

بنك أسئلة الوحدة الأولى في الطاقة الخلوية



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف الحادي عشر المتقدم ← أحياء ← الفصل الأول ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 07:32:50 2026-10-20

ملفات اكتب للمعلم اكتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل
منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس

المزيد من مادة
أحياء:

إعداد: Adel Rania

التواصل الاجتماعي بحسب الصف الحادي عشر المتقدم



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الحادي عشر المتقدم والمادة أحياء في الفصل الأول

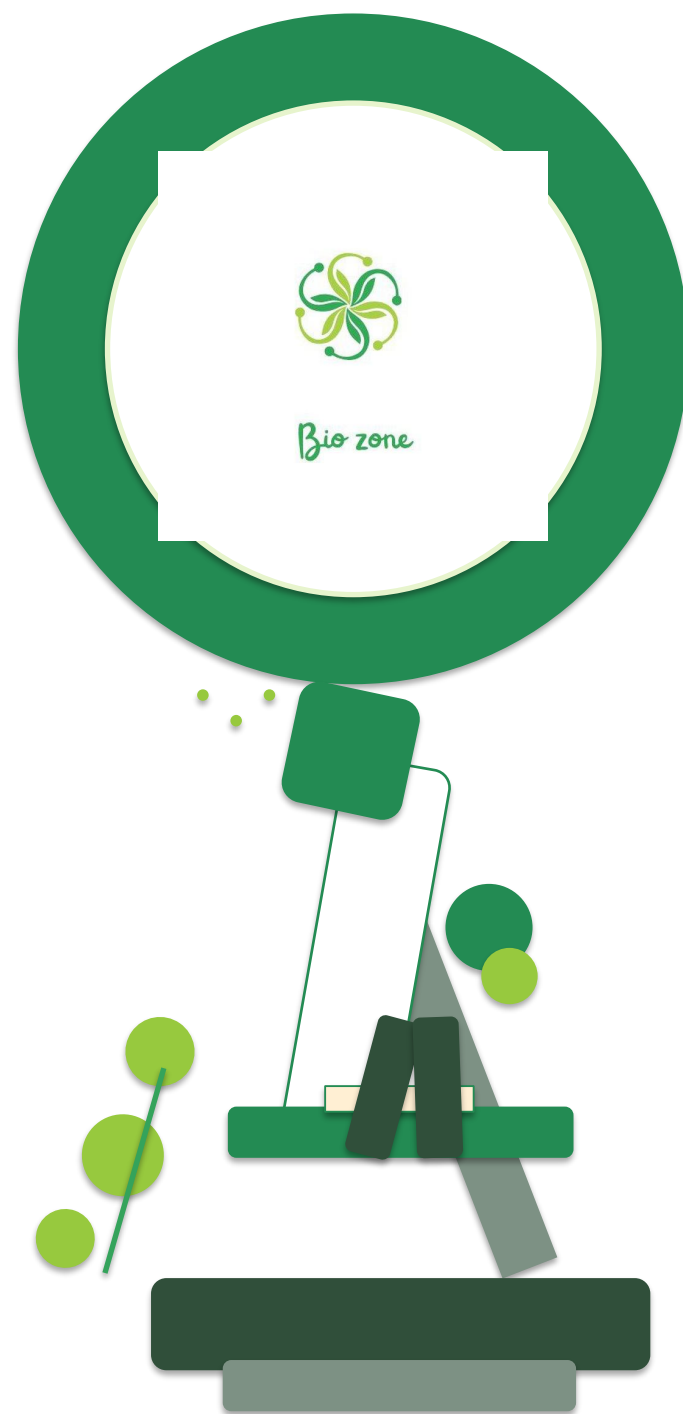
الطاقة الخلوية وكيف تحصل المخلوقات الحية على الطاقة

1

تحميل تطبيق المناهج للهواتف الذكية

تطبيق المناهج على Play Google (أندرويد)

