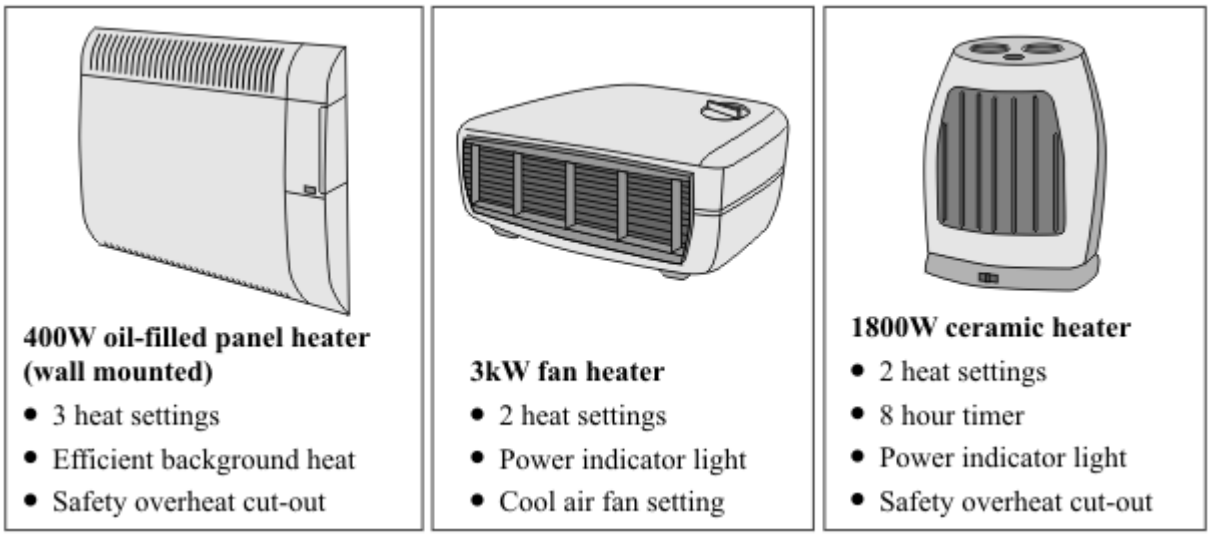
Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: Electricity (Standard demand)

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

The pictures show three different types of electric heater.



(a) The ceramic heater is run on full power for 5 hours.

Use the following equation to calculate, in joules, the amount of energy transferred from the mains to the heater.

energy transferred = power × time

Show clearly how you work out your answer.

_____

_____

Energy transferred = _____ joules

(2)

(b) Which heater will be the most expensive to run on its highest heat setting?

_____

(1)

(c) A heater is needed for a small office.

Comparing each type of heater with the other two, give **one** advantage of using each type of heater in the office.

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oil-filled panel heater _____

_____

fan heater _____

_____

ceramic heater _____

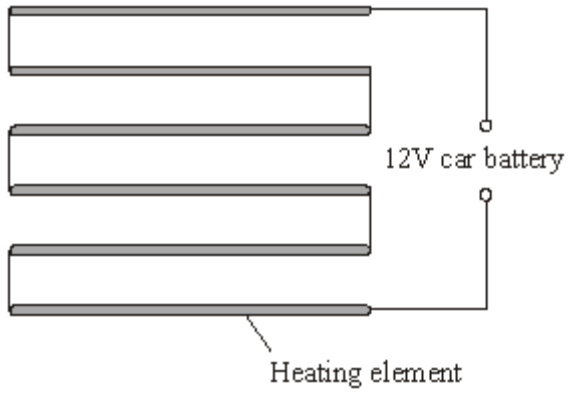
_____

(3)

(Total 6 marks)

Q2.

The diagram shows a simple type of car rear window heater. The six heating elements are exactly the same.



Each heating element has a resistance of 5 Ω. The current passing through each element is 0.4 A.

(i) Calculate the total resistance of the six heating elements.

Show clearly how you work out your answer.

_____

_____

Total resistance = _____ ohms

(2)

(ii) Why is the current passing through each element the same?

_____

_____

(1)

(iii) What is the total current passing through the whole circuit?

_____

(1)

(iv) How is the 12 volt potential difference of the car battery shared between the six heating elements?

