

No Calculator – 20 Minutes Timed

Find the answer key at [www.AlgebraNinja.com](http://www.AlgebraNinja.com)

Name: \_\_\_\_\_ Hour: \_\_\_\_\_

### TMT Science 20 ACT Prep V2

1. How many electrons does Hydrogen have?
2. At what temperature does water being to boil (in °C)?
3. Toothpaste is considered a 9 on the pH scale. What information does that give us about toothpaste?
4. Having blue eyes is considered a recessive trait. In order to have blue eyes, what must be true of the alleles inherited by both parents?
5. A water balloon is launched into the air. Just before it hits the ground again, does the water balloon have more kinetic or potential energy?
6. What is the density of a block with a mass of 10 kg and a volume of 1 m<sup>3</sup>?
7. In an experiment, the temperature of a room is changed to determine whether plants grow faster in hotter temperatures. What is the independent variable in the experiment?
8. Each energy level in an atom can hold up to a certain number of electrons. How many can the first level hold?
9. Describe the main function of the chloroplast.
10. Found within the cytoplasm of a cell, how does the cell nucleus contribute to its cell?
11. Oxide is a common ion equivalent of Oxygen, denoted O<sup>2-</sup>. With an atomic number of 8, how many electrons does oxide have?
12. If Hydrogen has an atomic mass of 1 amu while Oxygen's mass is 16 amu, what is the mass of a single molecule of water?
13. In natural selection, what does being "fit" entail?
14. In what process does mRNA copy the DNA of a cell?
15. Tectonic plates move due to the convection currents of an asphalt-like substance found in which of Earth's layers?
16. The process of photosynthesis involves plants using carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O), along with energy from sunlight, to create sugar (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) and oxygen (O<sub>2</sub>). Write the basic formula for this chemical reaction.
17. Besides cell walls and DNA, what cellular structure is found in both prokaryotes and eukaryotes?
18. Two positively-charged marbles, mimicking two protons, are rolled towards each other. What will happen as they get close to each other?
19. Does a digital scale show someone their weight or their mass?
20. If the organelles in a cell were to be compared to a human body system, which system would the mitochondria best represent?