This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

Stage Exam 06

13JUN2024 and 14JUN2024

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

Subject :	Life Science
Class :	7A, 7B, 7C and 7E
Teacher :	Hazar Al Gharib
Duration :	1 hour

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

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. Most of the energy used by life on Earth comes from the

A. rotation of Earth.
B. weather.
C. Moon.
D. Sun.

2. Where do plants get the carbon dioxide needed for photosynthesis?

A. Water
B. The Sun
C. The air
D. Glucose

3. Chlorophyll is green because

A. it absorbs green wavelengths of light.
B. it absorbs blue and yellow wavelengths which make green.
C. it reflects green wavelengths of light.
D. of an optical illusion caused by transmitted light.

4. Long-day plants

A. require less than 10 to 12 hours of darkness to flower.
B. require longer light period for flowering.
C. include carnations.
D. include all of the above.

5. Plants produce _____ and _____ in photosynthesis.

A. carbon dioxide and oxygen
B. oxygen and glucose
C. glucose and carbon dioxide
D. nitrogen and glucose

6. What is ATP?

A. An energy source for plants
B. A compound formed in the chloroplasts
C. An energy source for animals
D. An energy source for both plants and animals

7. Where does cellular respiration occur?

A. In the cytoplasm and mitochondria
B. In chloroplasts
C. In mitochondria
D. In the nucleus

8. Movement of body parts are common in animals, but in plants, movements are seen in the form of

A. bending.
B. bending and twisting.
C. elongation of certain parts.
D. bending, twisting, and elongation of certain parts.

9. _____ is the phenomenon of growth of plant organs in response to chemicals.

A. Phototropism
B. Hydrotropism
C. Chemotropism
D. Gravitropism

10. Ethylene is used for

A. retarding ripening of tomatoes.
B. speeding up of ripening of fruits.
C. slowing down the ripening of apples.
D. both B and C.

II- Stimulus and Response. (1pt. each)

For every stimulus, there is a response.

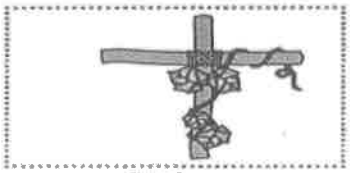
1. Define the following scientific terms:

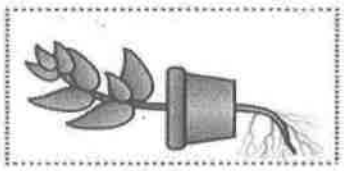
a) Stimulus

b) Tropism

2. Identify the stimulus and tropism that are best described by each of the following figures.


Figure 1


Figure 3


Figure 2

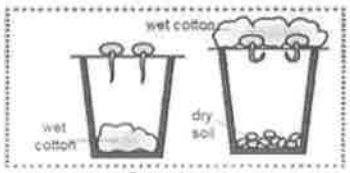


Figure 4

a) Stimulus in figure 1
b) Tropism in figure 1
c) Stimulus in figure 2
d) Tropism in figure 2
e) Stimulus in figure 3
f) Tropism in figure 3
g) Stimulus in figure 4
h) Tropism in figure 4

i) Infer why the plant shown in figure 2 is growing at an angle.

j) Name the special climbing plant structures responsible for the tropism in figure 3.

III- Fill in the blanks with the word "positive" or "negative". (1pt. each)

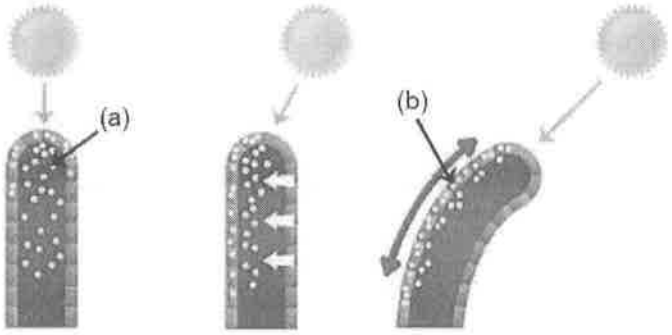
The shoot system, consisting of the plant structures growing above ground, shows __1__ phototropism, __2__ gravitropism, and __3__ hydrotropism.

The roots show __4__ phototropism, __5__ gravitropism, __6__ hydrotropism, and __7__ thigmotropism.

In vine plants, tendrils show __8__ thigmotropism.

IV- Plant Hormones. (1pt. each)

The figure aside shows the effect of one of the plant hormones on the growth of a plant.



1. Name the plant hormone, labelled (a) in the figure.

2. Indicate the effect of this plant hormone on the growth of the plant, labelled (b) in the figure.

3. Explain how this plant hormone, labelled (a) in the figure, is responsible for phototropism.

4. Fill in the table with the effects of the plant hormones on the growth of plants.

Plant hormone	Effect of plant hormone on the growth of the plant
Gibberellins	a)
Ethylene	b)
Cytokinins	c)

V- Humans and Plant Responses. (1pt. each)

Cucumbers are climbing or scrambling plants that can either be grown up supports (climbing) or allowed to trail on the ground (scrambling).


