

حصة التوقعات النهائية



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف الثاني عشر المتقدم ← علوم ← الفصل الثالث ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 09:23:18 2026-07-08

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

المزيد من مادة
علوم:

إعداد: عمر

التواصل الاجتماعي بحسب الصف الثاني عشر المتقدم



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الثاني عشر المتقدم والمادة علوم في الفصل الثالث

حصة التوقعات النهائية

1

Mendelian Genetics and Genetic Recombination

2

مراجعة هيكل الأحياء

3

هيكل الامتحان النهائي 2026م

4

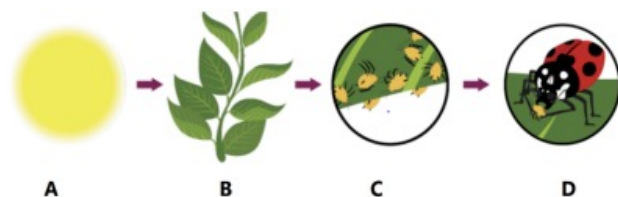
جهاز المناعة مسببات الأمراض وأنواع المناعة واضطراباتها

5



حصة التوقعات النهائية (C) 12ADV

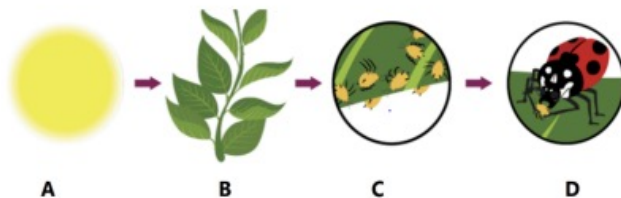
In the figure below, almost all the energy in living organisms originates from the Sun. Which of the following statements is true **regarding the plants' leaves**?

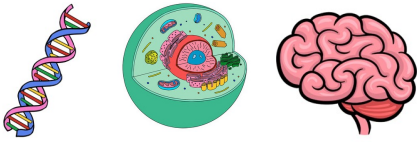


- a. They represent the energy level that depends on other organisms as a source of food.
- b. They represent the energy level that has the least amount of usable energy.
- c. They represent the energy level with the highest entropy.
- d. They represent the energy level that has the highest amount of usable energy.

The food chain in the figure below is a clear example of the laws of thermodynamics. Which of the following refers to an **organism that absorbs energy from its environment** and relies on the anabolic pathway to produce large molecules from small molecules?

- a) C only
- b) B only
- c) A and C
- d) B and C





Laws of Thermodynamics

- **First Law**—The Law of Conservation of Energy: Energy can be converted from one form to another, but it cannot be created or destroyed.
- **Second Law**: Energy cannot be converted without the loss of usable energy; that is, **entropy—disorder or unusable energy—**

Autotrophs and Heterotrophs

- Directly or indirectly, nearly all the energy for life comes from the Sun.
- Autotrophs make their own food, either with energy from the Sun or from inorganic substances.
- Heterotrophs ingest food to obtain energy.

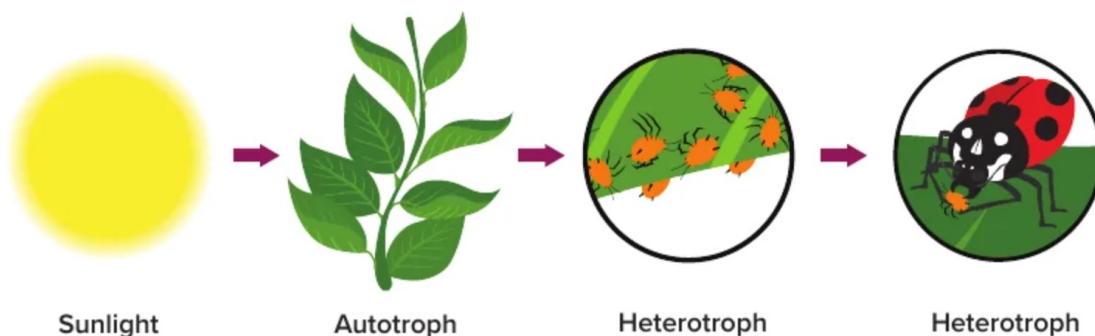
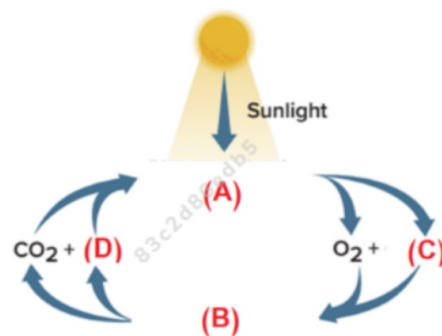


Figure 2 Almost all the energy in living organisms originates from the Sun, and energy flows from autotrophs to heterotrophs.



