**EM-1**

**Question Bank of Unit-5**

1. What do you understand by phasor group of three –phase transformer? Also mention its classification & significances. Explain the following in regarding with three phase transformers:
(i) 3Ф to 2Ф connections (ii) 3Ф to 6Ф connections (2012)
2. Explain the working principle & constructional details of three winding transformer. Also mention the importance of third winding in the three winding transformer.
3. What do you mean by parallel operation of 3Ф transformer? Also discuss the excitation phenomenon & harmonics in 3Ф transformer.(2010)
4. Discuss the basic cause for the generation of harmonics in the transformer.
5. A three phase transformer bank consisting of three 1Ф transformer is used to step down the voltage of a 3Ф, 6600V transmission lines. If the primary line current is 10A, calculate the secondary line voltage, line current, & output KVA for Y/∆ connection. The turn ratio is 12. Neglect losses
6. Write all essential & desirable conditions to connect two 3Ф, transformer in parallel.
7. Draw the connection diagram for open delta system & show that
$$\frac{S open ∆}{S closed ∆}=\frac{1}{√3}$$
8. Two single phase transformers share a load of 400 KVA at .8 pf lagging. Their equivalent impedances referred to secondary windings are (1+J2.5) Ω & (1.5+J3) Ω respectively. Calculate the load shared by each transformer.
9. Discuss three –phase transformer phasor groups. How the displacement is expressed as the clock hour number. (2012)
10. Show the terminal connections of a 3-phase transformer with corresponding phasor diagram having the vector groups: Dy1 & yd11. (2012)
11. Explain Scott-connection. (2012)
12. Explain with suitable diagrams how harmonics are produced in transformers even when the supply voltage be purely sinusoidal. Which order of harmonics are usually prominent ? What is done to neutralize the effect of third harmonic voltages in high voltage Y-Y connected transformers?