

Question Bank (I-Scheme)

Name of course: Maintenance of Electrical Equipment

Unit Test: II

Subject code: 316328 (MEE)

Semester: VI

Program: EE

Chapter 4: Testing and Trouble shooting of Transformers (20Marks)

2 Marks

1. Which electrical tests are carried out before commissioning of transformer?
2. List routine tests to be conducted on 3 phase transformer as per IS-2026-2011.
3. State any four requirements of foundation of Static machines.
4. Draw Polarity test of a single phase transformer.

4 Marks

5. Explain How O.C. and S.C test is performed on single phase transformer with neat diagram.
6. Prepare the troubleshooting chart (probable reasons and remedies) for three phase transformer.
7. A 1-phase transformer of 100 KVA, 11000/2200 volts, 50 Hz, gave the following results:
O.C. test: $V_o=2200V$, $I_o=1.59A$, $W_o = 980W$ - L.V.side
S.C. test: $V_{sc} = 580 V$, $I_{SC} = 9.1. A$, $W_{SC} = 1100 W$ H.V. side (with L.V. shorted) Calculate the efficiency and regulation of transformer at full load 0.8 p. f. (lagging).
8. Draw the experimental set up of the Back to Back test on 1-Ph transformer. Also write its procedure.
9. Describe the procedural steps to be followed for finding voltage ratio of single phase transformer by one method with neat diagram.
10. Draw and Explain working of phasing out test on a 3 phase transformer.
11. Following, test results were obtained in a single phase 2.75 kVA. 250/125 V transformer on a short circuit test on high voltage side $V_{sc} =36 V$, $I_{sc}= 8A$, $W_{sc}= 128 W$ calculate resistance and impedance of the transformer at $75^{\circ}C$ referred to high voltage side. The test is conducted at ambient temperature of $30^{\circ}C$.

Chapter 5: Testing and reconditioning of electrical machine insulation (10 Marks)

2 Marks

1. List the different methods of drying of insulation.
2. List the properties of transformer oil.
3. List any eight contamination agents of the transformer oil.

4. State the factors affecting the life of insulating materials.
5. Draw the setup for impulse test on a Power transformer.
6. Define the terms i) Polarization Index ii) dielectric absorption

4 Marks

7. Explain methods of cleaning of insulation of electrical machines.
8. Classify the insulating materials as per operating temperature. Give two examples of each type.
9. State the method of measurement of insulation resistance and explain any one method.
10. List out and explain any one test to be carried on transformer oil.
11. Draw and explain vacuum impregnation method of varnishing.
12. Explain the procedure of the test to be undertaken for measuring dielectric strength of transformer oil. Draw the necessary circuit set up for the same.