In an ecosystem, photosynthesis and cellular respiration form an integrated cycle and the sun is the primary source of most of the energy. Which of the following best describes the process labelled with the **letter A**?

- A catabolic process that takes place in autotrophs.
- A catabolic process takes place in heterotrophs.
- An anabolic process that takes place in autotrophs.
- An anabolic process that takes place in heterotrophs.



Metabolism

- All of the chemical reactions in a cell are referred to as the cell's metabolism.
- A series of chemical reactions in which the product of one is the substrate for the next is called a metabolic pathway.

Photosynthesis: **anabolic** pathway in which light energy from the Sun is converted to stored chemical energy for use by the cell

Cellular respiration: **catabolic** pathway in which organic molecules are broken down to release energy for use by the cell

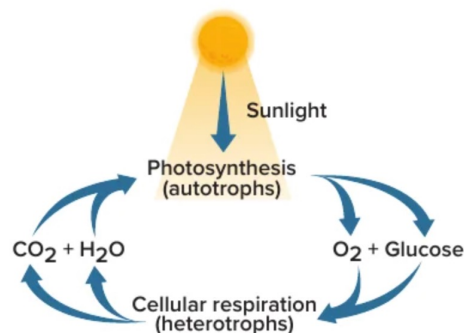
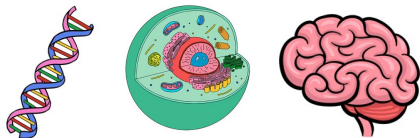


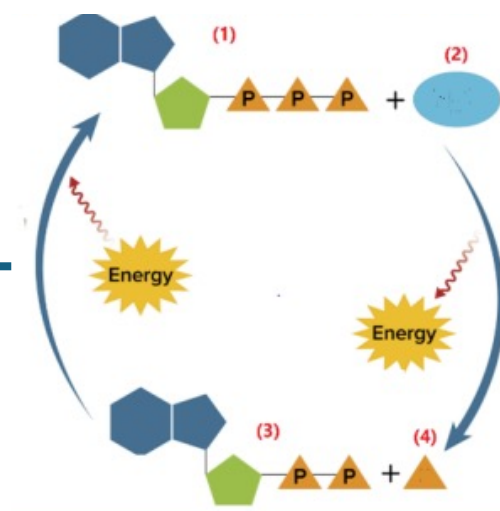
Figure 3 Photosynthesis and cellular respiration provide most of the energy for life processes.





In living organisms, chemical energy is stored in biological molecules and can be converted to other forms of energy when needed as shown in the figure below. Which of the following is True regarding the **compound (1)**?

- The compound breaks down to ATP and phosphate group.
- The compound will be destroyed permanently and cannot be restored.
- When the bond between the second and third phosphate group breaks, energy absorbed.
- This compound will be used as energy storage.



The figure below shows the breakdown of ATP, which of the following is an incorrect **labeling**?

- (1) ATP, (2) H_2O
- (3) ADP, (4) P
- (3) ADP, (2) H_2O
- (2) AMP, (1) ATP

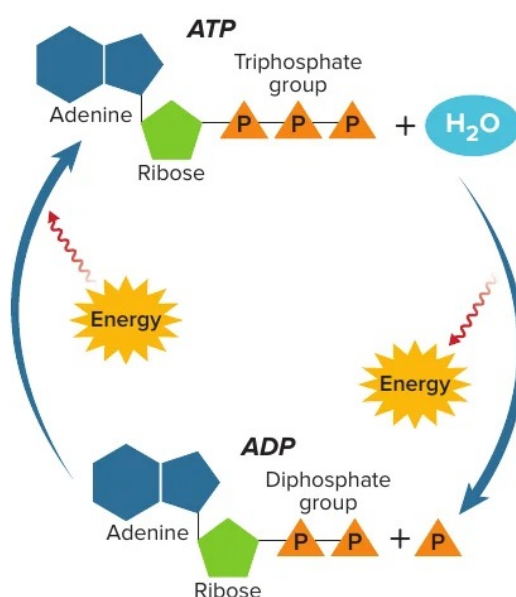
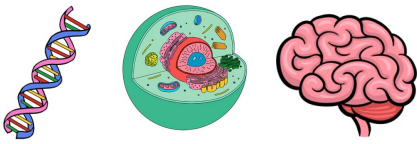


Figure 4 The breakdown of ATP releases energy for powering cellular activities in organisms.





Phase one: Light reaction

- **Light absorption** is the **first step** in photosynthesis. Plants have organelles that absorb light energy. After light is captured, **ATP and NADPH are produced**. These are used in the next phase.

