Past Paper Questions – Waves Name ……

1. (a) For a **sound wave** travelling through air, explain what is meant by *particle displacement*, *amplitude* and *wavelength.*

Particle displacement.....

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amplitude .....

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wavelength.....

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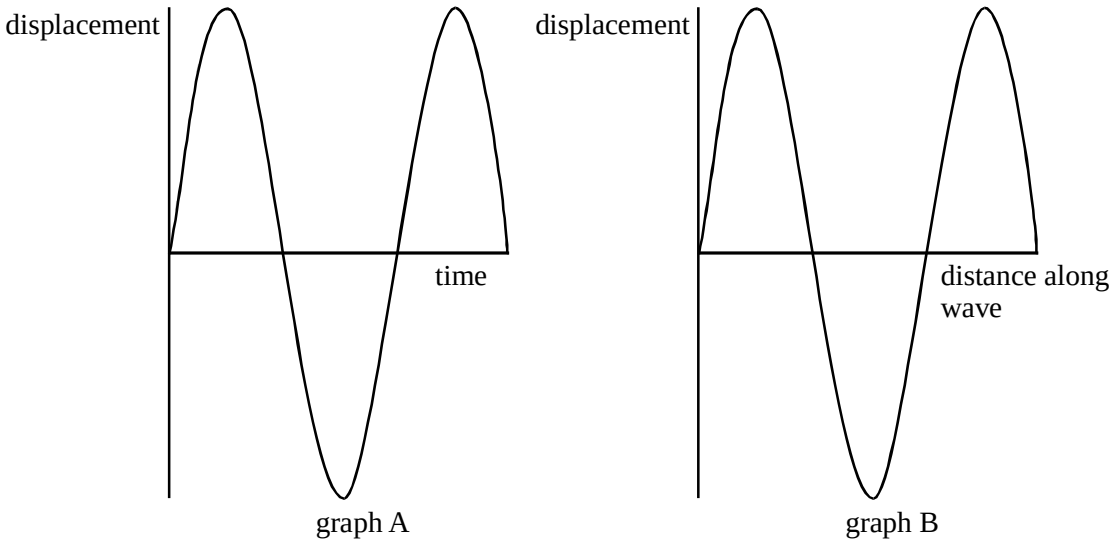
(4)

(b)



Graph A shows the variation of particle displacement with **time** at a point on the path of a progressive wave of constant amplitude.

Graph B shows the variation of particle displacement with **distance** along the same wave at a particular instant.

(i) Show on graph A

(1) the wave amplitude, *a*,

(2) the period, *T*, of the vibrations providing the wave.

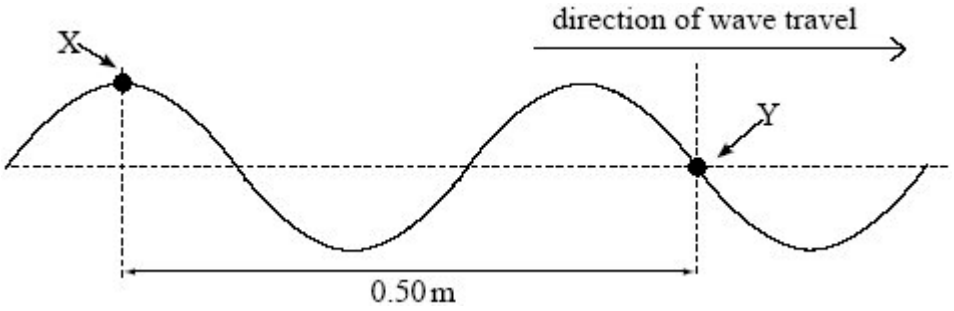
(ii) Show on graph B

(1) the wavelength of the wave, λ,

(2) two points, P and Q, which are always π/2 out of phase.

(4)
(Total 8 marks)

2. (a) The diagram below represents a progressive wave travelling from left to right on a stretched string.



(i) Calculate the wavelength of the wave.

answer ..... m

(1)

(ii) The frequency of the wave is 22 Hz. Calculate the speed of the wave.

answer.....m s^{-1}

(2)

(iii) State the phase difference between points X and Y on the string, giving an appropriate unit.

answer .....

(2)

(b) Describe how the displacement of point Y on the string varies in the next half-period.

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(2)
(Total 7 marks)