

- 4 A force is exerted on a current-carrying wire in a uniform magnetic field. Fig. 4.1 shows a wire of length 0.23 m carrying a current of 6.5 A in a magnetic field of field strength 0.082 T. The wire is at an angle of 70° to the field.

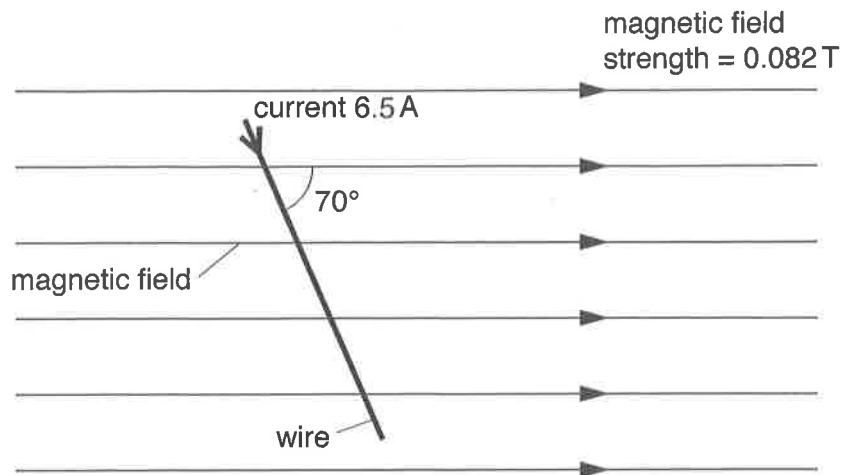


Fig. 4.1

- (a) (i) State and explain how the direction of the force on a wire carrying a current in a magnetic field can be determined.

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- (ii) Calculate the magnitude of the force acting on the wire.

force = N [2]

- (b) A different wire is then bent into a rectangular shape. It is free to move in the magnetic field, and there is a current in it as shown in Fig. 4.2.

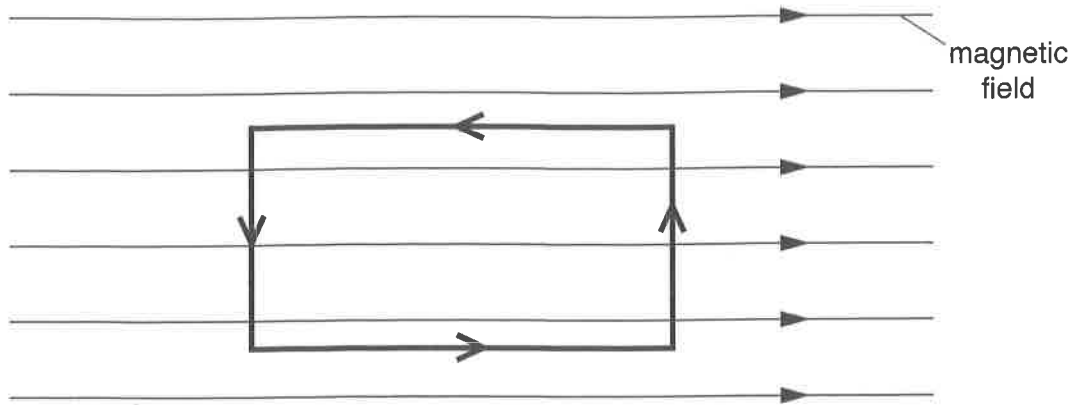


Fig. 4.2

Explain the movement of the wire that takes place.

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