



Centre Number

71

Candidate Number

General Certificate of Secondary Education
2009–2010

Science: Single Award (Modular)

Electricity, Waves and Communication

Module 5

Foundation Tier

[GSC51]



THURSDAY 20 MAY 2010, AFTERNOON

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.
Answer **all six** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 45.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

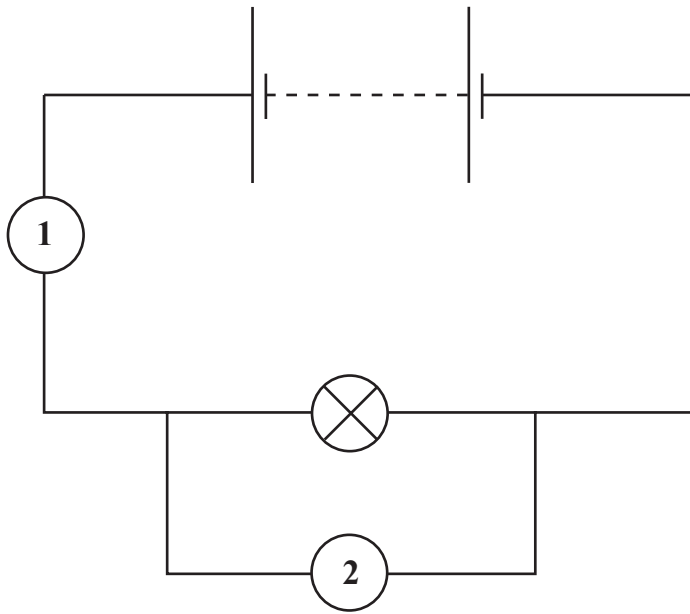
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use only

Question Number	Marks
1	
2	
3	
4	
5	
6	

Total
Marks



1 The circuit below was used to measure the current through and the voltage across a bulb.



(a) (i) What type of meter is meter ②?

Choose from :

voltmeter ohmmeter ammeter

_____ [1]

(ii) Complete the following sentence with **one** word that describes how meter ① is connected.

Meter ① is connected in _____ in the circuit. [1]

(iii) Give two changes you would see if more batteries were added to the circuit above.

1. _____

2. _____ [2]

Examiner Only	
Marks	Remark

2 (a) (i) Complete the following sentence about mobile phones.

Choose from:

city **infra-red** **microwave** **mast**

Mobile phones work by sending _____ signals to the nearest _____ which acts as a repeater station. [2]

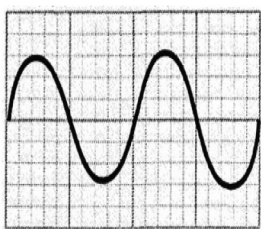
(ii) What is the area around a mast called?

_____ [1]

(iii) Name a disease associated with long-term use of mobile phones.

_____ [1]

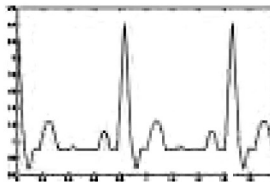
(b) (i) Which diagram below shows a digital signal?



A



B



C

Answer (A, B or C) _____ [1]

(ii) Digital signals are going to replace analogue signals by the year 2012. Give one **disadvantage** of analogue signals.

Circle the correct answer.

can be processed by computers

less interference

more interference

[1]

Examiner Only	
Marks	Remark

3 (a) The picture below shows a three pin plug.



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(i) Using lines match each pin with the colour of wire that should be connected to it.

Pin	Colour of wire	
Earth	Blue	
Neutral	Green/yellow	
Live	Brown	[2]

