

# **BIOL-8 Practice Test 01 — Answer Key**

## **Modules 1-4: Foundations of Human Biology**

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## **Part A: Multiple Choice Answers**

Q	Answer	Explanation
1	C	All living things are made of cells
2	A	Cell → Tissue → Organ → Organ System → Organism
3	B	The independent variable is what the scientist changes
4	B	Theories are well-supported by many experiments
5	B	Homeostasis = maintaining a stable internal environment
6	B	Autotrophs make their own food
7	C	Atomic number = number of protons
8	B	Covalent bonds involve sharing electrons
9	C	Water is polar due to unequal electron sharing
10	B	Acids have pH less than 7
11	A	Carbon, Hydrogen, Oxygen, Nitrogen are most common
12	B	Hydrogen bonds give water its unique properties
13	B	Acids release H <sup>+</sup> ions
14	B	Dehydration synthesis removes water to build polymers
15	C	Carbohydrates provide quick energy
16	B	Amino acids are protein monomers
17	B	Amino acid sequence determines protein shape/function
18	D	DNA and RNA are nucleic acids
19	B	Hydrolysis adds water to break polymers

Q	Answer	Explanation
20	B	Cell theory: cells come from pre-existing cells
21	C	Prokaryotes lack a membrane-bound nucleus
22	C	Mitochondria produce ATP
23	C	Ribosomes are the site of protein synthesis
24	C	Plant cells have cell walls; animal cells do not
25	D	Golgi apparatus packages and ships proteins

## Part B: Fill in the Blank Answers

Q	Answer
26	cell
27	nucleus
28	isotopes
29	basic (or alkaline)
30	monosaccharide (or simple sugar)
31	energy
32	ribosome
33	cell
34	chloroplasts
35	rough

## Part C: Short Answer Key

### 36. Characteristics of living things (any 3):

- Cellular organization (made of cells)
- Metabolism (use energy)
- Homeostasis (maintain internal stability)
- Growth and development
- Reproduction
- Response to stimuli
- Adaptation

### 37. Ionic vs. Covalent bonds:

- Ionic bonds: electrons are transferred from one atom to another
- Covalent bonds: electrons are shared between atoms

### 38. Four biomolecules:

- Carbohydrates, Lipids, Proteins, Nucleic Acids
- Nucleic acids (DNA and RNA) store genetic information

### 39. Prokaryotes vs. Eukaryotes:

- Prokaryotes: no nucleus, no membrane-bound organelles, smaller (ex: bacteria)
- Eukaryotes: have a nucleus and membrane-bound organelles, larger (ex: plants, animals)

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*End of Answer Key*