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

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.....[2]

(b) An alternating current is passed through an air-cored solenoid.
An iron core is inserted into the solenoid and then held stationary within the solenoid. The current in the solenoid is now smaller.

Explain why the root-mean-square (r.m.s.) value of the current in the solenoid is reduced as a result of inserting the core.

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.....[3]

(c) Practical transformers are very efficient. However, there are some power losses.

State two sources of power loss within a transformer.

1. .....

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2. .....

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[2]

[Total: 7]