



Basic Electricity – Unit 16: Transformers

Exercise 1

MATCH THE FOLLOWING TERMS.

SECONDARY TAPS
POWER FACTOR
TURNS RATIO
DELTA
WYE CONNECTION
KVA or VOLT-Ampere putput rating
LOAD LOSSES
PRIMARY WINDINGS
SHELL TYPE
STEP DOWN TRANSFORMER
TRANSFORMER
ISOLATION
VOLT-AMPERE
POLARITY TEST
VOLTAGE REGULATION
PRIMARY VOLTAGE RATING
STEP UP TRANSFORMER

_____ A standard three-phase connection with the ends of each phase winding connected in series to form a closed loop with each phase 120 degrees from the other.

_____ For the purpose of isolating the source supply from the load side.

_____ designates the output that a transformer can deliver for a specified time at rated secondary voltage and rated frequency without exceeding the specified temperature rise

_____ Includes the I^2R loss in the winding, and the circulating currents (if any) in parallel windings.

_____ A standard test performed on transformers to determine the instantaneous direction of the voltages in the primary compared to the secondary voltage.

_____ The ratio of watts to volt-amps in a circuit.

_____ Designates the input circuit voltage for which the primary winding is designed.

_____ The primary winding on the input (supply) side.

_____ Taps located in the secondary winding





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_____ A type of transformer construction where the core completely surrounds the coil.

_____ A transformer in which the energy transfer is from the high-voltage winding to the low-voltage winding or windings.

_____ A transformer in which the energy transfer is from the low-voltage winding to a high-voltage winding or windings.

_____ An electrical device, containing no moving parts, which, by electro-magnetic induction, transforms energy from one or more circuits to other circuits at the same frequency, most of the time with changed values of voltage and current.

_____ The ratio of turns in the primary winding to the number of turns in the secondary winding.

_____ The circuit volts multiplied by circuit amperes.

_____ The change in secondary voltage occurring when the load is reduced from rated value to zero, with the values of all other quantities remaining the same. The regulation may be expressed in percent (*or per unit*) on the basis of the rated secondary voltage at full load.

_____ A standard three-phase connection with similar ends of the single-phase coils connected to a common point. The common point is what forms the electrical neutral point and may be grounded.



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Solutions:

DELTA _____ A standard three-phase connection with the ends of each phase winding connected in series to form a closed loop with each phase 120 degrees from the other.

ISOLATION _____ For the purpose of isolating the source supply from the load side.

KVA or Volt-Ampere output rating _____ designates the output that a transformer can deliver for a specified time at rated secondary voltage and rated frequency without exceeding the specified temperature rise

LOAD LOSSES _____ Includes the I^2R loss in the winding, and the circulating currents (if any) in parallel windings.

POLARITY TEST _____ A standard test performed on transformers to determine the instantaneous direction of the voltages in the primary compared to the secondary voltage.

POWER FACTOR _____ The ratio of watts to volt-amps in a circuit.

PRIMARY VOLTAGE RATING _____ Designates the input circuit voltage for which the primary winding is designed.





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PRIMARY WINDINGS _____ The primary winding on the input (supply) side.

SECONDARY TAPS _____ Taps located in the secondary winding

SHELL TYPE _____ A type of transformer construction where the core completely surrounds the coil.

STEP DOWN TRANSFORMER _____ A transformer in which the energy transfer is from the high-voltage winding to the low-voltage winding or windings.

STEP UP TRANSFORMER _____ A transformer in which the energy transfer is from the low-voltage winding to a high-voltage winding or windings.

TRANSFORMER _____ An electrical device, containing no moving parts, which, by electro-magnetic induction, transforms energy from one or more circuits to other circuits at the same frequency, most of the time with changed values of voltage and current.

TURNS RATIO _____ The ratio of turns in the primary winding to the number of turns in the secondary winding.

VOLT-AMPERES _____ The circuit volts multiplied by circuit amperes.

VOLTAGE REGULATION _____ The change in secondary voltage occurring when the load is reduced from rated value to zero, with the values of all other quantities remaining the same. The regulation may be expressed in percent (*or per unit*) on the basis of the rated secondary voltage at full load.

WYE-CONNECTION _____ A standard three-phase connection with similar ends of the single-phase coils connected to a common point. The common point is what forms the electrical neutral point and may be grounded.





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