BIOL-1 Practice Test 01 — Answer Key

Modules 1-4: Study of Life through Cells

Part A: Multiple Choice Answers

Q	Answer	Explanation
1	B	All living things are made of cells
2	A	Cell → Tissue → Organ → Organ System → Organism
3	C	Observation → Hypothesis → Experiment → Conclusion
4	B	The independent variable is what the scientist changes
5	B	Homeostasis = maintaining a stable internal environment
6	B	Autotrophs make their own food (producers)
7	C	Atomic number = number of protons
8	B	Isotopes differ in neutron number
9	B	Ionic bonds involve electron transfer
10	B	Water is polar due to unequal electron sharing
11	C	pH 2 is strongly acidic (far below 7)
12	B	Buffers resist pH changes
13	B	Cohesion = water molecules sticking together
14	C	Carbon forms the backbone of organic molecules
15	B	Monomers are building blocks that form polymers
16	B	Dehydration synthesis removes water to build polymers
17	C	Carbohydrates provide quick energy
18	C	Peptide bonds link amino acids
19	B	Denaturation = loss of protein shape

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 via cellular respiration
23	D	Plant cells have cell walls; animal cells do not
24	B	Ribosomes are the site of protein synthesis
25	C	Golgi packages and ships proteins

Part B: Fill in the Blank Answers

Q	Answer
26	cell
27	nucleus
28	isotopes
29	hydrolysis
30	nitrogen (N)
31	acidic
32	amino acid
33	heterotrophs (or consumers)
34	endomembrane system
35	endosymbiotic

Part C: Short Answer Key

36. Characteristics of living things (any 3):

- Cellular organization (made of cells)
- Metabolism (use energy, carry out chemical reactions)
- Homeostasis (maintain internal stability)
- Growth and development
- Reproduction
- Response to stimuli
- Adaptation/evolution

37. Ionic vs. Covalent bonds:

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

38. Four macromolecules:

- Carbohydrates, Lipids, Proteins, Nucleic Acids
- Protein monomer: amino acid

39. Prokaryotes vs. Eukaryotes:

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

End of Answer Key