NAME	**INDEX NUMBER**
SCHOOL	**DATE**

WAVES I

1. 1995 Q19 P1

In an experiment using a ripple tank the frequency, f, of the electric pulse generator was reduced to one third of its value. How does the new wave length compare with the initial wave length? Explain your answer. (3 marks)

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2. 1995 Q25 P1

Name the property of light that shows that it is a transverse wave

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3. 1995 Q6 P2

(a) Distinguish between stationary and progressive waves (1 mark)

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(b) (i) Describe how a young's double slit may be made in a laboratory (2 marks)

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(ii) State the condition for a minim to occur in an interference pattern (1mark)

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(c) The sketch graph in fig 4 shows the results of an experiment to study diffraction patterns using a double slit.

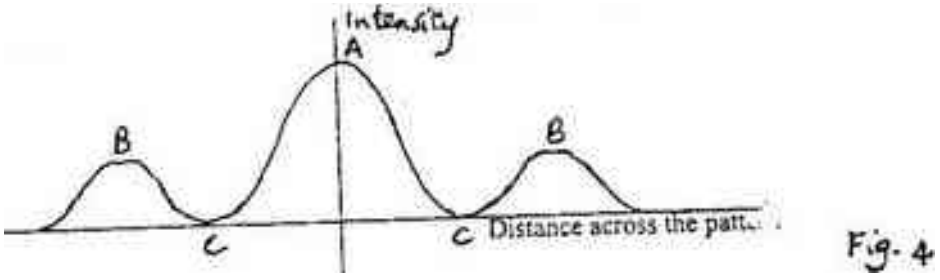

Fig. 4

(i) Sketch an experimental set up that can be used to obtain such a pattern (4 marks)

(ii) Name an instrument for measuring the intensity (1 mark)

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(iii) Explain how the peaks labelled A and B, and troughs labelled C are formed (6 marks)

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4. 1996 Q5a, c P2

(a) (i) What is the difference between longitudinal and transverse waves? (1 mark)

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(ii) State two distinctions between the way sound waves and electromagnetic waves are transmitted (2 marks)

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(b) In an experiment to observe interference of light waves a double slit is placed close to the source. See figure 3

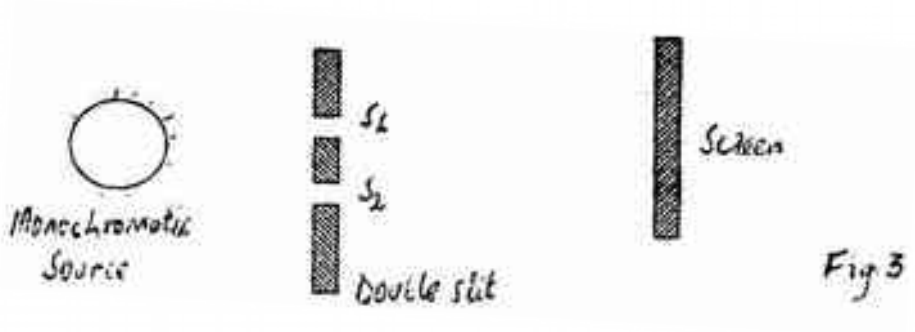

Fig 3

(i) State the function of the double slit (1 mark)

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(ii) Describe what is observed on the screen (2marks)

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(iii) State what is observed on the screen when

i). The slit separation S_1S_2 is reduced (1 mark)

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ii). White light source is used in place of monochromatic source (1 mark)

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5. 1999 Q18 P1

Two tuning forks of frequencies 256Hz and 258 Hz are sounded simultaneously and then placed close to each other, calculate the beat frequency.

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6. 1999 Q1a P2

a) Distinguish between longitudinal and transverse waves

Longitudinal waves -

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Transverse waves –

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7. 2000 Q17 P1

Give one example of a longitudinal wave.

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8. 2002 Q23 P1

Fig. 12 shows water waves incident on an aperture AB.