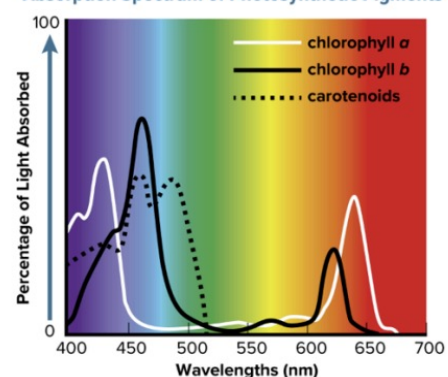
Use the figure below to answer the question: why plant parts that contain chlorophyll appear green to the human eye?

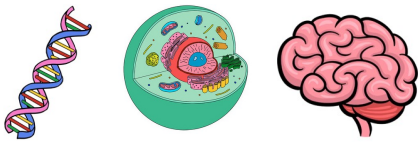
- Chlorophylls absorb light in the yellow region of the visible light spectrum.
- Chlorophylls reflect light in the violet-blue region of the visible light spectrum.
- Chlorophylls absorb light in the green region of the visible light spectrum.
- Chlorophylls reflect light in the green region of the visible light spectrum.

According to Figure 6, chlorophyll a absorbs light most strongly in **which regions?**

- Green and yellow
- Blue-violet and red
- Yellow and orange
- Green only

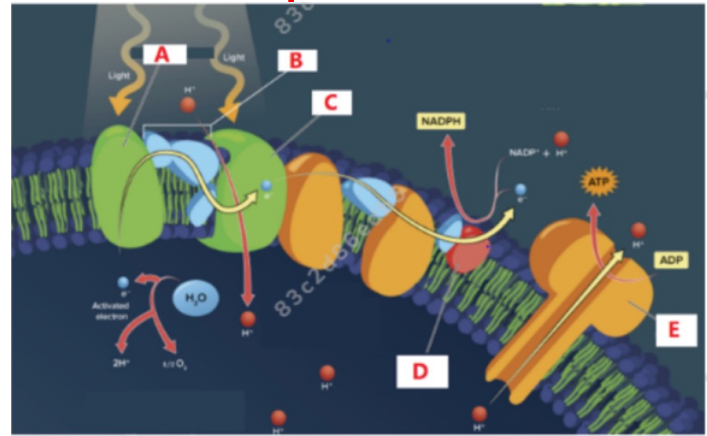
Absorption Spectrum of Photosynthetic Pigments



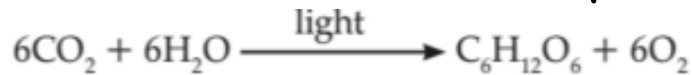


The figure below shows the electron transport in light reactions of photosynthesis. Which letter of the following refers to the **final electron acceptor**?

- a. E
- b. C
- c. B
- d. D



The equation below represents the reactants and the products of photosynthesis:

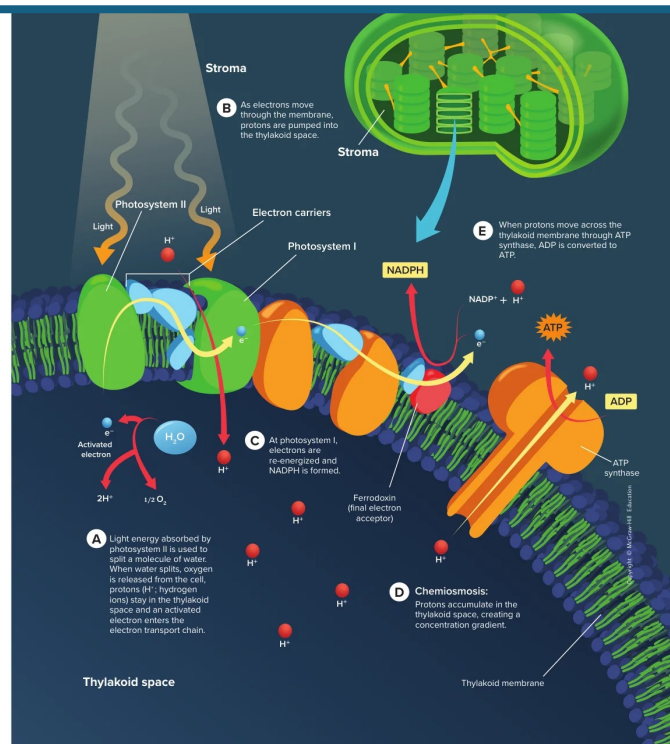


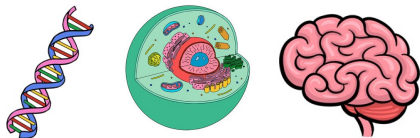
Which of the following molecules' breakage is essential **for initiating** the chemiosmosis process?

