

BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-I Computer Science & Engineering AI & ML : WINTER : 2024
SUBJECT: ELECTRICAL TECHNOLOGY

Day : Friday
Date : 06/12/2024

W-27616-2024

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

N.B.

- 1) Figures to the right indicate full marks.
- 2) Use of non-programmable calculator is allowed.
- 3) Assume suitable data if necessary.

Q. 1 Explain the B-H curve for magnetic and non-magnetic materials. Explain Kirchhoff's laws for magnetic circuits. (10)

OR

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

Q. 2 Explain R-L-C series A.C. circuit with the help of diagram and write all the formulas. (10)

OR

Q. 2 A coil having a resistance of 7Ω and an inductance of 31.8 mH is connected to 230 V , 50 Hz supply. Calculate i) the circuit current ii) phase angle iii) power factor iv) power consumed and v) voltage drop across resistor and inductor. (10)

Q. 3 Derive an EMF equation of transformer with suitable notation. (10)

OR

Q. 3 List different types of losses in transformer and explain each one in brief. (10)

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

OR

Q. 4 Explain in detail the following terms: a) Electrical Grid b) Phase sequence (10)

Q. 5 What is back EMF concerning DC motors derive EMF equation of DC motor. (10)

OR

Q. 5 Explain the working of DC generator with the help of its construction. (10)

Q. 6 Explain in details Nickel Cadmium battery. Write its applications. (10)

OR

Q. 6 Differentiate between series and parallel connection of batteries. Write their advantages and disadvantages. (10)

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