BIOLOGY · ARKANSAS

# Biology
## Practice Test

### Unit 1: Cells and Molecular Biology

25 Questions

Original practice test based on the Arkansas curriculum. Work through each question, then check your answers at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

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Question 1

Cell theory states that every living organism is composed of one or more cells, and that cells arise only from

A) Preexisting cells

B) Nonliving matter

C) Minerals alone

D) Sunlight alone

Understand It with Pulse Flag a mistake

Question 2

A bacterium lacks a nucleus and membrane bound organelles so it is classified as

A) Eukaryotic

B) Prokaryotic

C) Multicellular

D) Photosynthetic only

Understand It with Pulse Flag a mistake

Question 3

Which structure is found in both a bacterial cell and a human liver cell

A) Chloroplast

B) Large central vacuole

C) Ribosome

D) Golgi body with stacks

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Question 4

The nucleus controls cell activity because it holds

A) ATP for active transport

B) Lipids for the membrane

C) Glucose for respiration

D) DNA with instructions for proteins

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Question 5

Most ATP in an animal cell is made in the

A) Mitochondrion

B) Ribosome

C) Nucleus

D) Cell wall

Understand It with Pulse Flag a mistake



Question 6

Chloroplasts capture light energy in a leaf cell and use it to

A) Break down DNA into nucleotides

B) Build sugars from carbon dioxide and water

C) Store calcium for signalling

D) Digest old chloroplasts

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Question 7

Ribosomes make a protein by linking amino acids in the sequence specified by

A) A fatty acid chain

B) A glucose polymer

C) Messenger RNA

D) A water molecule

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Question 8

Rough endoplasmic reticulum is rough because its outer surface carries

A) Chlorophyll

B) DNA loops

C) Lysosomes

D) Ribosomes

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Question 9

After a protein is made, the Golgi body typically

A) Modifies it and packages it for delivery

B) Copies its DNA sequence

C) Burns it for ATP

D) Turns it into glucose

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Question 10

Lysosomes protect a cell by using enzymes to

A) Make new ribosomes

B) Digest damaged parts and engulfed material

C) Copy chromosomes

D) Produce light energy

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Question 11

A mature plant cell often has one very large vacuole that

A) Makes ATP from glucose

B) Reads messenger RNA

C) Stores water and helps support the cell

D) Forms the cell wall

Understand It with Pulse Flag a mistake

Question 12

The cytoskeleton gives a cell shape and helps move organelles because it is a network of

A) Starch grains

B) Lipid droplets

C) Mineral crystals

D) Protein fibres

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Question 13

In a phospholipid bilayer, the water loving heads face outward while the water fearing tails face

A) Inward away from water

B) Toward the nucleus only

C) Toward ribosomes only

D) Outward toward water

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Question 14

Oxygen moves across a cell membrane from high to low concentration without energy input by

A) Active transport

B) Simple diffusion

C) Endocytosis

D) Exocytosis

Understand It with Pulse Flag a mistake

Question 15

Osmosis is the diffusion of water across a membrane from a region of lower solute concentration to a region of

A) Lower water concentration only

B) Equal solute concentration

C) Higher solute concentration

D) Zero pressure

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Question 16

An animal cell in pure water gains water, swells, and may burst because the surrounding solution is

A) Hypertonic

B) Isotonic

C) Saturated with salt

D) Hypotonic

Understand It with Pulse Flag a mistake

Question 17

A plant cell in strong salt water loses water and its membrane pulls away from the

A) Cell wall

B) Nucleus

C) Ribosome

D) Mitochondrion

Understand It with Pulse Flag a mistake

Question 18

Active transport can move glucose into a cell against its concentration gradient, but it requires

A) Sunlight directly

B) ATP energy

C) Gravity

D) No membrane protein

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Question 19

A white blood cell engulfs a bacterium by wrapping its membrane around it in a process called

A) Osmosis

B) Simple diffusion

C) Endocytosis

D) Facilitated diffusion

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Question 20

A secretory cell releases insulin by fusing vesicles with its plasma membrane in a process called

A) Endocytosis

B) Osmosis

C) Active diffusion

D) Exocytosis

Understand It with Pulse Flag a mistake

Question 21

An enzyme increases reaction rate without being consumed because it lowers the

A) Activation energy

B) Number of reactants

C) Temperature of the surroundings

D) Amount of product formed

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Question 22

Enzyme specificity comes from the shape of its

A) Cell wall

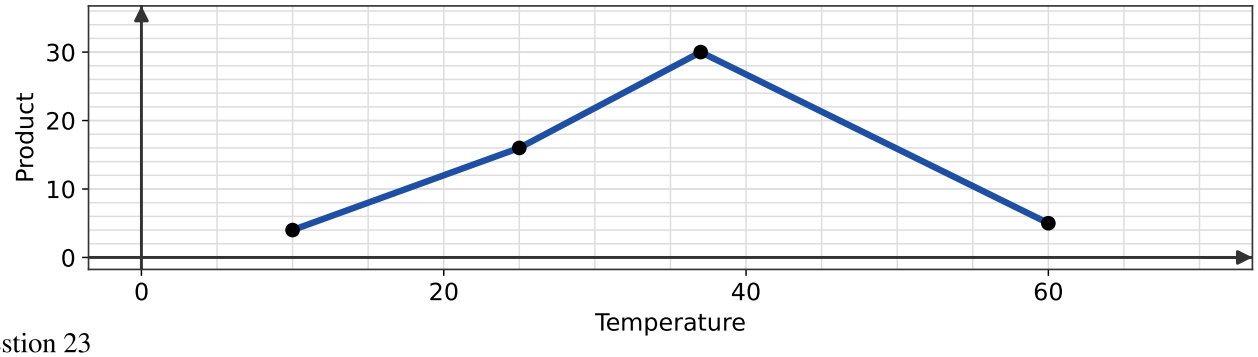
B) Active site

C) Plasma membrane

D) Nuclear pore

Understand It with Pulse

Flag a mistake




Question 23

An enzyme makes 4 units of product at 10 degrees Celsius, 16 units at 25 degrees, 30 units at 37 degrees, and 5 units at 60 degrees in ten minutes The temperature nearest the optimum is

A) 10 degrees Celsius

B) 25 degrees Celsius

C) 37 degrees Celsius

D) 60 degrees Celsius

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Flag a mistake

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Question 24

Heating an enzyme strongly changes its shape so it can no longer bind substrate, a change called

A) Replication

B) Fermentation

C) Photosynthesis

D) Denaturation

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Question 25

Proteins are polymers built from monomers called

A) Amino acids

B) Monosaccharides

C) Fatty acids alone

D) Nucleotides alone

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# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | A | **10.** | B | **18.** | B |
| **2.** | B | **11.** | C | **19.** | C |
| **3.** | C | **12.** | D | **20.** | D |
| **4.** | D | **13.** | A | **21.** | A |
| **5.** | A | **14.** | B | **22.** | B |
| **6.** | B | **15.** | C | **23.** | C |
| **7.** | C | **16.** | D | **24.** | D |
| **8.** | D | **17.** | A | **25.** | A |
| **9.** | A | | | | |

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