



**GCSE**

**Science A (4461)**

*Specification A*

**PHY1AP, PH1ASF & PH1ASH**

**Mark Scheme**

*2009 Examination – June 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](http://www.aqa.org.uk)

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Set and published by the Assessment and Qualifications Alliance.

**GCSE**  
**SCIENCE A (4461)/PHYSICS (4451)**  
Objective Test Answer Key  
**PHY1AP (Energy and Electricity)**  
**June 2009**  
Foundation Tier

Question	<b>Key</b>			
One	<b>A</b>	fan		<b>3</b>
	<b>B</b>	lamp		<b>2</b>
	<b>C</b>	oven		<b>4</b>
	<b>D</b>	radio		<b>1</b>
Two	<b>A</b>	falling water (hydroelectric)		<b>3</b>
	<b>B</b>	geothermal		<b>2</b>
	<b>C</b>	solar		<b>4</b>
	<b>D</b>	wave		<b>1</b>
Three	<b>A</b>	conduction		<b>4</b>
	<b>B</b>	convection		<b>1</b>
	<b>C</b>	insulation		<b>2</b>
	<b>D</b>	radiation		<b>3</b>
Four	<b>A</b>	electrical		<b>3</b>
	<b>B</b>	gravitational potential		<b>1</b>
	<b>C</b>	heat (thermal energy)		<b>4</b>
	<b>D</b>	kinetic		<b>2</b>
Five	<b>A</b>	environmental		<b>4</b>
	<b>B</b>	efficient		<b>2</b>
	<b>C</b>	electrical		<b>1</b>
	<b>D</b>	economical		<b>3</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Six	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>
Seven	<b>1</b>	<b>3</b>	<b>2</b>	<b>4</b>
Eight	<b>1</b>	<b>2</b>	<b>4</b>	<b>1</b>
Nine	<b>3</b>	<b>3</b>	<b>1</b>	<b>2</b>

**GCSE**  
**SCIENCE A (4461)/PHYSICS (4451)**  
 Objective Test Answer Key  
**PHY1AP (Energy and Electricity)**  
**June 2009**  
 Higher Tier

Question	<b>Key</b>			
One	<b>A</b>	environmental	4	
	<b>B</b>	efficient	2	
	<b>C</b>	electrical	1	
	<b>D</b>	economical	3	
Two	<b>A</b>	coal	3	
	<b>B</b>	nuclear	2	
	<b>C</b>	tides	4	
	<b>D</b>	wind	1	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Three	<b>1</b>	<b>2</b>	<b>4</b>	<b>1</b>
Four	<b>3</b>	<b>3</b>	<b>1</b>	<b>2</b>
Five	<b>2</b>	<b>3</b>	<b>2</b>	<b>4</b>
Six	<b>2</b>	<b>4</b>	<b>3</b>	<b>1</b>
Seven	<b>1</b>	<b>3</b>	<b>2</b>	<b>2</b>
Eight	<b>4</b>	<b>2</b>	<b>1</b>	<b>4</b>
Nine	<b>2</b>	<b>3</b>	<b>4</b>	<b>3</b>

Unit : PHY1AP PHYSICS UNIT 1A

Centre :

Candidate Number :

UCI :

Series : 6M09

Candidate Name :

22-JUN-09

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**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		
<b>1A</b>	environmental	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.
<b>1B</b>	efficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.
<b>1C</b>	electrical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.
<b>1D</b>	economical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.

**QUESTION TWO**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		
<b>2A</b>	coal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.
<b>2B</b>	nuclear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.
<b>2C</b>	tides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.
<b>2D</b>	wind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	.

**QUESTION THREE**

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

**QUESTION FOUR**

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

**QUESTION FIVE**

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

**QUESTION SIX**

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

**QUESTION SEVEN**

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

**QUESTION EIGHT**

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

**QUESTION NINE**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>9A</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>9B</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>9C</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>9D</b>	<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	fan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1B	lamp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1C	oven	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1D	radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION TWO		1	2	3	4
2A	falling water (hydroelectric)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2B	geothermal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2C	solar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2D	wave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

QUESTION FOUR		1	2	3	4
4A	electrical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4B	gravitational potential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4C	heat (thermal energy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4D	kinetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION FIVE		1	2	3	4
5A	environmental	<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	electrical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5D	economical	<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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