ملخص أنواع الخلايا وأسئلة تدريبية

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التواصل الاجتماعي بحسب الصف التاسع					
صفحة المناهج الإماراتية على فيسبوك					

المزيد من الملفات بحسب الصف التاسع والمادة أحياء في الفصل الأول	
1	أسئلة درس التفاعلات الكيميائية والإنزيمات - بريدج

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Grade 9 Biology Study Guide: Basic Cell Types

Summary & Multiple Choice Practice Questions

1. Summary of Key Concepts

Common Characteristics of All Cells

- **Plasma Membrane:** A protective outer boundary that controls what enters and leaves the cell.
- **Genetic Material:** DNA/RNA that provides instructions for making necessary substances.
- **Energy Generation:** Cells break down nutrients/molecules to generate energy required for life.

Two Main Cell Types

- **Prokaryotic Cells:** Simpler and smaller cells without a nucleus or membrane-bound organelles. Genetic material floats freely inside the cell. Examples include bacteria.
- **Eukaryotic Cells:** Larger (1 to 100 times larger than prokaryotic cells) and more complex cells with a distinct nucleus containing DNA and specialized membrane-bound structures called organelles. Examples include plants, animals, fungi, and yeast.

Key Definitions

- **Nucleus:** A central membrane-bound organelle that holds the cell's DNA.
- **Organelles:** Specialized internal structures enclosed by membranes that carry out specific functions at the same time in different parts of the cell.

Origin of Cell Diversity

- **Evolutionary Origin:** Scientists believe eukaryotic cells evolved from prokaryotic cells millions of years ago through a process explained by the Endosymbiont Theory.
- **Endosymbiont Theory:** States that one prokaryotic cell began living inside another in a mutually beneficial (symbiotic) relationship, eventually evolving into eukaryotic cells with complex organelles.

Quick Comparison Table

Feature	Prokaryotic Cells	Eukaryotic Cells
Nucleus	Absent (No nucleus)	Present (DNA inside nucleus)
Organelles	No membrane-bound organelles	Has specialized organelles
Size	Smaller (Simpler structure)	10 to 100 times larger
Examples	Bacteria	Plants, Animals, Fungi, Yeast

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2. Practice Multiple Choice Questions

Q1. What structure is common to all cell types?

A) Nucleus

B) Plasma membrane

C) Mitochondria

D) Cell wall

Correct Answer: B) Plasma membrane

Q2. What is the main function of the plasma membrane?

A) To generate cell energy

B) To store genetic material

C) To control what enters and leaves the cell

D) To make proteins

Correct Answer: C) To control what enters and leaves the cell

Q3. Which type of cell is generally 1 to 100 times larger than prokaryotic cells?

A) Bacterial cell

B) Eukaryotic cell

C) Virus

D) Prokaryotic cell

Correct Answer: B) Eukaryotic cell

Q4. Where is the genetic material (DNA) contained in a eukaryotic cell?

A) Inside the nucleus

B) Floating freely in the cytoplasm

C) Outside the plasma membrane

D) Inside the ribosome

Correct Answer: A) Inside the nucleus

Q5. Which of the following organisms is an example of a prokaryote?

A) Yeast

B) Plant

C) Bacteria

D) Animal

Correct Answer: C) Bacteria

Q6. What are organelles?

A) The outer layers of all living organisms

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B) Specialized membrane-bound structures that perform specific functions

C) Types of bacteria found in soil

D) Molecules used to build the cell wall

Correct Answer: B) Specialized membrane-bound structures that perform specific functions

Q7. Which theory explains how eukaryotic cells evolved from prokaryotic cells?

A) Cell Theory

B) Endosymbiont Theory

C) Evolutionary Selection Theory

D) Atomic Theory

Correct Answer: B) Endosymbiont Theory

Q8. According to the Endosymbiont Theory, how did eukaryotic cells evolve?

A) One prokaryotic cell lived inside another in a mutually beneficial relationship

B) Cells split into smaller units over time

C) Organelles grew spontaneously outside the cell

D) Cells combined with viruses to form new structures

Correct Answer: A) One prokaryotic cell lived inside another in a mutually beneficial relationship

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