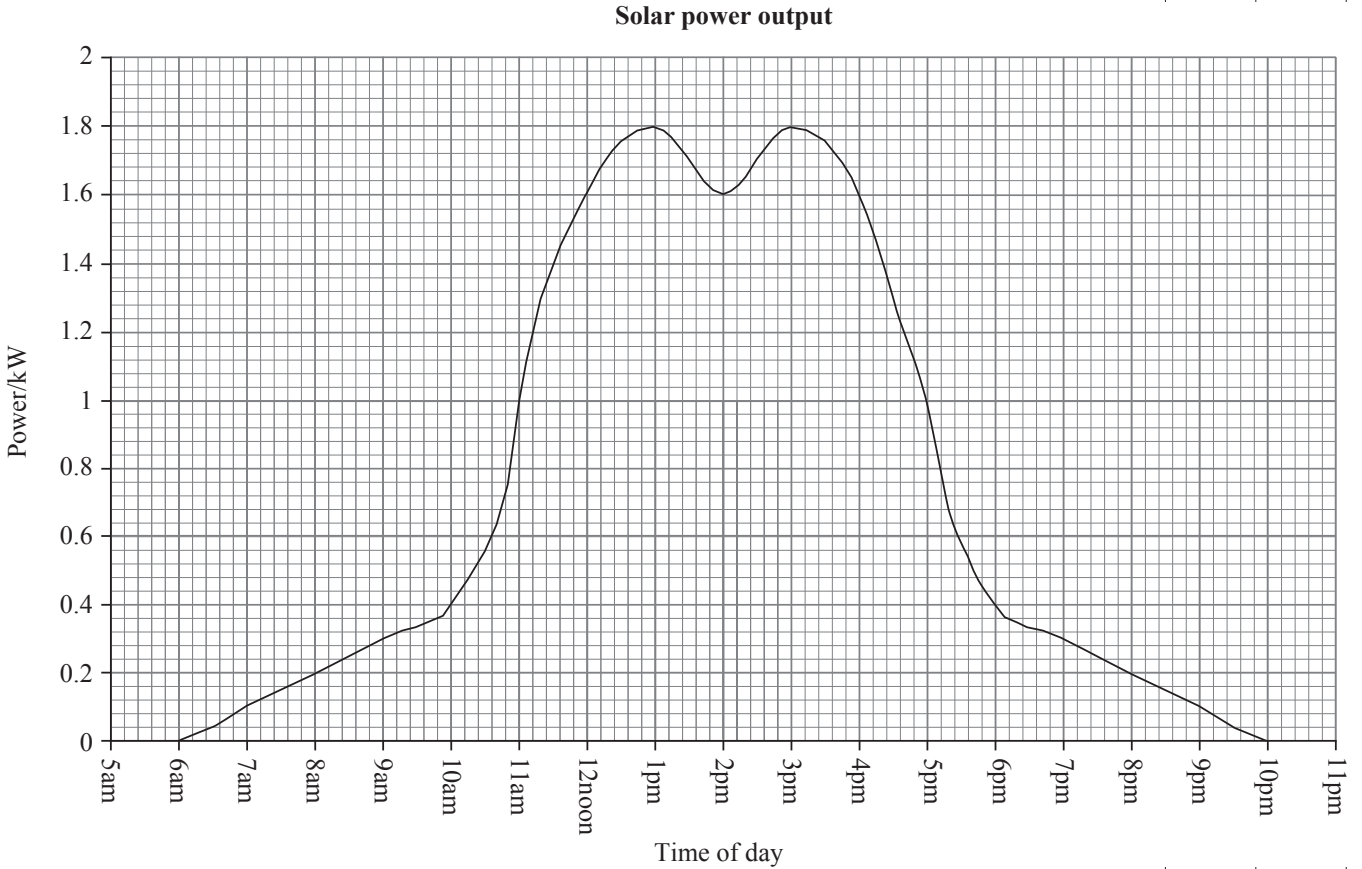
(ii) Apart from the Earth wire, name one other safety feature of this plug.

_____ [1]

Examiner Only	
Marks	Remark

4 The graph below shows the electrical power output from a solar panel during a typical summer day.

Examiner Only	
Marks	Remark



(a) (i) Calculate the number of hours that the power output is greater than 1 kW. Show your working out.

Answer _____ hours [2]

(ii) How many watts are in 1 kW?

_____ [1]

(iii) Suggest a reason for the drop in power output during mid-afternoon.

_____ [1]

(iv) Draw a line on the graph above to show what the power output might be on a typical winter day. [2]

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(b) (i) Solar power is described as a renewable energy source.

What is meant by the term **renewable energy**?

_____ [1]

(ii) Explain fully how using renewable energy sources, such as solar power, reduces the amount of air pollution.

