Lecture 44

1. A balanced 3ϕ star connected load is supplied from a symmetrical 3ϕ 400V system. The current in each phase is 30A and lags by 30° behind the voltage.

Find

i) Impedance in each phase

ii)total power drawn.

Draw phasor diagram.

2.

A 415V, 50 Hz, three phase voltage is applied to three star-connected identical impedences. Each impedance consists of a resistance of 15Ω, a capacitance of 177μF and an inductor of 0.1H in series. Find the

a. Power factor **(ANS:0.744(lag))**
b. Phase current **(ANS: 11.9A)**
c. Line current **(ANS: 11.9A)**
d. Active power **(ANS: 6.36kW)**
e. Reactive power **(ANS: 5.71kVAR)**
f. Total VA **(ANS: 8.55kVA)**