- a. O_2
- b. CO_2
- c. H_2O
- d. $\text{C}_6\text{H}_{12}\text{O}_6$

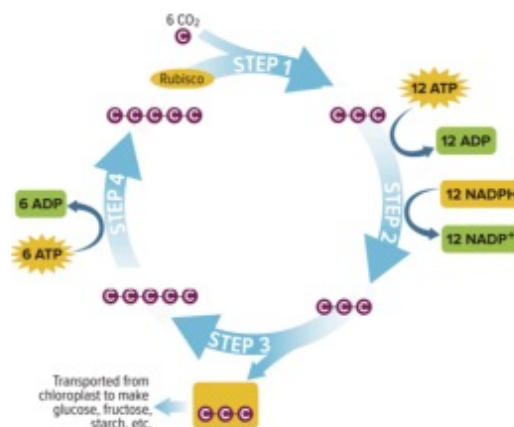
Get It?

Summarize the function of water during chemiosmosis.





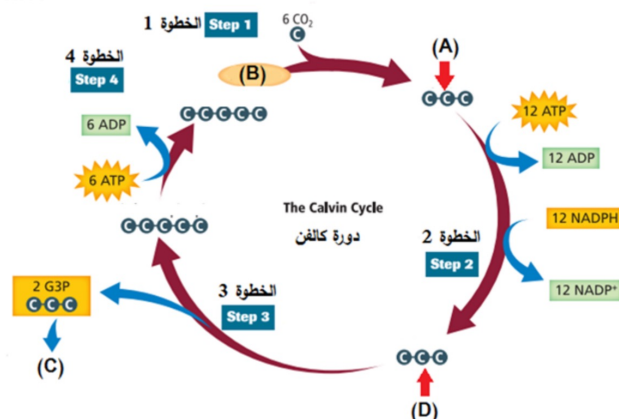
Which of the following is the right order for molecules **that are produced** in the Calvin cycle starting from CO₂ fixation?



- Ribulose 1, 5-bisphosphates (RuBP) , 3- phosphoglycerate (3-PGA) , glyceraldehyde 3- phosphate
- 3- phosphoglycerate (3-PGA) , glyceraldehyde 3- phosphate, Ribulose 1, 5-bisphosphates (RuBP)
- Glyceraldehyde 3- phosphate, Ribulose 1, 5-bisphosphates (RuBP) , 3- phosphoglycerate (3-PGA)
- 3- phosphoglycerate (3-PGA) , Ribulose 1, 5-bisphosphates (RuBP) , glyceraldehyde 3- phosphate

The figure below shows Calvin's cycle, study it and answer the question: **which letter** of the following refers to the compound that will be **transported from chloroplast to make glucose, fructose, and starches?**

- A
- B
- C
- D



Which of the following equations describes the **second step of the Calvin cycle?**

- Ribulose 1, 5-bisphosphate+ ATP + NADPH → Glyceraldehyde 3 phosphate (G3P)
- Glyceraldehyde 3 phosphate (G3P) + ATP + NADPH → 3 phosphoglycerate (3-PGA)
- 3 phosphoglycerate (3-PGA) + ATP + NADPH → Glyceraldehyde 3 phosphate (G3P)
- 3 phosphoglycerate (3-PGA) → ATP + NADPH + Glyceraldehyde 3 phosphate (G3P)



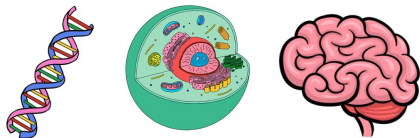


Which of the following plants **does not follow the CAM pathway** to maximize photosynthetic activity?

- a. Pineapple
- b. Cactus
- c. Orchids
- d. Sugarcane

C ₄ plants	CAM plants
Fix carbon dioxide into four carbon C ₄ .	Called crassulacean acid metabolism (CAM) pathway
Have structural modifications in the arrangement of cells in the leaves.	Occurs in plants that live in environments where access to water is limited (deserts, salt marshes)
Are able to make glucose in different cells.	At night, CO ₂ fix into organic compounds, During the day, CO ₂ is released from these compounds and enters the Calvin cycle
Keep their stomata closed during hot days.	Are able to make glucose at different time of the day
Ex: Corn and sugarcane.	Ex: Pineapples, orchids and cactus

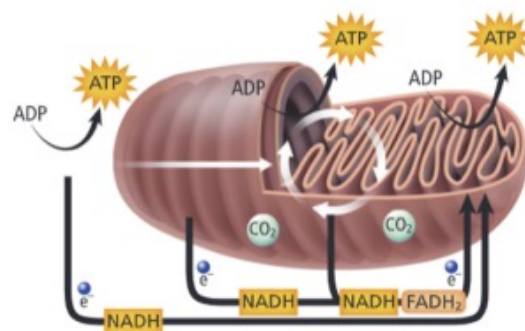




The figure below shows cellular respiration.

