Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: Energy (Standard Demand)

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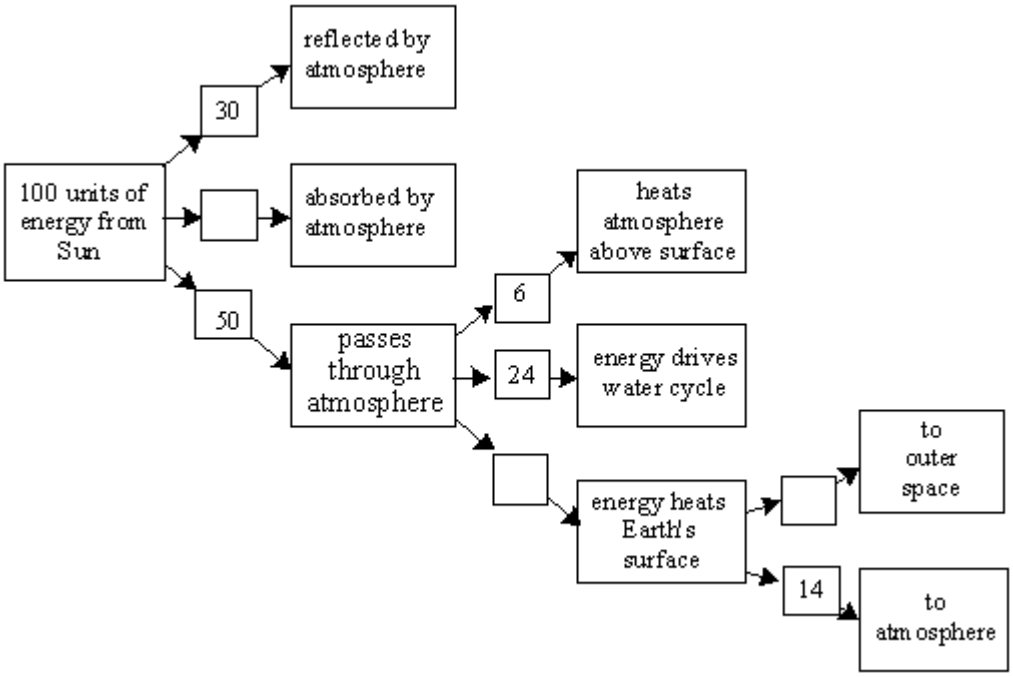
Name of the Student:_____
Max. Marks : 16 Marks **Time : 16 Minutes**

Q1.

Complete the boxes on the chart to show what happens to the energy from the Sun.



(Total 3 marks)

Q2.

Laptop computers can get very hot when they are left on for a long time. This decreases the energy efficiency of a laptop computer.

(a) What does **decreased efficiency** mean?

Tick (✔) **one** box.

Statement	**Tick (✔)**
The energy output is increased.	
A greater proportion of the energy is wasted.	
The energy input is decreased.	
A greater proportion of the energy is usefully transferred.	

(1)

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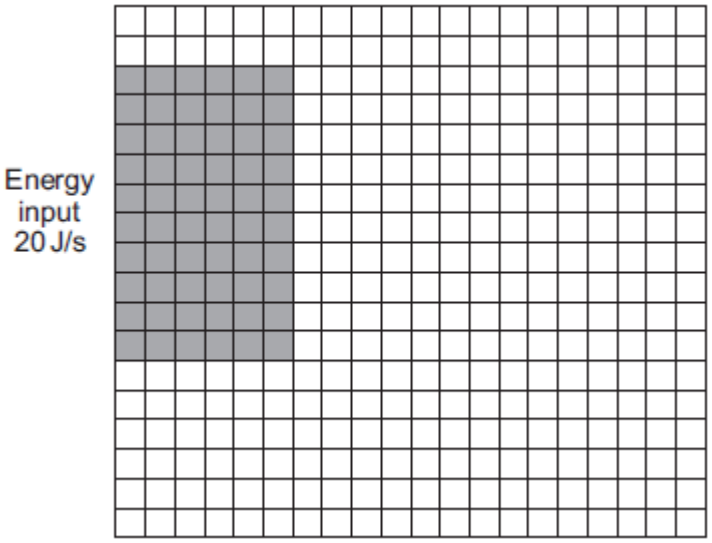
(b) The input energy to a laptop computer is 20 J each second. When the laptop is being used, 12 J of energy is transferred usefully each second and 8 J of energy is wasted each second.

