

Assignment 4

- Q1 Draw phasor diagram of single phase transformer on resistive load (unity power factor) and inductive load (lagging power factor) [06] Dec 2012 & [06] May 14
- Q2 A 230/110 V, single phase transformer takes an input of 350 VA at no load and at rated voltage. The core loss is 110 W. Find i) The iron loss component of no load current ii) Magnetizing component of no load current and iii) no load P.f. [06] Dec 12
- Q3 A 30 kVA, 2400/120 V, 50 Hz transformer has a high voltage winding resistance of 0.1Ω and a leakage reactance of 0.22Ω . The low voltage winding resistance is 0.035Ω and leakage reactance is 0.012Ω . Calculate for the transformer
- Equivalent resistance as referred to both primary & secondary
 - Equivalent reactance as referred to both primary & secondary.
 - Equivalent impedance as referred to both primary & secondary
 - Copper loss at full load. & [08] Dec 12 & [08] Dec 14
& at 75% of full load.
- Q4 Derive emf equation for single phase transformer [04] Dec 12 & [04] May 15
- Q5 State the working principle of a transformer and derive the expression for the emf induced [04] May 13 & [06] Dec 14
- Q6 A 3000/200 V, 50 Hz single phase transformer has a cross sectional area of 150 cm^2 for the core. If the no. of turns on the low voltage winding is 80, Determine the no. of turns on the high voltage winding and maximum value of flux density in the core [06] May 13

