



ALADWANA

Gem



Science

الصف 4 الابتدائي

إجابات نماذج امتحانات الأضواء النهائية

الفصل الدراسي الثاني 2024 - 2025

Model (1)

20
Marks

1 (A) Complete the following sentence using the words between brackets:

- Mobile phone batteries stores energy. (chemical - electrical)

(B) What happens when ...?

1 You approach your hand near a lighted electric bulb.

- You will feel heat comes from the light bulb.

2 The dead remains of sea creatures are pressed and exposed to extreme heat and pressure for millions of years.

- Oil and natural gas are formed.

3 Wind blows weakly in a desert.

- Sand will move few meters away.

4 A flood occurs near a farmland.

- Sediments and rocks transfer very fast (rapidly) from one place to another.

2 (A) Put (✓) or (X):

- Canyons are deep valleys that have steep sides. (✓)

(B) Answer the following questions:

1 Charcoal is considered a biofuel. Why?

- Because it is a fuel that is made from living organisms that can be planted.

2 What are the environmental effects when rain washes chemical pesticides off farmland?

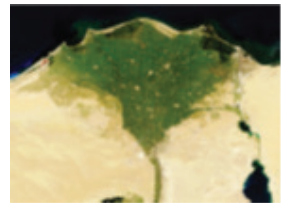
- The chemical pesticides cause soil pollution and when the rain falls, they can be carried by water into canals leading to water pollution.

3 Weather is different from weathering. Explain.

- Weather is the condition of atmosphere at a specific time and place, while weathering is the breaking down of rocks on the Earth's surface into smaller pieces.

4 What are the processes that are responsible for the formation of the opposite land form?

- Erosion and deposition processes.



3 (A) Write the scientific term:

1 A force that pulls down the broken rocks along the mountainsides. (Gravity)

2 The type of weathering where the structure of rocks is changed. (Chemical weathering)

Model (2)

20
Marks

1 (A) Put (✓) or (X):

- Oil and coal are produced from the decomposition of the same remains of dead organisms.

(X)

(B) What happens when ...?

1 The using of fossil fuel is reduced.

- **Burning of fossil fuel decreases, the amount of carbon dioxide and other pollutants decreases, so acid rain and global warming decrease.**

2 Large amounts of silt are deposited along the banks of Nile Delta.

- **The soil of the Nile Delta will be fertile.**

3 Oxygen in air reacts with iron in rocks.

- **A red-colored rust is formed, causing chemical weathering of rocks that weakens them and breaks them down easily.**

4 Sea waves hit sand on the beaches.

- **The sea waves pull sand away from the beaches leading to beaches erosion.**

2 (A) Complete the following sentence using the words between brackets:

- Buring of fuel produces energy.

(chemical - **thermal**)

(B) Give a reason for:

1 Natural gas is a nonrenewable energy resource.

- **Because it is used faster than it can be replaced.**

2 We must conserve using of fossil fuel.

- **Because fossil fuels are formed over millions of years, so they can't be replaced fast as they are used.**

3 Some small canyons have plants and trees on their sides.

- **Because they may have been formed by water streams.**

4 Sand dunes are not fixed in their places, but they are always moving.

- **Because the force of wind always moves sand from one place to another.**

3 (A) Mention the type of weathering:

1 Breaking down of rocks by the effect of acid rain.

- **Chemical weathering.**

2 Breaking down of rocks due to the change in temperature and cycle of melting and freezing of water.

- **Mechanical weathering.**

(B) Answer the following questions:

1 Write the energy chain that represents the energy conversions that occur when an electric lamp is turned on.

– **Electrical energy → Light energy + Thermal energy.**

2 Mention the importance of water turbines.

– **They convert the kinetic energy of water to generate electricity.**

3 Explain how Nile delta is formed.

– **The Nile River carries sediments, and when the river meets the sea, the sediments are deposited forming the Nile delta.**

4 (A) Choose the correct answer:

1 The on Mars rover curiosity convert solar energy into which is used to recharge the batteries.

a) **solar panels - electrical**

b) batteries - electrical

c) solar panels – sound

d) batteries - sound

2 Dissolving of minerals forming rocks then combine again forming new rocks is an example of

a) mechanical weathering

b) erosion by wind

c) deposition in rivers

d) chemical weathering

(B) Answer the following questions:

