

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

**Attempt (Any Five) Questions.**

1. a) Define the terms; Electric current, voltage, power and energy. [8]  
b) Define Resistor and capacitor. What will be the current drawn by a lamp rated at 250v, 40 watts connected to a 230v supply? [4+4]
2. a) State and prove Ohm's law with suitable example. [8]  
b) The effective resistance of two resistors connected in series is  $100\Omega$ . When connected in parallel the effective value is  $24\Omega$ . Determine the values of the two resistors. [8]
3. a) Differentiate between Dia, para and ferro-magnetic material. [8]  
b) Derive series and parallel connection of capacitor. [8]
4. a) Define magnetic field and magnetic flux. Also explain the hysteresis loop for magnetic material. [8]  
b) Derive the energy stored in current carrying inductor. [8]
5. a) What is Lenz's law? Explain dynamically induced emf and statistically induced emf. [10]  
b) Explain in detail about Faraday's laws of Electromagnetic induction. [6]
6. Write short notes on : (Any Four) [4x4=16]
  - a) resistance and its variation with temperature
  - b) Electrostatic induction phenomena.
  - c) KVL circuit
  - d) Faraday's law of electrolysis
  - e) Lead acid cell
  - f) Soft and hard magnetic material

Good luck !

# Diploma In Electrical Question Paper

**Annelies Wilder-Smith**



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