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إعداد: محمد أحمد رجب

## التواصل الاجتماعي بحسب الصف الحادي عشر المتقدم



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# Biology Final Revision

Grad 11 Advanced - Inspire

CH5- Cellular Energy

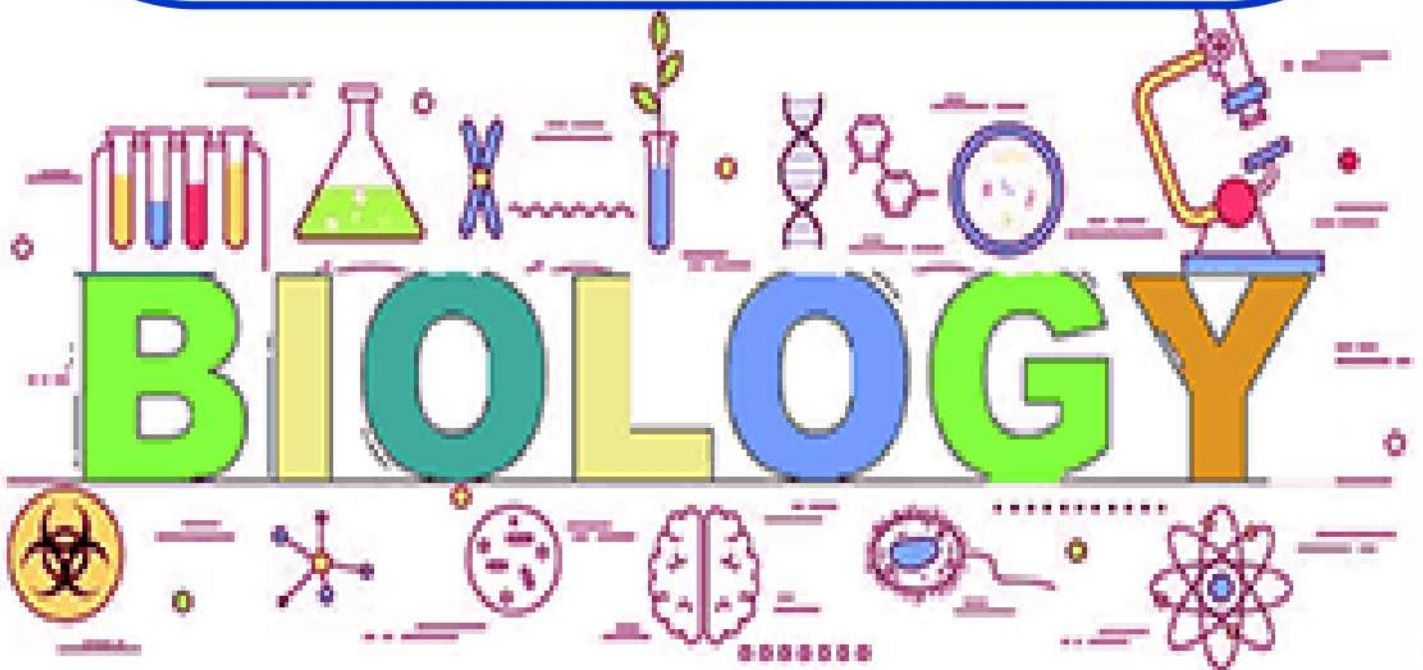
CH6- Immune System

CH7- Population Ecology

Term 3

2023-2024

Teacher: **Mohammad Rajab**



Name:-----

Revision Biology: Gr 11 Advanced

CH5- Cellular Energy

1	BIO.3.4.01.028 Describe the complementary processes of cellular respiration and photosynthesis with respect to the flow of energy and the cycling of matter within ecosystems, and explain how human activities can disrupt the balance achieved by these processes	U2M8L1	page 178
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1- Which statement describes the law of conservation of energy?

- A- Energy cannot be converted or destroyed.
- B- Energy can be converted and destroyed.
- C- Energy can be converted but not destroyed.
- D- Energy can be destroyed but not converted.

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2- Which is **NOT** a characteristic of energy?

- A- Energy cannot be converted nor destroyed.
- B- Is the capacity to do work.
- C- exists in forms such as chemical, light, and mechanical.
- D- Changes spontaneously from disorder to order

3- Which law of thermodynamics explains why the ladybug receives the least amount of usable energy?

- A. Energy
- B. Law of conservation of energy
- C. the first law
- D. Entropy increases (the second law)

4- Which the following is an example of the second law of thermodynamics (entropy increases)?

- A- converted energy
- B- food chain.
- C- Photosynthesis
- D- homeostasis

5- Which energy transformation can occur only in autotrophs?

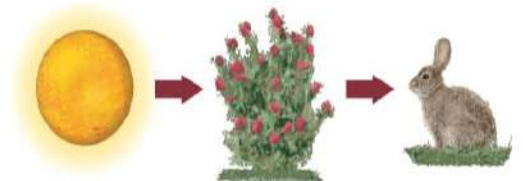
- A- chemical energy into mechanical energy.
- B- electrical energy into thermal energy.
- C- light energy into chemical energy.
- D- mechanical energy into thermal energy.

6- Which organism depends on an external source of organic compounds?

- A. autotroph
- B. heterotroph
- C. chemoautotroph
- D. photoautotroph

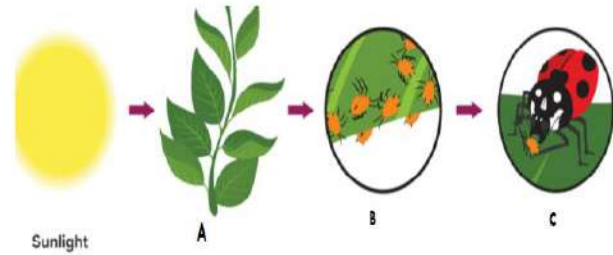
7- Which part of this food chain provides energy to just one other part?

- A. the chemoautotroph
- B. the heterotroph
- C. the Sun
- D. the photoautotroph



8- Which of the following refers to A heterotrophic organism?

- a- ( A and B )
- b- ( B and C )
- c- ( A and C )
- d- ( A,B and C )



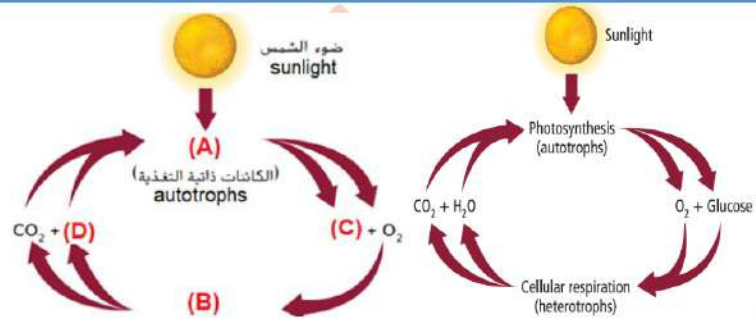
9- Which of the following refers to an organism that can transform chemical energy into mechanical energy?

