

Easy

Deputy Executive Engineer (Electrician) 2026

Gujarat Public Service Commission / Assistant Engineer (Electrical)

Consider the following statements regarding Preventive Maintenance of industrial electrical systems: 1.

Thermography is used to detect "hot spots" in

A

1 and 2 only

Correct

B

2 and 3 only

C

1 and 3 only

D

1, 2 and 3

Correct Answer: A

Full Detailed Explanation

Correct Answer: A - 1 and 2 only Quick Concept Explanation Preventive maintenance aims to detect deterioration before failure. Electrical programs combine thermal inspection, insulation testing, earth-continuity/resistance checks, contact tightening, protection testing and oil diagnostics where applicable. Key relation: Thermal principle: abnormal I²R heating reveals high-resistance connections. Dielectric-strength tests determine the electric stress at which insulation breaks down under the specified test method.Exam focus: Thermography = hot spots; earth tester = grounding health; BDV test = transformer oil insulation quality. Common trap: Believing dielectric testing applies only to solid cable insulation. Statement-wise Verification Statement 1 - Correct.Thermography is used to detect "hot spots" in electrical connections and panels.Thermography identifies temperature rise caused by loose joints, overload, imbalance, poor contacts and other high-resistance defects without shutting equipment down in many cases. Statement 2 - Correct.Measurement of Earth Resistance should be done periodically using an Earth Tester.Earth-electrode/earthing-system resistance is checked periodically with suitable earth-resistance test methods/instruments as part of electrical safety maintenance. Statement 3 - Incorrect Dielectric strength testing is performed only on