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BIO

بنك أسئلة

صف حادي عشر متقدم
أنسباير الوحدة الأولى



DATE

19/ 10 / 2026



TEACHER

Rania
Adel



GRADE

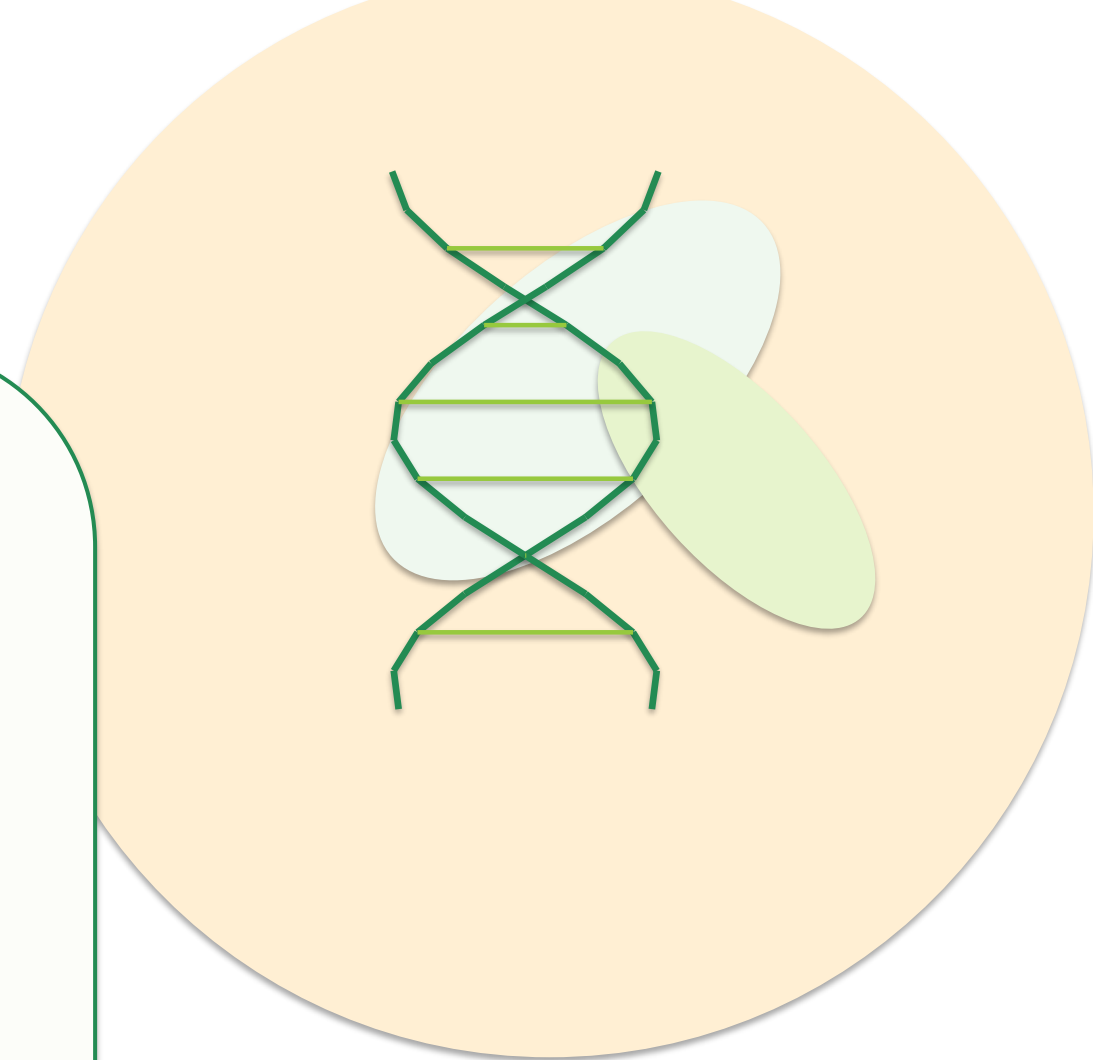
حادي عشر
متقدم أنسباير



SUBJECT

Biology

Learn • Understand • Apply



UNSOLVED PRACTICE QUESTIONS

Complete all questions before checking the Answer Key
at the end of this presentation.

Multiple-Choice Questions (1/6)

1. Which law of thermodynamics states that energy can be converted from one form to another, but it cannot be created nor destroyed?
A) First law of thermodynamics
B) Second law of thermodynamics
C) Third law of thermodynamics
D) Law of entropy
2. The second law of thermodynamics states that energy cannot be converted without the loss of usable energy, generally in the form of:
A) Light energy
B) Chemical energy
C) Thermal energy
D) Mechanical energy
3. Organisms that make their own food, such as plants, are classified as:
A) Heterotrophs
B) Autotrophs
C) Decomposers
D) Scavengers
4. All of the chemical reactions in a cell are collectively referred to as the cell's:
A) Thermodynamics
B) Homeostasis
C) Metabolism
D) Photosynthesis
5. Which type of metabolic pathway releases energy by breaking down larger molecules into smaller molecules?
A) Anabolic pathway
B) Catabolic pathway
C) Photosynthetic pathway
D) Endergonic pathway

is comprised of an adenine
r, and how many phosphate

A) Catabolic
B) Anabolic
C) Both catabolic and anabolic
D) Neither catabolic nor anabolic

A) Oxygen
B) Carbon dioxide
C) Energy
D) Sunlight

A) NADP+

B) DNA

C) Glucose

D) Adenosine triphosphate (ATP)

A) One
B) Two
C) Three
D) Four

A) Adenine base and ribose sugar
B) Ribose sugar and first phosphate group
C) First and second phosphate groups
D) Second and third phosphate groups

Multiple-Choice Questions (3/6)

11. Which of the following is the correct overall chemical equation for photosynthesis?

- A) $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
 B) $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{Energy}$
 C) $6\text{O}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{CO}_2$
 D) $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{CO}_2 \rightarrow 6\text{O}_2 + 6\text{H}_2\text{O} + \text{Energy}$