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

2	BIO.3.4.01.028 Describe the complementary processes of cellular respiration and photosynthesis with respect to the flow of energy and the cycling of matter within ecosystems, and explain how human activities can disrupt the balance achieved by these processes	U2M8L1		page 180
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10- Which of the following is an incorrect labeling?

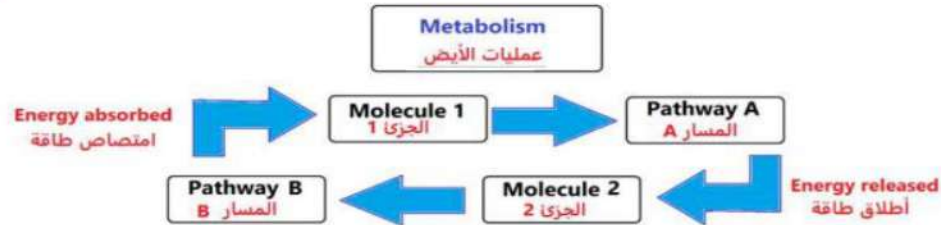
- A-Photosynthesis
- B- Cellular respiration
- C- Glucose
- D- Chlorophyll



The figure below demonstrate the metabolism, which is a series of chemical reactions in the cell where a product of one reaction is a substrate of the next reaction.

Which of the following is a correct description of the ongoing process?

يوضح الشكل أدناه الأيض الخلوي وهو سلسلة التفاعلات الكيميائية في الخلية بحيث يكون ناتج تفاعل واحد هو المادة المتفاعلة في التفاعل التالي. أي مما يلي يعتبر وصفاً صحيحاً للعملية التي تحدث؟



- A- Pathway A represents the catabolic pathway.
- B- Pathway A represents the anabolic pathway.
- C- Molecule 2 is bigger than the molecule 1.
- D- Pathway B represents the catabolic pathway.

11- Which the following is an example of Anabolism?

- A- Photosynthesis
- B- cellular respiration
- C-homeostasis
- D- fermentation

12- In which metabolic process are molecules broken down to produce carbon dioxide and water?

- A- Photosynthesis
- B- cellular respiration
- C- homeostasis
- D- fermentation

13- Why is cellular respiration a catabolic pathway?

- A- Energy is used to form glucose and oxygen.
- B- Energy is converted from water to carbon dioxide.
- C- Energy that is lost is converted to thermal energy.
- D- Energy is released by the breakdown of molecules.

3

BIO.3.4.01.025 Identify examples of the functions performed by the living organisms in which ATP is converted into ADP and inorganic phosphate.

U2M8L1

Figure 4

page 181

14- Why is adenosine triphosphate (ATP) such an important biological molecule?

- A- It captures light energy from the sun.
- B- It is produced in anabolic pathways.
- C- It stores and releases chemical energy.
- D- It converts mechanical energy to thermal energy.

15- Look at the following figure. Which molecule is released when ATP becomes ADP?

- A- phosphate group
- B- water molecule
- C- ribose sugar
- D- energy cells

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16- Energy is released from ATP when?

- A- phosphate group is added
- B- adenine bonds to ribose.
- C- ATP is exposed to sunlight
- D- phosphate group is removed.

17- Which of the following can be compared to a battery in need of recharging?

- A- ADP
- B- ATP
- C- Ribose
- D- Adenosine

18- Which of the following results in the storage of energy in terms of the ATP/ADP cycle?

- A- The breaking of the bond between the 5-carbon sugar and the 1<sup>st</sup> phosphate group
- B- The addition a phosphate group
- C- The removal of a phosphate group
- D- The addition of the glucose

4

BIO.3.4.01.027 Describe that photosynthesis converts carbon dioxide plus water into sugars plus oxygen, which is released.

U2M8L2

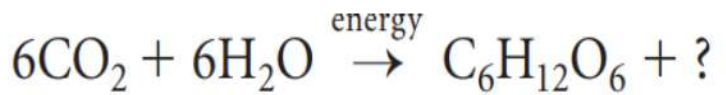
page 185

19- Where do the light-dependent reaction occur(Electron transport)?

- A- thylakoid membrane
- B- Stroma
- C- mesophyll
- D- mitochondria

20- What waste product of photosynthesis released to the environment?

- A- Carbon dioxide      B- Water  
C- Oxygen                  D- ammonia



21- At the beginning of photosynthesis, which molecule is split to produce oxygen (O<sub>2</sub>) as a waste product?

- A- CO<sub>2</sub>                      B- H<sub>2</sub>O                      C- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>                  D- 3-PGA

22- What supplies the electron that is lost in PSII?

- A- oxygen                      B- water                      C- glucose                      D- rubisco

23- After the electron leave PSII, where does it go next?

- A- Electron Transport chain      B- NADPH reductase  
C- PSI                                  D- Stroma

24- What supplies the electron that is lost in PSI?

- A- Oxygen                      B- PSII                      C- NADPH                      D- Water

25- Which mechanism of photosynthesis uses the movement of hydrogen ions (H<sup>+</sup>) across a concentration gradient to synthesize ATP?

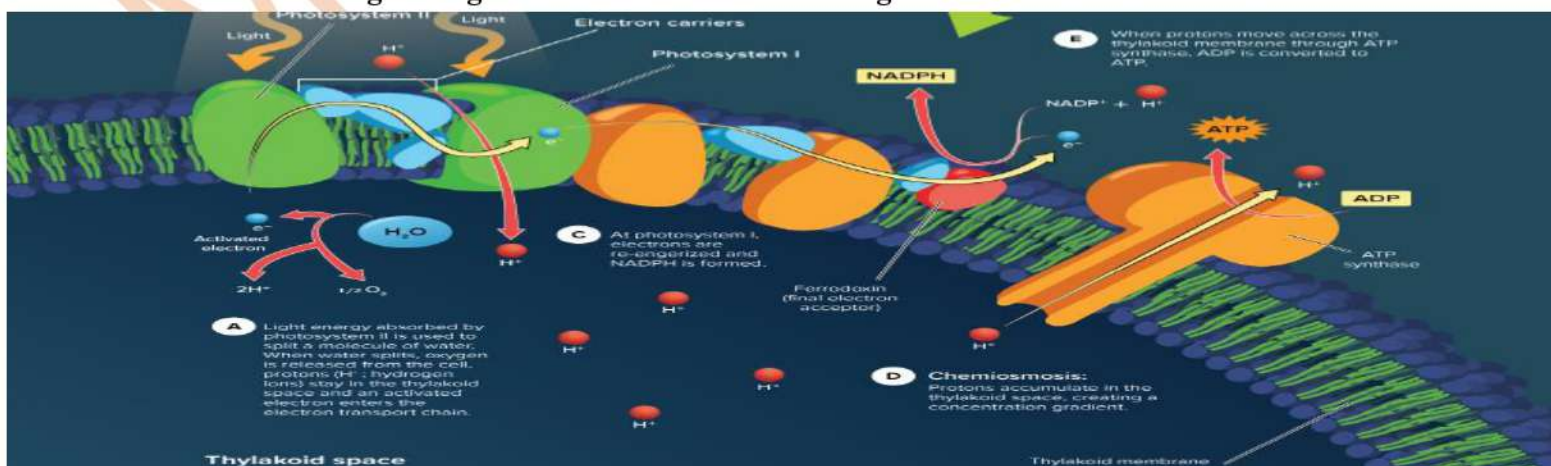
- A- Absorption                      B- chemiosmosis  
C- electron transport                  D- C<sub>2</sub> pathway

26- What is the name of the chemical where the energy is stored during the first phase of photosynthesis?