Which of the following refers to **anaerobic process**?

- Glycolysis
- Krebs cycle
- Electron transport chain
- Chemiosmosis



Which substance enters cellular respiration as a reactant according to the equation?

- Carbon dioxide
- ATP
- Glucose
- NADH



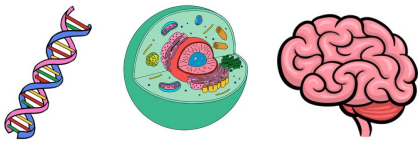
Overview of Cellular Respiration



Cellular respiration occurs in two main parts: (**glycolysis and aerobic respiration**).

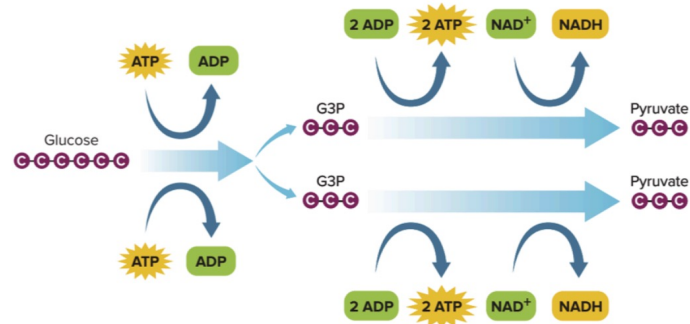
- Glycolysis is an anaerobic process, meaning it **does not require oxygen**. / Cytoplasm
- Aerobic respiration involves the Krebs cycle and electron transport. Aerobic processes **require oxygen**. / Mitochondria of eukaryotes





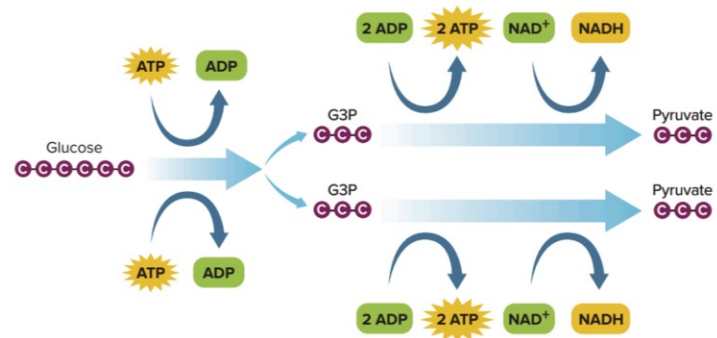
Which of the following is true regarding the **results of the glycolysis** process shown in the figure below?

- a. Two ATP and two pyruvate molecules
- b. Three ATP and four pyruvate molecules
- c. Four ATP and three pyruvate molecules
- d. Two ATP and three pyruvate molecules



Which of the following products of glycolysis contains the **most stored energy**?

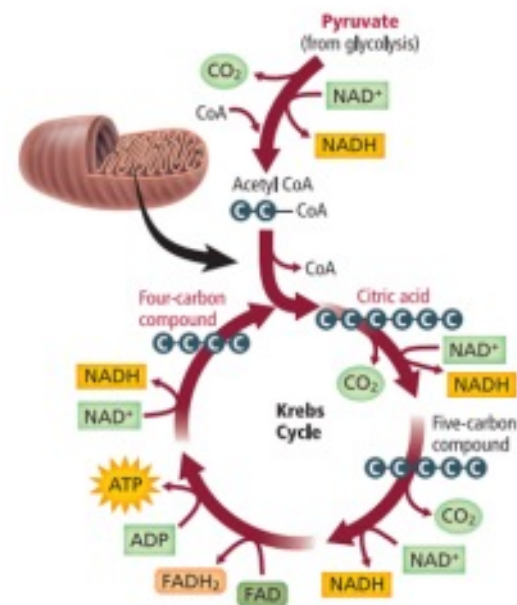
- a. NADH
- b. ATP
- c. ADP
- d. Pyruvate





The figure below shows the breakdown of pyruvate into carbon dioxide through Krebs cycle. Study it and answer the question: how many ATP molecules are produced from NADH molecules released from the breakdown of **one pyruvate molecule**?

