

Study Guide 28.1: Levels of Organization

KEY CONCEPT

The human body has five levels of organization.

VOCABULARY

determination	organ
differentiation	organ system
tissue	

MAIN IDEA: Specialized cells develop from a single zygote.

Fill in the blank with the term from the box that best completes the sentence.

differentiation	zygote	embryonic stem cells
specialized	apoptosis	determination

- All cells in a multicellular organism arise from a single cell called a _____.
- A human zygote divides and differentiates into more than 200 different types of _____ cells.
- In humans, the first few divisions of a zygote produce _____.
- Most stem cells become committed to developing into only one kind of specialized cell through a process called _____.
- A committed stem cell acquires all the characteristics and functions of a specialized cell through a process called _____.
- Cells that are no longer needed die off in a process of programmed cell death called _____.

MAIN IDEA: Specialized cells function together in tissues, organs, organ systems, and the whole organism.

Complete the table below with levels of organization, descriptions, and examples.

Level of Organization	Description	Example
7.	a basic unit of life with the specific structure and chemical makeup needed to perform a specific task	responsible for the exchange of gases in the lungs
tissues	8.	collections of epithelial cells that line stomach, lungs, and other organs
organs	different types of tissues that function together	9.
10.	groups of organs that work together in a coordinated way to perform the most complex activities of the body	stomach, intestines, liver, and other organs involved in digestion
organism	all organs and organ systems taken together	11.

Vocabulary Check

12. The word *determine* is part of the term _____, which is the process a stem cell goes through when it becomes committed to developing into only one cell type.
13. The word *different* is part of the term _____, which is the process a stem cell goes through as it becomes a specialized cell.