- A- ATP and NADPH                      B- Glucose and ATP  
C- Oxygen and Glucose                  D- Chlorophyll

27- What is the main purpose of the light reaction?

- A- To provide the energy and electrons for the Calvin cycle.  
B- To capture energy and make sugar.  
C- To reflect green light.                  D- To make sugars.



5	BIO.3.1.02.027 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy	U2M8L2	Figure 8	page 186
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28- The figure below shows the electron transport in the light reaction of the photosynthesis. Which letter of the following refers to the Ferredoxin protein?

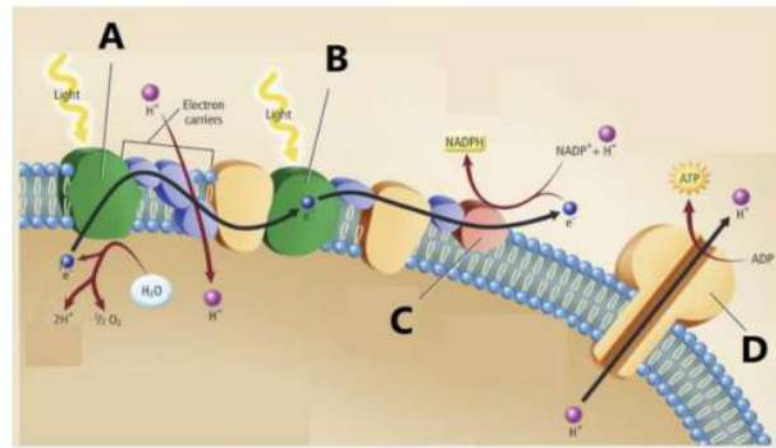
- A                      B
- C                      D

29- Which letter of the following refers to the ATP synthases?

- A                      B
- C                      D

30- Which letter of the following refers to the photosystem II?

- A                      B
- C                      D



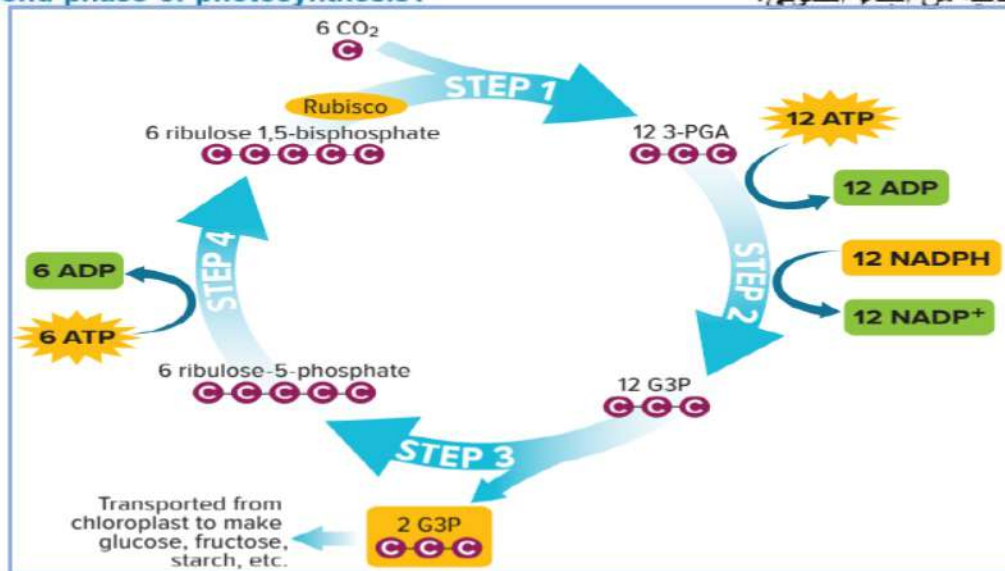
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6	BIO.3.1.02.027 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy	U2M8L2	Figure 9	page 187
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The figure below shows Calvin's cycle. Why do plants cells undergo the second phase of photosynthesis?

يوضح الشكل أدناه حلقة كالفن، لماذا تلجأ الخلية النباتية إلى المرحلة الثانية من البناء الضوئي؟



- A- Because it needs to produce more NADH.
- B- Because it needs to produce more ATP.
- C- Because it needs to produce more NADPH2.
- D- Because it needs to store the chemical energy in a more stable organic molecules.





31- Taking CO<sub>2</sub> from the atmosphere and turning it into glucose is called:

- A- Carbon fixation                      B- Cellular respiration  
C- Catabolic reaction                    D- mitosis

32- Where does the Calvin Cycle occur?

- A- thylakoid                      B- Stroma                      C- Lumen                      D- mitochondria

33- Which supplies energy used to synthesize carbohydrates during the Calvin cycle?

- A- CO<sub>2</sub> and ATP                      B- NADPH and H<sub>2</sub>O  
C- NADPH and ATP                    D- H<sub>2</sub>O and O<sub>2</sub>

34- Which of the following is NOT a reactant of the Calvin Cycle?

- A- NADPH                      B- ATP                      C- Oxygen                      D- Carbon dioxide

35- Which product of the Calvin cycle is used to produce glucose and other organic compounds?

- A- ADP                      B- CO<sub>2</sub>                      C- G3P                      D- NADP<sup>+</sup>

36- At the end of the Calvin cycle, where is energy stored?

- A- NADPH                      B- ATP                      C- Chloroplast                      D- Glucose

37- When carbon first enters the Calvin Cycle, what molecule does it combine with?

- A- PGA                      B- G3P  
C- RuBP                      D- ATP

38- What is the name of the enzyme that fixes carbon in photosynthesis?

- A- Rubisco                      B- NADPH reductase  
C- Carbon Fixase                      D- Calvinse

39- Which molecule is produced in the final step of the Calvin Cycle?

- A- (Acetyl-CoA)                      B- carbon dioxide (CO<sub>2</sub>)  
C- Ribulose 1, 5- biphosphates (RuBP)                      D- Glyceraldehyde 3 phosphate (G3P)

40- How many carbons does Glyceraldehyde 3 phosphate (G3P) have?