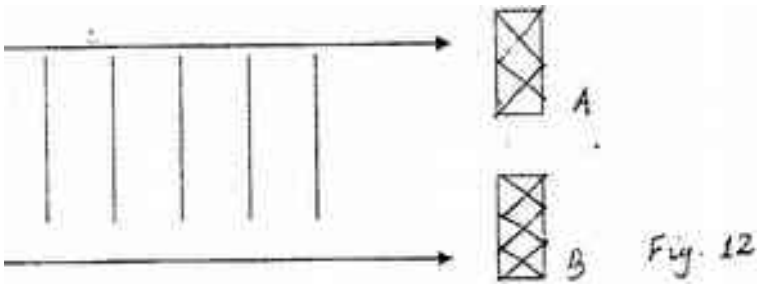

Fig. 12

On the same diagram, sketch the waves after going through the aperture.

9. 2003 Q4 P2

a) Figure 3 shows a transverse wave travelling along x-axis.

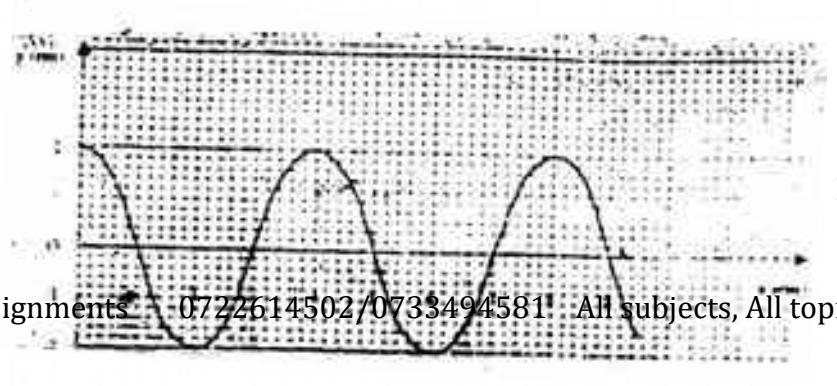

Fig 3

(i) Determine the:

I Wavelength of the wave

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II Amplitude of the wave.

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(ii) If the time taken by the wave to move from 0 to A is 0.09 seconds, determine the:

I Frequency of the wave.

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II Speed of the wave

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b) Figure 4 shows a Geiger muller (GM) tube

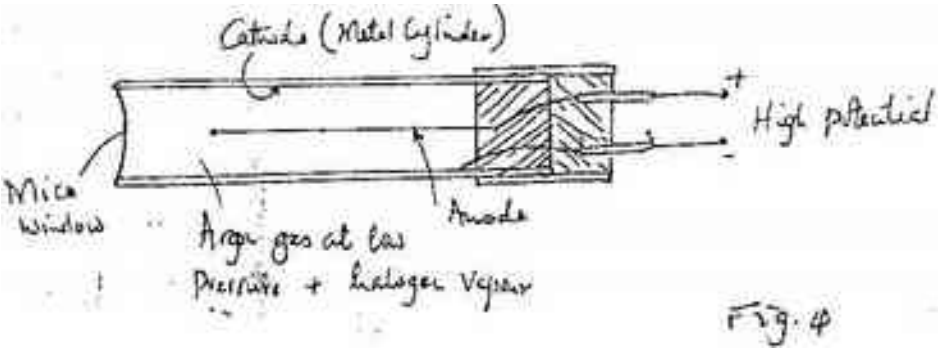

Fig. 4

(i) Give the reason why the mica window is made thin.

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(ii) Explain how the radiation entering the tube through the window is detected by the tube.

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(iii) What is the purpose of the halogen vapour

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10. 2004 Q19 P1

State the difference between mechanical and electromagnetic waves.

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11. 2006 Q5 P2

A long coil is attached to a vibrating blade as shown in figure 3

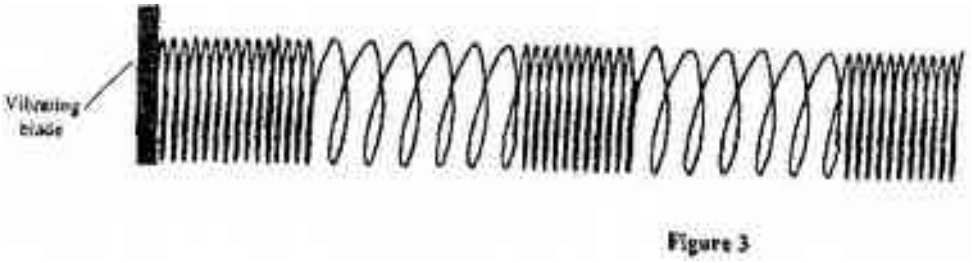

Figure 3

State the type of mechanical wave generated by the set - up and mark alongside the coil, the length corresponding to the wavelength, λ of the wave. (2 marks)

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12. 2008 Q7 P2

Figure 4 shows a hack-saw blade clamped horizontally on a bench and the free end is made to vibrate about the rest position.

