

**BACHELOR OF TECHNOLOGY (CBCS - 2023)**  
**B. Tech. Sem-I Computer Science & Engineering AI & ML : SUMMER : 2025**  
**SUBJECT: ELECTRICAL TECHNOLOGY**

Day : Thursday  
Date : 15/05/2025

S-27616-2025

Time : 10:00 AM-01:00 PM  
Max. Marks : 60

**N.B.**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Assume suitable data **WHEREVER** necessary.
- 4) Draw neat diagrams **WHEREVER** necessary.

Q.1 Explain the B-H curve for magnetic and non-magnetic materials. (10)

**OR**

Q.1 Write the properties of magnetic lines of force. Explain Cross and Dot convention. (10)

Q.2 Define active power, Reactive power and Apparent power. Draw the power triangle. (10)  
What is Peak factor and form factor.

**OR**

Q.2 A series R-L-C circuit having a resistance of  $8\Omega$ , an inductance of 80mH and a capacitance of  $100\mu\text{F}$  is connected across a 150V, 50Hz supply. Calculate: (10)  
i) Current                      ii) Power factor                      iii) Voltage across the inductance  
iv) Voltage across the capacitance  
What will be the nature of power factor and why?

Q.3 What is self- inductance and mutual inductance? Differentiate between statically induced emf and dynamically induced emf. (10)

**OR**

Q.3 What is autotransformer? Explain in details coefficient of coupling. (10)

Q.4 What are the advantages of three phase system over single phase system? (10)  
Distinguish between primary transmission and secondary transmission.

**OR**

Q.4 Explain in detail following terms: (10)  
i) Electrical Grid                      ii) Phase Sequence

Q.5 Explain the working principle of single phase induction motor with the help of construction. (10)

**OR**

Q.5 Derive formula of torque in DC motor. Write the applications of DC motor. (10)

Q.6 What is the working principle of fuel cell? State its types. (10)

**OR**

Q.6 What is the difference between series and parallel connection of batteries? Write their advantages and disadvantages. (10)

\* \* \* \*