

Name of the Student: _____

Max. Marks : 17 Marks

Time : 17 Minutes

Mark Schemes

Q1.

(a) sound 1

(b) (visible) light 1

(c) cooking food 1

(d) 1.2 gigahertz 1

(e) $300\,000 \times 1000 = 300\,000\,000 \text{ m/s}$ 1(f) wave speed = frequency \times wavelength
allow $v = f \lambda$ 1(g) $300\,000\,000 = 1200\,000\,000 \times \lambda$
an answer of 0.25 scores 3 marks 1
$$\lambda = \frac{300\,000\,000}{1\,200\,000\,000}$$
 allow ecf from (e) 1
 $\lambda = 0.25 \text{ (m)}$ 1**[9]****Q2.**

(a) K 1

(b) Decreases 1

(c) use a metre rule / 30 cm ruler to measure across 10 (projected) waves
accept any practical number of waves number for 10 1

and then divide by 10 1

(d) $1.2 \text{ cm} = 0.012 \text{ m}$

1

$$18.5 \times 0.012 = 0.22(2) \text{ (m / s)}$$

1

allow 0.22(2) with no working shown for 2 marks

typical walking speed = 1.5 m / s

accept any value e.g. in the range 0.7 to 2.0 m / s

1

so the water waves are slower (than a typical walking speed)

this cannot score on its own

1

[8]