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FACULTY OF ENGINEERING & TECHNOLOGY

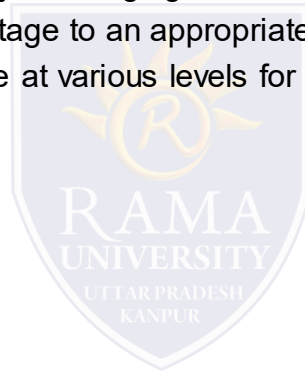
Electrical Machine-1

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SINGLE PHASE TRANSFORMER

Introduction

- A transformer is a device that changes ac electric power at one voltage level to ac electric power at another voltage level through the action of a magnetic field.
- There are two or more stationary electric circuits that are coupled magnetically.
- It involves interchange of electric energy between two or more electric systems
- Transformers provide much needed capability of changing the voltage and current levels easily.
 - They are used to step-up generator voltage to an appropriate voltage level for power transfer.
 - Stepping down the transmission voltage at various levels for distribution and power utilization.



SINGLE PHASE TRANSFORMER

Transformer Classification

- In terms of number of windings
 - Conventional transformer: two windings
 - Autotransformer: one winding
 - Others: more than two windings
- In terms of number of phases
 - Single-phase transformer
 - Three-phase transformer
- Depending on the voltage level at which the winding is operated
 - Step-up transformer: primary winding is a low voltage (LV) winding
 - Step-down transformer : primary winding is a high voltage (HV) winding
- Classification based on construction
 - Core type transformer
 - Shell type transformer



SINGLE PHASE TRANSFORMER

Transformer Construction

- The different parts of the transformer are shown in Figure below.