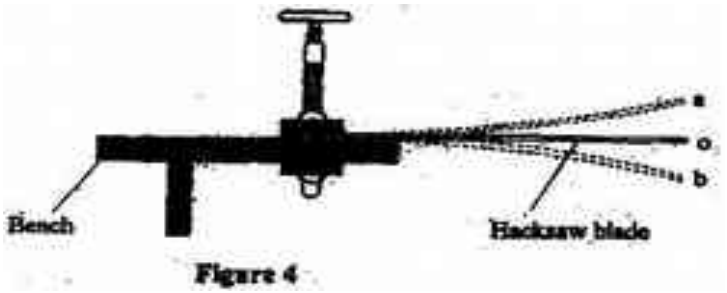

Figure 4

The movement o ⟶ a ⟶ 0 ⟶ b ⟶ 0 ⟶ a ⟶ 0 ⟶ b takes 0.7 seconds.

Determine the frequency of vibration of the blade. (2marks)

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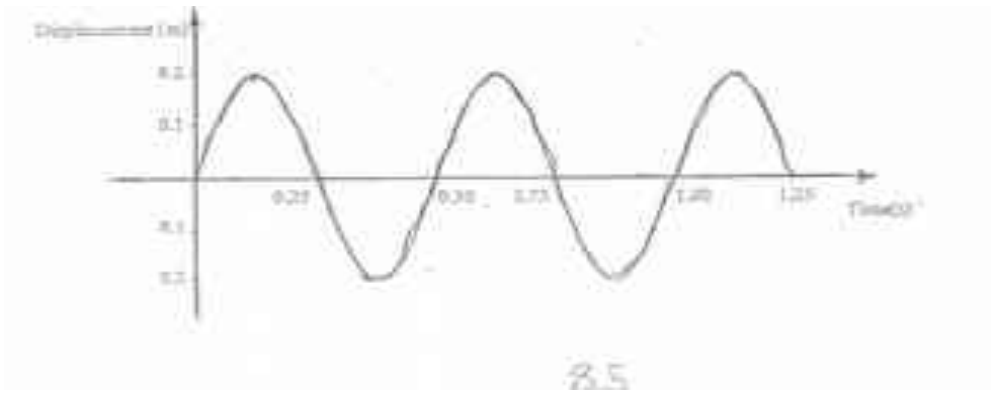
13. 2009 Q6 P2

Figure 2 **shows how** the displacement varies with time for a certain ***wave.***



Determine the frequency of the wave (3marks)

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14. 2010 Q7 P2

Figure 5, shows how the displacement of a point varies with time as a wave passes it.

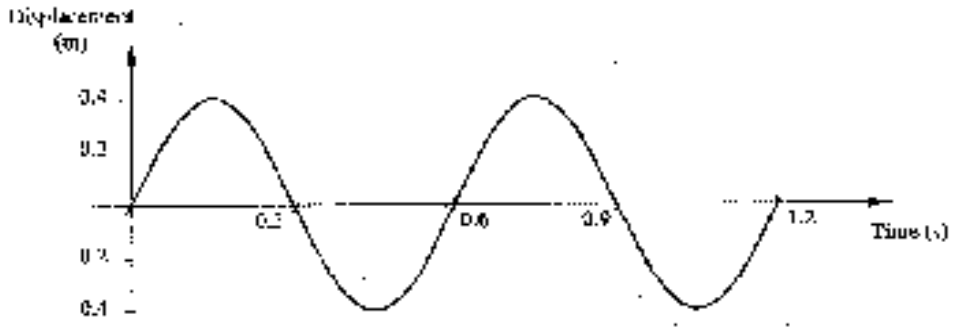

Figure 5

On the same diagram, draw a wave which passes the point with half the amplitude and twice the frequency of the one shown.