Use the grid in **Figure 2** to complete the Sankey diagram for the laptop computer when it is being used.

Label your diagram.

Figure 2



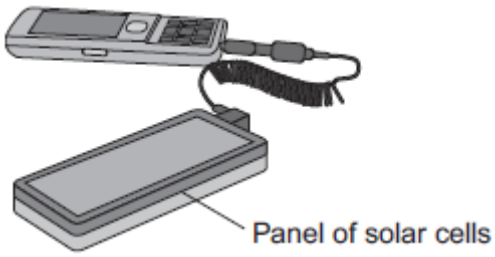
(2)

(Total 3 marks)

Q3.

A student goes camping and uses a panel of solar cells to charge his mobile phone, as shown in **Figure 1**.

Figure 1



(a) Give **one** disadvantage of using a panel of solar cells to generate electricity to charge a mobile phone.

_____

_____

(1)

(b) A new camping stove has been invented that uses burning wood to cook food and to generate electricity.

Figure 2 shows the new camping stove and a fossil fuel gas camping stove.

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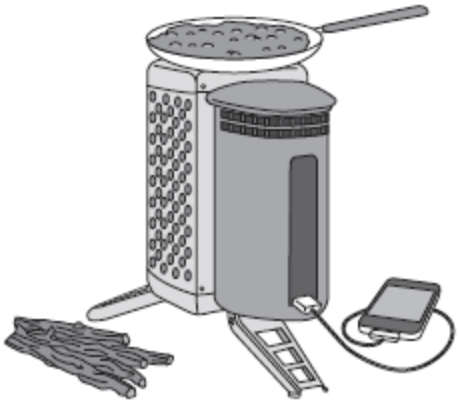
Figure 2

New camping stove



Fossil fuel gas camping stove

The new camping stove has a USB connection to charge portable devices such as mobile phones.

Suggest **two** other advantages of using the new camping stove instead of a fossil fuel gas camping stove.

_____

_____

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_____

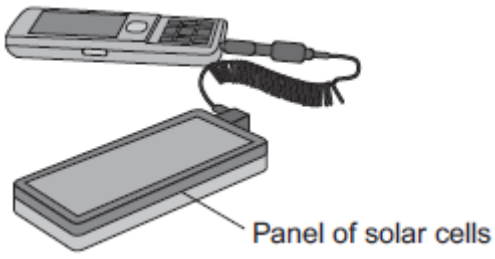
(2)

(Total 3 marks)

Q4.

A student goes camping and uses a panel of solar cells to charge his mobile phone, as shown in **Figure 1**.

Figure 1



(a) Give **one** disadvantage of using a panel of solar cells to generate electricity to charge a mobile phone.

_____

_____

(1)

(b) A new camping stove has been invented that uses burning wood to cook food and to generate

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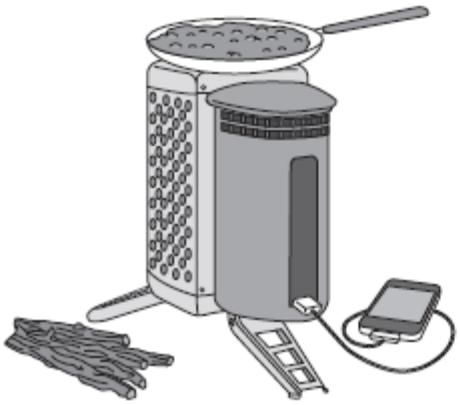
electricity.

Figure 2 shows the new camping stove and a fossil fuel gas camping stove.

Figure 2

New camping stove



Fossil fuel gas camping stove

The new camping stove has a USB connection to charge portable devices such as mobile phones.

Suggest **two** other advantages of using the new camping stove instead of a fossil fuel gas camping stove.

_____

_____

_____

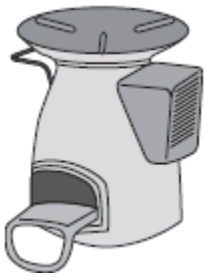
_____

(2)

(c) Another version of the new camping stove, called a home-stove, has been designed for use in Africa and is shown in **Figure 3**.

Figure 3

Home-stove



It can be used to cook food and generate electricity. The total power output of the stove is 5 kW. The maximum electrical power output is 20 W.

In African villages, there are three methods that can be used to heat food, a traditional three-stone fire, a basic stove and the home-stove as shown in **Figure 4**.

