الإدارة المركزية للتعليم العام
إدارة تنمية مادة العلوم

Weekly Homework
15th Week

2026

Integrated Sciences

1st Secondary
First Term

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Ch 2 : Lesson (4)
The Atmosphere and the Role of Science in Its Sustainability

First: Choose the correct answer

1) Global warming causes …….

A. major changes in climate

B. melting polar ice

C. rising sea levels

D. All the above

2) The following consequences happen to the atmosphere:

I Reducing its ability to maintain the Earth's surface at a suitable temperature

II Increasing its ability to maintain the Earth's surface at a suitable temperature

III Reducing its ability to protect the Earth from harmful solar radiation.

Which of the previous consequences happen due to the continuous changes in the composition of the atmosphere?

A. I and III

B. II and III

C. I and II and III

D. none of the above

3) All the following from the strategies to reduce the global warming EXCEPT

A. using public transportation

B. increase the use of vehicles

C. increasing green spaces (afforestation)

D. switching to clean renewable energy sources

4) …… is one of the most important methods to reduce global warming

A. Using public transportation

B. Decrease the use of vehicles

C. Increasing green spaces (Afforestation)

D. Switching to clean renewable energy sources

5) The incomplete combustion of carbon-based fuels such as gasoline and coal produces compound (X) whose ability to bind to hemoglobin is approximately (Y) times greater than the ability of oxygen to bind to hemoglobin.

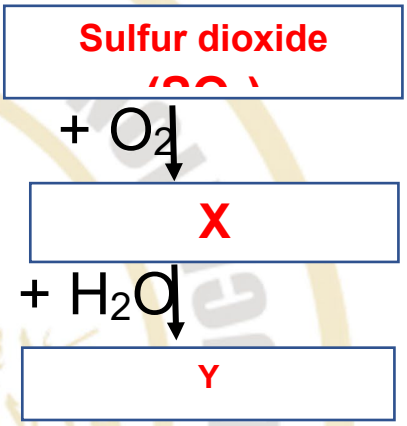
What are the compound (X) and the value of (Y)?

	Compound (X)	Value (Y)
A	Carbon monoxide (CO)	200 - 250
B	Carbon monoxide (CO)	100 - 150
C	Nitric oxide (NO)	200 - 250
D	Nitric oxide (NO)	100 - 150

6) What are the environmental effects of releasing sulfur oxides (SO_x) into the atmosphere when fossil fuels are burned?

A- Increased oxygen content in the atmosphere
B- Improvement in air quality
C- Reduction of global warming
D- Formation of acid rain

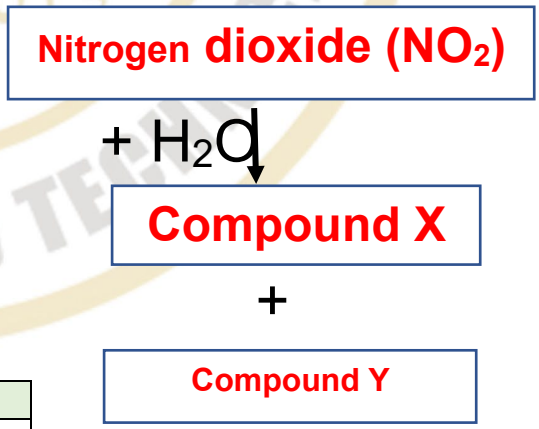
7) Study the diagram shown and then answer:



What are the two products (X and Y)?

	Product (X)	Product (Y)
A	Sulfuric acid H_2SO_4	Sulfur trioxide (SO_3)
B	Sulfur trioxide (SO_3)	Sulfuric acid H_2SO_4
C	Sulfur monoxide (SO)	Nitric acid HNO_3
D	Nitric acid HNO_3	Sulfur monoxide (SO)

8) Study the diagram shown and then answer:



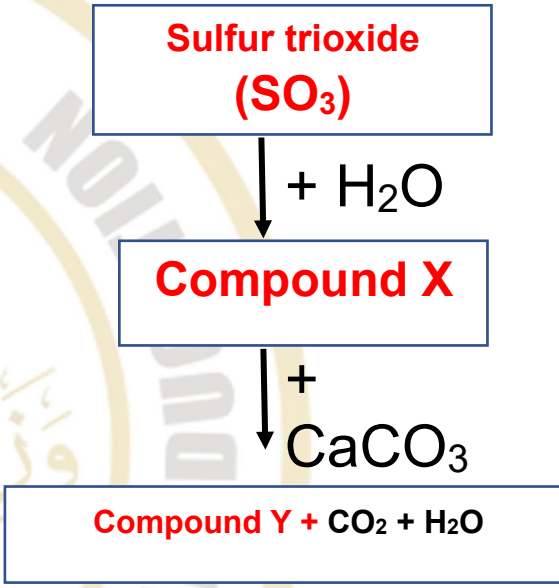
What are the two products (X and Y)?

