

Licensed Electrician's Practical (LEP) Assessment

Sample Paper January 2026

| | | | |
|---|--|-------------------------|--|
| Candidate Surname: | | | |
| Candidate Given Names: | | | |
| Assessment Venue Location: | | | |
| Wiring Bay No.: | | Testing Bay No.: | |
| Consumer Mains Installation: (Underground / Overhead) | | | |

Circle the appropriate answer below.

| | | |
|--|-----|----|
| Is the candidate's photo ID valid? | Yes | No |
| Does the IR tester supplied by candidate meet calibration requirements? | Yes | No |
| Does the type of IR tester supplied by candidate meet the assessment requirements? | Yes | No |

| | | | |
|-----------|----------------------|----------------------|----------------------|
| Candidate | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Print name | Signature | Date |
| Assessor | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Print name | Signature | Date |

| Marks Allocation | | Possible | Actual | | | | | | | | |
|------------------|------------------------------------|----------|--------|-----|-----|-----|-----|-----|-----|----|--|
| Q1 | Meter Panel and Switchboard Wiring | 35 | | | | | | | | | |
| Q2 | Electrical Installation Testing | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 32 | |
| | | | | | | | | | | | |
| Q3 | MEN System Voltage Measurement | 3.1 | | 3.2 | | 18 | | | | | |
| | | | | | | | | | | | |
| Q4 | Visual Defects | 15 | | | | | | | | | |
| Total: | | 100 | | | | | | | | | |

| Final Percentage | Pass/Fail |
|------------------|-----------|
| | |

I have conducted this assessment and certify that I am independent of the candidate.

| | | | |
|--------------------------------|----------------------|----------------------|----------------------|
| Assessor | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Print name | Signature | Date |
| Reviewed by (If applicable) | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Print name | Signature | Date |

Instructions

- Mobile phone and smart devices are to be switched off, placed in the location designated by the assessor and not used.
- Personal notepads and paper are not permitted.
- Permanent ink pens only must be used. Answers in pencil and/or erasable pens may not be marked.
- Do not remove any sheets from this assessment paper or the room.
- Papers with no name or signature will not be marked.
- A mark will be deducted per section for each missing or incorrect unit where required.
- Reference material listed below. Do not mark, fold, or write on the reference material.
- The assessment may be audio/visually recorded for safety and integrity purposes.
- Speak to the assessor if you require assistance or have a query.

Working Time: 4 hours (including reading time). At the end of this time you will be asked to stop.

This LEP assessment will comprise of four questions. Throughout the assessment, the LEP assessor will instruct you as to which workstation to use, and when to move to them.

| | |
|----|------------------------------------|
| Q1 | Meter Panel and Switchboard Wiring |
| Q2 | Electrical Installation Testing |
| Q3 | MEN System Voltage Measurements |
| Q4 | Visual Defects |

Inform your assessor if any equipment is missing or not available. DO NOT TAKE ANYTHING FROM ANOTHER WORKSTATION.

Required Reference Material

- AS/NZS 3000:2018 Electrical installations – Wiring Rules
- AS/NZS 3008.1.1:2017 Electrical installations – Selection of cables, Part 1.1: Cables for alternating voltages up to and including 0.6/1 kV - Typical Australian installation conditions

Optional Reference Material

- AS/NZS 3017:2022 Electrical installations – Verification guidelines
- The Victorian Service and Installation Rules 2025

Results

Candidates need to obtain 75% or more to pass this assessment. If a mark of 74% or less is achieved, a minimum of 14 days is required before you are permitted to re attempt the assessment.

I, the above named candidate confirm:

- I understand the instructions provided to me
- I do not have any unauthorised materials in my possession, and
- I have not attempted the Licensed Electrician's Practical Assessment at any venue within the past 14 days.

| | | | |
|-----------|----------------------|----------------------|----------------------|
| Candidate | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| | Print name | Signature | Date |

Question 1

| | |
|-----------------|--|
| Wiring Bay No.: | |
|-----------------|--|

Meter Panel and Switchboard Wiring

A mark will be deducted for each missing or incorrect unit where required.

