BACHELOR OF TECHNOLOGY (CBCS - 2023)

B. Tech. Sem-I COMPUTER SCIENCE & ENGINEERING-A&M : SUMMER : 2024

SUBJECT: ELECTRICAL TECHNOLOGY

Day : Tuesday
Date : 14/05/2024

S-27616-2024

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) Use of **non-programmable CALCULATOR** is allowed.
4) Draw neat labelled diagrams **WHEREVER** necessary.

Q.1 Compare electric and magnetic circuits. **(10)**

OR

Q.1 Define Hysteresis loop. Explain Hysteresis loss and Eddy current loss in details. **(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 230 V, 50Hz A.C. supply is applied to a coil of 0.06H inductance and 2.5Ω resistance connected in series with a 6.8μF capacitor. Calculate: **(10)**
i) impedance ii) current
iii) phase angle between current and voltage
iv) power factor and v) power consumed

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

OR

Q.3 Define mutual coupling. Explain in details coefficient of coupling. **(10)**

Q.4 Draw layout of distribution system. State the voltage levels at each stage. **(10)**

OR

Q.4 What is balanced supply and balanced load in a three-phase system? Define the following terms with neat diagram: **(10)**
i) Line voltage ii) Line current
iii) Phase voltage iv) Phase current

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 Describe solar panels and writhe their applications. **(10)**

OR

Q.6 Write a short note on maintenance free batteries. **(10)**

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