

Easy

Deputy Executive Engineer (Electrician)

2026

Gujarat Public Service Commission / Assistant Engineer (Electrical)

Consider the following regarding Earth Leakage Protection: 1. An ELCB (Earth Leakage Circuit Breaker) detects small leakage currents to the earth. 2. Voltage-operated

A

1 and 2 only

B

1 and 3 only

Correct

C

2 and 3 only

D

1, 2 and 3

Correct Answer: B

Full Detailed Explanation

Correct Answer: B - 1 and 3 only Quick Concept Explanation An RCCB/RCD detects imbalance between live and neutral currents caused by leakage to earth and is used for shock protection. An MCB protects conductors against overload and short circuit. Key relation: Typical additional personal protection uses 30 mA RCD/RCCB.Exam focus: RCCB leakage; MCB overcurrent; SPD transient surge. Common trap: Do not expect an RCCB alone to provide overload protection.

Statement-wise Verification Statement 1 - Correct.An ELCB (Earth Leakage Circuit Breaker) detects small leakage currents to the earth.An RCCB/RCD detects imbalance between live and neutral currents caused by leakage to earth and is used for shock protection. Statement 2 - Incorrect.Voltage-operated ELCBs are preferred over current-operated RCCBs in modern installations.Modern installations prefer current-operated RCCBs/RCDs because they directly sense residual current and are more comprehensive Statement 3 - Correct.A 30mA RCCB is generally used for personal protection against electric shock.An RCCB/RCD detects imbalance between live and neutral currents caused by leakage to earth and is used for shock protection. Core Concept An RCCB/RCD detects imbalance between live and neutral currents caused by leakage to earth and is used for shock protection. An MCB protects conductors against overload and short circuit.