- A- 1                      B- 2                      C- 3                      D- 6

41- Which step occurs during the Calvin cycle?

- A- formation of ATP                      B- formation of six-carbon sugars  
C- release of oxygen gas                      D- release of oxygen gas

42- Which letter of the following refers to the compound that will be transported from chloroplast to make glucose, fructose, and starches?

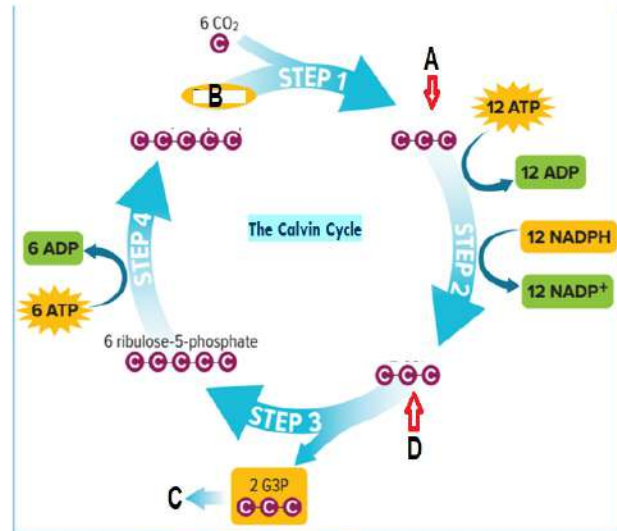
- A                      B                      C                      D

43- What is the name of the process indicated by (step1)?

- A- Carbon fixation  
B- Glycolysis  
C- Catabolic reaction  
D- Electron transport chain

44- Which letter of the following refers to rubisco enzyme?

- A                      B                      C                      D



8	BIO.3.1.02.028 Use a model to illustrate that aerobic cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy	U2M8L3	page 189, 190
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1- In which metabolic process are molecules broken down to produce carbon dioxide and water?

- A- photosynthesis                      B- cellular respiration  
C- homeostasis                      D- fermentation

2- What is the overall purpose of cellular respiration?

- A- to make ATP                      B- to process H<sub>2</sub>O                      C- to store glucose                      D- to deliver oxygen.

3- Which is NOT a stage of cellular respiration?

- A- Glycolysis                      B- Krebs cycle  
C- electron transport chain                      D- lactic acid formation

4- Which stages of cellular respiration is the aerobic process?

- A- Krebs Cycle and Electron Transport                      B- Glycolysis and Electron Transport  
C- chemiosmosis and Krebs Cycle                      D- Krebs Cycle and Glycolysis

5- Where in the cell does cellular respiration take place?

- A- Ribosome                      B- Golgi apparatus                      C- Mitochondria                      D- vacuoles

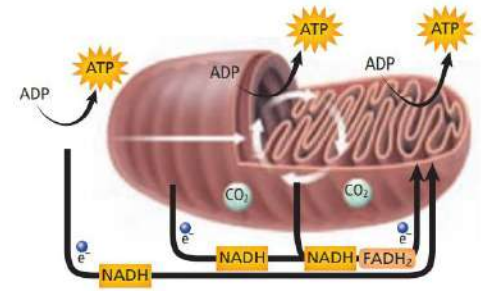
9	BIO.3.1.02.028 Use a model to illustrate that aerobic cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy	U2M8L3	page 190
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5- Which stage of cellular respiration is the anaerobic process?

- A- Krebs Cycle                      B- Glycolysis  
C- chemiosmosis                      D- Electron Transport Chain

6- Which organelle is illustrated in the figure?

- A- golgi apparatus                      B- mitochondria  
C- nucleus                                  D- endoplasmic reticulum



7- Which process does not occur in the organelle illustrated?

- A- Glycolysis                                      B- Krebs cycle  
C- Conversion of pyruvate to acetyl CoA      D- electron transport

8- In Which molecule is most the energy of glucose stored at the end of glycolysis?

- A- Pyruvate                      B- acetyl CoA                      C- ATP                      D- NADH

9- How many net yield ATP molecules are produced by Glycolysis?

- 3                      4                      2                      8

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10- Which represents the general sequence of cellular respiration?

- A- TCA cycle → chemiosmosis → glycolysis  
B- glycolysis → Krebs cycle → electron transport  
C- electron absorption → catalysis → phosphorylation  
D- aerobic pathway → anaerobic pathway → fermentation

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7	BIO.3.1.02.028 Use a model to illustrate that aerobic cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy	U2M8L3	Figure 12	page 191
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11- Which occurs during the Krebs cycle(tricarboxylic acid (TCA) cycle) (citric acid cycle)?

- A- breaking down pyruvate                      B- breaking down pyruvate  
C- creating glucose                                  D- producing ethyl alcohol

12- When pyruvate acid is converted to 2-carbon intermediate

molecule called acetyl CoA it produces.....

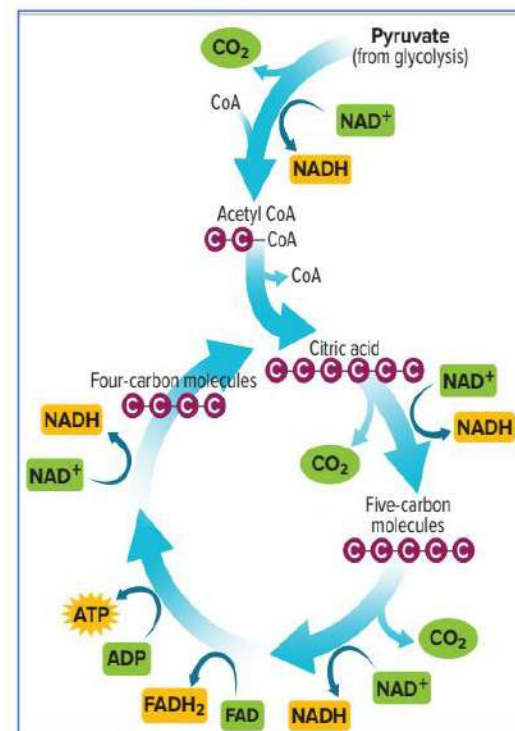
- A- ATP + NADH                                      B- CO<sub>2</sub> + NADH  
C- FADH<sub>2</sub> + CO<sub>2</sub>                                  D- FADH<sub>2</sub> + ATP

13- What is the first compound formed in the Krebs cycle?

- A- 4-Carbon compound                      B- citric acid  
C- Acetyl CoA                                      D- Glucose

14- Which molecule generated by the Krebs cycle is a waste product?

- A- CoA    B- CO<sub>2</sub>  
C- FADH<sub>2</sub>    D- NADH



15- During the Krebs cycle, pyruvate is broken down into what compound?

- A- H<sub>2</sub>O                      B- O<sub>2</sub>  
C- CO      Mohamad Rajab      D- CO<sub>2</sub>

16- How many NADH molecules are produced from the breakdown of one pyruvate molecule by the end of Krebs cycle?

