

GANPAT UNIVERSITY**B. Tech. Semester: VIII, Electrical Engineering****Regular Examination April – June 2015****2EE 801: Commissioning, Testing and Maintenance of Electrical Equipment****Time: 3 Hours****Total Marks: 70**

- Instruction:**
- 1 Attempt all questions.
 - 2 Make suitable assumptions wherever necessary.
 - 3 Figures to the right indicate full marks.

Section - I**Que. – 1**

- (A) What is the requirement of drying out of any DC Machine? Which methods are used for that? Explain one of them with neat sketch. [6]
- (B) What are the properties of good transformer oil? List out the tests performed on transformer oil. Describe any two of them. [6]

OR**Que. – 1**

- (A) Discuss the various aspects of indoor substation maintenance. [6]
- (B) Tabulate the troubleshooting chart of DC machine with all possible faults. [6]

Que. – 2

- (A) Discuss the steps in the installation of rotary machines. [6]
- (B) Explain the meaning of first numeral used in the Ingress Protection (IP) code of induction motor. [5]

OR**Que. – 2**

- (A) What are the methods of cable laying & installation? Mention merits & demerits of each of them. [6]
- (B) Explain the procedure for start-up of an induction motor (running the machine for the first time after installation). [5]

Que. – 3 Attempt any three**[12]**

- (A) Explain Earth resistance measurement with the graph.
- (B) Describe the tests conducted on switchgear for the verification of dielectric properties
- (C) What are the significances of Current Transformer's ratio and polarity tests? How are they performed?
- (D) What is the Polarization Index (PI)? What is its significance with respect to the insulation health?

Section – II

Que. – 4

- (A) Discuss briefly the various methods used for the alignment of rotary machines. [6]
- (B) What are the tests performed on busbars? Discuss each of them briefly. [6]

OR

Que. – 4

- (A) Explain the troubleshooting chart of transformer. [6]
- (B) What are the commissioning tests to be performed on relay? [6]

Que. – 5

- (A) Which are the basic tests required for field and armature winding of DC machine? Explain any three of them in brief. [6]
- (B) What is thermography? Discuss the advantages & disadvantages of infrared thermography. How does thermography help in substation maintenance? [5]

OR

Que. – 5

- (A) List out the troubles related to bushings and transformer windings with possible causes and required actions. [5]
- (B) Give the maintenance schedule for transformers. [6]

Que. – 6

Attempt any three [12]

- (A) Give a short note on installation steps for transformer.
- (B) How can you classify the tests performed on cables? Discuss the merits & limitations of performing diagnostic tests on cable by direct voltage and alternating voltage.
- (C) Explain the tan-delta test of cable.
- (D) Explain Growler testing for DC machine.

END OF PAPER