

**'T' Scheme
Sample Question Paper**

Program Name : Electrical Engineering Program Group
Program Code : EE/EP/EU
Semester : Sixth
Course Title : Maintenance of Electrical Equipment
Max. Marks : 70

22625

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Sub-questions in a main question carry equal marks.
- (5) Assume suitable data if necessary.
- (6) Preferably, write the answers in sequential order.

Q.1 Attempt any Five of the following.

(10 Marks)

- a) List out four different fire extinguishers.
- b) Explain the need of maintenance of electrical equipment.
- c) Explain predictive maintenance.
- d) List the different methods of testing of electrical equipment.
- e) List any four properties of transformer oil.
- f) List out eight different tools used in electrical maintenance.
- g) List the different methods of drying of insulation.

Q.2 Attempt any Three of the following.

(12 Marks)

- a) Explain the sequence followed in operating any one type of fire extinguisher.
- b) Write the internal causes of failure of electrical equipment.
- c) Explain the need and steps to conduct the reduced voltage running up test on the three phase induction motor.
- d) Draw neat diagram of the foundation used for floor mounted transformer.

Q.3 Attempt any Three of the following.

(12 Marks)

- a) Differentiate between installation earthing and system earthing.
- b) Explain the importance of the preventive maintenance schedule.
- c) Explain moisture proofness test conducted on single phase induction motor.
- d) Prepare the troubleshooting chart (probable reasons and remedies) for three phase transformer for the following symptoms
 - i) no output voltage,
 - ii) transformer oil overheats,

Q.4) Attempt any Three of the following.

(12 Marks)

- a) List any four activities that are to be carried out for rescuing a person who has received an electric shock.
- b) Explain the significance of open circuit voltage ratio test on three phase slip induction motor.
- c) Explain neat diagrams and expressions open delta method of testing of transformers.
- d) State factors affecting the life of insulating materials.
- e) Explain with neat diagram the impulse test on a power transformer.

Q.5) Attempt any Two of the following.

(12 Marks)

- a) State factors involved in designing a machine foundation.
- b) Explain with neat circuit diagrams the procedures to perform no load and blocked rotor tests on three phase induction motor.
- c) Prepare the preventive maintenance schedule for three phase induction motor over one year.

Q.6) Attempt any Two of the following.

(12 Marks)

- a) Explain with diagrams the synchronous impedance method of finding regulation of alternator.
 - b) Explain the steps to determine the efficiency and regulation from the results of the back to back test on single phase transformer with neat diagrams if needed
 - c) Draw and explain vacuum impregnation method of varnishing.
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'T' Scheme
Progressive Test– I Sample Question Paper

Program Name : Electrical Engineering Program Group
Program Code : EE/EP/EU
Semester : Sixth
Course Title : Maintenance of Electrical Equipment
Max. Marks : 20

22625

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Sub-questions in a main question carry equal marks.
- (5) Assume suitable data if necessary.
- (6) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

(08 Marks)

- a. Define the following term
 - 1) Safety 2) Hazard
- b. State the objectives of testing of electric machine.
- c. State the factors on which severity of electric shock depends.
- d. State the need of earthing for electrical equipment.
- e. State the tolerance limits for the following:
 - 1) No load current for single phase transformer
 - 2) Speed for three phase induction motor
- f. Define routine maintenance and breakdown maintenance.

Q.2 Attempt any THREE.

(12 Marks)

- a. State any four objectives of preventive maintenance of electrical equipment.
- b. Compare direct test and indirect test on electrical machines.
- c. Enlist any four precautions to be taken while working on electrical installation.
- d. State the causes of fire due to electrical reasons.
- e. List out any four activities that are done during preventive maintenance of induction motor

'I' Scheme

Progressive Test– II Sample Paper

Program Name : Electrical Engineering Program Group
Program Code : EE/EP/EU
Semester : Sixth
Course Title : Maintenance of Electrical Equipment
Max. Marks : 20

22625

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Sub-questions in a main question carry equal marks.
- (5) Assume suitable data if necessary.
- (6) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

(8 Marks)

- a. State the functions of following tools of electrical maintenance
(i) Dial Indicator (ii) Growler
- b. State two electrical faults in electrical machine.
- c. Define Polarization index. State its value for class A and class B insulating material.
- d. State the effects of misalignment on direct coupled drives.
- e. List the agents which contaminate the insulating oil.
- f. Define Dielectric Strength for transformer oil. State its value for new transformer oil.

Q.2 Attempt any THREE.

(12 Marks)

- a. State how to protect an electrical machine during its inactivity.
 - b. Explain the troubleshooting chart for three phase transformer for the following,
 - i) transformer overheats,
 - ii) excessive humming noise near it,
 - iii) overload relay operated and
 - iv) primary side fuses blow off
 - c. State the classification of the insulating materials as per IS 8504-1994.
 - d. State the external causes of failure of electrical equipment.
 - e. Explain separate source voltage withstand test on transformer.
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