

- 6 An ideal transformer is illustrated in Fig. 6.1.

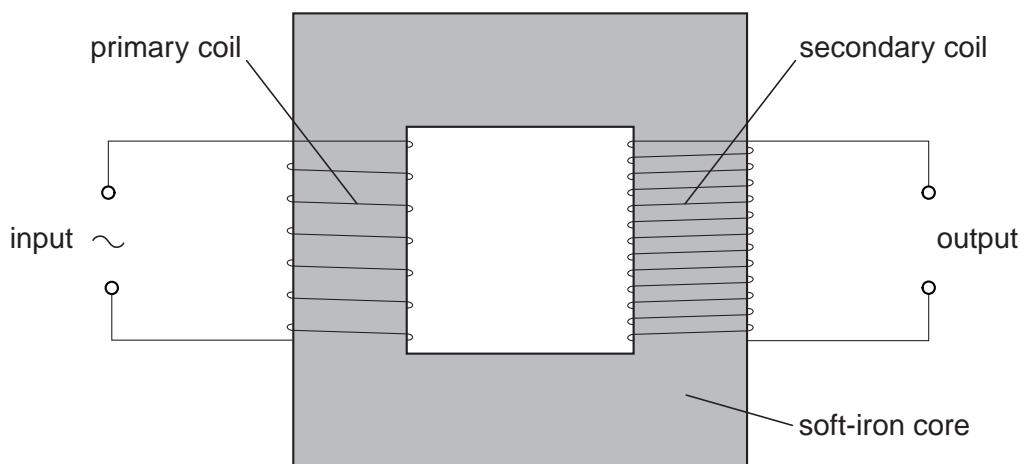


Fig. 6.1

- (a) (i) State Faraday's law of electromagnetic induction.

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[2]

- (ii) Use the law to explain why a transformer will not operate using a direct current input.

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[2]

- (b) (i) State Lenz's law.

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[2]

- (ii) Use Lenz's law to explain why the input potential difference and the output e.m.f. are not in phase.

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[2]

- (c) Electrical energy is usually transmitted using alternating high voltages.

Suggest one advantage, for the transmission of electrical energy, of using

For
Examiner's
Use

(i) alternating voltage,

[1]

(ii) high voltage.

[1]