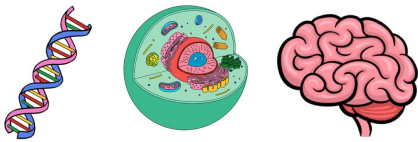
- a. 3
- b. 6
- c. 12
- d. 8



The figure below shows the Krebs cycle and the preparatory reaction. Study it and answer the question:

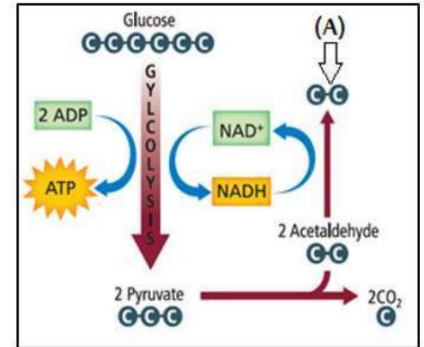
In the electron transport chain, how many ATP molecules are produced from all NADH molecules that are released upon breakage of **one glucose molecule**?

- a. 30
- b. 18
- c. 12
- d. 21



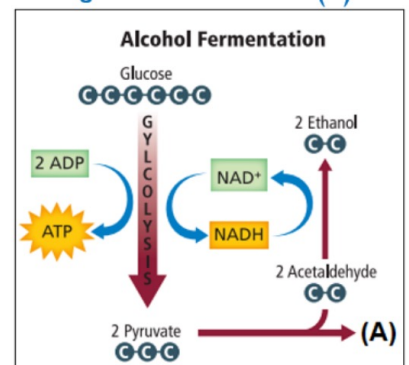
The graph below represents the process of alcohol fermentation, which of the following refers to the **letter (A)** in the illustration below?

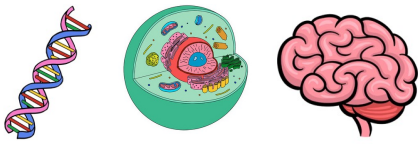
- a. Lactic Acid
- b. Ethanol
- c. Acetyl Co-A
- d. Citric Acid



The graph below represents the process of alcohol fermentation, which of the following refers to the **letter (A)** in the illustration below?

- a. One CO₂ molecule
- b. Two CO₂ molecules
- c. Three CO₂ molecules
- d. Four CO₂ molecules





An **infectious disease** is best defined as:

- A. A disease caused by nutrient deficiency
- B. A disease caused by a pathogen passed from one organism to another
- C. A disease caused only by bacteria
- D. A genetic disorder

The figure below represents the anthrax bacteria, which Koch isolated from the cattle. After growing the bacteria in the laboratory, he injected the bacteria in a healthy animal. Which of the following **is not one of the Koch's postulates**?

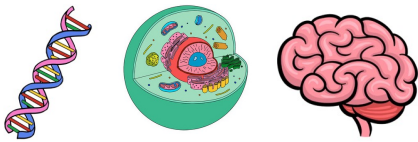


- a. The suspected pathogen must be isolated from the disease host in half the cases of the disease
- a. The suspected pathogen must be grown in pure culture on artificial media in the laboratory
- b. The suspected pathogen must cause the same disease when injected in a healthy new host
- c. The suspected pathogen must be isolated from the new host

Get It?

Explain how Koch proved the germ theory correct.





The figure below shows various ways of diseases transmission to humans. Which of the following letters indicates the transmission of diseases **through direct contact**?

- a. A
- b. B
- c. C
- d. D



(A)



(B)



(C)



(D)

The figure below shows various ways of diseases transmission to humans. Which of the following letters indicates the transmission of diseases **through indirect contact through air**?

- a. A
- b. B
- c. C
- d. D



(A)



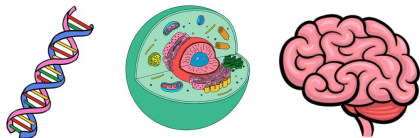
(B)



(C)



(D)



Which statement correctly **compares nonspecific and specific immunity**?

- A. Nonspecific immunity targets one pathogen; specific immunity targets all pathogens.
- B. Nonspecific immunity acts first; specific immunity develops later and is more targeted.
- C. Specific immunity is present at birth; nonspecific immunity develops later.
- D. Both are identical.

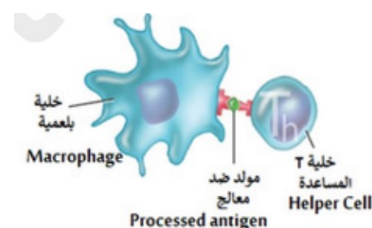
Nonspecific Immunity

At the time of birth, the body has a number of defenses in the immune system that fight off pathogens. These defenses are nonspecific because they are not aimed at a specific pathogen. They protect the body from any pathogen that the body encounters.

The nonspecific immunity provided by the body helps to prevent disease. Nonspecific immunity also helps to slow the progression of the disease while the specific immunity begins to develop its defenses. Specific immunity is the most effective immune response, but nonspecific immunity is the first line of defense.

