



**GCSE**

**Science A (4461)**

*Specification A*

**PHY1BP, PH1BSF & PH1BSH**

**Mark Scheme**

*2010 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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**GCSE**  
**SCIENCE A (4461) / PHYSICS (4451)**  
 Objective Test Answer Key  
**PHY1BP (Radiation and the Universe)**  
**June 2010**  
 Foundation Tier

Question	<i>Key</i>			
One	<b>A</b>	gamma rays	<b>1</b>	
	<b>B</b>	microwaves	<b>4</b>	
	<b>C</b>	visible light	<b>3</b>	
	<b>D</b>	X-rays	<b>2</b>	
Two	<b>A</b>	alpha	<b>3</b>	
	<b>B</b>	beta	<b>2</b>	
	<b>C</b>	gamma	<b>1</b>	
	<b>D</b>	X-rays	<b>4</b>	
Three	<b>A</b>	alpha	<b>2</b>	
	<b>B</b>	beta	<b>3</b>	
	<b>C</b>	gamma	<b>1</b>	
	<b>D</b>	X-rays	<b>4</b>	
Four	<b>A</b>	categoric	<b>2</b>	
	<b>B</b>	control	<b>1</b>	
	<b>C</b>	dependent	<b>3</b>	
	<b>D</b>	reliable	<b>4</b>	
Five	<b>A</b>	three	<b>3</b>	
	<b>B</b>	four	<b>1</b>	
	<b>C</b>	five	<b>2</b>	
	<b>D</b>	eight	<b>4</b>	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Six	4	2	2	1
Seven	4	3	1	4
Eight	3	3	4	2
Nine	4	2	2	2

**GCSE**  
**SCIENCE A (4461) / PHYSICS (4451)**  
 Objective Test Answer Key  
**PHY1BP (Radiation and the Universe)**  
**June 2010**  
 Higher Tier

Question	<i>Key</i>			
One	<b>A</b>	three		<b>3</b>
	<b>B</b>	four		<b>1</b>
	<b>C</b>	five		<b>2</b>
	<b>D</b>	eight		<b>4</b>
Two	<b>A</b>	Source gives off alpha radiation only.		<b>3</b>
	<b>B</b>	Source gives off alpha and beta radiation only.		<b>2</b>
	<b>C</b>	Source gives off alpha, beta and gamma radiation.		<b>4</b>
	<b>D</b>	Source gives off beta radiation only.		<b>1</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Three	3	3	4	2
Four	4	2	2	2
Five	1	3	4	2
Six	2	2	2	2
Seven	1	2	2	1
Eight	2	4	3	4
Nine	2	4	4	2

Unit : PHY1BP PHYSICS UNIT 1B

Centre :

Candidate Number :

UCI :

Series : 6M10

Candidate Name :

28-JUN-10

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> three	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>1B</b> four	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>1C</b> five	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>1D</b> eight	<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> Source gives off alpha radiation only.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>2B</b> Source gives off alpha and beta radiation only.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>2C</b> Source gives off alpha, beta and gamma radiation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>2D</b> Source gives off beta radiation only.	<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	gamma rays	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1B	microwaves	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1C	visible light	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1D	X-rays	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION TWO		1	2	3	4
2A	alpha	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2B	beta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2C	gamma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2D	X-rays	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION THREE		1	2	3	4
3A	alpha	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3B	beta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3C	gamma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3D	X-rays	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

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