

**UNIT-4:**

Electrical Machines : Principle and construction of single phase Transformer, operation of transformer without load and with load, losses, efficiency, open circuit and short circuit test, Equivalent circuit, Phasor diagram.

General construction features and working principle of D.C. machine, Synchronous machine and Induction motor.

UNIT-5:

Fundamentals of Electronics : Introduction to Semiconductor materials, PN junction Theory, PN Junction diode and its characteristics, different types of diodes and their characteristics, Switching operations, digital operations. Diode based circuit analysis and design.

Text Books:

1. D. P. Kothari and I. J. Nagrath, “Basic Electrical Engineering”, Tata McGraw Hill, 2010.
2. B. L. Theraja, “ A text book of Electrical Technology”, S. Chand, 2011.
3. L. S. Bobrow, “Fundamentals of Electrical Engineering”, Oxford University Press, 2011.

Reference Books :

1. E. Hughes, “Electrical and Electronics Technology”, Pearson, 2010.
2. V. D. Toro, “Electrical Engineering Fundamentals”, Prentice Hall India, 1989.

Course Outcomes:

After completion of this course module, students will able :

1. To understand and analyze basic electric and magnetic circuits
2. To study the working principles of electrical machines and power converters.
3. To introduce the components of low voltage electrical installations