This is a Class 1 exam

Lebanon Evangelical School for Boys and Girls

Lebanon Evangelical School
for Boys and Girls Loueizeh - Baabda

Stage Exam 04

20-25JUN2025

Do NOT write in this box. Your MARK will be placed here.

Subject :	Life Science
Class :	8A, 8B, 8C and 8E
Teacher :	Hazar Al Gharib
Duration :	1 hour

Please write your answers on a separate sheet of paper NOT on the question sheet.

You are to answer the questions to this exam on : Lined paper

Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

I- Identify the letter of the choice that best completes or answers the statement. (1pt. each)

1. What is mitosis?
   A. One of two identical "sister" parts of a duplicated chromosome.
   B. Cell division in which the nucleus divides into nuclei containing the same number of chromosomes
   C. Cell subtraction in which the nucleus self-destructs.
   D. The region of chromosomes that holds the two sister chromatids together during mitosis.

2. When does a cell grow, perform its normal functions, and prepare for division?
   A. Meiosis
   B. G1 phase
   C. Interphase
   D. Cytokinesis

3. What is the first and longest phase of mitosis, during which the chromosomes become visible and the centrioles separate and take up positions on the opposite sides of the nucleus?
   A. Anaphase
   B. Telophase
   C. Prophase
   D. Metaphase

4. Which of the following is a definition for a centriole?
   A. Process of programmed cell death.
   B. The second growth phase of the cell cycle, consisting of the portion of interphase after DNA synthesis occurs.
   C. Protein structures which move the chromosomes during cell division.
   D. A tiny cylindrical organelle near the nucleus in animal cells, occurring in pairs and involved in the development of spindle fibers in cell division.

5. Which of the following is an explanation for a centromere?
   A. The region of the chromosome that holds the two sister chromatids together during mitosis.
   B. One of two identical "sister" parts of a duplicated chromosome.
   C. Process of programmed cell death
   D. The two identical "sister" parts of a duplicated chromosome.

6. How do multicellular organisms grow?

A. By the growth of the size of the cells.
B. Through eating food.
C. From sleeping a lot.
D. By making more cells.

7. Your cells are _____ to work in different levels of organization.

A. multiplied
B. specialized
C. stopped
D. forced

8. What is the order of the phases of mitosis?

A. TAMP
B. AMPT
C. PMAT
D. MAPT

II- Indicate whether the following sentences or statements are true or false. If false, change the underlined word or phrase to make the sentence or statement true. (1pt. each)

1. Cells spend the majority of their lives in mitotic phase.

2. Fruit fly body cells have 8 chromosomes. After mitosis, you would expect a resulting fruit fly daughter cell to have 8 chromosomes.

3. In mitosis, the resulting daughter cells are identical to the starting mother cell and non-identical to each other.

4. Unicellular organisms need to copy and divide their cells to grow the organism.

5. The count of embryonic stem cells is equal to the count of adult stem cells.

III- Put the right term for each given definition. (1pt. each)

1. A group of similar cells working together to perform a specific task.

2. The phase during which the DNA molecules condense into chromosomes.

3. The part of the cell cycle that forms two nuclei.

4. The cell from which all the cells of a multicellular organism are derived.

5. The stage of the cell cycle during which DNA molecules replicate.

IV- Read the following sentences and answer by <u>one or more than one</u> of the following terms: Unicellular Prokaryotes, Unicellular Eukaryotes and Multicellular Eukaryotes. (1 pt. each)

1. Undergo mitosis for growth, repair of damaged tissues, or replacement of dead cells.

2. They are made up of a cell that has a nucleus surrounded by a membrane and many other specialized organelles.

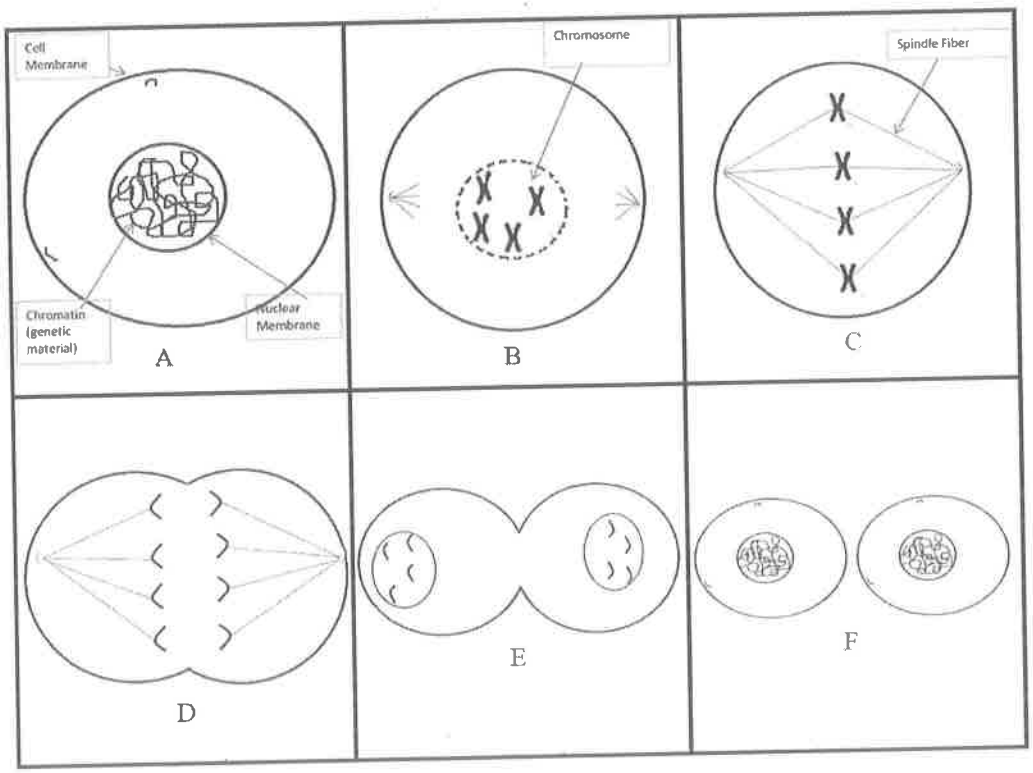
3. Don't reveal levels of organization.

