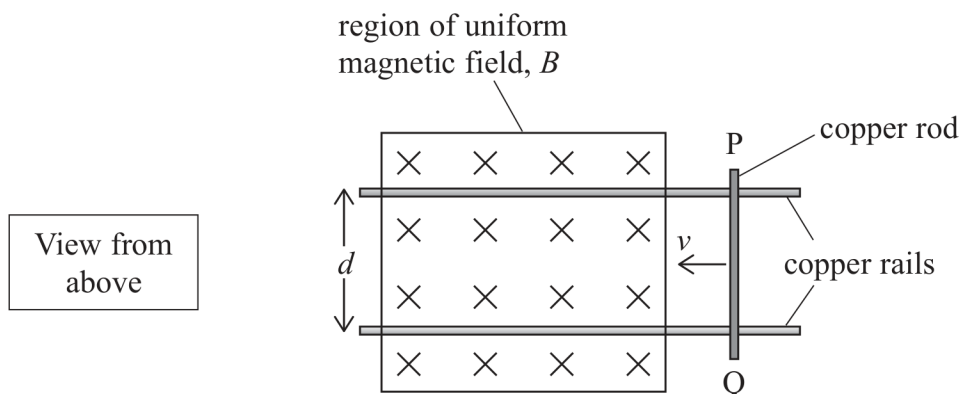


- 17 A copper rod, PQ, is moved with a velocity v along a pair of copper rails, as shown. The rails are a distance d apart.



The rod and rails are in a uniform magnetic field that is directed vertically downwards.

- (a) Calculate the e.m.f. induced across the copper rod.

$$B = 150 \text{ mT}$$

$$v = 3.5 \times 10^{-2} \text{ ms}^{-1}$$

$$d = 7.5 \text{ cm}$$

(3)

Induced e.m.f. =

- (b) Explain the direction of the induced e.m.f.

(3)

(Total for Question 17 = 6 marks)

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