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

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Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Q1.

The photograph shows a man dropping an egg inside a padded box from a height.



He is investigating to see if the padding stops the egg from breaking.
(a) State the type of energy which the egg gains as it falls.

(1)

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(b) The weight of the egg is 0.6 N.

Calculate the work done on the egg to lift it up by 20 m. State the unit.

(3)

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(c) The velocity of the container was 18 m/s as it hit the floor.
The mass of the container was 0.5 kg.

Calculate the momentum of the container.

(2)

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*(d) A student stands on the ground with an egg in his hand.
He throws the egg vertically upwards.
The egg rises to a height of 10 m.

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Then the egg falls and lands on the ground.

Describe the energy changes of the egg during this sequence of events.

(6)

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(Total for Question = 12 marks)

Q2.

Andrew skis down a hill.



Andrew starts from the top of the hill and his speed increases as he goes downhill.

He controls his speed and direction by using his skis.

He brings himself to a stop at the bottom of the hill.

Describe the energy changes that happen between starting and stopping.

(3)

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Q3.

(i) Complete the equation that relates efficiency, useful energy transferred by a device and total energy supplied to the device.

(1)

efficiency .....

(ii) In one second an engine has a total energy input of 7500 J.

In one second 3200 J is transferred to the surroundings as wasted energy.
Calculate the useful energy transferred by the engine.

(1)

useful energy transferred = ...

(iii) Calculate the efficiency of this engine.

(2)

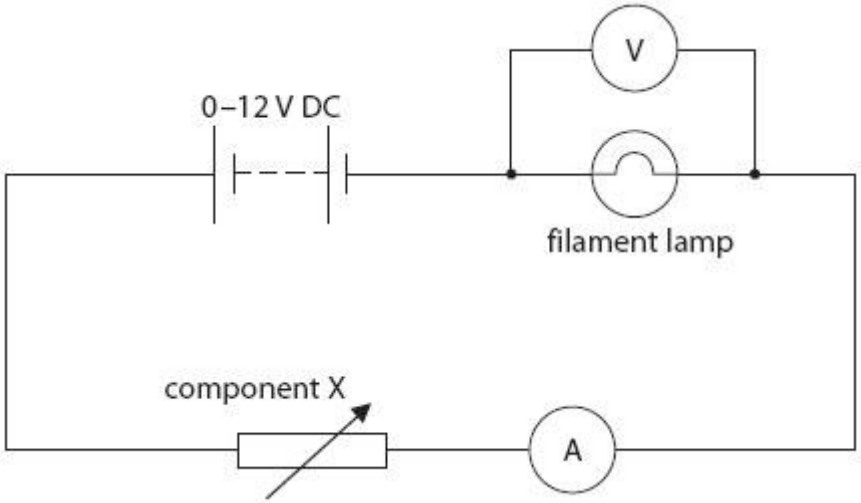
efficiency of the engine = ...

(Total for question = 4 marks)

Q4.

A student sets up an experiment to measure the potential difference (voltage) across a filament lamp.
She changes the current through the lamp.
The diagram shows the circuit she used.

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(d) Describe the energy transfer that takes place in the lamp.

(2)

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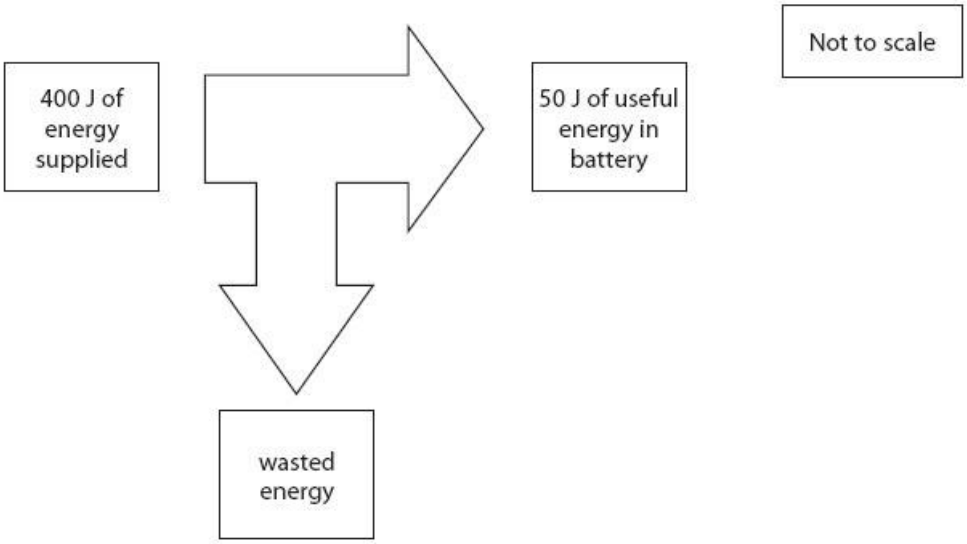
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Q5.

A student uses a solar powered battery charger to charge some batteries.



The diagram shows how much energy is usefully transferred by the battery charger.



(i) Calculate the amount of wasted energy.

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(1)

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(ii) Calculate the efficiency of the battery charger.

(2)

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