For Examiner's Use

[November/December 2006]

5 A metal disc is swinging freely between the poles of an electromagnet, as shown in Fig. 5.1.

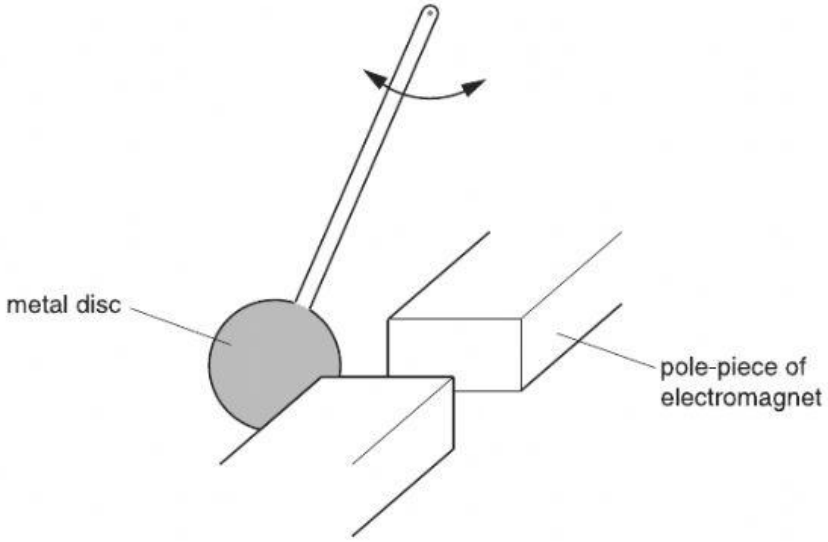

Fig. 5.1

When the electromagnet is switched on, the disc comes to rest after a few oscillations.

(a) (i) State Faraday's law of electromagnetic induction and use the law to explain why an e.m.f. is induced in the disc.

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(ii) Explain why eddy currents are induced in the metal disc.

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(b) Use energy principles to explain why the disc comes to rest after a few oscillations.

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