	Product (X)	Product (Y)
A	Nitric oxide NO	Water vapor (H_2O)
B	Nitrous acid (HNO_2)	Nitric oxide NO
C	Nitric acid HNO_3	Nitrous oxide (N_2O)
D	Nitrous acid (HNO_2)	Nitric acid HNO_3

9) $4NO_{(g)} + 2H_2O_{(g)} + O_{2(g)} \rightarrow$ .....

A- $4HNO_{2\,(aq)}$ B- $4HNO_{3\,(aq)}$ C- N_2O D- $N_2O + O_3$

10) Study the diagram shown and then answer:



What are the two products (X and Y)?

	Product (X)	Product (Y)
A	Calcium oxide (CaO)	Sulfur (S)
B	Sulfur (S)	Calcium oxide (CaO)
C	Calcium Sulphate ($CaSO_4$)	Sulfuric acid (H_2SO_4)
D	Sulfuric acid (H_2SO_4)	Calcium Sulphate ($CaSO_4$)

11) Formation of ground-level ozone (O_3) is formed secondarily from the reaction of ..... and volatile organic compounds in the presence of sunlight.

A) nitrogen oxides (NO_x)

B) carbon oxides (CO_x)

C) sulfur oxides (SO_x)

D) copper oxides (CuO_x)

12) …….. are computer programs based on physical, chemical, and biological equations that describe the movement and interactions of the atmosphere. they allow predicting the long-term effects of human activities.

A) Climate Models

B) Satellites

C) Weather monitoring stations

D) Scientific forecasting

Second: Essay Questions

1) **Explain**: The increase in the proportion of greenhouse gases in the atmosphere works similarly to the principle as a glass greenhouse.

2) **Write** two from the negative effects of global warming

3) **Explain**: The global warming may lead to the extinction of polar species.

4) **Write** two from the strategies to reduce the global warming

5) Air pollution is one of the greatest dangers threatening the atmosphere and the health of living organisms. **Write two from the most prominent pollutants**

6) **Explain**: The increase in greenhouse gases in the atmosphere causes the global warming phenomena.

7) What happens in the following cases?

1- Carbon monoxide (CO) binds to hemoglobin inside red blood cells.

2- The reduced binding of oxygen to hemoglobin.

3- Cells begin to rely on anaerobic respiration.

4- Carboxyhemoglobin (HbCO) concentration in the blood increases.

8) **Explain**: Once carbon monoxide is inhaled, it makes it harder for the blood to combine with oxygen gas.

9) Write one from the negative effects of acid rains on each of the following:

1- the human health

2- the plant

3- the soil

4- the buildings and infrastructure

10) **Explain**: Gas scrubbers should be installed in factory and power plant chimneys

11) Write some possible solutions to climate change and air pollution.

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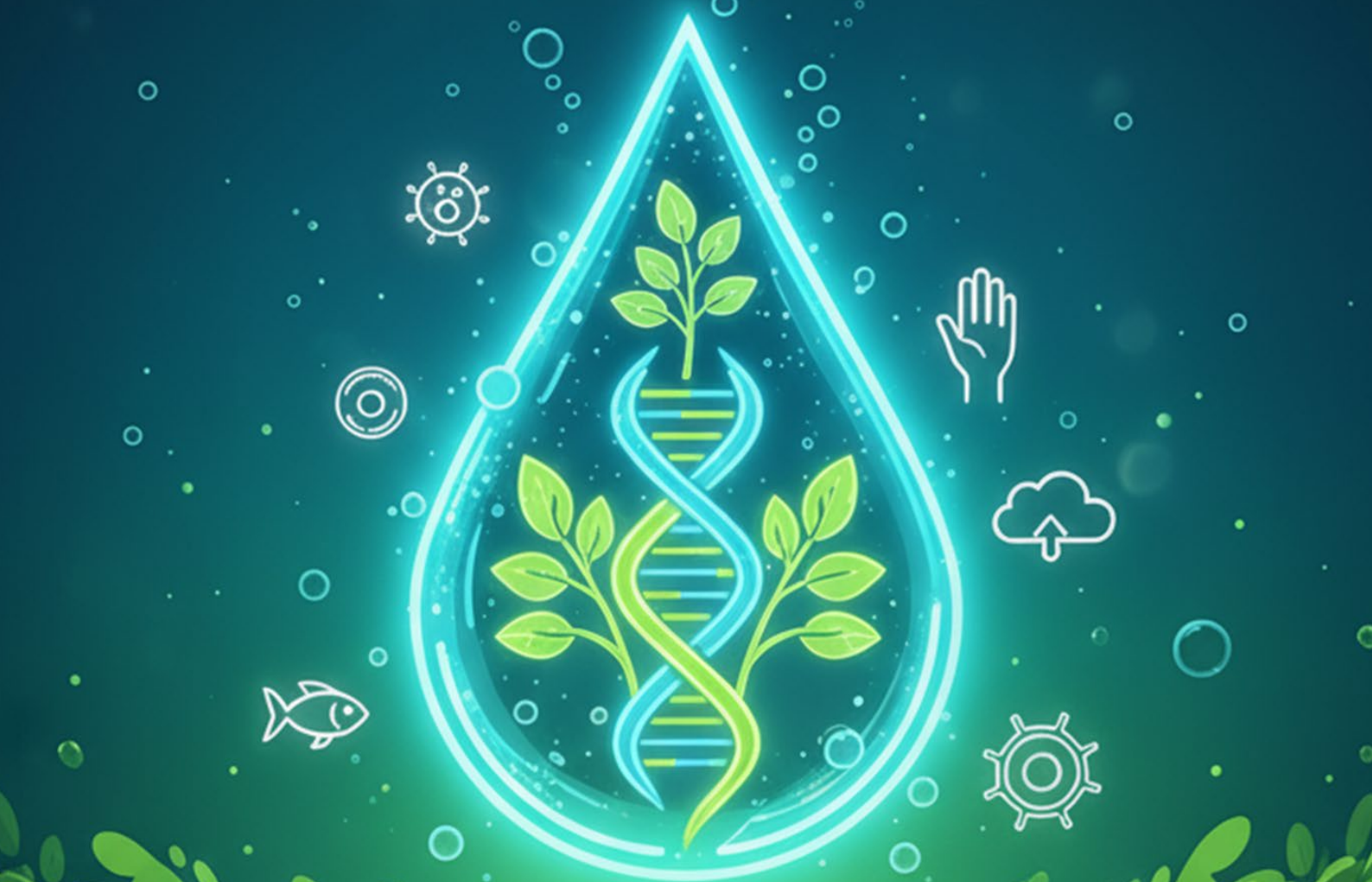
Integrated Sciences

