



**GCSE**

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

*Specification A*

**PHY1AP, PH1ASF & PH1ASH**

**Mark Scheme**

*2012 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 students' 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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**GCSE**  
**SCIENCE A (4461)/PHYSICS (4451)**  
 Objective Test Answer Key  
**PHY1AP (Energy and Electricity)**  
**March 2012**  
 Foundation Tier

Question	Key			
One	<b>A</b>	elastic potential (strain)	<b>1</b>	
	<b>B</b>	electrical	<b>3</b>	
	<b>C</b>	kinetic	<b>2</b>	
	<b>D</b>	sound	<b>4</b>	
Two	<b>A</b>	gas-fired power stations	<b>4</b>	
	<b>B</b>	nuclear power stations	<b>3</b>	
	<b>C</b>	oil-fired power stations	<b>1</b>	
	<b>D</b>	wood-burning power stations	<b>2</b>	
Three	<b>A</b>	falling water (hydroelectric)	<b>1</b>	
	<b>B</b>	fossil fuel	<b>2</b>	
	<b>C</b>	tides	<b>4</b>	
	<b>D</b>	wind	<b>3</b>	
Four	<b>A</b>	conductor	<b>1</b>	
	<b>B</b>	convector	<b>2</b>	
	<b>C</b>	insulator	<b>4</b>	
	<b>D</b>	radiator	<b>3</b>	
Five	<b>A</b>	Hairdryer	<b>1</b>	
	<b>B</b>	Hand whisk	<b>2</b>	
	<b>C</b>	Table lamp	<b>3</b>	
	<b>D</b>	Television	<b>4</b>	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Six	<b>2</b>	<b>4</b>	<b>3</b>	<b>1</b>
Seven	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>
Eight	<b>1</b>	<b>3</b>	<b>1</b>	<b>3</b>
Nine	<b>2</b>	<b>4</b>	<b>2</b>	<b>1</b>

**GCSE**  
**SCIENCE A (4461)/PHYSICS (4451)**  
 Objective Test Answer Key  
**PHY1AP (Energy and Electricity)**  
**March 2012**  
 Higher Tier

Question	Key			
One	<b>A</b>	Hairdryer	<b>1</b>	
	<b>B</b>	Hand whisk	<b>2</b>	
	<b>C</b>	Table lamp	<b>3</b>	
	<b>D</b>	Television	<b>4</b>	
Two	<b>A</b>	chemical energy to electrical energy	<b>1</b>	
	<b>B</b>	electrical energy to chemical energy	<b>2</b>	
	<b>C</b>	electrical energy to light energy	<b>3</b>	
	<b>D</b>	light energy to electrical energy	<b>4</b>	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Three	<b>1</b>	<b>3</b>	<b>1</b>	<b>3</b>
Four	<b>2</b>	<b>4</b>	<b>2</b>	<b>1</b>
Five	<b>3</b>	<b>4</b>	<b>1</b>	<b>2</b>
Six	<b>1</b>	<b>2</b>	<b>4</b>	<b>2</b>
Seven	<b>2</b>	<b>4</b>	<b>2</b>	<b>4</b>
Eight	<b>4</b>	<b>2</b>	<b>3</b>	<b>3</b>
Nine	<b>3</b>	<b>4</b>	<b>3</b>	<b>2</b>

Unit : PHY1AP      PHYSICS UNIT 1A

Centre :

Candidate Number :

UCI :

Series : 3G12

Candidate Name :

01-MAR-12

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	Hairdryer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1B	Hand whisk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1C	Table lamp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1D	Television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION TWO		1	2	3	4
2A	chemical energy to electrical energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2B	electrical energy to chemical energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2C	electrical energy to light energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2D	light energy to electrical energy	<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	elastic potential (strain)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1B	electrical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1C	kinetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1D	sound	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION TWO		1	2	3	4
2A	gas-fired power stations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2B	nuclear power stations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2C	oil-fired power stations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2D	wood-burning power stations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION THREE		1	2	3	4
3A	falling water (hydroelectric)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3B	fossil fuel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3C	tides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3D	wind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

QUESTION FIVE		1	2	3	4
5A	Hairdryer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5B	Hand whisk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5C	Table lamp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5D	Television	<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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