- A- 1                      B- 2                      C- 4                      D- 5

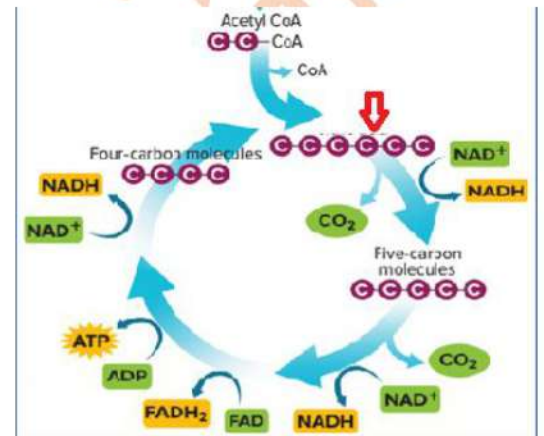
17- How many ATP molecules are produced from NADH molecules released from the breakdown of one pyruvate molecules?

- A- 3                      B- 6                      C- 8                      D- 12

18- Which of the following does the letter(A) indicate?

- A- Pyruvate                      B- Citric acid  
C- Acetaldehyde                D- Lactic acid

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## CH6- Immune System

10 BIO.3.1.01.087 Explain the malfunctioning of biological systems based on hypotheses such as Koch's postulates, or on scientific examples of infectious diseases, their causes, transmission and treatments, and non-infectious diseases.

U6M27L1

page 151

**Postulate 1 -** The suspected pathogen must be isolated from the diseased host in every case of the disease.

**Postulate 2 -** The suspected pathogen must be grown in pure culture on artificial media in the laboratory.

**Postulate 3 -** The suspected pathogen from the pure culture must cause the same disease when placed in a healthy new host.

**Postulate 4 -** The suspected pathogen must be isolated from the new host, grown again in pure culture, and shown to have the same characteristics as the original pathogen.

1- Scientists were not able to clearly demonstrate germ theory, the first one who managed to develop a technique to demonstrate this theory was....(was studying anthrax).

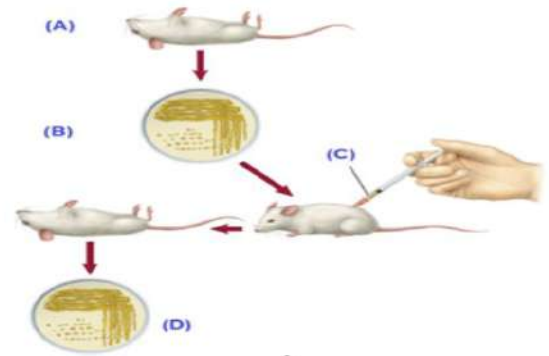
- a- Louis Pasteur                      b- Koch                      c- John snow                      d- Mendel

2-What do Koch's postulates prove?

- a- anthrax is harmful to humans                      b- a specific pathogen causes a specific disease  
c- pathogens can be grown in the lab                      d- all bacteria are pathogens

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3- Koch's postulates demonstrate that a specific pathogen causes a specific disease. Which letter of the following indicates that pathogen identified and grown in pure culture?



- A B  
C D

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Disease	Cause	Affected Organ System	How Disease is Spread
Tetanus	Bacterium	Nervous system	Soil in deep puncture wound
Strep throat	Bacterium	Respiratory system	Droplets/direct contact
Lyme disease	Bacterium	Skeletal and nervous systems	Vector (tick)
Chicken pox	Virus	Skin	Droplets/direct contact
Rabies	Virus	Nervous system	Animal bite
Influenza (the flu)	Virus	Respiratory system	Droplets/direct contact
Hepatitis B	Virus	Liver	Direct contact with exchange of body fluids
Giardia	Protozoan	Digestive tract	Contaminated water
Malaria	Protozoan	Blood and liver	Vector (mosquito)
Athlete's foot	Fungus	Skin	Direct contact or contaminated objects

4- What is the micro-organism that cause Tetanus?

- a- Bacteria                      b- Protozoa                      c- Fungus                      d- Virus

5-What is the micro-organism that cause Hepatitis B?

- a- Bacteria                      b- Protozoa                      c- Fungus                      d- Virus

6- What is the micro-organism that cause Athlete's foot?

- a- Bacteria                      b- Protozoa                      c- Fungus                      d- Virus

7-What is the micro-organism that cause Giardia and malaria?

- a- Bacteria                      b- Protozoa                      c- Fungus                      d- Virus

8-What is the micro-organism that cause Chickenpox?

- a- Virus                      b- Parasites                      c- Bacteria                      d- Protozoa

9- Which of the following human body systems and organs does the Rabies virus affect?

- a- Respiratory system                      b- The skin  
c- Blood and liver                      d- Nervous system

10- Which of the following human body systems and organs does the Chickenpox virus affect?

- a- Respiratory system                      b- The skin  
c- Blood and liver                      d- Nervous system



11- Which of the following human body systems and organs does the Malaria affect?

- a- Respiratory system
- b- The skin
- c- Blood and liver
- d- Nervous system

12

BIO.3.1.01.087 Explain the malfunctioning of biological systems based on hypotheses such as Koch's postulates, or on scientific examples of infectious diseases, their causes, transmission and treatments, and non-infectious diseases.

U6M27L1

page 155

### Disease Patterns

#### Endemic diseases

Continually are found in a **small numbers** within the population.

Such as common **cold**

#### Epidemic

A large outbreak in an area and afflict **many people**

Severe acute respiratory syndrome **SARS**

#### Pandemic

Widespread throughout a **large region** such as country, continent and the entire globe

**HIV - Spanish flu - Asian flu**

12-Diseases that are continually are found in small amounts within the population is called .....

- a- Endemic
- b- Pandemic
- c- Epidemic
- d- All of the above

13-The Corona virus is spreading all over the world, so it is classified as...

- a- Pandemic
- b- Epidemic
- c- Endemic
- d- non-infectious disease

14- Which of the following describes diseases that are continually found in small percentage within the population?

- a- Pandemic disease
- b- Epidemic disease
- c- Degenerative Diseases
- d- Endemic disease

13

BIO.3.1.01.088 Compare between specific and nonspecific immunity and between active and passive immunity

U6M27L2

page 160

15- It acts as a chemical barrier in tears and saliva, breaks down bacterial cell walls.

- a- Mucus
- b- Enzyme lysozyme
- c- Interferon
- d- complement proteins

16- A chemical barrier secreted in the stomach and kills many microorganisms found in food?

- a- Lysosome
- b- Mucus
- c- Hydrochloric Acid
- d- skin

17- White blood cells, especially neutrophils and macrophages are fighting pathogens through a process called.....

- a- Exocytosis
- b- Phagocytosis
- c- Lysis
- d- Both A and B

18-The phagocytes release digestive enzymes and other harmful chemicals from their.....

