

الإدارة المركزية للتعليم العام

مستشار مادة العلوم



Weekly Home Work

Week (3)

Integrated Science

Secondary one

Second Term 2026

مراجعة

أ / مجدي عبد اللطيف

د / حسين عبد الرحمن بخات

إشراف عام

د / هالة عبد السلام خفاجي

رئيس الإدارة المركزية للتعليم العام

والمشرف على مستشاري

المواد الدراسية

إعداد

أ / سحر ناصف موجه عام الإسكندرية

أ / عبد المسيح حزين موجه عام الأقصر

إشراف

د / عزيزة رجب خليفة

مستشار مادة العلوم

Lesson Two: Biological Processes in Living Organisms and the Stability of the Biosphere (part one)

Choose the correct answer

- 1- The primary function of xylem tissue in plants is to transport**

A) Products of photosynthesis B) Oxygen
C) Water and minerals D) Energy
- 2- During summer , why does the process of transpiration become more important for the plant?**

A) Because it helps cool the leaves
B) Because it increases sugar storage
C) Because it reduces salt absorption
D) Because it stops photosynthesis
- 3- The appearance of air bubbles inside xylem vessels causes**

A) Increased transpiration rate
B) Increased speed of water ascent
C) Salt accumulation in leaves
D) Obstruction of the water column movement upwards
- 4- The system responsible for transporting oxygen and nutrients in the human body is the**

A) Respiratory system B) Circulatory system
C) Excretory system D) Digestive system
- 5- Which of the following agricultural applications benefits most from Micro-CT results?**

A) Improving protein productivity
B) Increasing cellular respiration rate
C) Developing drought resistance strategies
D) Enhancing chlorophyll formation

- 6- The pulmonary circulation begins with
- A) Oxygenated blood from the left ventricle
 - B) Deoxygenated blood from the right ventricle
 - C) Deoxygenated blood from the left ventricle
 - D) Oxygenated blood from the right ventricle
- 7- In which blood vessels does the actual gas exchange occur?
- A) Aorta
 - B) Pulmonary artery
 - C) Pulmonary veins
 - D) Blood capillaries
- 8- Which of the following processes is responsible for converting potential energy in food into active energy?
- A) Transport
 - B) Respiration
 - C) Excretion
 - D) Photosynthesis
- 9- The renal denervation technique is a physical application used to treat
- A) Shortness of breath
 - B) Diabetes mellitus
 - C) Visual weakness
 - D) High blood pressure
- 10- A decrease in blood density leads to
- A) Increased blood pressure
 - B) Cardiac stopped
 - C) Decreased effort required to pump blood
 - D) Oxygen accumulation
- 11- Anaerobic respiration occurs within the cell inside the.....
- A) Cytoplasm
 - B) Mitochondria
 - C) Nucleus
 - D) Sap vacuole

12 Why is aerobic respiration considered more efficient than anaerobic respiration?

- A) Because it produces CO_2
- B) Because it occurs only in the cytoplasm
- C) Because it produces a larger amount of energy (ATP)
- D) Because it does not require enzymes

13 The accumulation of lactic acid in muscles leads to

- A) Products of photosynthesis
- B) Feeling of muscle fatigue(tired)
- C) decreases in water and minerals
- D) Increased muscle activity



Essay

1- **Explain** : The ability of giant trees to lift water to biggest heights.

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2- **Explain** : The importance of the presence of companion cells associated with sieve tubes.

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3- **Give reasons** : The presence of valves in the heart.

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4- **Trace** : the pathway of chemical energy stored in glucose during anaerobic.

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Weekly Assessment

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د/ عزيزة رجب خليفة

مستشار مادة العلوم

**Lesson Two: Biological Processes in Living Organisms
and the Stability of the Biosphere (part one)**

Model (A)

Choose the correct answer:

- 1- If the leaves of a pine tree are coated with a waxy substance that blocks the stomata, the first process to stop will be
 - A) Lignin production
 - B) Upward movement of water to the leaves
 - C) Water flow in the phloem
 - D) Food storage

- 2- Modern technologies, such as Micro-CT Scanning (Micro-X-ray Computed Tomography), are used to
 - A) Accurately image water and food transport mechanisms
 - B) Kill pests
 - c) Increase growth rate
 - D) Stimulate respiration

- 3- Blood pressure in the arteries is at its highest level during
 - A) Ventricular diastole (relaxation)
 - B) Sleep
 - C) When blood reaches the veins
 - D) Ventricular systole (contraction)

- 4- If a substance is innovated to increase the efficiency of oxygen transport to the mitochondria, it is expected to
 - A) Increase lactic acid fermentation
 - B) Aerobic respiration switches to anaerobic respiration
 - C) Increase the efficient in energy production
 - D) Stop ATP production

Essay Question

- 5- **Give reasons for:** Hemoglobin affects blood viscosity .

**Lesson Two: Biological Processes in Living Organisms
and the Stability of the Biosphere (part one)**

Model (B)

Choose the correct answer:

- 1- **Blood viscosity, as a physical property, mainly depends on**
 - A) affects the effort required to pump the blood
 - B) Concentration of protein and red blood cells
 - C) Oxygen percentage
 - D) Adhesion force

- 2- **The Cohesion-Adhesion theory depends primarily on the properties of ...**
 - A) Water molecules
 - B) Food molecules
 - C) Oxygen
 - D) Carbon dioxide

- 3- **Anaerobic respiration in human muscles during strenuous exercise results in the accumulation of**
 - A) Ethyl alcohol
 - B) Glucose
 - C) Glycogen
 - D) Lactic acid

- 4- **Storing sugars in roots during winter and transporting them to leaves in spring proves that transport in the phloem**
 - A) Depends on gravity
 - B) Occurs in two directions (bidirectional)
 - C) Occurs from bottom to top only
 - D) Stops in extreme cold

Essay Question

- 5- **Explain:** The presence of valves inside the heart contributes to maintaining the efficiency of blood circulation .

Lesson Two: Biological Processes in Living Organisms
and the Stability of the Biosphere (part one)

Model (C)

Choose the correct answer:

- 1- **Damage to the phloem in a tree leads to**
 - A) Roots drying out due to lack of water
 - B) Death of roots due to lack of food supply
 - C) Increased salt absorption
 - D) Stopping of transpiration

- 2- **Which of the following processes is responsible for converting potential energy in food into active energy?**
 - A) Photosynthesis
 - B) Excretion
 - C) Respiration
 - D) Transport

- 3- **Which of the following factors leads to an "increase" in arterial blood pressure?**
 - A) Increased resistance of arterial walls
 - B) widening of blood vessels
 - C) Decrease in blood volume
 - D) Slow heart rate

- 4- **Anaerobic fermentation in yeast cells produces**
 - A) Oxygen
 - B) Water only
 - C) Lactic acid
 - D) Ethanol

Essay Question

- 5- Explain: The importance of lignin in xylem vessels for tall plants such as trees .