OCR
Oxford Cambridge and RSA

# A Level Physics A

**H556/02** Exploring physics

# Question Set 24

**1 (a)** Fig. 17.1 shows the variation with distance of the displacement of a **stationary** wave at time $t = 0$.

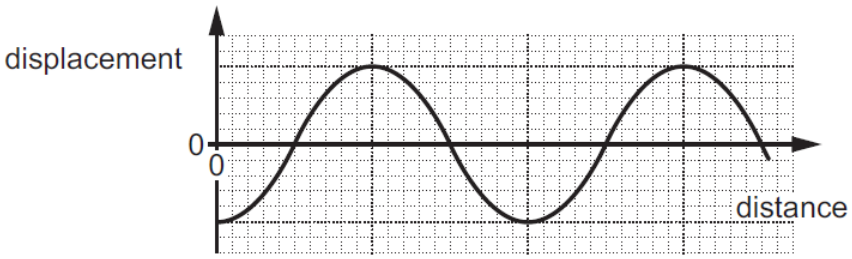


**Fig. 17.1**

The period of the wave is $T$.

**(i)** On Fig. 17.1, sketch a graph to show the variation of the displacement at time $t = \frac{T}{2}$. **[1]**

**(ii)** On Fig. 17.1, show the positions of **all** the nodes. Label each node **N**. **[1]**

**(b)** Stationary sound waves are formed in a tube closed at one end.
Fig. 17.2 shows three stationary wave patterns formed in the air column of the tube.

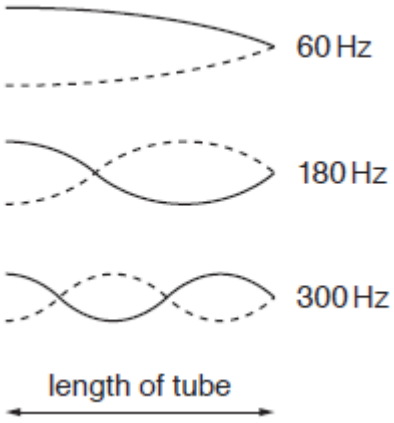


**Fig. 17.2**

The frequency $f$ of the oscillations for each stationary wave is shown in Fig. 17.2.

Use Fig. 17.2 to explain how the frequency $f$ of the sound wave depends on the wavelength $\lambda$.

**[3]**

## Total Marks for Question Set 24: 5