- a- Nucleus
- b- Mitochondria
- c- Endoplasmic Reticulum
- d- Lysosome

19- A series of 20 proteins that are found in the blood plasma and are involved in phagocytosis are called.....

- a- Component proteins
- b- Guiding proteins
- c- Complement proteins
- d- Digestion proteins

20-What is the role of complement proteins, found in the plasma, in the immune response?

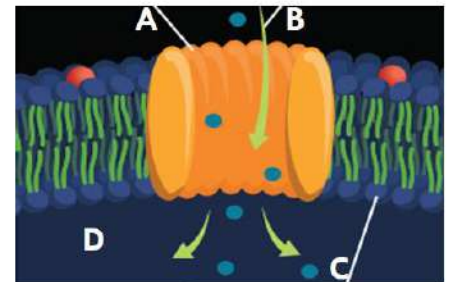
- a- Enhance phagocytosis
- b- activate phagocytes.
- c- Enhance destruction of a pathogen.
- d- all the above

21- What is the role of complement proteins, found in the plasma, in the immune response?

- a- Enhance and activate phagocytosis.
- b- Deactivate Cytotoxic T cells.
- c- Strengthening the plasma membrane.
- d- Releasing digestion enzymes.

22- Which letter of the following indicates fluid rushing into the cell causes it to burst?

- A
- B
- C
- D



23- Which letter of the following indicates Complement proteins?

- A
- B
- C
- D

24- How do neutrophils and macrophages defend the body?

- a- they ingest bacteria.
- b- they produce antibodies.
- c- they recruit lymphocytes.
- d- they secrete cytotoxins.

25- When a virus enters the body, another cellular defense helps prevent the virus from spreading. Virus-infected cells secrete a protein called.....

- a- Histamine
- b- Cytokine
- c- Interferon
- d- None of the above

26- In the site of inflammation, edema, redness, and heat are the result of .....

- a- Inflammatory Response
- b- Leukocyte's extravasation
- c- Histamine release
- d- phagocytosis

27- Which term best describes the function of interferon?

- a- Anticenter
- b- messenger
- c- Supporter
- d- virus-killer

14	BIO.3.1.01.089 Explain the physiology of immune system and its functions and the importance of cells B and T.	U6M27L2	Figure 10	page 161, 162
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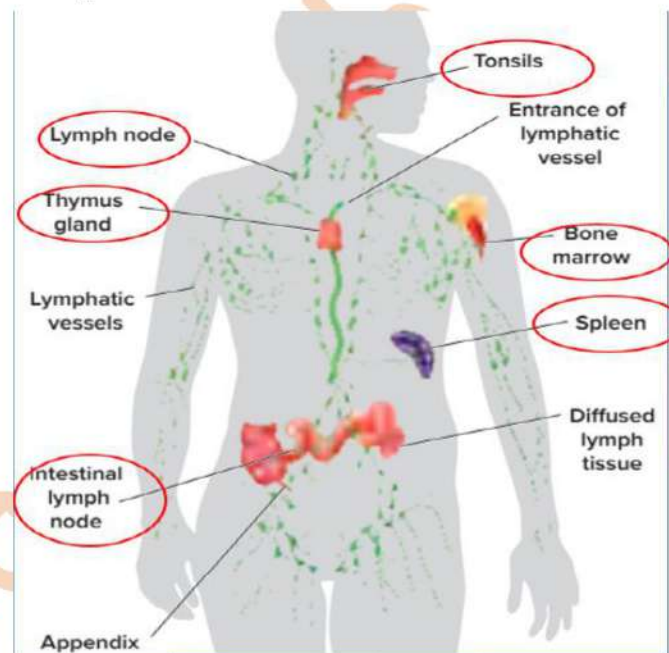
28- Which of the following is Not a component of the lymphatic system?

- a- The liver (The heart) (pituitary gland)
- b- The spleen
- c- The tonsils
- d- The thymus gland

29- Lymphatic system includes organs and cells that helps to .....

- a- absorb fats
- b- filter lymph.
- c- destroy foreign microorganisms.
- d- All the above.

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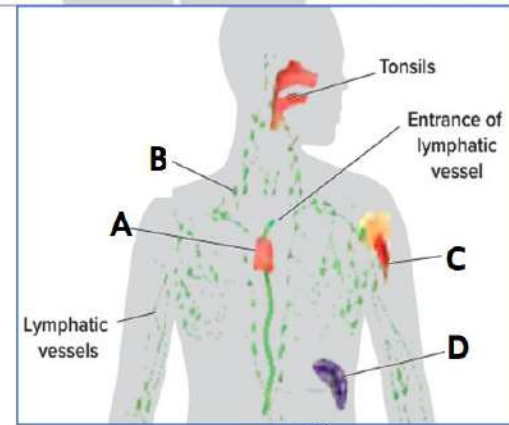
30- Which of the following letters indicates where lymphocytes are produced?

- A
- B
- C
- D

31- Which of the following letters indicates the lymphatic organ that stores blood and destroys damaged red blood cells?

- A
- B
- C
- D

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32-The lymphatic organ that stores blood and destroys damaged red blood cells is.....

- a- The spleen
- b- the tonsils
- c- The bone marrow
- d- the lymphatic nodules

33-T cells are produced in the bone marrow, but they mature in the.....

- a- The spleen
- b- the tonsils
- c- The bone marrow
- d- the thymus gland



34- Where are lymphocytes produced?

- a- Bone marrow
- b- spleen
- c- Thymus gland
- d- lymph nodes

15

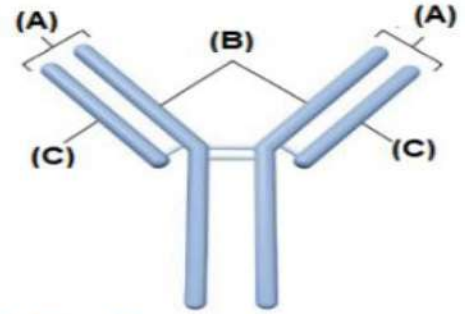
BIO.3.1.01.089 Explain the physiology of immune system and its functions and the importance of cells B and T.

U6M27L2

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35- What do the letters (A) and (B) represent?

- 1- (A): Antigen binding site and (B): light chain
- 2- (A): Heavy chain and (B): Antigen binding site
- 3- (A): Light chain and (B): Antigen binding site
- 4- (A): Antigen binding site and (B): Heavy chain



36- Why are parts (B) and (C) of the diagram above important for the formation of antibodies?

- a- They allow for an enormous number of possible antibodies to form.
- b- They are created by the T cells in the immune system.
- c- They help reduce the number of antibodies that system.
- d- They help stimulate the inflammatory response.

37- Antibodies are made of two light protein chains and two heavy protein chains. If the molecular weight of a light chain is 10000 and the molecular weight of a heavy chain is 20000.

What is the molecular weight of an antibody?