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_____

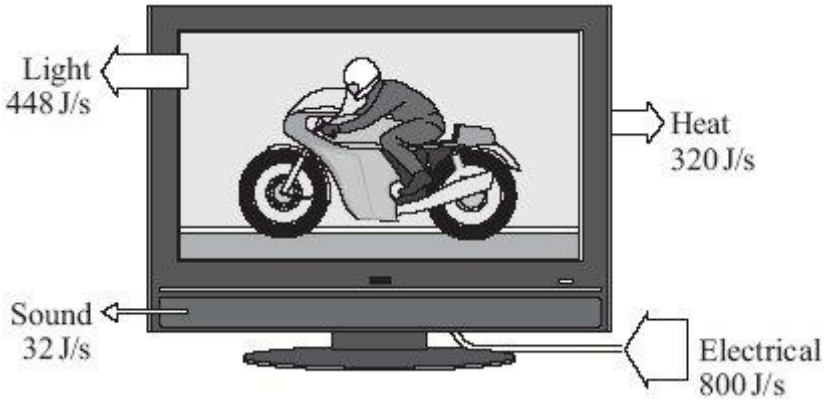
_____

(1)

(Total 5 marks)

Q3.

(a) The diagram shows the energy transformations produced by a TV.



(i) Calculate the efficiency of the TV, using the information in the diagram..

Show clearly how you work out your answer.

_____

_____

Efficiency = _____

(2)

(ii) What eventually happens to the useful energy transferred by the TV?

_____

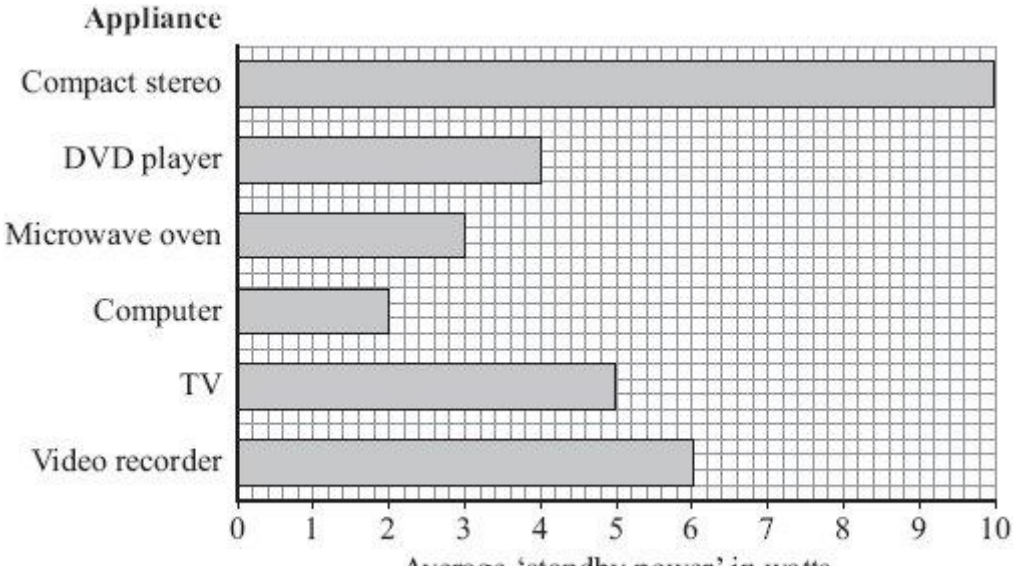
_____

(1)

(b) Electrical appliances left on standby use energy.

The bar chart shows the power for the appliances that one family leaves on standby when they go on holiday.

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The family is on holiday for a total of 175 hours.

(i) Use the information in the bar chart and the equation in the box to calculate the energy wasted by leaving the compact stereo on standby while the family is on holiday.

energy transferred (kilowatt-hour, kWh)	=	power (kilowatt, kW)	×	time (hour, h)

Show clearly how you work out your answer.

_____

_____

Energy wasted = _____ kilowatt-hours

(2)

(ii) Electricity costs 12 p per kilowatt-hour.

Use the equation in the box to calculate the cost of leaving the compact stereo on standby while the family is on holiday.

total cost = number of kilowatt-hours × cost per kilowatt-hour

Show clearly how you work out your answer.

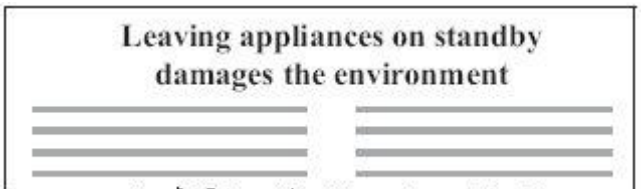
_____

Cost = _____ p

(1)

(c) A headline from a recent newspaper article is shown below.

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Explain why leaving appliances on standby damages the environment.

_____

_____

_____

_____

(2)
(Total 8 marks)

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