1 Explain how global warming phenomenon occurs.

– **When the amount of carbon dioxide gas in the atmosphere increases, it traps heat on the Earth's surface leading to a slow rise in the Earth's temperature.**

2 List some ways to conserve fossil fuel.

– **Walking or using bicycles instead of driving cars.**

– **Turn off light and unplug unused devices.**

– **Use renewable energy resources instead of fossil fuel.**

3 Sand dunes are formed as a result of several process, what is the sequence for their formation?

– **Weathering → Erosion → Deposition**

Model (3)

20
Marks

1 (A) Correct the underlined word:

- Most energy chains start with the Moon.

(Sun)

(B) Give a reason for:

1 Smog has harmful effect on the human health.

- **Because it causes the irritation of the human's eyes and lungs, and the damage of the respiratory system tissues.**

2 Plants of wetlands and their roots help in the formation of a delta.

- **Because they slow down the river water, and the plants roots help in trapping the sediments that increase the deposition process.**

3 Iron in rocks may rust.

- **Due to the reaction of oxygen with iron of some rocks forming red-colored rust.**

4 The formation of drippings in the limestone caves is considered chemical weathering.

- **Because when water dissolves the minerals in the rocks, they combine again forming new materials with new structure.**

2 (A) Cross out the odd word:

- Charcoal - Gasoline - Liquid fuel from corn - Wood.

(Gasoline)

(B) Answer the following questions:

1 Generators are important in the electric power stations. Mention their importance.

- **They change the kinetic energy into electrical energy.**

2 Mention the effect of acid rains on the environment.

- **The death of trees.**

- **The change in the chemical nature of lakes leading to the death of fish.**

- **The change in the chemical nature of soil.**

3 What are the similarities between valleys and canyons?

- **Both are formed by rivers or streams, and they often have rivers or streams at their bottoms.**

4 What are the main factors that help in the erosion of weathered rocks?

- **Water, wind, and gravity.**

3 (A) Put (✓) or (X):

1 The output energy of an operating solar panel is light energy.

(X)

2 Wind and flowing water that carry sand are from the factors of mechanical weathering.

(✓)

(B) Mention the role of ...:

1 Concave mirrors in cooking food.

– They convert the solar energy into thermal energy, as they collect and focus the sunlight to heat metal pots and cook food inside.

2 Lichens in chemical weathering.

– They produce acids on rocks that dissolve minerals found in these rocks and break them down.

3 Wind deposition.

– When the wind is weak, small sand dunes are formed, while strong wind forms large sand dunes.

4 (A) Complete the following sentences using the words between brackets:

1 Hydroelectric energy is generated by

(wind - **dams**)

2 The pulls down the weathered rocks along the mountainsides.

(**Earth's gravity** - wind)

(B) Compare between each of the following:

1

P.O.C	Oil	Water
Type of energy resources	Nonrenewable energy resource.	Renewable energy resource.

2

P.O.C	Electric bell	Washing machine
Input	Electrical energy	Electrical energy
Output	Sound energy and thermal energy (lost)	Kinetic energy, thermal and sound energies (lost)

3

P.O.C	Canyons	Valleys
Shape	They have steep sides, and are surrounded by narrow vertical walls.	They have gently sloped sides, and are surrounded by wide flat plains.

Model (4)

20
Marks

1 (A) Complete the following sentence using the words between brackets:

- The sound energy produced from an operating washing machine is considered a energy. (waste - useful)

(B) What happens when ...?

1 Carbon dioxide reacts with water vapor in the air.

- **Acid rains are formed.**

2 Shaking a hand bell. (Regarding the energy conversion)

- **The kinetic energy is converted into sound energy and thermal energy (lost energy).**

3 Plant roots grow in the cracks of rocks.

- **The rocks are broken down (Mechanical weathering occurs).**

4 A rock blocks the path of flying sand in a desert.

- **Sand dunes are formed.**

2 (A) Write the scientific term:

- A path that shows the flow of energy from its source to the device. (**Energy chain**)

(B) Give a reason for:

1 The mobile phone gets warm when being used for long time.

- **Because some electrical energy is lost in the form of thermal energy when the mobile phone operates.**

2 Hydroelectric dams are built on rivers.

- **To control the water flow and increase the potential energy of water to generate electricity.**

