

Assignment - 2

Q.1) A 6-pole, 50Hz alternator has 42 slots with two layer wdg. The flux per pole is 0.012wb and each full pitch coil has 8-turns. The line emf when the coil are connected for 3- ϕ , star connection and 2-phase connection.

Q.2) A 3- ϕ alternator with slots/pole/phase = 5, then the coil span is 12 slot pitches. The coil span factor is -----.

Q.3 A 3-phase, 4-pole, 60 slot Alternator, if

- (a) Coil span = one to 12 then pitch factor is
- (b) Coil span = 10 slots then pitch factor is
- (c) The winding is short pitched by five slots then the pitch factor is.
- (d) If coil span = $\frac{11}{12}$ th of pole pitch then coil span factor is.

Q.4 A 3- ϕ star connected synchronous generator is rated at 15KVA, 415V. The armature effective resistance are 0.4 Ω and 6 Ω respectively. per phase the percentage voltage regulation for a load of 10KVA at 0.9 p.f lag is -----.

Q.5 A 3- ϕ , 400 volt star connected alternator has a synchronous impedance of $(0 + j20)\Omega$ /ph. It delivers a balance load of 12KVA at 0.8 p.f leading the percentage voltage regulation of the alternator is equal to -----.