

BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-II Computer Science & Engineering : WINTER: 2025
SUBJECT: ELECTRICAL TECHNOLOGY

Day : Wednesday
Date : 26/11/2025

W-27695-2025

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) Draw neat diagrams **WHEREVER** necessary.
- 4) Assume suitable data, if necessary.

- Q.1** a) Define: EMF, Potential Difference, Voltage, Current & Resistance. (05)
b) Compare active and passive elements in electric circuit. (05)

OR

- a) Explain Kirchhoff's voltage law with neat diagram. (05)
b) Explain nodal analysis with neat diagram. (05)

- Q.2** a) Illustrate superposition theorem with neat diagram. (05)
b) Calculate equivalent resistance, if 5 resistance are connected in parallel. (05)

OR

- a) Describe maximum power transfer theorem with neat diagram. (05)
b) Explain star-delta transformation with neat diagram. (05)

- Q.3** a) Define form factor and peak factor with reference to sinusoidal AC waveform. (05)
b) Explain resonance in series R-L-C circuit with proper mathematical equations. (05)

OR

- a) Compare active and reactive power with reference to power triangle. (05)
b) Describe concept of impedance with reference to impedance triangle. (05)

- Q.4** a) Explain necessity and advantages of 3-phase system. (05)
b) Illustrate measurement of 3-phase power. (05)

OR

- a) Describe meaning of phase sequence in 3-phase AC circuit. (05)
b) Explain line and phase voltage relations in star connection. (05)

- Q.5** a) Compare electric circuit with magnetic circuit. (05)
b) Explain principle and operation of single phase transformer. (05)

OR

- a) Write a note on losses in transformer. (05)
b) Derive EMF equation of the transformer. (05)

- Q.6** a) Sketch basic layout of distribution system. (05)
b) Explain different types of wiring systems in brief. (05)

OR

- a) Explain necessity of earthing with neat sketch. (05)
b) Describe different types of tariffs. (05)

* * *