Climbing Cucumbers


Scrambling Cucumbers

1. Indicate whether growing scrambling cucumbers or climbing cucumbers is more beneficial. Explain your answer.

Ripe bananas are yellow in color and often feature brown or black spots on their surface. As compared to unripe bananas, ripe bananas are sweeter and better in taste.


Unripened Bananas

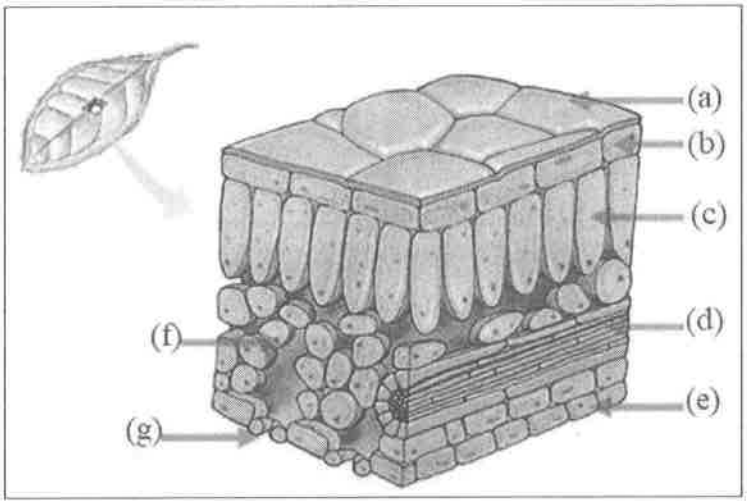
2. Explain the benefit from ripening bananas in response to ethylene.

VI- **Connect photosynthesis and cellular respiration with their characteristics by filling in each table cell with the word "photosynthesis", "cellular respiration", or "both".** ***(1pt. each)***

Characteristic	Photosynthesis, Cellular respiration, or Both
Occurs in mitochondria	1.
Its reactants are glucose and oxygen	2.
Captures and stores energy	3.
Occurs in green plant cells	4.
Its end products are glucose and oxygen	5.
Releases energy from food	6.
Is an energy process	7.
Occurs in all cells	8.
Its end products are carbon dioxide, water and ATP	9.
Occurs in chloroplasts	10.
Its reactants are light energy, carbon dioxide and water	11.
Involves the exchange of gases	12.

VII- Leaves and Photosynthesis. (1pt. each)

The figure aside shows a cross section in a plant leaf.



1. Label the parts of the leaf shown in the figure (from a to f).

2.

a. In which leaf layer are the small openings located?

b. What is their main function?

3. What is the main function of the waxy covering of a leaf?

4. Explain why photosynthesis mainly occurs in the cells labelled (c) and (f).

5. Indicate the importance of the leaf part labelled (d).

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I. 1. D 2. C 3. C 4. D 5. B
6. D 7. A 8. D 9. C 10. B 10pts.

II 1. a) Stimulus is any change in the surrounding environment.

b) Tropism is the response of a plant to a stimulus.

2. a) Sunlight b) Phototropism
c) gravity d) gravitropism
e) touch f) Thigmotropism
g) water h) hydrotropism

i) The plant has been turned on its side, so the stem tip is trying to grow up, away from gravity, and the root tip is trying to grow downward, toward gravity.

j) Tendrils 12pts.

III. 1. Positive 5. positive
2. negative 6. positive
3. negative 7. negative
4. negative 8. positive 8pts.

IV. 1. Auxins
2. Auxins cause the elongation of stem cells.
3. Since auxins concentrate on the dark

side of a plant's stem, these cells grow longer than the stem cells on the sunnier side. This causes the stem of the plant to bend toward light.

4. a) cause cell division and elongation
b) stimulates the ripening of fruits.
c) increase cell division and slow down the aging process of flowers and fruits.

6pts.

V. 1. Climbing cucumbers is more beneficial because in this way they will receive more sunlight and this will enhance a faster and better growth.

2. Bananas can be picked and shipped while still green and then be treated with ethylene to ripen.

2pts.

VI. 1. Cellular respiration
2. Cellular respiration
3. Photosynthesis
4. Photosynthesis
5. Photosynthesis
6. Cellular respiration
7. Both
8. Cellular respiration
9. Cellular respiration
10. Photosynthesis
11. Photosynthesis
12. Both

12pts.

VII. 1. a) Cuticle
b) Upper epidermal cells
c) Palisade mesophyll cells
d) Vascular tissue
e) lower epidermal cells
f) spongy mesophyll cells
g) Stomata

2. a. lower epidermis
b. Gases enter and leave the leaf through them.

3. It minimizes water loss and prevents pathogen entery.

4. Since they contain chloroplasts, the organelles where photosynthesis occurs.

5. The vascular tissue pumps water and minerals to all leaf cells and carries food from the leaf to all cell parts.

12 pts.