4. Undergo cell differentiation.

5. Sexual reproduction is the most common among them.

V- Cell Cycle and Cell Division. (1pt. each)

The figure below represents cell cycle and division.



1. **Label** the phases represented in the figure (from A to E).

2. **Name** and **define** the stage represented by F.

3. Refer to the stage represented by F to **explain** why the cell shown in the figure is NOT a plant cell.

4. **Describe**, by referring to your knowledge and the figure, the changes in phase D.

5. **Indicate** the main difference between the genetic materials in A, B, and E by filling the following table with **YES** or **NO**. Note that you are not asked to copy the table on your answer sheet.

	Genetic material in A	**Genetic material in B**	**Genetic material in E**
DNA strands are long and thin	a.	b.	c.
DNA strands are condensed	d.	e.	f.
Genetic material is called chromatin	g.	h.	i.
Chromosomes are single stranded chromatids	j.	k.	l.
Identical chromosomes are held together by a centromere	m.	n.	o.

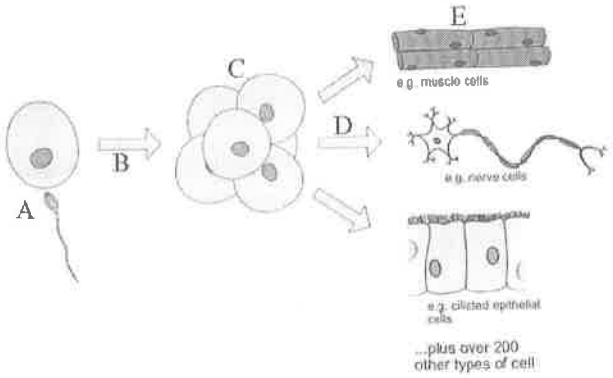
6. **Explain** the importance of cell division at the level of:

i. Unicellular organisms
ii. Multicellular organisms

VI- Cell Differentiation (1pt. each)

The figure aside shows a process happening in multicellular organisms and resulting in different types of cells.

1. Refer to the figure to match each of the letters (A to E) with the word or phrase, that best describes it, from the box below.

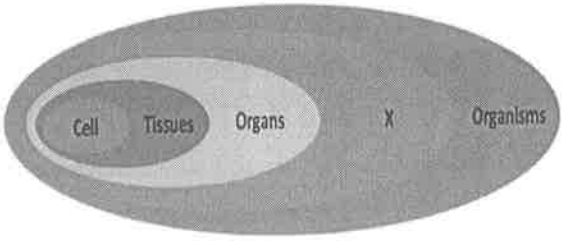


Differentiation – Fertilization – Specialized cells – Mitosis – Undifferentiated cells

2. **Explain** how the different types of cells represented in the figure and belonging to the same organism, have the same genetic material but still perform different jobs in the body.

VII- Levels of Organization (1pt. each)

The chart aside shows the relationships about levels of organization.



1. Which of the following statements is false?

   A. All living things are made of cells.
   B. An organism is an individual living form.
   C. Some organisms are made of only one cell.
   D. A leaf is an example of tissue in a plant.

2. Which structure represents an example of level X?

   A. Respiratory System
   B. Kidney
   C. Neuron
   D. Heart

3. **List** the main four types of tissues in humans and most animals.

4. Organs are sometimes shared by two or more organ systems in the body. **Give** an example of **one** human body organ and **two** organ systems to which this organ belongs.

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I. 1. B (8)
2. C
3. C
4. D
5. A
6. D
7. B
8. C

II. 1. False, interphase (8)
2. True
3. False, identical
4. to reproduce
5. False, is more than

III. 1. Tissue (5)
2. Prophase
3. mitosis
4. zygote
5. S stage.

IV. (5)
1. Multicellular Eukaryotes
2. Unicellular Eukaryotes
3. Unicellular Prokaryotes and Unicellular Eukaryotes
4. Multicellular Eukaryotes
5. Multicellular Eukaryotes

V. (5)
1. A. Interphase
B. Prophase
C. Metaphase
D. Anaphase
E. Telophase

2. Cytokinesis; it is the stage during which the cytoplasm of the cell divides and forms two new daughter cells. (2)

3. Since a cell plate didn't grow outward until new cells formed. (1)

4. Spindle fibers begin to shorten, pulling sister chromatids toward opposite sides of the cell. The cell begings to Lengthen. (2)

7,5

5. a. Yes d. no g. yes j. No m. no
b. no e. Yes h. no k. no n. Yes
c. no f. yes i. no l. Yes o. no

6. i. It is a form of reproduction (1)
ii. It enhances growth, replaces dead cells, and repairs damaged tissues. (1.5)

VI. 1. i. D (5)
ii. A
iii. E
iv. B
v. C

2. because they use different parts of the instructions on the chromosomes. (1)

VII. 1. D (1)
2. A (1)
3. Connective - muscular - nervous - epithelial (2)
4. pancreas belongs to the digestive and endocrine systems. (2)