Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 8_Energy

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

The International Space Station (ISS) has several solar panels called wings.



(a) The wings convert energy from the Sun into a form useful in the ISS.

(1)

- ☒ **A** transverse and electromagnetic
- ☒ **B** electromagnetic but not transverse
- ☒ **C** transverse but not electromagnetic
- ☒ **D** neither transverse nor electromagnetic

(b) In one second, the useful energy available from one wing is 34.3 kJ.
The energy incident on the wing from the Sun is five times this amount.

What is the percentage efficiency of the wing?

(3)

efficiency = ... %

(c) A wing is in direct sunlight.
The ISS is not receiving energy from the wing.
The temperature of the wing remains constant.

Explain why the temperature of the wing remains constant in these conditions.

(2)

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Q2.

The International Space Station (ISS) has several solar panels called wings.



(a) The wings convert energy from the Sun into a form useful in the ISS.

(1)

- ☒ **A** transverse and electromagnetic
- ☒ **B** electromagnetic but not transverse
- ☒ **C** transverse but not electromagnetic
- ☒ **D** neither transverse nor electromagnetic

(b) In one second, the useful energy available from one wing is 34.3 kJ.
The energy incident on the wing from the Sun is five times this amount.

What is the percentage efficiency of the wing?

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efficiency = ... %

(c) A wing is in direct sunlight.
The ISS is not receiving energy from the wing.
The temperature of the wing remains constant.

Explain why the temperature of the wing remains constant in these conditions.

(2)

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Q3.

Figure 14 shows a demolition ball of mass 400 kg.

The ball is used to demolish a wall.

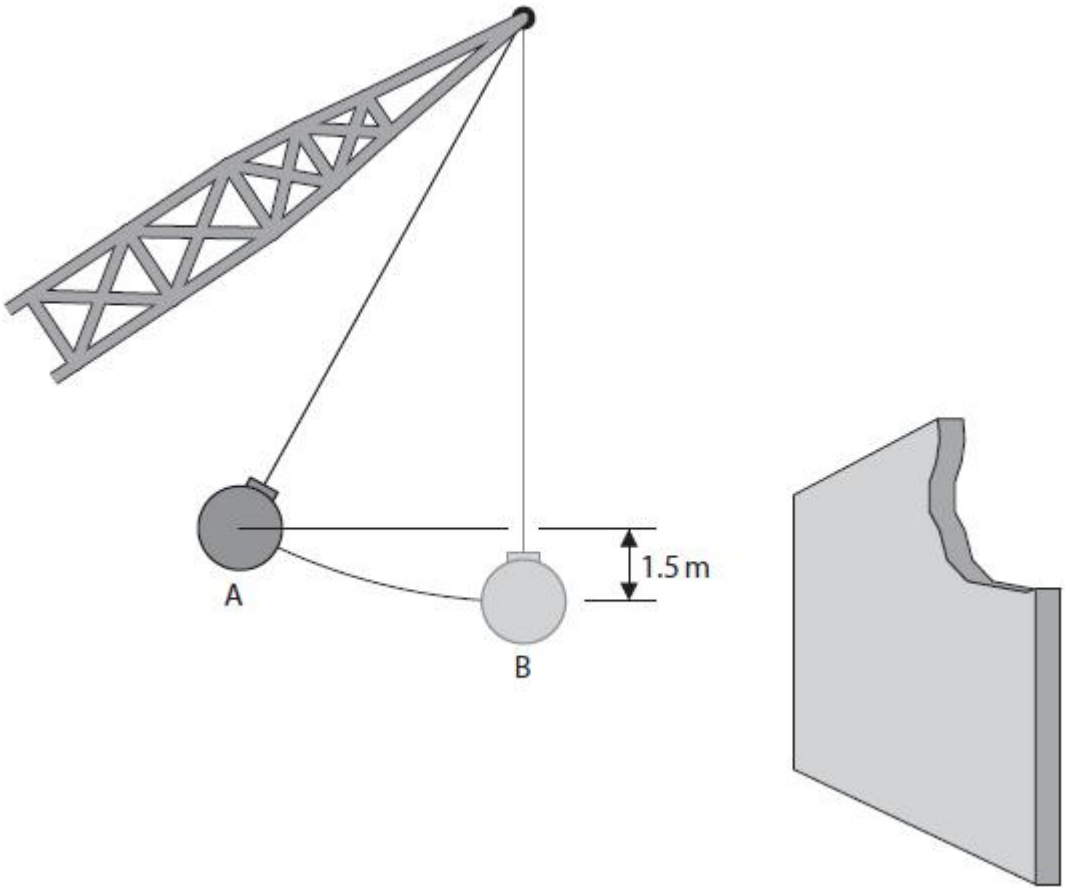


Figure 14

* After knocking down the wall, the ball will swing **freely**.

The graph in Figure 15 shows how the height of the ball above ground varies with time during three swings.

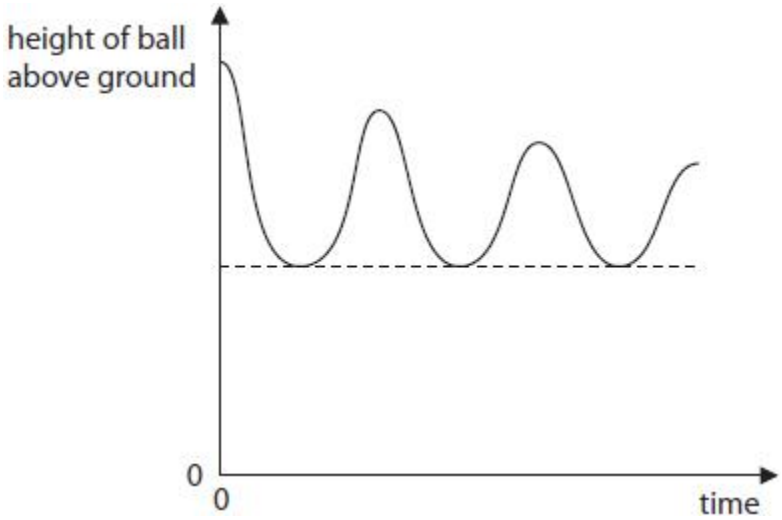


Figure 15

Explain how the energy within the system changes during this time.

The system consists of the swinging ball and its surroundings.

(6)

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(Total for question = 6 marks)

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