4. Cell Communication and Cell Cycle

Starter Quiz ·

AP Biology Name: _____ Score: _____

1. Why do the cells of a body need to communicate?

   ☐ to compete and destroy each other

   ☐ to coordinate their actions as one organism

   ☐ they do not communicate at all

   ☐ only to store energy

2. **Signal transduction** is the process of…

   ☐ copying DNA

   ☐ making ATP

   ☐ digesting food

   ☐ converting an outside signal into an inside cellular action

3. A **signal transduction pathway** is…

   ☐ a single molecule doing everything alone

   ☐ a chain of molecules that each activate the next

   ☐ a kind of cell wall

   ☐ a type of DNA

4. **Homeostasis** is…

   ☐ copying DNA

   ☐ making the body colder over time

   ☐ growing as fast as possible

   ☐ keeping the body's internal conditions steady

5. The **cell cycle** is the sequence a cell follows to…

   ☐ digest food

   ☐ send hormones

   ☐ make ATP

   ☐ grow, copy its DNA, and divide into two

6. Checkpoints help prevent damaged cells from dividing.

   ☐ True ☐ False

7. A cell that has the right receptor and can respond to a signal is called a _____ cell.

   _____

8. The three stages are reception, transduction, and _____.

   _____

9. When one signal produces a huge response through a cascade, we call it _____.

   _____

10. The target value that the body tries to hold is called the _____ point.

    _____

AP Biology

1. **to coordinate their actions as one organism**

   Cells must communicate to act together – growing, defending, and responding as one coordinated body.

2. **converting an outside signal into an inside cellular action**

   Signal transduction turns a signal arriving outside the cell into a response inside it.

3. **a chain of molecules that each activate the next**

   A **pathway** is a relay: molecule A activates B, B activates C, and so on inside the cell.

4. **keeping the body's internal conditions steady**

   Homeostasis keeps internal conditions (temperature, glucose, water) steady around a set point.

5. **grow, copy its DNA, and divide into two**

   The **cell cycle** takes a cell through growth, DNA copying, and division into two new cells.

6. **True**

   By stopping a damaged cell, a checkpoint protects the body from passing on faulty cells.

7. **target**

   Only a **target cell** with the matching receptor responds; other cells ignore the signal.

8. **response**

   The final stage is the **response** – the cell actually does something.

9. **amplification**

   Each step activates many of the next, so **amplification** turns a tiny signal into a large effect.

10. **set**

    The body compares the current value with the **set point** and corrects any difference.