



GCSE

Additional Science A

General Certificate of Secondary Education **A217/01**

Unit 3: Modules B6, C6, P6 (Foundation Tier)

Mark Scheme for June 2010

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of pupils of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, OCR Nationals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

© OCR 2010

Any enquiries about publications should be addressed to:

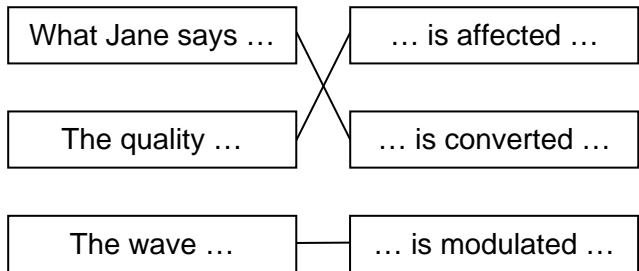
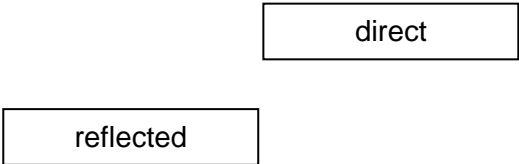
OCR Publications
PO Box 5050
Annesley
NOTTINGHAM
NG15 0DL

Telephone: 0870 770 6622
Facsimile: 01223 552610
E-mail: publications@ocr.org.uk

A217/01

Mark Scheme

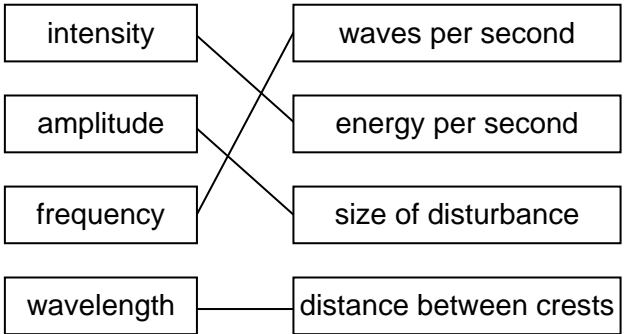
June 2010

| Question | | | Expected Answers | Marks | Additional Guidance |
|----------|---|----|---|-------|---|
| 1 | a | |  | [2] | <p>correct pattern = 2 marks one or two mistakes = 1 mark</p> <p>a mistake is a missing line or a line in the wrong place</p> |
| | b | i |  | [1] | both required for 1 mark |
| | | ii | discusses waves (1) which cancel each other out (1) | [2] | |
| | | | Total | [5] | |

A217/01

Mark Scheme

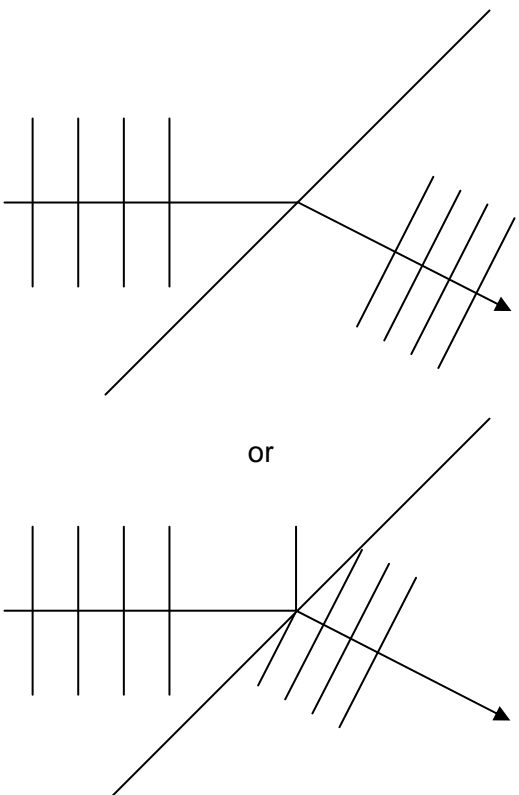
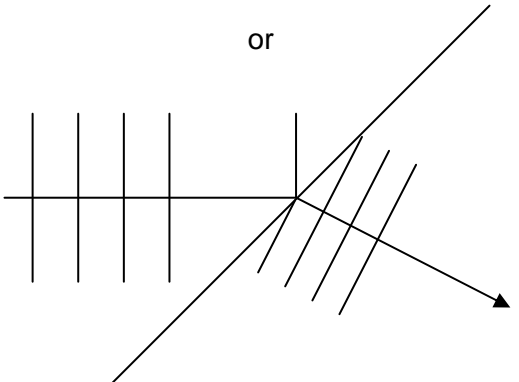
June 2010

| Question | | | Expected Answers | Marks | Additional Guidance |
|----------|---|--|---|------------|--|
| 2 | a | | 300 m/s (1) | [1] | |
| | b | |  | [2] | <p>correct pattern = 2 marks one or two mistakes = 1 mark</p> <p>a mistake is a missing line or a line in the wrong place</p> |
| | c | | decreases stays the same | [1] | <p>accept gets smaller / reduces (owtte) accept remains constant / doesn't change (owtte) both required for 1 mark</p> |
| | | | Total | [4] | |

