BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - II Computer Science & Engineering : SUMMER : 2025
SUBJECT: ELECTRICAL TECHNOLOGY

Day : Friday
Date : 30/05/2025

S-24027-2025

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 B-H curve of magnetic material in detail. State and explain Kirchhoff's flux law and M.M.F. law of magnetic circuit. **(10)**

OR

Q.1 Compare electric circuit and magnetic circuit. State and explain right hand thumb rule. **(10)**

Q.2 Define the following terms related to AC circuit:
i) Form factor ii) Peak factor iii) Active power iv) Bandwidth v) Quality factor. **(10)**

OR

Q.2 Define power factor and discuss causes and problems of low power factor. Explain different methods of improving power factor. **(10)**

Q.3 State and explain Faradays law of electromagnetic induction. Discuss the concept of statically and dynamically induced EMF in detail. **(10)**

OR

Q.3 Discuss the concept of transformer with respect to following points :
i) Definition ii) Principle of operation iii) EMF equation iv) Losses in transformer v) Voltage regulation of transformer. **(10)**

Q.4 Discuss advantages of three-phase power supply system. List out different methods of three phase power measurement and explain two-wattmeter method in detail. **(10)**

OR

Q.4 Discuss the concept of phase sequence and balanced load related to three-phase supply system. Sketch general layout of electrical power system and write down function of it's elements. **(10)**

Q.5 Discuss principle of operation and applications of single-phase induction motor. Explain different methods used for starting of single-phase induction motor. **(10)**

OR

Q.5 Sketch characteristics of D.C. series motor and write down its applications. Derive an EMF equation of generator. **(10)**

Q.6 Discuss the concept of Lead-acid battery with respect to following points :
i) Construction ii) Working iii) Care and maintenance iv) Applications. **(10)**

OR

Q.6 Define battery and explain the following concepts in short :
i) Solar cell ii) Solar panel iii) Fuel cell **(10)**

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