



GCSE

**Science A (4461) /
Physics (4451)**

Specification A

PHY1AP, PH1ASF & PH1ASH

Mark Scheme

2011 Examination – March Series

The blank answer sheet for this component can be found at the end of this document.

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

Further copies of this Mark Scheme are available to download from the AQA Website: www.aqa.org.uk

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GCSE
SCIENCE A (4461) / PHYSICS (4451)
 Objective Test Answer Key
PHY1AP (Energy and Electricity)
March 2011
 Foundation Tier

Question	Key			
One	A	falling water	4	
	B	sunlight	1	
	C	waves	2	
	D	wind	3	
Two	A	conduction	1	
	B	convection	2	
	C	insulation	4	
	D	radiation	3	
Three	A	electrical	3	
	B	kinetic	4	
	C	light	1	
	D	sound	2	
Four	A	coal-fired	1	
	B	geothermal	3	
	C	nuclear	2	
	D	wind farm	4	
Five	A	economical	2	
	B	efficient	1	
	C	environmental	3	
	D	ethical	4	
	A	B	C	D
Six	3	3	4	3
Seven	1	3	2	1
Eight	2	4	2	4
Nine	4	3	2	2

GCSE
SCIENCE A (4461) / PHYSICS (4451)
 Objective Test Answer Key
PHY1AP (Energy and Electricity)
March 2011
 Higher Tier

Question	Key			
One	A	economical		2
	B	efficient		1
	C	environmental		3
	D	ethical		4
Two	A	... increase the rate at which infra red radiation is absorbed		4
	B	... increase the rate at which infra red radiation is emitted		3
	C	... improve the ability to reflect visible light		1
	D	... prevent the reflection of visible light		2
	A	B	C	D
Three	2	4	2	4
Four	4	3	2	2
Five	2	3	1	3
Six	3	2	3	3
Seven	3	4	3	4
Eight	1	1	4	1
Nine	1	2	1	3

Unit : PHY1AP PHYSICS UNIT 1A

Centre :

Candidate Number :

UCI :

Series : 3G11

Candidate Name :

02-MAR-11

For completion by the Examination Invigilator. Please fill this circle if the candidate is absent: ○

HIGHER TIER

Instructions on how to complete this answer sheet are given on the question paper. Please make sure you follow them carefully.

Questions **ONE** to **NINE** Choose one response 1 - 4 for each of the parts **A - D**

QUESTION ONE		1	2	3	4
1A	economical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1B	efficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1C	environmental	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1D	ethical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION TWO		1	2	3	4
2A	...increase the rate at which infra red is absorbed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2B	...increase the rate at which infra red is emitted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2C	...improve the ability to reflect visible light	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2D	...prevent the reflection of visible light	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION THREE		1	2	3	4
3A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION FOUR		1	2	3	4
4A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION FIVE		1	2	3	4
5A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION SIX		1	2	3	4
6A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION SEVEN		1	2	3	4
7A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION EIGHT		1	2	3	4
8A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION NINE		1	2	3	4
9A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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FOUNDATION TIER

Instructions on how to complete this answer sheet are given on the question paper. Please make sure you follow them carefully.

Questions **ONE** to **NINE** Choose one response **1 - 4** for each of the parts **A - D**

QUESTION ONE		1	2	3	4
1A	falling water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1B	sunlight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1C	waves	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1D	wind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION TWO		1	2	3	4
2A	conduction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2B	convection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2C	insulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2D	radiation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION THREE		1	2	3	4
3A	electrical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3B	kinetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3C	light	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3D	sound	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION FOUR		1	2	3	4
4A	coal-fired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4B	geothermal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4C	nuclear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4D	wind farm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION FIVE		1	2	3	4
5A	economical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5B	efficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5C	environmental	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5D	ethical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION SIX		1	2	3	4
6A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION SEVEN		1	2	3	4
7A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION EIGHT		1	2	3	4
8A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION NINE		1	2	3	4
9A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9B		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9C		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9D		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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