A217/01

Mark Scheme


June 2010

| Question | | | Expected Answers | Marks | Additional Guidance | | | | | | | |
|-------------|---|--|---|-------------|---|------------|---------------|--|--|------------|-----|--|
| 3 | a | | refraction (1) the wave changes speed (1) | [2] | accept slows down | | | | | | | |
| | b | |  <p>or</p>  | [1] | look for four wavefronts on right closer together than on left ignore angle to the direction of energy flow accept irregular spacing if two of the gaps are smaller than the gaps on the left hand side | | | | | | | |
| | c | | <table border="1"><tr><td>radio waves</td><td></td><td></td><td>visible light</td><td></td><td></td><td>gamma rays</td></tr></table> | radio waves | | | visible light | | | gamma rays | [2] | all three correct = 2 marks one or two correct = 1 mark |
| radio waves | | | visible light | | | gamma rays | | | | | | |
| | | | Total | [5] | | | | | | | | |

A217/01

Mark Scheme

June 2010

| Question | | | Expected Answers | Marks | Additional Guidance |
|----------|---|----|---|-------|--|
| 4 | a | | MgSO ₄ (1) | [1] | |
| | b | |  | [1] | |
| | c | | Donna (1) | [1] | |
| | d | i | Mg(OH) ₂ (1) NaOH (1) | [2] | correct pattern = 2 marks one mistake = 1 mark a mistake is <ul style="list-style-type: none"> • a ring in the wrong place • a missing ring • an extra ring |
| | | ii | salt (solution) (1) water (1) | [2] | in any order ignore named salts e.g. magnesium sulfate |
| | | | Total | [7] | |

| | | | | | |
|---|---|--|--|-----|---|
| 5 | a | | removing impurities is expensive / impure acid is cheaper (1) impurities do not stop acid doing the job (1) | [2] | not acid becomes impure as it is used ignore references to strength of acid |
| | b | | use a probe/meter and look for reading/number (1) use paper/indicator and look for colour (1) | [2] | in any order must have both device and observation for each mark accept universal/litmus/Ui/pH |
| | | | Total | [4] | |

| | | | | | |
|---|---|--|--------------|-----|--|
| 6 | a | | A B | [1] | both required for 1 mark in any order |
| | b | | A (1) | [1] | |
| | c | | C (1) | [1] | |
| | | | Total | [3] | |

A217/01

Mark Scheme

June 2010

| Question | | | Expected Answers | Marks | Additional Guidance |
|----------|---|--|---|------------|--|
| 7 | a | | storage retrieval | [1] | both required for 1 mark |
| | b | | billions experience transmit | [2] | all three correct = 2 marks two or one correct = 1 mark |
| | c | | <div style="text-align: right;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> The variety of potential pathways ... <input checked="" type="checkbox"/> (1) </div> | [1] | |
| | | | Total | [4] | |

A217/01

Mark Scheme

June 2010

| Question | | | Expected Answers | Marks | Additional Guidance |
|----------|---|----|--|------------|--|
| 8 | a | | <div style="text-align: right;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> The wasp has difficulty ... <input checked="" type="checkbox"/> (1) The wasp relies on reflex . <input checked="" type="checkbox"/> (1) </div> | [2] | correct pattern = 2 marks one mistake = 1 mark a mistake is <ul style="list-style-type: none"> • an extra tick • a missing tick • a tick in the wrong place |
| | b | i | <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; display: inline-block;">motor</div> <div style="border: 1px solid black; padding: 5px; display: inline-block;">sensory</div> </div> | [2] | |
| | | ii | any three from: impulse in sensory neuron from skin; impulse is an electrical signal; passes between neurons across a synapse; to a relay neuron; in the spinal cord; impulse in motor neuron to muscle; | [3] | accept in the spine |
| | | | Total | [7] | |

| | | | | | |
|---|---|--|--|------------|--|
| 9 | a | | language (1) | [1] | |
| | b | | any two from: stimulate brain electrically / owtte; study people with brain damage; view brain in MRI scanner; | [2] | accept study the 'brains of dead people' / owtte do not accept X-ray or CT scan |
| | | | Total | [3] | |

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

14 – 19 Qualifications (General)

Telephone: 01223 553998

Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office; 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity



OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553

© OCR 2010