3 People must not build houses very close to rivers.

- **Because the path of rivers may change, causing weathering and erosion of rocks and houses.**

4 Chemical weathering has stronger effect than mechanical weathering on rocks.

- **Because chemical weathering changes the structure of rocks producing new materials, while mechanical weathering doesn't.**

3 (A) Put (✓) or (X):

1 Powerplants that use biofuel to generate electricity cause air pollution. (X)

2 Pulling of sand from the seashores happens due to the erosion process. (✓)

(B) Define each of the following:

- 1 Law of conservation of energy.
– **Energy is neither created nor destroyed, but it is converted from one form to another.**
- 2 Deposition.
– **It is the process of laying down of sediments after their erosion.**
- 3 Canyons.
– **They are deep valleys that are carved by water.**

4 (A) Cross out the odd word:

- 1 Solar heater – Hand mixer – Solar panel – Greenhouse. (**Hand mixer**)
- 2 Plant roots – Oxygen – Temperature changes – wind. (**Oxygen**)

(B) Answer the following questions:

- 1 Although trees are a renewable source of energy, we must limit their use.
Explain.
– **Because cutting down trees at a faster rate than they can grow leads to deforestation leading to negative effects on the environment and also wood will run out.**
- 2 What is the effect of smog from cars in big cities on the human health?
– **It causes irritation of humans' eyes, and irritation of humans' lungs causing the damage of the respiratory system tissues.**
- 3 How do plants that grow in wetlands found in deltas increase deposition process?
– **Plants partly slow down the speed of the river water and the plant roots help in trapping sediments.**

Model (5)

20
Marks

1 (A) Write the scientific term:

- A phenomenon where the Earth's temperature increases slowly due to the trapping of heat on Earth. **(Global warming)**

(B) What happens when ... ?

1 The wind rotates the blades of wind turbines.

- **The kinetic energy is converted into electrical energy. (Electricity is generated.)**

2 The dead remains of plant are pressed and exposed to extreme heat and pressure for millions of years.

- **Coal is formed.**

3 Wind that is carrying sand particles hits a big rock.

- **The sand particles carried by the wind carve the rocks forming different shapes.**

4 A river erodes the sediments of a mountain over a long period of time.

- **Valleys and canyons are formed.**

2 (A) Choose the correct answer:

- All forms of fossil fuel are formed

a) above the Earth's surface

b) under the Earth's surface

c) above the water surface

d) in the air around us

(B) Give a reason for:

1 You feel warm when you rub your hands together.

- **Because the kinetic energy is converted into thermal energy due to friction.**

2 Greenhouses have an important role.

- **Because they help farmers plant crops that only grow in warm climate.**

3 Acid rain has harmful effects on different living organisms.

- **Because it chemically changes the structure of the soil that causes the death of trees, chemically changes the structure of lakes causing the death of fish.**

4 Sand dunes are formed in some places and not formed in others.

- **Because sand dunes are formed when a barrier like (rocks) blocks the wind-blown sand.**

3 (A) Complete the following sentences using the words between brackets:

1 is a biofuel.

(Charcoal - Coal)

2 Sand dunes in Rub' Al Khali in Arabian Peninsula are formed by process.

(weathering - deposition)

(B) Answer the following questions:

- 1 Write the energy chain of an operated wind turbine, starting from the Sun.
– **Radiant energy → Thermal energy → Kinetic energy → Electrical energy.**
- 2 Mention the action of rain when it falls on the soil of farms that locate beside downhill.
– **It washes away the soil of farms causing its erosion.**
- 3 Compare between

P.O.C	Oil	Coal
Living organism each one is formed from	Decomposition of the remains of marine living organisms (creatures).	Decomposition of dead remains of plants.

4 (A) Put (✓) or (X):

- 1 Renewable energy resources are replaced faster than they are used. (✓)
- 2 Canyons have the same texture, and rock colors. (X)

(B) Look at the opposite figure, then answer:

- 1 What is the opposite factor?
– **Wind carrying sand.**
- 2 What is the effect of this factor on rocks?
– **When wind pushes sand, friction between the sand and rocks causes them to break apart (mechanically weathered).**
- 3 Does the change happen to rocks quickly or slowly?
– **The rocks change slowly.**

