

Name of the Student: _____

Max. Marks : 25 Marks

Time : 25 Minutes

Mark Schemes

Q1.

- (a) wavelength 1
- frequency 1
- this order only*
- (b) parallel 1
- (c) 8000 Hz 1
- (d) period = $\frac{1}{8000}$ 1
allow ecf from part (c)
- 0.000125 (s) 1
- (e) $\lambda = \frac{330}{6600}$ 1
- $\lambda = 0.050$ 1
allow 0.05
- m 1
- (e) distance travelled = speed \times time
- or**
- $s = vt$ 1
allow any correct rearrangement
- (f) $13.2 = 330 \times t$ 1

$$t = \frac{3600}{\dots}$$

1

$$t = 0.040 \text{ (s)}$$

allow 0.040 (s)

1

- (g) loudspeaker **B** is closer to the technician (than speaker **A**)

'it' means speaker B

1

so the sound would take more time to travel (to the technician)

1

so the sound from each speaker arrives at the technician at the same time

1

[16]

Q2.

- (a) 30 (°)

1

- (b) zero error

1

- (c) subtract 0.5 N from each measurement

1

- (d) points plotted correctly

allow 5 correctly plotted for 2 marks, 2–4 correctly plotted for 1 mark

allow ± half a square

ignore any attempt at a line of best fit

2

- (e) the long ramp has a smaller angle

allow description (eg shallower gradient / less steep)

1

(so) less force is needed (to hold the wheelchair stationary on the ramp)

allow (so) less force is needed to move the wheelchair up the ramp

1

- (f) $W = 160 \times 2.5$

1

$$W = 400 \text{ (J)}$$

1

[9]