# Cells And Cell Organelles Worksheet Answer Key PDF

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## Part 1: Building a Foundation

**What is the basic structural and functional unit of all living organisms?**

undefined. A) Tissue
undefined. B) Organ
**undefined. C) Cell ✓**
undefined. D) Organism

The basic structural and functional unit of all living organisms is the cell.

**Which of the following are characteristics of eukaryotic cells? (Select all that apply)**

undefined. A) Lack of nucleus
**undefined. B) Presence of membrane-bound organelles ✓**
**undefined. C) Presence of a distinct nucleus ✓**
undefined. D) Smaller than prokaryotic cells

Eukaryotic cells have a distinct nucleus and membrane-bound organelles.

**Describe the main function of the cell membrane.**

**The cell membrane regulates what enters and exits the cell and provides protection.**

**List two differences between plant cells and animal cells.**

1. Difference 1

**Plant cells have a cell wall.**

2. Difference 2

**Plant cells have chloroplasts.**

Plant cells have a cell wall and chloroplasts, while animal cells do not.

## Part 2: Comprehension and Application

**Which organelle is known as the powerhouse of the cell?**

undefined. A) Ribosome
undefined. B) Golgi Apparatus
**undefined. C) Mitochondria ✓**
undefined. D) Lysosome

The mitochondria are known as the powerhouse of the cell because they produce ATP.

**What are the functions of the smooth endoplasmic reticulum? (Select all that apply)**

undefined. A) Protein synthesis
**undefined. B) Lipid synthesis ✓**
**undefined. C) Detoxification processes ✓**
undefined. D) Photosynthesis

The smooth endoplasmic reticulum is involved in lipid synthesis and detoxification processes.

**If a cell is placed in a hypertonic solution, what is likely to happen to the cell?**

undefined. A) It will swell
**undefined. B) It will shrink ✓**
undefined. C) It will remain the same
undefined. D) It will burst

If a cell is placed in a hypertonic solution, it will likely shrink due to water moving out.

**Describe a real-world scenario where the process of osmosis is critical for cell function.**

**Osmosis is critical in processes like nutrient absorption in the intestines.**

## Part 3: Analysis, Evaluation, and Creation

**Which of the following correctly describes the relationship between the nucleus and ribosomes?**

undefined. A) Ribosomes are found inside the nucleus

**undefined. B) The nucleus directs ribosome production ✓**

undefined. C) Ribosomes produce the nucleus

undefined. D) The nucleus and ribosomes are unrelated

The nucleus directs ribosome production, which occurs in the nucleolus.

**Analyze the roles of the Golgi apparatus and lysosomes in protein processing and transport. Which statements are true? (Select all that apply)**

**undefined. A) The Golgi apparatus modifies proteins before they are transported ✓**

undefined. B) Lysosomes digest proteins for energy

**undefined. C) The Golgi apparatus packages proteins into vesicles ✓**

undefined. D) Lysosomes are involved in protein synthesis

The Golgi apparatus modifies and packages proteins, while lysosomes digest proteins.

**Which of the following scenarios would most likely disrupt cellular homeostasis?**

undefined. A) Increased production of ATP

**undefined. B) Loss of lysosomal function ✓**

undefined. C) Enhanced protein synthesis

undefined. D) Improved cell membrane integrity

Loss of lysosomal function would disrupt cellular homeostasis by affecting waste processing.

**Design an experiment to test the effects of temperature on enzyme activity within lysosomes. Describe your hypothesis, method, and expected results.**

**The experiment should outline how temperature affects enzyme activity, with expected results based on enzyme kinetics.**