

- 5 (a) State what is meant by a *progressive wave*.

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[2]

- (b) The variation with distance x along a progressive wave of a quantity y , at a particular time, is shown in Fig. 5.1.

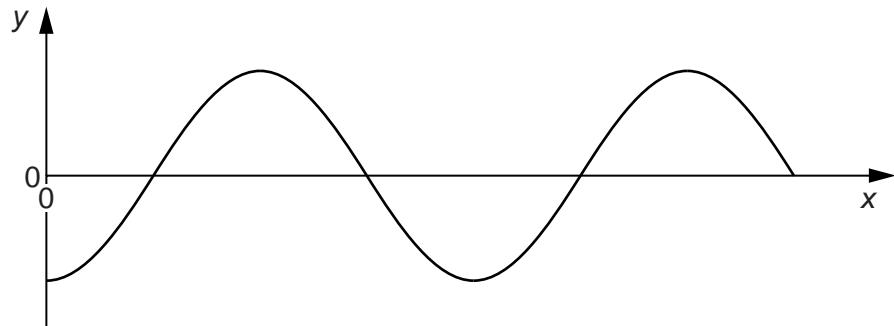


Fig. 5.1

- (i) State what the quantity y could represent.

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[1]

- (ii) Distinguish between the quantity y for

1. a transverse wave,

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[1]

2. a longitudinal wave.

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[1]

- (c) The wave nature of light may be demonstrated using the phenomena of diffraction and interference.

Outline how diffraction and how interference may be demonstrated using light.
In each case, draw a fully labelled diagram of the apparatus that is used and describe what is observed.

diffraction

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interference

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[6]