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| <b>NEW SCHEME</b> |
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**Sixth Semester B.E. Degree Examination, July 2006**

**Electrical and Electronic Engineering**

**Testing and Commissioning of Electrical Equipment**

Time: 3 hrs.]

[Max. Marks: 100

Note: 1. Answer any FIVE full questions.

- 1
  - a. Enumerate the standard specifications of a transformer. (04 Marks)
  - b. Explain the procedure for drying of windings of transformer with and without oil. (10 Marks)
  - c. Explain with neat figure the working of a Buchholtz relay. (06 Marks)
  
- 2
  - a. Describe the method of impulse testing on transformers. (08 Marks)
  - b. What are the methods of indirect testing of transformers to find the efficiency? Explain. (08 Marks)
  - c. What are the mechanical forces that develop during the working of a transformer? (04 Marks)
  
- 3
  - a. Give the details of foundation used for induction motors. (05 Marks)
  - b. Explain how the shaft alignment is carried out in induction motors. (07 Marks)
  - c. Enumerate the commissioning tests carried on induction motors. (08 Marks)
  
- 4
  - a. What are the vibration measurements methods used in induction motors? (06 Marks)
  - b. What is insulation resistance? Enumerate the factors affecting the insulation resistance measurements. (06 Marks)
  - c. Explain the high voltage test conducted on induction motors. (08 Marks)
  
- 5
  - a. Enumerate the various steps of installation of a synchronous machine. (06 Marks)
  - b. Give the details of excitation system used in synchronous machine. (04 Marks)
  - c. Define the following:
 

|                          |                            |                     |
|--------------------------|----------------------------|---------------------|
| i) Primary coolant       | ii) Secondary coolant      | iii) Heat exchanger |
| iv) Open circuit cooling | v) Closed circuit cooling. | (10 Marks)          |
  
- 6
  - a. Define short circuit ratio (SCR) of a synchronous machine and explain how it is obtained. (06 Marks)
  - b. Explain the sudden short circuit test conducted on synchronous generator. (10 Marks)
  - c. Explain the vibration test carried on a synchronous machine. (04 Marks)
  
- 7
  - a. Explain the high voltage test carried on circuit breakers at site. (06 Marks)
  - b. What are the steps involved in installation of circuit breakers? (04 Marks)
  - c. What are the maintenance operations required for a SF<sub>6</sub> circuit breaker? (10 Marks)
  
- 8 Write short notes on the following:
  - a. Testing of transformer oil.
  - b. Temperature raise test on induction motors.
  - c. Drying out of synchronous machine.
  - d. Selection of circuit breakers. (20 Marks)