- a- 90000
- b- 50000
- c- 60000
- d- 30000

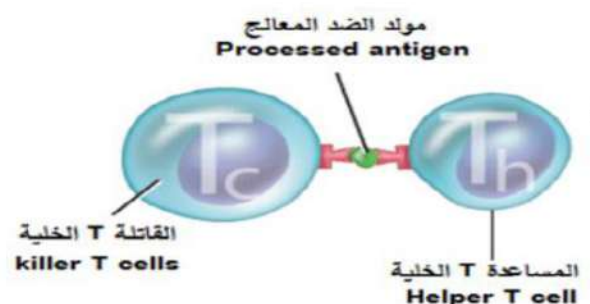
38- When making antibodies, any heavy chain can combine with any light chain. If a B cell can make 16000 different kinds of heavy chain and 1200 kinds of light chain. Which of the following processes can be used to calculate the different possible numbers of antibodies?

- a-  $1200 \times 16000$
- b-  $1200 \div 16000$
- c-  $16000 \div 1200$
- c-  $1200 - 16000$

- |             |          |
|-------------|----------|
| a- 19200000 | b- 1333  |
| c- 17200    | d- 14800 |

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

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



40- Activated cytotoxic T cells destroy pathogens by .....

- a- Chemical attack                      b- Antibiotic                      c- phagocytosis                      d- lysozyme

41- Active immunity occurs after the immune system is exposed to disease antigens (primary response) and produces...

- a- Neutrophils                      b- Memory cell                      c- Basophils                      d- Helper T Cells

17	BIO.3.1.01.087 Explain the malfunctioning of biological systems based on hypotheses such as Koch's postulates, or on scientific examples of infectious diseases, their causes, transmission and treatments, and non-infectious diseases.	U6M27L3	page 170
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42- Which of the following substances is released in the body to cause most of the symptoms of allergies?

- a- Insulin                                      b- histamine  
c- allergens                                      d- acetylcholine

43- What is an abnormal inflammatory response to an environmental antigen that is *not* pathogenic?

- a- an allergy                                      b- an autoimmunity  
c- an anaphylactic reaction                      d- a metabolic response

44- When a person has a localized inflammatory response with swollen itchy eyes, stuffy nose, sneezing, and sometimes a skin rash, Which disease would you expect this person to have?

- a- Rheumatic fever                                      b- Lupus  
c- Allergy                                      d- Angina pectoris


45- Common allergens that cause severe allergic reactions (anaphylactic shock )are .....


- a- Bee sting                                      b- Peanuts  
c- Latex                                      d- all the above

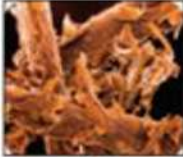
46- What causes anaphylactic shock?


- a- a large influx of antibodies                      b- a massive release of histamine  
c- an extreme autoimmune reaction                      d- toxic environmental agents

47- Which of the antigens initiates allergic reaction upon exposure to some kind of pets?

A  (D)

B  (C)

C  (B)

D  (A)

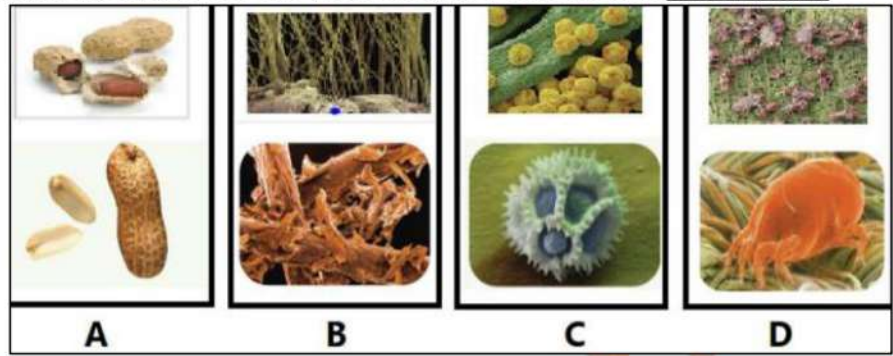
48- Which of the antigens initiates allergic reaction upon exposure to some flowering plant?

- A                                      B                                      C                                      D

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49- Which letter refers to the allergen that is responsible for the most fatalities and causes **anaphylaxis** reaction?

- A
- B
- C
- D



16

BIO.3.1.01.087 Explain the malfunctioning of biological systems based on hypotheses such as Koch's postulates, or on scientific examples of infectious diseases, their causes, transmission and treatments, and non-infectious diseases.

U6M27L3

page 171

50- What is the term for the formation of antibodies to the body's own proteins?

- a- Cancer
- b- leukemia
- c- Autoimmunity
- d- antipeptide disorder

51- A form of arthritis in which antibodies attack the joints is called.....

- a- Osteoarthritis
- b- Rheumatoid arthritis
- c- Lymphoma
- d- Osteosarcoma

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52- Which of the following diseases is shown in the picture?

- a-Tetanus
- b- Rheumatoid arthritis
- c- Sickle-cell disease
- d- allergy



53- An inflammation in which antibodies attack the valves of the heart.

- a- Osteoarthritis
- b- Rheumatoid arthritis
- c- Rheumatic fever
- d- Osteosarcoma

54- A disorder in which autoantibodies are formed and attack healthy tissue.

- a- Osteoarthritis
- b- Rheumatoid arthritis
- c- Rheumatic fever
- d- Lupus

55- When some medical tests were done on a person, it was found that he was suffering from inflammation in which the antibodies were attacking the heart valves and resulting in damage, leakage and affecting the valves' ability to close properly during blood movement across the heart.

Which disease would you expect this person to have?

- a- Angina pectoris
- b- Arteriosclerosis
- c- Lupus
- d- Rheumatic fever

=====**CH7- Population Ecology**=====

20

BIO.3.4.01.033 Explain that ecosystems are dynamic in nature and that their characteristics can vary over time  
BIO.3.4.01.042 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

U1M4L1

page 132, 133

Density-Independent Factors (abiotic)	Density-Dependent Factors (Biotic)
Weather events (drought, flooding, heat or cold) Fire - Air, land, and water pollution	Predation - Disease Competition - Parasites

1- Which of the following depends on the number of members in a population per unit area?

- A- An abiotic factor  
 B- A density-dependent factor  
 C- A density-independent factor  
 D- A biotic factor

2- Which of the following is an example of a density-dependent factor :

- A- disease  
 B- pollution  
 C- drought  
 D- flooding

3- which of the following is a density-dependent factor?

- A- The competition  
 B- The drought  
 C- The flooding  
 D- The hurricane

4- which of the following is a density-independent factor?