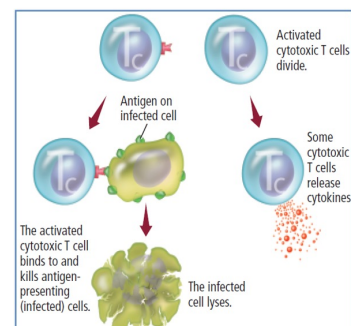
In the figure below, the macrophage presents the antigen to the helper T cell by binding to a receptor on the helper T cell. This binding help T cell to divide. Which of the following **stimulates this binding**?

- a. The helper T cell presents a processed antigen for the macrophage
- b. The macrophage engulfs and presents an antigen outside the cell
- c. Cytotoxic T cells release cytokines
- d. B cells produces antibodies



In the figure below, the activated helper T cell presents a processed antigen to the Cytotoxic T cell activating it to **divide and secrete**.....

- a. Cytokines
- b. Histamine
- c. Interferon
- d. Acetylcholine



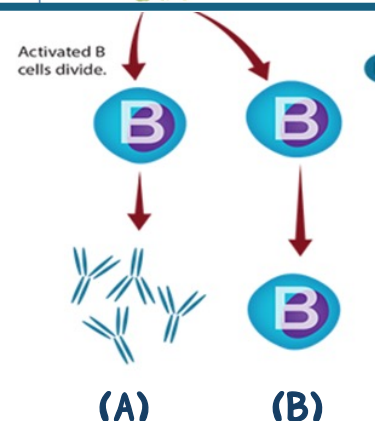
The figure below is a visualized illustration of Specific Immune Responses, **what do the letters (A) and (B) represent**?

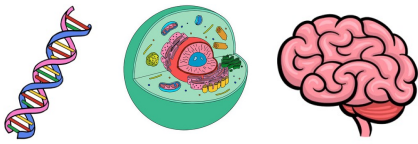
(A): Antibodies and (B): Memory cells

(A): Antigens and (B): Memory cells

(A): Processed antigen (B): Cytotoxic B cell

(A): Antibodies and (B): Helper B cell





Passive immunity

- Passive immunity is temporary protection against an infectious disease. It occurs when antibodies made by another person or animal are transferred or injected into the body.

Active immunity

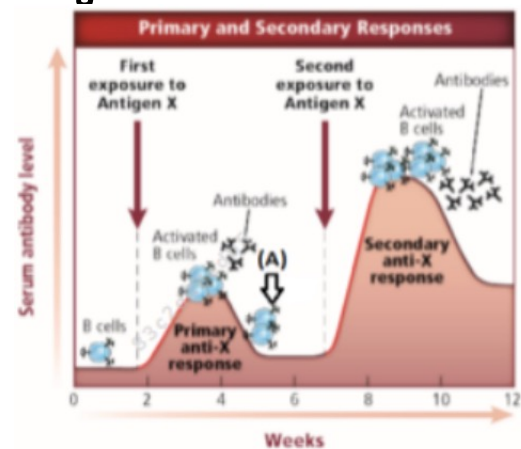
- Active immunity occurs when the immune system is exposed to antigens and makes memory cells. It can result from an **infectious disease** or **immunization**.

Get It?

Describe the difference between passive immunity and active immunity.

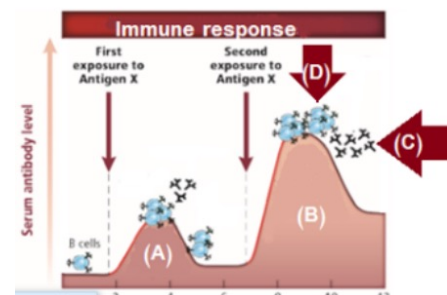
The graph below shows the difference between the primary and secondary immune responses when exposed to an antigen. Which of the following is not a characteristic of the structure represented by the **letter (A)**?

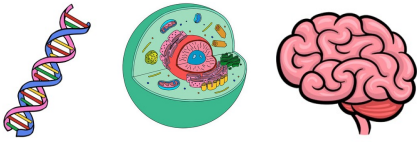
- Long-living cells
- Mature in thymus gland
- Exposed to the antigen during the primary immune response
- Respond rapidly if the body encounters the same pathogen later



The below graph shows the immune responses to exposure to an antigen. **which letter** of the following indicates a **secondary immune response**?

- A
- B
- C
- D



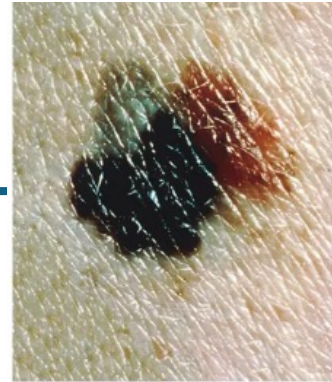


Which type of noninfectious diseases is characterized by **wearing out of body parts** and can be due to the natural aging process?