Figure 4

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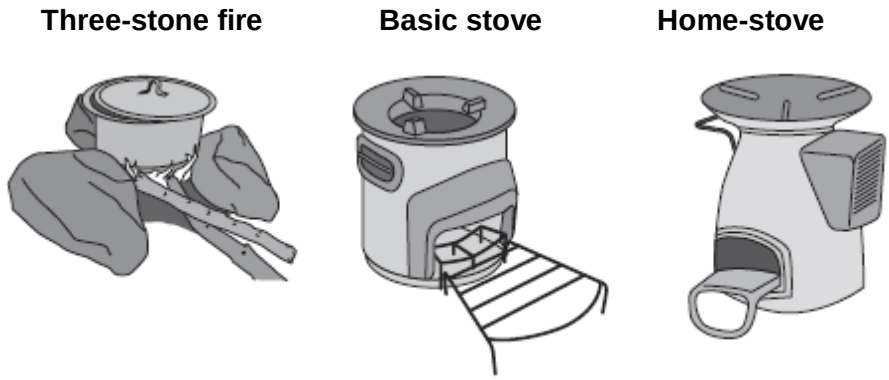
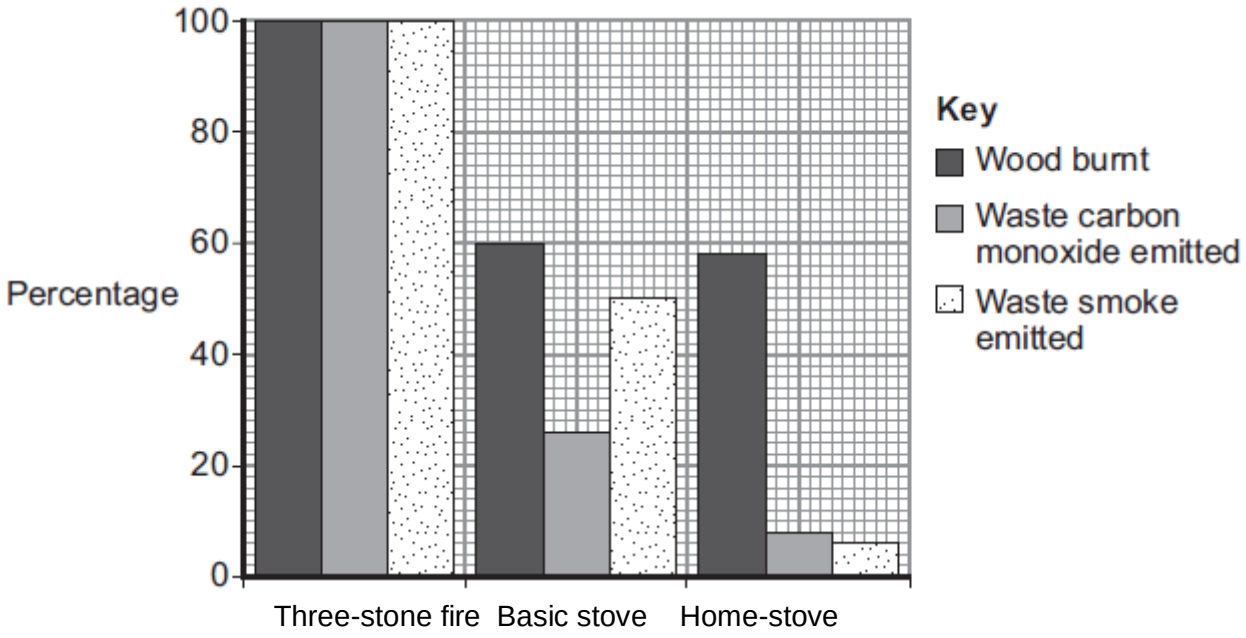


A scientist investigated the wood burnt and the carbon dioxide and smoke emitted when each method was used to boil the same volume of water.

Figure 5 shows the results of the investigation. The results for the basic stove and home-stove are relative to the three-stone fire.

Figure 5



(i) Give **two** advantages of using the home-stove compared to the other two methods.

You must use information in **Figure 5**.

_____

_____

_____

(2)

(ii) The home-stove is a reliable method of generating electricity.

Suggest **two** reasons why home-stoves are unlikely to be connected to a national grid in Africa.

_____

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(2)
(Total 7 marks)

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