**For each of the following questions explain why the given answer is wrong.**

1. Enzymes are necessary because they cause reactions to happen.
2. Enzymes work by decreasing the potential energy difference between reactant and product
3. As a result of its involvement in a reaction, an enzyme permanently alters its shape.
4. If a patient in a hospital was accidentally given an IV full of pure water they would be fine because pure water is neutral so it can’t hurt us.
5. Cellular respiration is only done by heterotrophs because autotrophs can make their own energy.
6. The purpose of fermentation is to produce a small amount of energy when cells don’t have access to oxygen.
7. Plants use water only as a means of keeping their cells full and holding the plant itself upright.
8. The second step of photosynthesis is called the dark reactions because it only happens in the dark.
9. Diagram how a gamete with 3 chromosomes could be produced with two maternal chromosomes and one paternal chromosome. (there isn’t anything wrong in this question)
10. Explain why each of the following is wrong:
    1. Dominant alleles are more likely to be inherited than recessive alleles.
    2. Dominant alleles are found at greater frequency than recessive alleles in populations.
    3. Adaptive traits will become dominant over time through the action of natural selection.
    4. Mutations are recessive.
    5. Recessive alleles are deleterious.
    6. Dominant alleles regulate the expression of recessive alleles.
11. One trait = one gene
12. All cells will replicate their DNA at some point in their life.
13. All enzymes are made of protein.
14. Antibiotics should be prescribed for all viral and bacterial infections.
15. Genotype always equals phenotype.
16. Structural homologies only exist in animals, never in plants.
17. When the environment changes all species living in it will change to adapt to it.
18. Whales lost their hind limbs because they stopped using them.
19. We have never been able to observe speciation.
20. Bird and bat wings can only be described as homologous structures, not as analogous structures.
21. Only organisms (cells and larger) can evolve. Molecules cannot evolve.
22. Abiogenesis is a theory.
23. The primitive atmosphere had to contain oxygen before life could evolve.
24. The strongest evidence supporting the endosymbiotic theory is that mitochondria and bacteria are the same size and have a similar shape.
25. Plants are simple organisms with no tissues or organs.
26. Plants actively move water up their trunks.
27. Plants get food from the ground.
28. Plants do not do sexual reproduction.
29. Ectotherms do not regulate their body temperature in any way
30. The human body will crave high sugar high fat foods and store it in large quantities. This is an example of a deleterious trait that has never given an advantage to humans.
31. Most materials are transported through the blood stream of mammals and into and out of tissues by active transport.
32. You can get the flu from a flu vaccine.
33. In each of the following pairs the two terms given mean the same thing and do the same job.
    1. leukocyte; lymphocyte
    2. antigen; antibody
    3. B lymphocyte; T lymphocyte
    4. cytotoxic T cell; helper T cell
34. Blood and filtrate move in the same direction through the nephrons of the kidney and this helps conserve energy.
35. The nervous and endocrine systems send completely different kinds of messages so they never work together.
36. All hormones have the same types of effects on cells, no matter what they are made of.
37. Sex and reproduction is always the same thing. (Don’t make this dirty!!)
38. The process of development is very different in different types of species.
39. Neurons are the only type of cell that has a resting potential.
40. Animal behaviors are always determined by their genes (nature) while human behaviors are always influenced by their environment (nurture).
41. All populations will increase continuously, regardless of outside factors.
42. All symbiotic relationships benefit all members of the relationship.
43. A species will only be affected if there are changes in the population of its prey or its predator. Any changes to other species in its ecosystem will have no impact.