

6 A transformer is illustrated in Fig. 6.1.

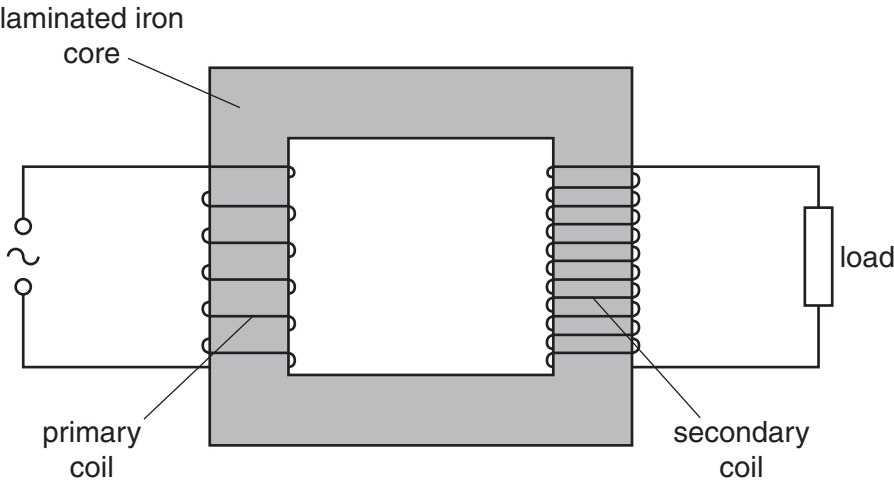


Fig. 6.1

(a) (i) Explain why the coils are wound on a core made of iron.

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[1]

(ii) Suggest why thermal energy is generated in the core.

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[2]

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

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[2]

(ii) Use Faraday's law to explain why the potential difference across the load and the e.m.f. of the supply are not in phase.

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[2]

(c) Electrical energy is usually transmitted using alternating current. Suggest why the transmission is achieved using

(i) high voltages,

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.....[2]

(ii) alternating current.

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.....[1]