2 ions then attract each other.
17. _____ In question #16 above, both Na and Cl achieve full outer shells of electrons.
18. _____ In covalent bonding, ions are formed that share electrons.
19. _____ A covalent bond forms between a metal and a non-metal (ie. CO_2).
20. _____ In electricity, $Q = I/t$.
21. _____ In electricity, I = current and is measured in volts.
22. _____ 1 ampere = 1 coulomb/second.
23. _____ In electricity, $V = E/Q$. Where V = volts and E = electrons.
24. _____ In electricity, $R = V/I$. Where R = resistance measured in ohms.
25. _____ Ohms law is: $V = I \times Q$.
26. _____ In drawing electrical circuits, the negative terminal of a battery is the long vertical line and the positive terminal is the short vertical line.
27. _____ Electrons leave the negative terminal and return to the positive terminal of a battery.
28. _____ Examples of electrical "loads" are bulbs and heating coils.
29. _____ Electrical loads have high resistance that hinder the passage of protons through them.
30. _____ When an ebonite rod is rubbed with fur, the rod becomes negative as it gains protons.
31. _____ If an ebonite rod rubbed with fur touches a pith ball, the ball becomes negatively charged.
32. _____ After touching the pith ball in #31 above, the ball will be attracted to the ebonite rod.
33. _____ A neutral object is drawn with equal numbers of positive and negative charges.
34. _____ Drawings on the exam can be done in pen or pencil but must be large and clear.
35. _____ A glass rod has a greater pull on electrons than a plastic bag.
36. _____ When a positive glass rod is brought close to a metal leaf electroscope, the leaves repel because they are positively charged.
37. _____ Charging by induction occurs when a charged rod touches a neutral object.
38. _____ In the reaction: $A + B \rightarrow C$, the reactants are A + B and the product is C.
39. _____ copper + oxygen \rightarrow copper oxate.
40. _____ potassium + chlorine + oxygen \rightarrow potassium chlorate.
41. _____ Colour is a qualitative physical property of matter.
42. _____ Objects with high lustre tend to sink in water.
43. _____ A heterogeneous mixture has more than one visible particle. An example is water.
44. _____ A homogeneous solution would be apple juice.
45. _____ An example of a pure substance is human blood.
46. _____ The release of light, heat, and sound indicates a physical change.
47. _____ According to particle theory, all particles are at rest until heated.
48. _____ N_2 is an element whereas H_2O is a compound.
49. _____ The alkali metals include sodium and calcium and are in Group 1.
50. _____ The halogens have a valence of 7 and include Cl and Br.
51. _____ Noble gases such as fluorine have a filled outer shell so they are stable or inert.
52. _____ When writing atomic notation for an element, the mass # is above the atomic #.
53. _____ Neutrons and protons are located in the nucleus of an atom and electrons are outside the nucleus travelling in paths called "isotopes".
54. _____ When connected to an 8 Volt battery, a 9 V bulb is less bright than a 10 V bulb.
55. _____ When 2 batteries are connected in series the overall voltage is higher than if they are connected in parallel.
56. _____ Connecting batteries in parallel does not increase the overall voltage but allows the batteries to last longer.
57. _____ If 2 bulbs are connected in parallel and one goes out the other also goes out.
58. _____ The higher the voltage of a battery, the greater the energy given to each coulomb of charge.
59. _____ The bottom of a thundercloud is positively charged and induces a negative charge on the ground.
60. _____ When an object is discharged, excess charge (electrons) enter or exit it to "ground".
61. _____ To measure E/Q use a voltmeter, to measure Q/E use an ammeter.
62. _____ The following are correct valences: alkali metals=1, alkaline earth metals=3, halogens=7.
63. _____ There are practice quizzes on **zeroBio** that will help you study for the exam!