12. In a chloroplast, the flattened, saclike membranes where light-dependent reactions take place are called:

- A) Stroma
B) Mitochondria
C) Thylakoids
D) Matrix

13. Stacks of thylakoids inside the chloroplast are referred to as:

- A) Stroma
B) Grana
C) Pigments
D) Vesicles

14. The fluid-filled space outside the grana, where the light-independent reactions occur, is the:

- A) Cytoplasm
- B) Thylakoid space
- C) Matrix
- D) Stroma

15. The major light-absorbing pigments in plants that reflect light in the green region of the spectrum are:

- A) Carotenoids
- B) Chlorophylls
- C) Anthocyanins
- D) Rubisco

Photosynthesis, in which energy is used to produce molecules such as glucose, is called the:

18. The mechanism by which the flow of electrons is called:
- A) Fermentation
 - B) Glycolysis
 - C) Chemiosmosis
 - D) Carbon fixation
- Bio Zone** | Prepared by Rania A

Steps of glycolysis occur within the cytoplasm of the cell.

A single molecule of glucose is broken down into two molecules of pyruvate.

- 23.** Cellular respiration occurs during glycolysis and aerobic respiration. It is classified as:
- A) An aerobic process
 - B) An anaerobic process
 - C) A light-dependent process
 - D) A light-independent process
- Bio Zone** | Prepared by Rania Ade

Multiple-Choice Questions (6/6)

26. What is the net yield of ATP from the glycolysis of one glucose molecule?

- A) 1 ATP
- B) 2 ATP
- C) 4 ATP
- D) 36 ATP

27. The series of reactions in which pyruvate is broken down into carbon dioxide is known as the:

- A) Calvin cycle
- B) Krebs cycle
- C) Lactic acid cycle
- D) CAM pathway

28. Where does the Krebs cycle take place in eukaryotes?

- A) Cytoplasm
- B) Thylakoid membrane
- C) Mitochondrial matrix
- D) Stroma

29. In cellular respiration, what is the final electron acceptor in the electron transport chain?

- A) Carbon dioxide
- B) Water
- C) NAD⁺
- D) Oxygen

30. When oxygen is low or absent, some cells can produce a limited amount of ATP through an anaerobic pathway known as:

- A) Fermentation
- B) Chemiosmosis
- C) The Calvin cycle
- D) Aerobic respiration

Fill-in-the-Blank Questions

- 41.** The first law of thermodynamics is the law of conservation of energy, which states that energy can be converted from one form to another, but it cannot be _____ nor destroyed.
- 42.** Energy continually flows between organisms; _____ is the anabolic pathway in which light energy is converted to stored chemical energy.
- 43.** Light-absorbing colored molecules called _____ are found in the thylakoid membranes of chloroplasts.
- 44.** Prior to the Krebs cycle, pyruvate reacts with coenzyme A (CoA) to form a 2-carbon intermediate called _____.
- 45.** In _____, enzymes convert the pyruvate made during glycolysis to lactic acid, transferring high-energy electrons and protons from NADH.

ANSWER KEY

Model answers and correct options for all questions.

Answer Key: Multiple-Choice Questions

- | | | |
|--------------|--------------|--------------|
| 1. A | 11. A | 21. B |
| 2. C | 12. C | 22. C |
| 3. B | 13. B | 23. B |
| 4. C | 14. D | 24. D |
| 5. B | 15. B | 25. A |
| 6. B | 16. A | 26. B |
| 7. C | 17. B | 27. B |
| 8. D | 18. C | 28. C |
| 9. C | 19. C | 29. D |
| 10. D | 20. B | 30. A |

- 
36. False (They take place in the cytoplasm.)
37. True
38. True
39. True
40. False (Lactic acid fermentation occurs in skeletal muscles and occurs in yeast.)
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Answer Key: Short-Answer Questions

- 46.** ATP (Adenosine triphosphate) consists of an adenine base, a ribose sugar, and three phosphate groups. Energy is stored in the phosphate bonds. It releases energy when the bond between the second and third phosphate groups is broken, forming ADP.
- 47.** Catabolic pathways release energy by breaking down larger molecules into smaller ones (e.g., Cellular respiration). Anabolic pathways use energy to build larger molecules from smaller ones (e.g., Photosynthesis).
- 48.** Water splits during the light reactions (at photosystem II) to release electrons, which replace those lost by pigments. This splitting also provides protons (H^+) to drive ATP synthesis and releases oxygen as a byproduct.
- 49.** C₄ plants keep their stomata closed during hot days and fix carbon into four-carbon compounds in specialized cells. CAM plants allow CO₂ to enter leaves only at night, fixing it into organic compounds that are released for the Calvin cycle during the day.
- 50.** Aerobic processes require oxygen (e.g., Krebs cycle, electron transport), while anaerobic processes do not require oxygen. Glycolysis is an anaerobic process that occurs in the cytoplasm before aerobic respiration continues in the mitochondria.



Bio zone

Teacher Rania Adel