



A Level Physics A

H556/02 Exploring physics

Question Set 16

1 (a) Fig. 19.1 shows the image from an experiment using a ripple tank.

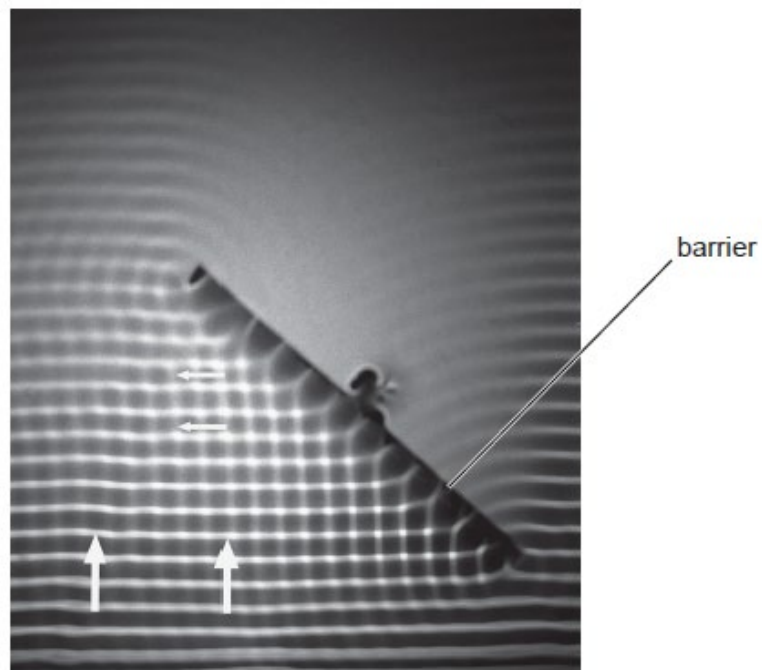


Fig. 19.1

A straight ruler repeatedly hits the surface of water. Waves on the surface of the water travel in the direction shown by the two large upward white arrows. The waves are incident at a solid barrier.

Closely examine the image shown in Fig. 19.1.

State **two** wave phenomena (properties) that can be observed in this image. You may annotate Fig. 19.1 to support your answer.

- Reflection - Diffraction

[2]

(b) Two transmitters, **A** and **B**, emit coherent microwaves in all directions. A receiver is moved at constant speed along the line from **P** to **Q** which is parallel to the line joining the two transmitters, as shown in Fig. 19.2.

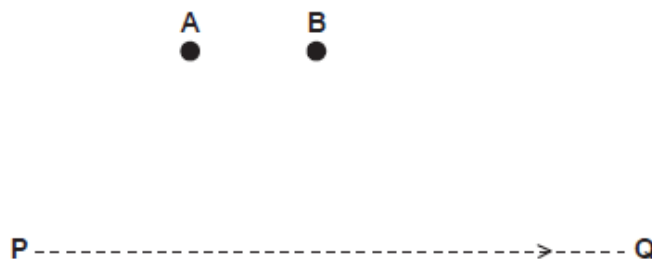


Fig. 19.2

Explain why the output signal from the receiver fluctuates between minimum and maximum values as the receiver moves from **P** to **Q**.

- There is interference along the line PQ
- Max output where there is constructive interference, where waves from A and B are in phase.
- Min output where there is destructive interference, where waves from A and B are in anti-phase.

[3]

Total Marks for Question Set 16: 5

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