

FACULTY OF ENGINEERING

B.E. (ECE/M/P/AE/AI& DS/AI & ML/IoT/IT) I – Semester (AICTE) (Backlog) (New)
Examination, September/ October 2022

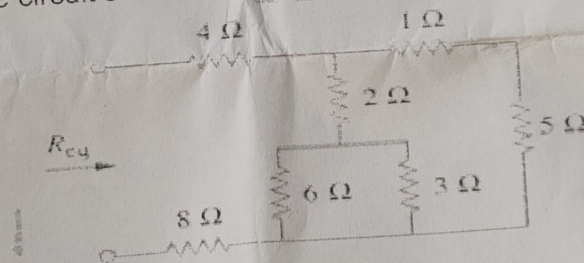
Subject: Basic Electrical Engineering

Max. Marks: 70

Time: 3 Hours

- Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each Question carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. (a) Define Thevenin's Theorem.
(b) Write the expression for voltages and current across Inductor and Resistor.
(c) Define Reactive power.
(d) Define Faraday's law
(e) Mention the losses in DC Machine.
(f) List the applications of three phase induction motor.
(g) Write short notes on MCB.
2. (a) Find the Req for the circuit shown in below figure



- (b) Explain Norton's theorem in detail.
3. (a) Derive expression for average and RMS value of sinusoidal waveform.
(b) A consumer uses a 10 kW geyser, a 6 kW electric furnace and five 100 W bulbs for 15 hours. How many units (kWh) of electrical energy have been used? If the per unit charge (Kwh) is Rs. 5.20. find his electricity bill for 1 month.
4. Explain the working principle & construction of single-phase transformer.
5. (a) Explain three phase transformer connections in detail.
(b) Derive voltage and current relations in star and delta connections.
6. Explain (a) Plate Earthing (b) Pipe Earthing.
- Explain different types of batteries and also list their characteristics.