Science 10 exam sample questions and points of interest to study.

1. An atom of element X has 11 electrons and an atom of element Y has 8 electrons. The formula of the product of the reaction of these elements is expected to be:

(a) XY

(b) XY2

(c) XY3

(d) X2Y

(e) X2Y3

2. Biodiversity is a term that is used to describe differences that exist in the:

(a) abiotic environment

(b) variety of organisms

(c) sizes of populations

(d) rates of reproduction

3. An atom has a total of 18 electrons. These electrons are found in 3 orbits that have:

(a) 6 electrons each;

(b) 8, 8, and 2 electrons, moving out from the nucleus;

(c) 2, 8, and 8 electrons, moving out from the nucleus;

(d) 2, 10, and 6 electrons, moving out from the nucleus;

(e) 4, 8, and 6 electrons, moving out from the nucleus.

4. A bright yellow solid substance is known to be an element. It is brittle and will shatter if hit with a hammer. It is a poor conductor of both heat and electricity. This element is best called a(n):

(a) alkali metal

(b) metal

(c) nonmetal

(d) noble gas

(e) periodic element

5) The term “consumer” is used to define an organism that:

(a) may eat plants or animals;

(b) eats only animals;

(c) eats only plants;

(d) causes decomposition in dead organisms.

6. Covalent bonds are due to the:

(a) transfer of electrons from one atom to another;

(b) attraction between ions of opposite charge;

(c) gain or loss of electrons by atoms;

(d) sharing of two electrons by two atoms;

(e) magnetic force of attraction between two atoms.

7. A group of organisms of different species that live and interact together is referred to as a(n):

(a) ecosystem

(b) community

(c) population

(d) biome

8. When the following equation is balanced, the coefficients for P and O2 in order are:

P + O2 —> P2O5

(a) 6, 4

(b) 3, 4

(c) 4, 6

(d) 5, 4

(e) 4, 5

9. A balanced chemical equation takes into account the theory that:

(a) compounds and elements remain unchanged in a chemical reaction.

(b) atoms react by shifting or sharing protons

(c) the total mass always increases during a chemical reaction.

(d) the mass of any gases involved can be ignored.

(e) atoms are neither created nor destroyed in chemical reactions

10. ) An organic compound is one that:

(a) can not be produced by a living organism;

(b) contains atoms that must include carbon, hydrogen, and phosphorus;

(c) contains atoms that must contain carbon and hydrogen;

(d) is released into the atmosphere as a result of combustion of fossil fuels.

11. Write the chemical reactions (word equation) for the following processes:

Cellular Respiration

Photosynthesis

12. List four clues that a chemical reaction has occurred.

13. Classify the following as a physical property or a chemical property

14. It has been proven that one-quarter of all vehicle accidents occur because the driver is distracted. “Drive Thru’” dining is a convenience we take for granted in our modern society. Assume that a driver was eating french fries while driving and dropped one of the french fries on the seat. He looks down, sees the fry, and reaches to pick it up. It takes him approximately 3.0 s to look and pick up the french fry.

(a) How far in meters does the car travel in this time if he is travelling at a constant speed of 100 km/h?

15. Bohr diagrams for the first 20 elements.

16. Compound naming and formulas work sheet fro the wikispaces page.

17. Practice balancing chemical equations

18. Distinguish between single and double displacement reactions.

19. Distinguish between acids and bases.

20. Manipulate the formula for Velocity and solve for each variable.

21. Manipulate the formula for Acceleration and solve for each variable.

22. Be able to explain the cycles of matter carbon, nitrogen, water and phosphorous

23. Understand the interactions of different species.

24. Draw and label food chains, include an explanation of the transfer of energy.

25. Distinguish between Synthesis and Decomposition chemical reactions

26. Create speed and acceleration graphs

27. Conversions – meters to kilometers, m/s 🡪 km/h etc…