

Name of the Student: _____

Max. Marks : 21 Marks

Time : 21 Minutes

Mark Schemes

Q1.

- | | | | |
|-----|-------|--|---|
| (a) | (i) | 50 (N) | |
| | | <i>ignore any units</i> | 1 |
| | (ii) | resultant force | 1 |
| | (iii) | 4000 | |
| | | <i>accept their (a)(i) × 80 correctly calculated for 2 marks</i> | |
| | | <i>allow 1 mark for correct substitution i.e. 50 × 80 or their (a)(i) × 80</i> | |
| | | <i>ignore any units</i> | 2 |
| (b) | (i) | joule | 1 |
| | (ii) | heat | 1 |

[6]

Q2.

- | | | | |
|-----|----------------------------|---|---|
| (a) | shallowest slope/ gradient | | |
| | | <i>accept smallest distance in biggest time</i> | |
| | | <i>accept longest time to travel the same distance</i> | |
| | | <i>accept the line is not as steep</i> | |
| | | <i>accept it is a less steep line</i> | |
| | | <i>do not accept the line is not steep</i> | 1 |
| (b) | A – B | | |
| | | <i>If 2 or 3 boxes are ticked no mark</i> | 1 |
| (c) | (i) | 200 m | 1 |
| | (ii) | 20 s | |
| | | <i>allow 1 mark for correctly identifying 60 s or 40 s from the graph</i> | 2 |
| (d) | (i) | <u>straight</u> line starting at origin | |
| | | <i>accept within one small square of the origin</i> | 1 |

passing through $t = 200$ and $d = 500$

1

(ii) 166

*accept any value between 162 and 168
accept where their line intersects
given graph line correctly read ± 3 s*

1

[8]

Q3.

(a) **B** or bungee cords

1

C or springs or playground ride

each additional answer loses 1 mark minimum mark zero

1

will go back to original shape/size

1

(b) (i) newton

1

(ii) 0 – 5 (N) or 5

*accept 1 – 5 (N)
do **not** accept 4*

1

(iii) 16 (cm)

1

(iv) 2.5 (N)

accept answer between 2.4 and 2.6 inclusive

1

[7]