- a. Cancer
- b. Degenerative disease
- c. Inflammatory disease
- d. Metabolic disease

What happens when **control of the cell cycle** is lost?

- A. Cells stop dividing
- B. Cells become bacteria
- C. Abnormal cell growth occurs
- D. DNA disappears



This Figure shows:

- A. Healthy skin tissue
- B. Skin tumor caused by abnormal cell division
- C. Bacterial infection
- D. Blood clot

Which disease is an example of a **degenerative disease**?

- A. Hemophilia
- B. Arthritis
- C. PKU
- D. Malaria





Individuals can have a dangerous response to particular allergens, such as latex, and go into **anaphylactic shock**. Which of the following symptoms would these individuals have?

- a. Arthritis
- b. Atherosclerosis
- c. Breathing problems
- d. Epileptic seizures

Get It?

Explain how allergies are related to the immune system?

Which of the following **diseases** is shown in the picture below?

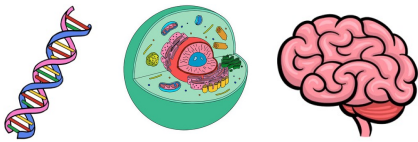
- a. Rheumatoid arthritis
- b. Tetanus
- c. Sickle-cell disease
- d. Allergy



The figure below represents an X-ray of an arm of a patient with **rheumatoid arthritis disease**. Which of the following is the right classification of this disorder?

- a. Infectious disease
- b. Allergic reaction
- c. Autoimmune disease
- d. Metabolic disease





A **limiting factor** is:

- A. A factor that increases populations forever
- B. A factor that keeps a population from increasing indefinitely
- C. A factor found only in plants
- D. A disease



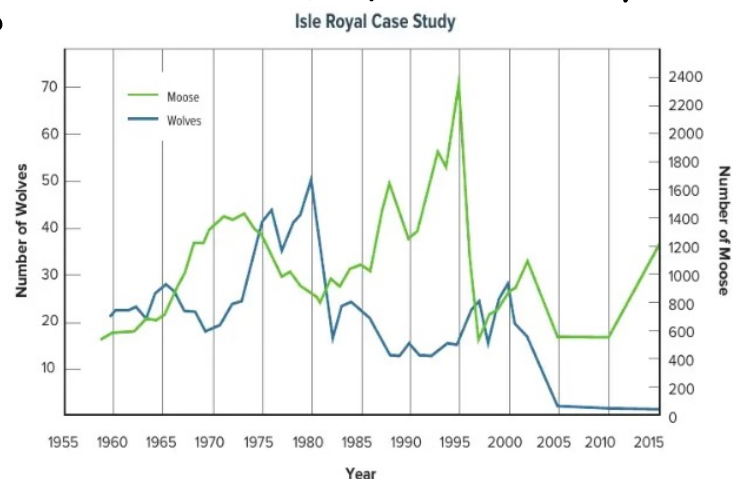
Figure 4 A crown fire is a density-independent factor that can limit population growth. However, small ground fires can promote growth in a forest community.

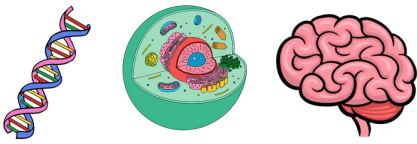
As shown in the graph below, a study of density dependent factors was done on the wolf and moose populations on Isle Royal. Which of the following **does not represent** the results shown in the graph below?

- a. The study shows the relationship between the number of predators and prey.
- b. The rise and the fall of the number of each group was dependent on the other group.
- c. As the number of wolves decreased, the number of moose increased.
- d. The population density of both groups increased between 2000 and 2005.

As shown in the graph below, a study of density dependent factors was done on the wolf and moose populations on Isle Royal. Which of the following represents the year when Wolves population reached the **highest**?

- a. 2000
- b. 1982
- c. 1977
- d. 1980





Population growth rate

- **Population growth rate (PGR)** shows how fast a population grows. To understand it, ecologists look at:
 - **Birth rate** (natality): the number of individuals born in a time period.
 - **Death rate** (mortality): the number of individuals that die in a time period.
 - **Emigration**: individuals leaving the population.
 - **Immigration**: individuals joining the population.
- The number of individuals leaving (**emigration**) or joining (**immigration**) a population is also important. Emigration is the term used to describe individuals moving away from a population.

Which of the following organism **follows an r-strategy** for reproduction?

- A
- B
- C
- D



(A)



(B)



(C)



(D)

Which of the following organism **follows an K-strategy** for reproduction?

- A
- B
- C
- D



