Name _____

Studying Life

I. Introduction

1. **What is biology?**

- The study of life + life processes
(Cell Biology, Genetics, Evolution, Zoology, Botany, Ecology, A+P)

II. Characteristics Of Living Things

1. **What is a cell?**

- Smallest unit of a living organism
(skin, connective, adipose, neural, digestive, eye)

2. **Circle the letter of each sentence that is <u>true</u> about cells.**

a. A cell is the smallest unit of an organism that can be considered alive.
b. A multicellular organism may contain trillions of cells.
c. A living thing that consists of a ~~single~~ many cells is a multicellular organism.
d. Organisms are made up of cells.

3. **Match the year with the correct event contributing to the cell theory.**

1. D - mid-1600's — A. Robert Brown ("dark structure" = nucleus)
2. E - 1665 — B. Rudolf Virchow (cells come from pre-existing cells)
3. A - 1833 — C. Matthias Schleiden (all plants made up of cells)
4. C - 1838 — D. Anton van Leeuwenhoek (saw "living things" with microscope
5. F - 1839 — E. Robert Hooke (examined cork; "tiny chambers" = cells)
6. B - 1855 — F. Theodor Schwann (all animals made up of cells)

4. **What are two types of asexual reproduction?**

1. Regeneration (Sea Star) 2. Budding (Sponges)

5. **Living things are based on a universal** Code (DNA).

6. **Circle the letter of each sentence that is <u>true</u> about living things.**

a. The life cycle of many organisms involves development.
b. For bacteria, growth is mostly a simple increase in size.
c. Each type of organism has a distinctive life cycle.
d. Cells may change in number ~~but never~~ and differentiate.

7. **Why does an organism need energy and a constant supply of materials?**

- To perform basic functions
(moving, reproduction, growth, development)

8. **What is metabolism?**

- Utilization of organic matter for energy
(breaking down or building up molecules)

Name _____

9. All organisms respond to the environment in exactly the same ways.

Circle One : True (False) Ex) Brain Trauma

10. What is homeostasis?

- Balance of conditions within or among organisms
(Positive vs. Negative Feedback)

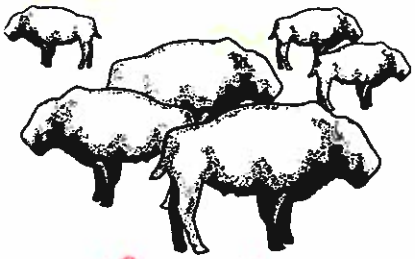
11. A group of organisms that changes over time is said to evolve **.**
(constant process)

III. Branches Of Biology

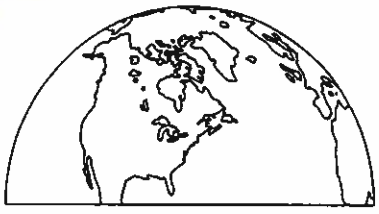
1. Match the different kinds of biologists with the focus of their study.

1. C.	- Botanist	A. Inherited or environmentally-caused abnormalitie
2. I.	- Biochemist	B. Internal functions of living organisms
3. E.	- Conservationist	C. Plant growth and responses
4. A.	- Geneticist	D. Ancient organisms and their remains
5. G.	- Marine Biologist	E. Human effects on species populations
6. H.	- Microbiologist	F. Animal growth and development
7. J.	- Oncologist	G. Aquatic organisms and their environment
8. D.	- Paleontologist	H. Infectious diseases and causes
9. B.	- Physiologist	I. Physical and chemical effects on life processes
10. F.	- Zoologist	J. Cancer-related issues and treatment

2. Label each of the illustrations below according to the level of study represented.



Organism



Biosphere

Cellular

3. What kinds of information can biology provide about matters affecting human society?

- Answers vary.
(Improve lifestyles, Conservation, Entertainment)