


Matter in Ecosystems Test Review

1. Organisms are composed of _____, which is anything that takes up space and has mass.
2. An _____ is a substance that is made entirely from one type of atom.
3. The 3 subatomic particles that make up an atom are _____.
4. Electrons in the outer most shell are known as _____ electrons.
5. What is the subatomic particle with no charge? _____
6. What subatomic particles are found in the nucleus of an atom? _____
7. The subatomic particle that identifies the atom and has a positive charge is _____.
8. Atoms that lose or gain electrons are known as _____.
9. Atoms that have extra neutrons are known as _____.
10. _____ bonds form when two atoms share one or more valence electrons.
11. The process of breaking and/or forming chemical bonds is known as _____.
12. The law of conservation of mass states that mass cannot be _____ or _____.
13. Does the following equation follow the law of conservation of mass? Why or why not?
 $2 \text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$ _____
14. In the equation above, the products are _____ and the reactants are? _____
15. Polymers are made up of smaller building blocks called _____.
16. Water is both a compound and a _____.
17. How many valence electrons does carbon have? _____
18. Give an example of an inorganic compound. _____
19. What element makes a compound organic? _____
20. Linking monomers to form a polymer occurs by a process known as _____.
21. Breaking of polymers into monomers occurs by what reaction? _____.
22. When ingested by organisms, the atoms of _____ provide most of the atoms that make up the other three organic macromolecules.
23. Diagram glucose.

24. Many carbohydrates are polymers and the subunits are _____.
25. Give an example of a monosaccharide. _____
26. Give an example of a disaccharide. _____
27. Give an example of a polysaccharide. _____
28. The subunits for lipids are _____.
29. The function of lipids is to _____.
30. _____ and _____ are the two types of steroids.
31. Give an example of how lipids can be used for water proofing. _____
32. _____ fatty acids contain at least one pair of double bonds.
33. Diagram a lipid and circle the carboxyl group.

34. What is the ratio of hydrogen to oxygen in a carbohydrate? _____
35. What is the ration of carbon to oxygen in a carbohydrate? _____
36. What are the two types of nucleic acids? _____
37. Nucleic acids store _____ information.
38. The subunits for nucleic acids are called _____.
39. The atoms that make up nucleic acids are _____.
40. Diagram a nucleotide and label the 3 parts.
41. Genetic information in _____ is passed from parent to offspring.

42. RNA directs the assembly of _____.
43. Without enzymes, chemical reactions in the body would occur to _____ to support life processes.
44. _____ made of amino acid subunits linked in long chains.
45. An _____ is a protein that speeds up chemical reactions without being consumed or using energy.
46. What are the elements that make up proteins? _____
47. What is the name of the enzyme that breaks down hydrogen peroxide? _____
48. Diagram the enzyme "lock and key" model and label the substrate, active site, and the enzyme.
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49. If the temperature or pH of the enzyme is out of the optimal range, the enzyme structure _____.
50. Name 3 factors that affect the action of enzymes. _____
51. Name 3 functions of proteins. _____
52. Name of the organelle that contains DNA and controls cell activities. _____
53. Name of organelle that is shaped like a football and converts glucose into energy. _____
54. Name of organelle that allows for movement of material through the cell. _____
55. Name the organelle that takes in and changes or modifies proteins. _____
56. Name the organelle that breaks down waste. _____
57. The "jelly like" material in the cell is known as _____.
58. The protein threads in a cell that move chromosomes and organelles around is the _____.
59. Organelle that contains materials from the cell membrane, ER, and Golgi is known as _____.
60. Organelle found only in plants, where photosynthesis takes place. _____
61. This tiny organelle is the site of protein synthesis. _____
62. This organelle is constantly in motion and is made of phospholipids _____.
63. The cell membrane is _____ permeable which means some things can and cannot get through.
64. In the cell membrane, _____ act like pores, channels, pumps and carriers.
65. In the cell membrane, _____ act as "antenna" and allows cells to communicate.
66. Cells keep a constant internal environment in response to environmental changes. This is _____.
67. What is facilitated diffusion? _____
68. By _____, molecules move from an area of high concentration to an area of low concentration.
69. _____ occurs when water molecules diffuse across a cell membrane.
70. Water always moves in the direction of _____ solute.
71. Active transport requires _____.
72. Active transport goes against the _____.
73. _____ occurs when large molecules enter the cell by membrane pinching in & creating a vesicle.
74. _____ occurs when a vesicle fuses with cell membrane and releases material outside the cell.
75. Diagram Endocytosis and Exocytosis. 
76. Match description with the osmotic condition:
A=Isotonic, B=Hypertonic, C=Hypotonic
- _____ solution with a lower solute concentration
 - _____ solution in which the solute concentration is the same
 - _____ red blood cell shrivels up
 - _____ condition that animal cells require
 - _____ red blood cell bursts
 - _____ plant cell loses pressure (wilts)
 - _____ solution with a higher solute concentration
 - _____ solution with a high water concentration