

GANPAT UNIVERSITY
B. TECH SEM- VIII (ELECTRICAL)
REGULAR EXAMINATION APRIL-JUNE 2017
2EE801: COMMISSIONING, TESTING AND MAINTENANCE OF ELECTRICAL EQUIPMENT

TIME: 3 HRS

TOTAL MARKS: 70

Instructions: (1) This Question paper has two sections. Attempt each section in separate answer book.
 (2) Figures on right indicate marks.
 (3) Be precise and to the point in answering the descriptive questions.

SECTION- I

- Que.-1** (A) What are the methods used for oil filtration? Discuss any one method in detail. [04]
 (B) Define: "trouble shooting." and discuss all the steps of it. [04]
 (C) Give the maintenance of overhead line. [04]

OR

- Que.-1** (A) Explain type tests performed on transformer. [06]
 (B) Tabulate the maintenance schedule for transformer above 1000MVA. [06]

- Que.-2** (A) With the proper sketch, discuss different armature winding testing of DC machine. [05]
 (B) Give the trouble shooting chart for DC machine. [03]
 (C) Discuss earth resistance measurement method with diagram and proper graph. [03]

OR

- Que.-2** (A) Explain continuity test of field winding for DC machine. [04]
 (B) Write a brief note on touch potential and step potential. [03]
 (C) Why fault location in cable has more important? Discuss capacitor charge method for fault location in cable. [04]

- Que.-3 Attempt any Three:**
 (A) Explain routine tests performed on lightning arrester. [04]
 (B) Write a short note on different testing of CT. [04]
 (C) In case of switchgear commissioning, explain verification method for dielectric property of them. [04]
 (D) Tabulate the trouble shooting chart of circuit breaker. [04]

SECTION-II

- Que.-4** (A) Explain the procedure of making the rotating machine ready for installation. [05]
 (B) Explain the recommended maintenance schedule of a 3-phase induction motor. [04]
 (C) Discuss the precautions to be adhered during lifting-shifting of a rotary machine in the industry. [03]

OR

- Que.-4** (A) Give reasons and remedial steps for 3 phase slip-ring induction motor for following conditions: 1) Motor fails to start. 2) Motor runs slow. 3) Motor runs hot. [03]
 (B) Explain the meaning of second numeral used in the designation of cooling system of rotating machine. [05]
 (C) Explain the meaning of insulation resistance. How is it measure for induction motor? Calculate the required value of insulation resistance of a 200 Volts, 400KW, dc generator at 40 °C and its 60 second insulation resistance at 75°C. [04]

- Que.-5** (A) What is the need and significance of vibration analysis of a rotary machine? How the vibration is measured and how the vibration measurements can be interpreted? [03]
(B) List out the different tests performed on synchronous machine. Explain any two in detail. [03]
(C) State the various types of enclosures for rotating electric machines and the types of cooling adopted them. [05]

OR

- Que.-5** (A) What is thermography? Discuss the advantages & disadvantages of infrared thermography. How does thermography help in substation maintenance? [04]
(B) List out the different equipment's used in substation. Explain any three with remarkable point. [03]
(C) Discuss briefly the various methods used for the alignment of rotary machines. [04]

Que.-6 **Attempt any Three:**

- (A) Give the concept of polarization index and explain how it affects to performance of machine. [04]
(B) What are the causes of misalignment? Discuss the bad effects of it. [04]
(C) Give a short note on plan of route of overhead line. [04]
(D) List the tests performed on Bus Bar and explain any two. [04]

END OF PAPER