1. ________________________ Group of similar cells performing similar functions

2. ________________________ The name given to the idea that life could arise from nonliving matter.

3. ________________________ The smallest units that are considered to be alive.

4. ________________________ If an atom contains 15 protons, it must contain 15 of these.

5. ________________________ The pH scale is a measurement system that indicates the concentration of this ion in solution.

6. ________________________ type of chemical bond formed by the transfer of electrons

7. ________________________ The positively charged subatomic particle found in the center of an atom.

8. ________________________ Attraction between molecules of the same substance.

9. ________________________ Attraction between molecules of different substances.

10. ________________________ A bond created when electrons are shared by two atoms.

11. ________________________ A substance with a concentration of hydroxide ions higher than water

12. ________________________ groups of organs that perform similar functions for an organism

13. ________________________ Name the scientist who first invented the microscope.
14. __________ The __________ variable is analyzed to see how it relates to changes in the __________ variable.
   a. Responding, manipulated  c. manipulated, responding
   b. Manipulated, independent  d. responding, independent

15. __________ Information gathered from observing a plant that grows 3 cm over a two-week period results in
   a. inferences.  c. hypothesis
   b. variables d. data

16. _______ A well-tested explanation that unifies a broad range of observation is a (an)
   a. hypothesis  c. inference
   b. theory d. controlled experiment

17. _______ All of the following are characteristics of all living things EXCEPT
   a. Growth  c. movement
   b. Reproduction d. use of energy

18. _______ What technique is used to separate the different cell parts?
   a. Microscopy  c. cell fractionation
   b. Cell culture d. nutrient solution

19. _______ What is the term for a group of organisms of one type living in the same place?
   a. Biosphere  c. population
   b. Ecosystem d. environment

20. _______ Which of the following statements about a compound is true?
   a. The physical and chemical properties of a compound are usually very different from those of the elements from which it is formed.
   b. Only the physical properties of a compound are usually the same as those of the elements from which it is formed.
   c. Only the chemical properties of a compound are usually the same as those of the elements from which it is formed.
   d. The physical and chemical properties of a compound are usually the same as those of the elements from which it is formed.

21. _______ What type of ion forms when an atom loses electrons?
   a. Neutral  c. negative
   b. Positive d. possibly positive or negative
22. ________ A substance with a pH of 6 is called
   a. an acid.                          c. both an acid and a base
   b. a base                           d. neither an acid nor a base

23. ________ Which statement is true?
   a. Simple sugars are made of polysaccharides
   b. Glycerol is made of fatty acids
   c. RNA molecules are made of nucleotides
   d. Amino acids are made of proteins

24. ________ Enzymes affect the reactions in living cells by changing the
   a. products of the reaction          c. temperature of the reaction
   b. speed of the reaction             d. pH of the reaction

25. ________ A monosaccharide is a
   a. Carbohydrate                      c. nucleic acid
   b. Lipid                             d. protein

26. ________ Isotopes are atoms of the same element with the same number of
   protons and
   a. different number of neutrons
   b. different number of molecules
   c. different number of protons
   d. same number of neutrons

27. ________ All of the following are functions of lipids EXCEPT
   a. store energy                      c. form membranes
   b. transport                         d. form waterproof barrier

28. ________ What kind of molecule transmits genetic information?
   a. Nucleic acids                     c. proteins
   b. Polysaccharides                   d. lipids

29. ________ There are how many different kinds of amino acids?
   a. 10                                c. 20
   b. 40                                d. none of the answers
MATCHING #31 – 34

30. __________ glycerol and three fatty acids  a. lipids

31. __________ monosaccharides  b. protein

32. __________ 5-carbon sugar, nitrogenous base and phosphate group  c. nucleic acid

33. __________ amino acids  d. carbohydrate

34. __________ According to the illustration to the right, how many populations of animals are represented by this community?

35. According to the illustration to the right, what are the non-living elements in this ecosystem?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

36. The ecosystem in the illustration is part of what larger level of organisms?

__________________________________________________________________

37. List three of the functions of proteins in the body.

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
38. What is structure Y in the illustration above?

39. What is structure X in the illustration above?

40. What has been created in step 2?

41. What is structure Z in step 3?

42. What is the name of this model of enzymatic activity?

Write in Complete Sentences for the rest of the questions.

43. Compare an element with a compound.

44. Compare an atom with a molecule
45. What was the difference between Redi, Needham, Spallazani, and Pasteur’s experiments?
1. tissue
2. Spontaneous generation
3. Cell
4. Electrons
5. Hydronium (H⁺)
6. Ionic bond
7. Proton
8. Cohesion
9. Adhesion
10. Covalent bond
11. Base
12. Organ System
13. Leewenhoek
14. A. responding, manipulated
15. D. data
16. B. theory
17. C. movement
18. C. cell fractionation
19. C. population
20. A. the physical and chemical properties of a compound are usually very different from those of the elements from which it is formed.
21. B. positive
22. A. an acid
23. C. RNA molecules are made of nucleotides
24. B. speed of the reaction
25. A. carbohydrate
26. A. different number of neutrons
27. B. transport
28. A. nucleic acids
29. C. 20
30. A. lipids
31. D. carbohydrates
32. C. nucleic acid
33. B. proteins
34. 11
35. air, rocks, ocean water, cold temperatures
36. This ecosystem is part of a biome and the biosphere.
37. 1. Control reaction rates
    2. Regulate cell processes
    3. Form bone, Form muscle
    4. Transport things through cell membranes
    5. Fight diseases.

38. enzyme
39. substrate (reactants) – either answer is correct
40. activated complex
41. products
42. lock and key model of enzymatic activity

43. An element is a pure substance made from only one kind of atom, cannot be broken down in a chemical reaction, and is represented by a single element symbol. A compound is also a pure substance, but it is made from two or more bonded atoms, can be broken down in a chemical reaction, and is represented by two or more symbols.

44. An atom is the smallest unit of matter and it cannot be broken down by normal chemical means. A molecule is composed of two or more atoms and can be broken down by normal chemical means.

45. Redi compared open jars with meat to jars with meat that were covered with cheesecloth and showed that only the meat that flies could touch produced maggots. Needham boiled broth and corked some while leaving others open. All his samples grew microorganisms showing that life could grow in boiled broth that was not open to the air. Spallazani used many different heating conditions and sealed the glass shut by melting the glass itself. He proved that broth that was heated sufficiently and kept in a sealed flask would not spontaneously grow microorganisms. Pasteur created a unique flask with a long, curved glass tube open to the air. He proved that broth, which was heated enough and exposed to the air through the curved tube, would not grow microorganisms. Pasteur’s experiment was the research that finally disproved spontaneous generation.