Science Exam: Homeostasis & Cell Processes

1. 1. What is the main purpose of homeostasis in living organisms?

- To grow larger
- To maintain a stable internal environment
- To respond to sound
- To change body shape

2. Which system in the human body is responsible for transporting materials to and from cells?

- Digestive system
- Nervous system
- Cardiovascular system
- Skeletal system

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2. 3. How does the body respond to high external temperatures?

- By shivering
- By sweating
- By slowing the heartbeat
- By producing more fat

3. 4. Which organ in the brain acts as a control center for temperature regulation?

- Cerebellum
- Hippocampus
- Hypothalamus
- Cortex

4. 5. What do thermoreceptors in the skin detect?

- Sound waves
- Temperature changes
- Light levels
- Pressure

5. 6. What is the function of effectors in homeostasis?

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- Detect external changes
- Control internal organs
- Carry out corrective actions
- Produce glucose

6. 7. Which process allows plants to make food using sunlight?

- Osmosis
- Photosynthesis
- Respiration
- Diffusion

7. 8. How do cells get energy from food?

- Through osmosis
- Through mitosis
- Through cellular respiration
- Through protein synthesis

8. 9. What is mitosis?

- A type of cellular transport
- A process of creating energy
- Cell division resulting in identical cells
- A form of passive transport

9. 10. Why is it important for DNA to be copied before cell division?

- To speed up the process
- So the cell grows larger
- To ensure each new cell gets the same genetic material
- To create mutations

10. 11. What is passive transport?

- Transport requiring energy
- Movement of particles using ATP
- Movement of molecules from high to low concentration without energy
- Transport involving vesicles

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11. 12. What is the diffusion of water across a semi-permeable membrane called?

- Endocytosis
- Active transport
- Osmosis
- Filtration

12. 13. Which of the following requires energy to move substances across the cell membrane?

- Passive transport
- Diffusion
- Osmosis
- Active transport

13. 14. What is endocytosis?

- Release of particles from a cell
- Fusion of cells
- Engulfing particles into a cell using energy
- Copying DNA

14. 15. What is exocytosis?

- Movement of particles into the nucleus
- Release of particles from the cell using a vesicle
- Breaking down glucose
- Creation of new proteins

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