

ANSWERS Final Review
Biology Semester 1 2009

Biochemistry

1. Most carbon-based molecules are classified as **organic**.
2. How many bonds can carbon form with other atoms? **4**
3. **Enzymes** speed up the rate of a chemical reaction
4. All organic compounds contain the element **carbon**
5. DNA and RNA are **nucleic acids**
6. Which element, Carbon, Hydrogen, Nitrogen or Sulfur is found in proteins but not carbohydrates or lipids? **Nitrogen**
7. The formation of ADP from ATP and water is an example of **hydrolysis** reaction.
8. Energy is released when **phosphate** bonds are broken in ATP.
9. Which organic molecule is glycogen? **Carbohydrate**
10. **Carbohydrates** are a main source of energy in humans and other organisms.
11. Amino acids are the basic building block of **proteins**.
12. Which organic molecule stores the genetic information? **DNA**

Hormones are essential to maintaining **homeostasis** mainly because they cause specific responses in specific targets.

Scientific Method

13. Scientific **hypothesis** are tested by experimenting
14. The word **theory** means a tested and generally accepted principle.
15. The order of the scientific method is **observation**, hypothesis, **experiment**, and **conclusion**.
16. What is quantitative analysis? **Result in numerical form**
17. How do you determine the independent variable? The **thing that is changed to test the hypothesis**
18. How do you determine the dependent variable? The **results**
19. How do you determine the control group? **The group without the independent variable**

Cells Structure and Function

20. Cell theory states that all living things are made of **cells**.
21. Which type of organisms are bacteria? **Prokaryote**.
22. Prokaryotes do not contain a **nucleus**.
23. Eukaryotes **do** contain a nucleus.
24. **Surface area** limits cell growth because the cell may become too large to get rid of waste and take in nutrients
V grows faster than SA
25. **Organelle** is a structure within a cell that performs a specific function.
26. Mitochondria produce the cell's **ATP**
27. **Mitochondria** releases energy from sugars and other molecules.
28. **Cell membrane** is a thin, flexible barrier around a cell
29. How are chloroplast and mitochondria similar? **They both have DNA**
30. What is the order of organization in living things? **Cell, tissue, organ, organ system**
31. The packaging and distribution center of the cell is the **Golgi Apparatus**
32. the **plasma membrane** regulates which materials enter and leave the cell
33. **Ribosomes** produce proteins in the cell
34. **Vacuoles** store food and other materials needed by the cell
35. Virus reproduce only in **living** cells
36. know the structure of virus on page 486 What is in the head? **RNA and DNA**

Homeostasis and Cell Transport

37. Diffusion is the net movement of molecules from an area of **high** concentration to an area of **low** concentration.
38. **Osmosis** is the passive transport of water across a selectively permeable membrane