

Name of the Student: _____

Max. Marks : 23 Marks

Time : 23 Minutes

Mark Schemes

Q1.

- | | | |
|-----|--------------------------------|------------|
| (a) | (light waves) are transverse | 1 |
| | (sound waves) are longitudinal | 1 |
| (b) | (i) B | 1 |
| | (ii) D | 1 |
| | | [4] |

Q2.

- | | | |
|-------|--|---|
| (a) | 2 cm | 1 |
| (b) | 5 (hertz) | |
| | <i>ignore incorrect units</i> | 1 |
| (c) | $v = f \times \lambda$ | |
| | 10 (cm/s) | |
| | <i>allow correct substitution for 1 mark (20 × 0.5) or (2 × 5)</i> | 2 |
| (d) | (i) point at 6 cm on x-axis should be circled | 1 |
| | (ii) line of best fit drawn through points ignoring anomalous point at 6 cm | |
| | <i>line should be a curve through every point (including 0) except anomalous point</i> | |
| | <i>tolerance ±1 square at each cross</i> | |
| | <i>ignore line after 16 cm</i> | |
| | <i>do not accept straight lines joining crosses</i> | 1 |
| (iii) | 3.5 (cm/s) | |
| | <i>tolerance ± half a square from students line</i> | |
| | <i>allow ecf from (d)(ii)</i> | |
| | <i>if no extrapolation accept 3.5</i> | 1 |

Q3.

- (a)
- correct order only*

gamma (rays)

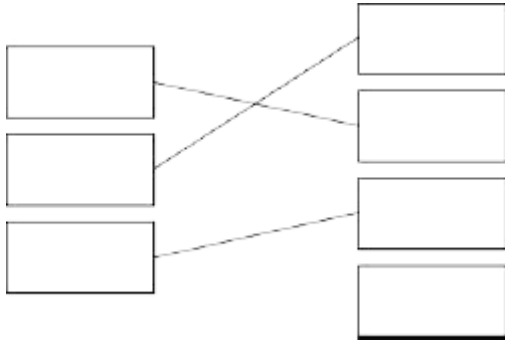
allow waves

1

(visible) light

1

- (b)

*extra line from statement cancels the mark*

1

1

1

[5]

Q4.

- (a) (i) radio (waves)

1

- (ii) gamma (rays)

accept γ *do **not** accept α*

1

- (iii) X-rays

or

gamma (rays)

accept γ *do **not** accept α*

1

- (b) (i) 2

1

- (ii) 4(cm)

1

- (iii) 3(cm)

ignore + or – in front of 3(cm)

1

- (iv) transverse

1

[7]