



**P.E.S. College of Engineering, Mandya - 571 401**  
*(An Autonomous Institution affiliated to VTU, Belgaum)*  
**Seventh Semester, B.E. - Electrical and Electronics Engineering**  
**Semester End Examination; Dec. - 2015**  
**Testing and Commissioning of Electrical Equipments**

Time: 3 hrs

Max. Marks: 100

**Note:** Answer any **FIVE** full questions, selecting at least **TWO** full questions from each **part**.

**PART - A**

- 1 a. What are the points to be considered in location, site selection and civil work associated with Power transformer? 10
- b. What are the qualities of good insulating coil? 4
- c. Explain various methods of cooling of power transformer. 6
- 2 a. Name and explain various accessories and fitments fitted on a power transformer. 10
- b. Explain drying out curve of a transformer and also explain different methods of drying out of transformer. 10
- 3 a. What are the typical tests carried out before commissioning a transformer? 10
- b. Explain the various cooling arrangements employed for synchronous machine and its type of enclosure. 10
- 4 a. Explain the  $3\phi$  short circuit test on synchronous generator. Explain how to calculate  $X_d, X'_d, X''_d$  from the test, with relevant equations and sketches. 10
- b. Explain the various tests performed on alternator. 5
- c. Explain the function of Excitation system with block diagram. 5

**PART - B**

- 5 a. Explain the various stages in the installation of induction motor and also give the foundation details. 10
- b. Explain the methods of measuring insulation resistance of the windings in Induction motors. What are the factors that affects this measurement? 10
- 6 a. What is polarization Index? Explain different methods of drying out of an Induction motor. 8
- b. Explain No load test and locked rotor test of an Induction motor. 6
- c. Explain the various methods of measuring the slip of Induction motor. 6
- 7 a. Explain the procedure of installation of circuit breaker and metal - clad switch gears. 8
- b. State the various type tests performed on high voltage a.c. circuit breaker. 6
- c. Explain the maintenance of circuit breaker. 6
8. Write short notes on the following : 8
  - a) Testing of transformer coil b) Temperature raise test on Induction motor
  - c) Shaft alignment of Induction motor d) Duty cycles for synchronous motor.20