- A- Competition  
 B- Unusually cold winter.  
 C- Parasites  
 D- Predation

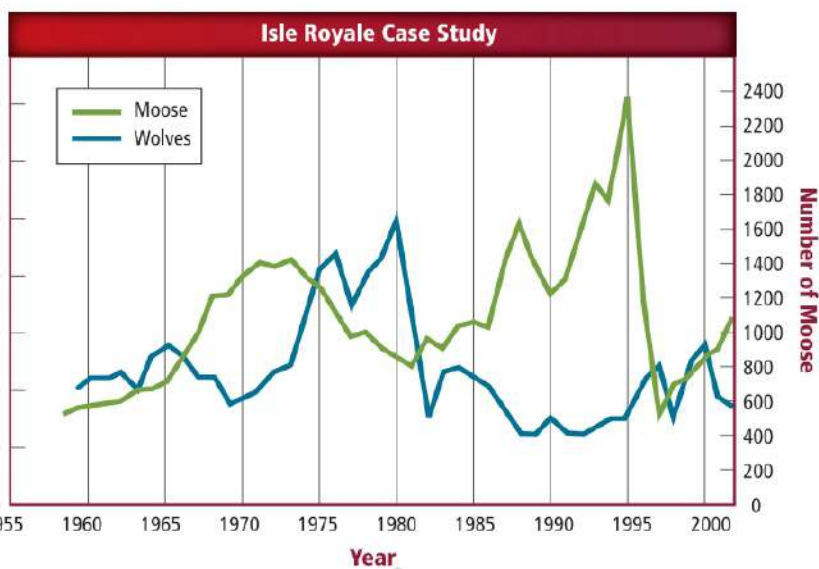
5- Which is a possible reason for the relatively quick spread of the shown disease?

- A- an abiotic factor  
 B- a decreased food supply  
 C- increased population density  
 D- increased immunity



6- What was the approximate ratio of moose to wolves in 1975? -

- A- 35:1 approx.  
 B- 50:1 approx.  
 C- 20:1 approx.  
 D- 15:1 approx.



7- Which of the following caused the increase in the number of moose in 1995?

- A- increased wolves  
 B- decreased wolves  
 C- increased food  
 D- decreased temperature

9- When a population growth is represented on a grid and results in a (S) shaped graph, it exhibits....

- A- Logistic  
 B- exponential  
 C- Carrying capacity  
 D- Lag phase.

28- Which of the following is a characteristic of exponential population growth?

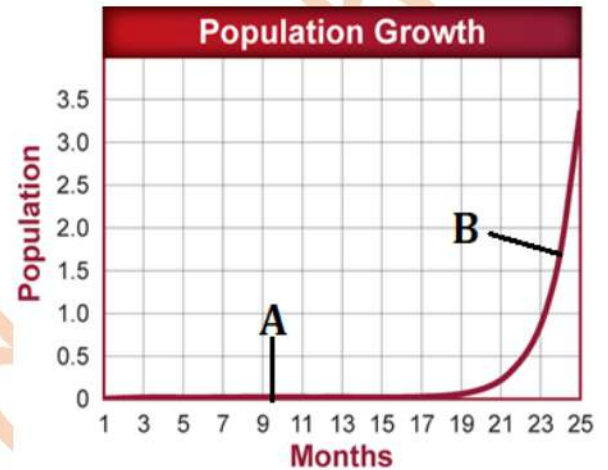
- A- Resources are consumed exponentially during all phases.
- B- Initial population growth is rapid.
- C- Growth rate is inversely population to population size.
- D- The lag phase follows rapid phase

10- Which type of population growth model does this graph represent?

- A- Exponential (geometric growth).
- B- Spatial.
- C- Genetic.
- D- Logistic.

22- The graph represents the population growth of mice over time, What does the letter (A) represent?

- A. exponential growth
- B. lag phase
- C. logistic growth
- D. straight-line growth



23- What does the letter (B) represent?

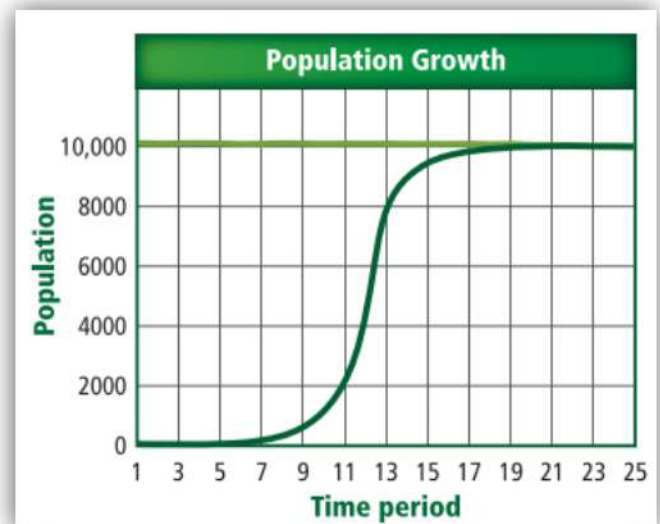
- A- exponential growth
- B- lag phase
- C- logistic growth
- D- straight-line growth

30- Which type of population growth model does this graph represent?

- A. exponential growth.
- B. lag phase.
- C. logistic growth.
- D. straight-line growth.

31- What is the horizontal line on this graph called?

- A. carrying capacity.
- B. geometric growth.
- C. exponential growth.
- D. straight-line growth.

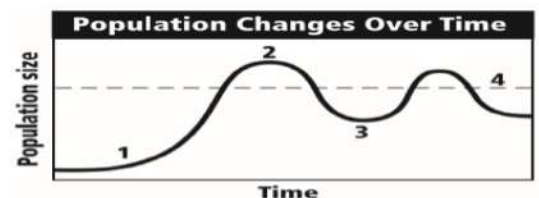


32- What do the time periods 1-7 represent?

- A- acceleration phase.
- B- exponential growth.
- C- carrying capacity.
- D- lag phase.

35- Which part of the graph indicates the carrying capacity of the habitat?

- A- 1
- B- 2
- C- 3
- D- 4



33- Why does the population growth level off at 10,000?

- A. .Biotic factors have made survival difficult
- B. The population has reached its carrying capacity.
- C. Density-independent factors have slowed the growth of the population.
- A. Immigration into the population has reached the maximum limit

19	BIO.3.4.01.033 Explain that ecosystems are dynamic in nature and that their characteristics can vary over time	U1M4L1	page 136
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	Offspring	Life span	Size	Parental care	Controlled by	Examples
r-strategy	many	Short	small	Less	Density-Independent Factors	Locusts- Fruit fly- Mouse
k-strategy	few	Long	larger	More	Density-dependent Factors	Panda- Elephants- whale

46- One of the characteristics of organisms that adopt the K-strategy:

- A. Short life span
- B. small organism
- C. Produces few offspring
- D. Less Parental care.

47- Which of the following organisms follows a K-strategy for reproduction?



a fruit fly ذبابة الفاكهة  
(A)



Locusts الجراد  
(B)



Mouses الفئران  
(C)



Elephant الفيلة  
(D)

48- Which organism is the best example of a k-strategist?

- A. Mouse
- B. grasshopper
- C. Rabbit
- D. whale

With my sincere wishes for good luck and success

Teacher: Mohammad Rajab