_____ [2]

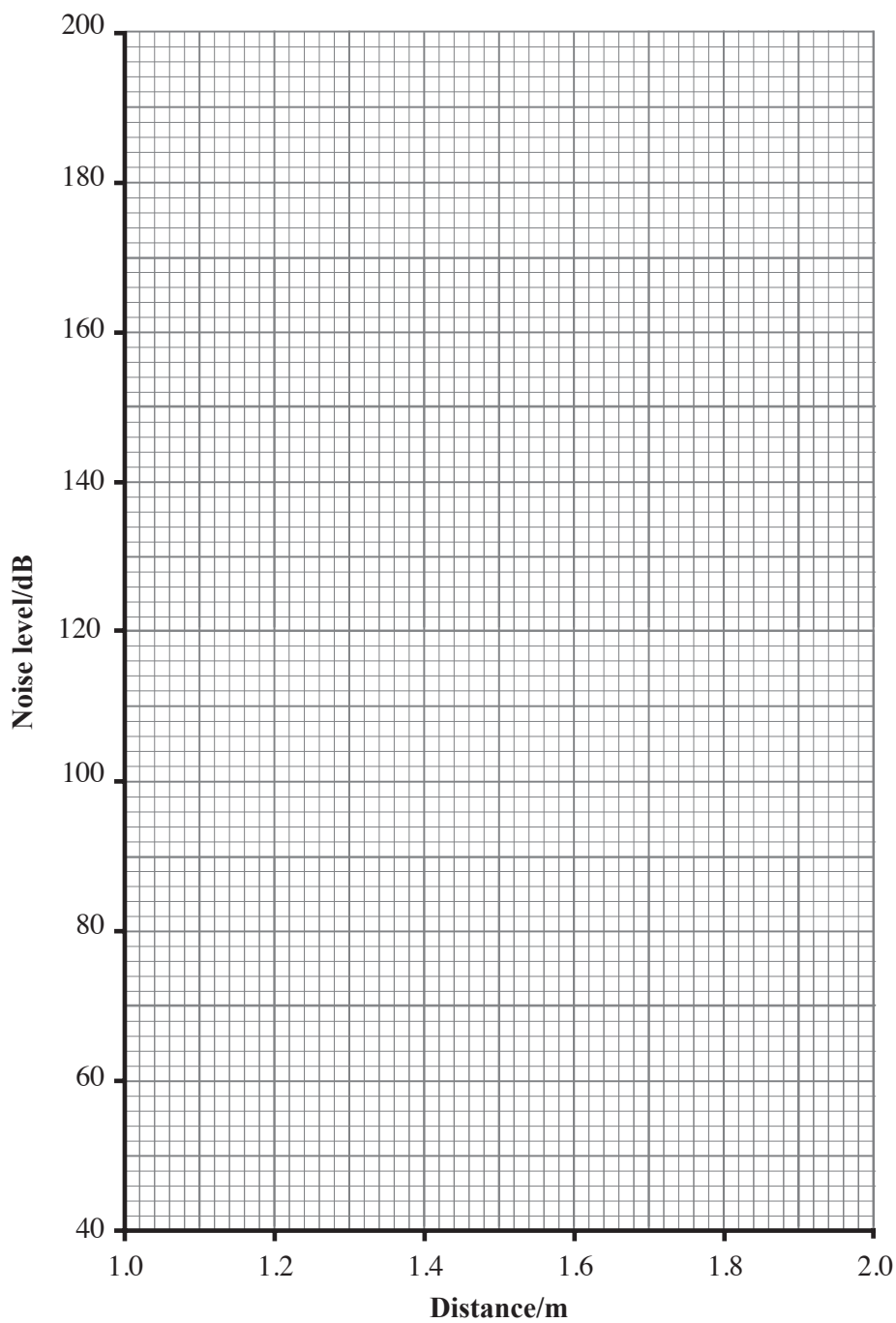
Examiner Only	
Marks	Remark

- 6 The table below gives noise levels in a concert at different distances from the loudspeakers.

Distance/m	Noise level/dB
1.0	180
1.2	125
1.4	92
1.6	70
1.8	56

- (a) (i) Plot these points on the grid below and draw a smooth curve.

[3]



Examiner Only	
Marks	Remark

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