



ALADWAA

Gem



Science

الصف 1 الإعدادى

إجابات نماذج اختبارات الأضواء لشهر إبريل

الفصل الدراسى الثانى

2024 - 2025

Model (1)

15
Marks

1 A) Complete the following sentences:

- 1 **Copper sulphate** is a salt that dissolves in water and has a blue color.
- 2 The measuring unit of speed is **meter/second**, while work is measured in **Joule**

B) 1- What happens when ...?

- 1 The mass of an object is doubled (relative to its potential energy).
- **Its potential energy will be doubled.**
- 2 The distance that is covered by a moving object is doubled, while the time remains constant.
(relative to the speed)
- **The speed will be double.**

2- Calculate the kinetic energy of an object with a mass of 12 kg moving at a speed of 2 m/s.

$$KE = \frac{1}{2}mv^2 = \frac{1}{2} \times 12 \times 2 \times 2 = 24j$$

2 A) Choose the correct answer:

- 1 The mechanical energy of a freely falling object equals at the moment it reaches the ground.
a) its potential energy
b) zero
c) its kinetic energy
d) the weight of the object
- 2 Which of the following feeding relationships harms one of the two living organisms?
a) Predation and competition.
b) Mutualism and commensalism.
c) Mutualism and predation.
d) Predation and commensalism.

B) 1- Give a reason:

- 1 The mechanical energy of an object remains constant during its falling, although its potential energy decreases.
- **Because the decrease in potential energy is equal to the increase in kinetic energy.**
- 2 There is no work done when a person carrying a bag while walking horizontally.
- **Because the force applied is perpendicular to the direction of the bag's motion.**

2- Compare between potential energy and kinetic energy according to the factors affecting on them:

P.O.C	Potential energy	Kinetic energy
The affecting factors	-The weight of an object (w) -The height of an object away from the ground (h)	- The mass of an object (m) - The speed of an object (v)

Model (2)

15
Marks

1 A) Put (✓) or (X):

- 1 The chemical formula of copper sulfate is CuSO_4 , and its color is green. (X)
- 2 When a moving object returns to its starting point, its displacement is zero. (✓)

B) 1- Write the chemical formula for the following salts that consists of:

- 1 PO_4^{3-} , K^+ : K_3PO_4
- 2 SO_4^{2-} , Al^{3+} : $\text{Al}_2(\text{SO}_4)_3$

2- Write the type of nutritional relationship between polar bear and seal:

- **Predation relationship.**

2 A) Write the scientific term:

- 1 The total length covered by a moving object from the starting point to the endpoint. (Distance)
- 2 The amount of energy required to move an object a certain displacement in the same direction of the applied force. (Work)

B) 1- When do the following become equal?

- 1 Distance and displacement.
- **When the object moves in a straight line and in a constant direction.**
- 2 Potential energy and kinetic energy of a falling object.
- **When the object is at half of its initial height from the ground.**

2- Calculate the potential energy of a metallic ball with a mass of 2 kg falling from a height of 5 m, given that the gravitational field strength is 10 N/kg.

- **$\text{PE} = mgh = 2 \times 10 \times 5 = 50 \text{ J}$.**

Model (3)

15
Marks

1 A) Correct the underlined words:

- 1 When the speed of a moving object doubles, its kinetic energy increases to double. (**four times**)
- 2 Ammonium chloride solution turns the universal indicator into blue. (**red**)

B) 1- What is meant by...?

- 1 The speed of an object = 100 m/s.

- It means that this object covered a distance = 100 m in one second.

- 2 The Mechanical energy of an object = 200 j.

- It means the sum of potential energy and kinetic energy is 20 j.

2- Compare between scavengers and omnivores according to the way of feeding:

P.O.C	Scavengers	Decomposers
The way of feeding	They feed on the remains of dead bodies.	They feed on both plants and animals.

2 A) Complete the following sentences:

- 1 Food chains start with **producers** and end with **decomposers**.
- 2 When an object is thrown upward, its potential energy **increases** and its kinetic energy **decreases**.

B) 1- What happens when ...?

- 1 The mass of an object increases to double and its speed decreases to half.

"relative to the kinetic energy"

- The kinetic energy decreases to a quarter.

- 2 When a moving object returns back to its starting point.

- Its displacement becomes zero.

2- Calculate the height of an object with a mass of 6 kg above the ground when its potential energy is 180 J (given that the gravitational field strength is 10 N/kg).

$$h = \frac{PE}{mg} = \frac{180}{6 \times 10} = 3 \text{ m}$$

Model (5)

15
Marks

1 A) Correct the underlined words:

- Only 1% of the energy is transferred from organisms at one trophic level to organisms at the next level. (10%)
- The pH value of Na_2CO_3 solution is less than 7. (greater)

B) 1- What is the importance of ...?

- Bacteria and algae in ecosystem:
 - They decompose organic materials in the bodies of dead organisms breaks them down into simple substances that mix with the soil.
- High dam:
 - Changing the kinetic energy of water into electric energy.



2- Look at the opposite figure, then answer:

- The given diagram shows the motion of a pendulum with a mass of 1 kg, and its kinetic energy at the rest position is 32 J. Calculate its speed at the rest point.

$$v^2 = \frac{2KE}{m} = \frac{2 \times 32}{1}$$
$$= 64 \text{ m/s}$$
$$v = \sqrt{64} = 8 \text{ m/s}$$

2 A) Put (✓) or (X):

- Mutualism is the nutritional relationship between bees and flowers. (✓)
- The work done by a force perpendicular to the direction of an object's motion is maximum. (X)

B) 1- What is meant by ...?

- The kinetic energy of an object is 20 J.
 - It means the energy gained by the object due to its motion is 20 J.
- The displacement of an object is 100 m.
 - It means the shortest straight-line path in a fixed direction between the starting and ending points is 100 m.

2- What is the number that indicates the weight of an object with a potential energy of 88 J at height of 11m?

$$W = \frac{PE}{h} = \frac{88}{11} = 8 \text{ N}$$