

Energy Stores + Systems

Question Paper

Level	GCSE (9-1)
Subject	Combined Science: Trilogy - Physics
Exam Board	AQA
Topic	6.1 Energy
Sub-Topic	Energy Stores + Systems
Difficulty Level	Silver Level
Booklet	Question Paper

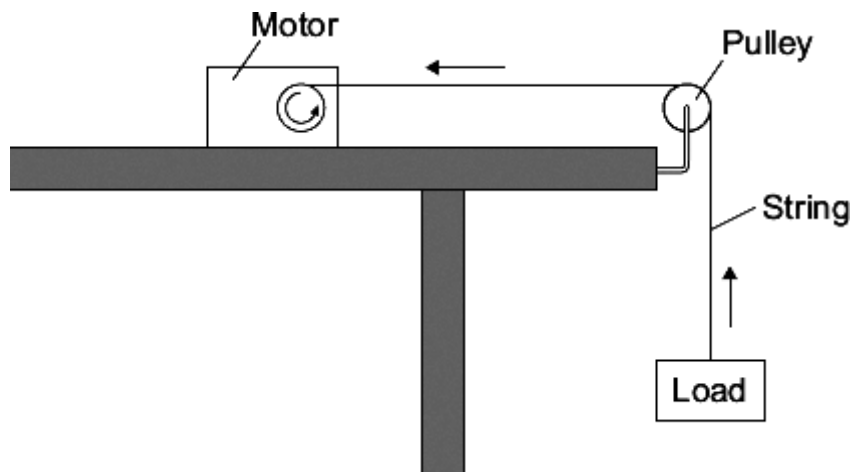
Time Allowed: 8 minutes

Score: /8

Percentage: /100

Grade Boundaries:

Q1. A student uses an electric motor to lift a load.



In the motor, the electrical energy is transferred into other types of energy. Some of this energy is useful and the rest of the energy is wasted.

(a) (i) Name the useful energy output from the electric motor.

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(1)

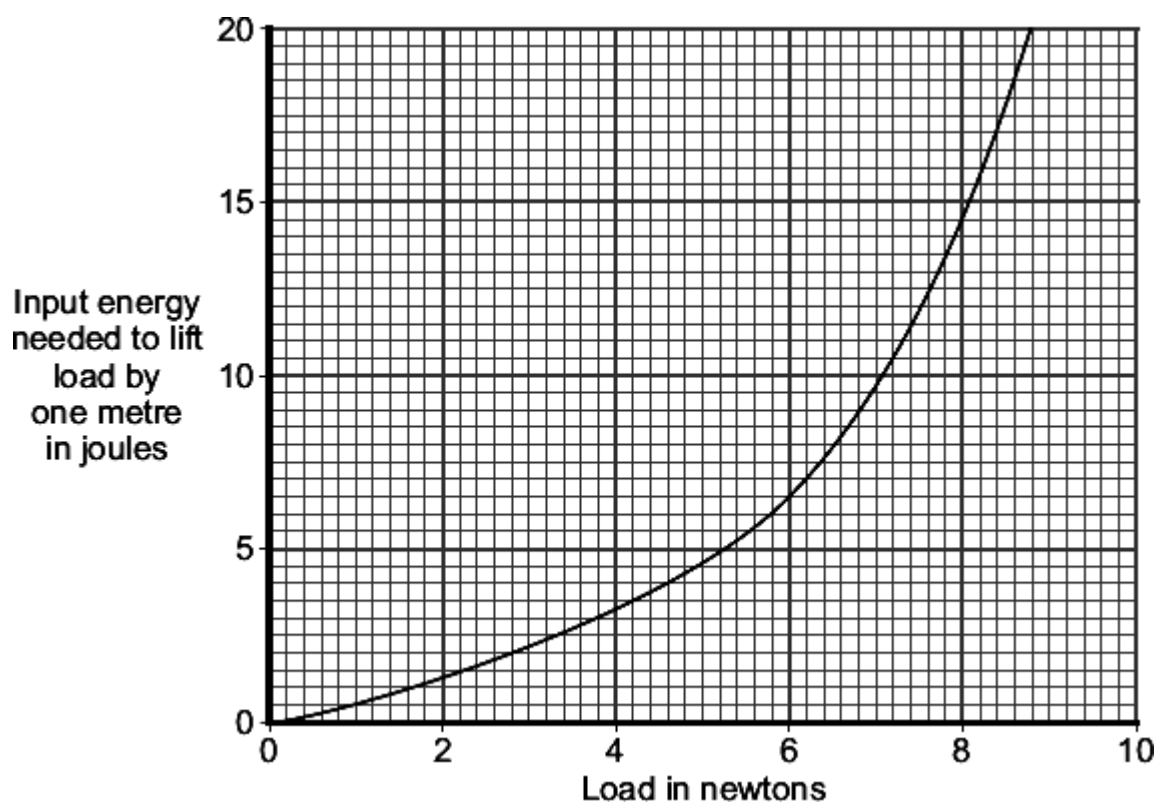
(ii) What eventually happens to the wasted energy?

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(1)

(b) The graph shows the input energy the motor needs to lift different loads by one metre.



What can you conclude from the graph about the relationship between the load lifted and the input energy needed?

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(2)

- (c) A shop uses escalators to lift customers to different floor levels. The escalators use electric motors. When the shop is not busy some escalators are turned off. A sign tells the customers that the escalators are turned off to save energy.



- (i) Each escalator has one motor with an average power of 4000 W. The motor is turned on for an average of 8 hours each day, 6 days each week. Electricity costs 15 pence per kilowatt-hour.

Calculate the cost of the electricity used in an average week to run **one** escalator.

Show clearly how you work out your answer.

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Cost = pence

(3)

- (ii) Give **one** environmental advantage to turning off electrical appliances when they are not being used.

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(1)

(Total 8 marks)