Assignment #2: Vocabulary & Basic Biology Concept Review from Living Environment and other Science Courses:

1. _____ are the individual units that bond together to form a polypeptide (protein).
2. _____ are the individual units that bond together to form a polysaccharide (starch).
3. _____ are protein molecules that catalyze (help speed up) chemical reactions.
4. Enzymes break apart (digest) or put together (s_____) the substrate into products. Enzymes (catalysts) cause chemical reactions within certain temperature ranges.
5. Each type of nutrient (protein, glucose, lipids, etc.) is digested by only ____ kind of enzyme. So, protease digests protein, but not glucose or starches!
6. Bacteria are _____ cells which lack a nucleus and other membrane bound organelles.
7. The nucleus contains _____ in eukaryotic cells.
8. _____ are organelles found in autotrophic cells that produce glucose in the process of photosynthesis.
9. _____ are the organelles where aerobic cellular respiration occurs to produce ATP energy in cells.
10. The mitochondrion makes energy (____) from glucose; this is called respiration. Glucose comes from photosynthesis by plants and algae.
11. The cell _____ is a selectively permeable boundary around a cell.
12. _____ from high to low concentration will occur across a membrane if the molecules are small and uncharged. Substances diffuse from areas of high concentration to areas of low concentration.
13. Active transport occurs when membrane proteins use _____ to carry materials into and out of a cell.
14. M_____ involves a diploid cell dividing into two identical daughter cells.
15. C_____ involves body cells dividing uncontrollably by mitosis.
16. M_____ is the process used to produce the sex cells (or gametes) which are haploid.
17. DNA mutations and chromosomal abnormalities may be passed on to the next generation if they are located in cells that produce _____.
18. T_____ is the hormone that stimulates gamete (sperm) production and the formation of secondary sex characteristics in males.
19. F_____ is the process that involves the fusion of a haploid sperm cell with a haploid egg cell to form a diploid cell called a zygote.
20. In human body (somatic) cells, a normal nucleus will contain _____ chromosomes.
21. In a human sperm or egg cell, a normal nucleus will contain _____ chromosomes.
22. DNA replication involves matching nucleotide bases together using the law of complementary base pairing. A pairs with __ and C pairs with __. Transcription involves matching nucleotide bases together using the law of complementary base pairing, however, there is no T in RNA instead there is a ___.
23. The simplified steps of protein synthesis are: DNA → _____ → Protein
24. An allele is: _____

25. If a population has a wide range of variation due to genetic diversity, it gives the population an _____(increased/decreased) ability to adapt if the environment ever changes drastically.
26. Organs and systems in the human body help maintain h_____.
27. E_____ in the digestive system are responsible for the hydrolysis (breaking down) of carbohydrates, proteins, and lipids.
28. White blood cells fight p_____ in the body.
29. A_____ are proteins produced by white blood cells in the human body that attach to invading pathogens and clump them together: antigen-antibody complex.
30. H_____ are specific chemical messenger molecules that travel through the blood and attach to receptor proteins on the surface of target cells.
31. The hormone _____ is secreted from the pancreas and lowers the glucose level in the blood.
32. Hormonal feedback mechanisms maintain h_____ in the human body.
33. _____ gas is consumed in photosynthesis, while excess _____ gas is produced in photosynthesis.
34. Glucose is the first stable product of photosynthesis and serves as a food source within cells. The chemical formula for glucose is _____.
35. Cellular _____ is the process of producing ATP energy from glucose and oxygen in mitochondria.
36. C_____ is the waste gas produced in cellular respiration and excreted through the lungs.
37. E_____ is transferred from one organism to another within a food web.
38. D_____ are responsible for recycling materials when they break down organic molecules from dead organisms.
39. Food chains always begin with a _____, progress with a series of consumers, and end with decomposers.
40. Stable ecosystems have a complex food web and _____ biodiversity.
41. All the individuals of the same species living in the same area make up a population. All of the populations in a habitat make up a community. An _____ is the interaction of all of the living organisms with the cycling of materials and the flow of energy.
42. The c_____ c_____ is the maximum number of individuals that can survive on the resources that are present in an area.
43. The _____ variable is the numerical data known before the experiment begins, e.g. time, temperature, or day. This is the factor in the experiment that a scientist purposely changes.
44. The _____ variable is the numerical data obtained during the experiment; the measured variable. This is the factor in the experiment that a scientist wants to observe or measure.
45. Every experiment must have a _____.
46. Conditions in an experiment must be exactly the same for all test tubes or test subjects. Only _____ variable condition being investigated should differ.
47. Iodine (Lugol's solution) is an indicator for _____ (polysaccharide) and will turn from a yellow/amber color to a purple/black color during a positive test.
48. The pH can be used to determine the acidity or basicity of a solution. The scale goes from 0 to 14, where 0-6 = _____ and 7 = _____ and 8-14 = _____.
49. Next task = Assignment #3: Vocabulary Scavenger Hunt
50. You will have a quiz on #1-49 above during the first weeks of school!