2025-2026

1st Secondary
First Term

Weekly Assessment
14th Week



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Model (A)

First: Choose the correct answer

1) In recent times, an increase in summer temperatures has been observed year after year. What is the main reason for that?

A. global warming phenomenon

B. Natural climate cycles

C. Solar radiations

D. Volcanic activities

2) From the solutions to air pollution and climate change:

A. expand the use of renewable energy

B. planting

C. reduce the use of chlorofluorocarbons

D. all the above

3) When carbon monoxide (CO) binds to hemoglobin inside red blood cells, a compound called …… is formed.

A. hymoglobin carbonate

B. hymoglobin bicarbonate

C. carboxyhemoglobin

D. hydroxyhemoglobin

4) Direct inhalation of NO_2 and SO_3 causes

A) irritation in the respiratory tract

B) decreases the likelihood of asthma attacks

C) decreases the likelihood of bronchitis.

D) decreases the likelihood of pneumonia.

Second: Essay question

5) Answer the following

A- Write one from the negative effects of acid rains on the plant

B- Explain: Afforestation is one of the most important methods to reduce global warming

Model (B)

First: Choose the correct answer

1) …… is the main cause of global warming phenomenon.

A. Volcanic explosion

B. Atmospheric air pollution

C. Nuclear radiation

D. Factories smoke

2) All the following from the greenhouse gases that cause global warming EXCEPT

A. carbon dioxide

B. methane

C. chlorofluorocarbons

D. oxygen

3) Which of the following compounds is produced when fossil fuels are burned and contributes to the formation of acid rain?

A- Methane CH_4
B- Carbon monoxide CO
C- Sulfur dioxide SO_2
D- Ozone O_3

4) All the following consequences may happen from gases like SO_2 and NO_2 that enter through the stomata and the effect of acid rains EXCEPT

A) causing oxidation reactions inside the leaves.

B) directly damage leaf tissue and chlorophyll.

C) deform and clogged the stomata.

D) increasing Photosynthesis.

Second: Essay question

5) Answer the following

A- Write one from the negative effects of acid rains on the plant

B- Explain: Carbon monoxide is a very dangerous gas for the human health.

Model (C)

First: Choose the correct answer

1) ..... is defined as the continuous rise in the temperature of the air surrounding the Earth's surface due to the pollution of air

A. Thermal equilibrium

B. Thermal activity

C. Global warming

D. Greenhouse gases

2) The increase in the proportion of greenhouse gases in the atmosphere works similarly to the principle as .....

A. photosynthesis process

B. desert mirage

C. polar mirage

D. glass greenhouse

3) ..... is commonly produced by the incomplete combustion of fossil fuels

A. Carbon monoxide CO

B. Hydrogen chloride HCl

C. Oxygen O_2

D. Ozone O_3

4) What conditions lead to the formation of nitrogen oxides (NOx) during the combustion of fossil fuels?

A- Combustion at low temperatures
B- Combustion in the absence of oxygen
C- Combustion at high temperatures
D- Combustion in the presence of large amounts of water

Second: Essay question

5) Answer the following

A- Write one from the negative effects of acid rains on the plant

B- Explain: Sulfur dioxide gas contributes in the formation of acid rain.