

Multiple Choice Answers

Q25: B

Q26: D

Multiple Choice Answers

Q24: D

Multiple Choice Answers

Q26: A

Multiple Choice Answers

Q24: D

Q26: B

Multiple Choice Answers

Q20: B

5(a)	wavelength: - wavelength = distance between successive / adjacent in phase points / wavefronts / crests / troughs $\lambda = d / (\text{number of}) \text{ oscillations}$ frequency: - frequency = (number of) oscillations / cycles crests / troughs / wavefronts (passing a point) per unit time $f = (\text{number of}) \text{ oscillations} / t$ One correct point from either list
	One correct point from both lists and speed = distance / time and one of: - wavelength $\times$ frequency (= distance per unit time) = speed $[(\text{number of}) \text{ oscillations} / t] \times [d / (\text{number of}) \text{ oscillations}] = f\lambda$ $v (= d / t) = \lambda / (1/f) = f\lambda$ or $v (= d / t) = \lambda / T = f\lambda$
5(b)(i)	$T = 4 \times 10^{-3}$ $f = 1 / T = 1 / 0.004$ $f = 250 \text{ Hz}$
5(b)(ii)	$f_o = f_s v / (v - v_s)$ $250 = 236 \times v / (v - 20)$ $v = (250 \times 20) / (250 - 236)$ $= 360 \text{ m s}^{-1}$

3(a)	10.0 cm
3(b)(i)	$v = f\lambda$ $= 16 \times 0.40$
	$= 6.4 \text{ m s}^{-1}$
3(b)(ii)	(X and Y have a) <u>constant</u> phase difference (of 180°) so (they are) coherent
3(c)	A single wave of amplitude 10.0 cm
	A single negative sine wave of wavelength 0.40 m
3(d)	$I \propto A^2$
	$\frac{I_X}{I_Y} = 10^2 / 20^2$
	ratio = 0.25

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