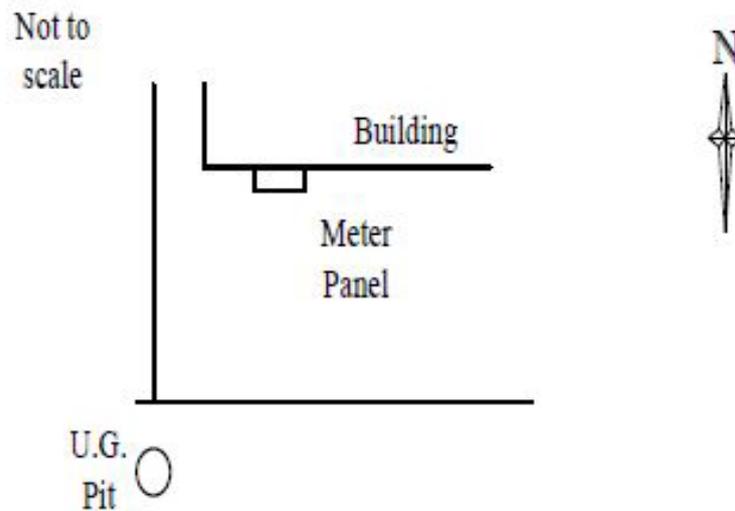
You are required to install a 3 Φ 4 wire 400/230V 50Hz air-conditioned school. The installation comprises a 3 Φ meter panel and main switchboard in a common enclosure, and a separate 1 Φ distribution board. The main switchboard and the distribution board are situated in the same building.

The installation is located at 55 Blyth Road, Williamstown.

The installation will be supplied from:

- Overhead supply** - from the fused overhead line connector box to the main switchboard. The consumer's mains are V90 SDI stranded copper cables. The cables are run enclosed in air.
- Underground supply** - from the service pit, the cables run underground in PVC conduit at a depth of 500mm. The consumer's mains are V90 SDI stranded copper cables.

The meter panel enclosure is located on the front of the building, 18 meters from the southern property boundary, and 6 metres from the western property boundary. The underground pit is located at the southwest corner of the property.



All wiring and identification are to be carried and completed to the requirements of AS/NZS3000:2018 Wiring Rules. You may ignore voltage drop requirements. Assume unity power factor on all loads. Assume short circuit protection is provided on the supply side of the consumer's mains. All cables installed are solid/stranded and will operate at normal operating temperatures.

You must select and arrange main switches, circuit breakers, RCDs and cables from the equipment provided. Divide the equipment in the installation into final sub-circuits, as per AS/NZS3000:2018 requirements. Select the **minimum** permissible cable size (cables available for final sub-circuits are 1.5mm², 2.5mm², 4mm² and 6mm²) and correct circuit protective device rating for each circuit.

Do not cut any cables or bus-bar, or take any equipment from another workstation, unless directed by your assessor. Inform your assessor if there is any equipment missing or not provided.

Note: Although Appendix C of AS/NZS3000:2018 Wiring Rules is classed as informative (i.e. for guidance only), Appendix C Tables C1, C2, C5 and C9 may be used in this assessment where appropriate.

Note: AS/NZS3008.1.1 shall be used for all cable selection and cable current ratings.

The installation will comprise of the following:

Equipment installed from the main switchboard:

- 1 – 3 Φ 15kW Air-conditioner
- 1 – 1 Φ 5.6kW Oven
- 1 – 1 Φ 15A Socket Outlet
- 38 – 1 Φ 25W Luminaires, installed over two circuits

The following equipment is to be installed from the distribution board and controlled by an isolator:

- 1 – 1 Φ 2.6kW Storage water heater
- 5 – 1 Φ 10A Double socket outlets, installed over two circuits
- 10 – 1 Φ 12W LED downlights installed on a single circuit

Note: Use of RCDs and/or RCBOs are permitted.

The 3 Φ final sub-circuit wiring is V90 single insulated cable, installed enclosed in the cable duct/conduit provided.

The 1 Φ sub-main is V90 single insulated cable, installed enclosed in the cable duct/conduit provided.

All 1 Φ final sub-circuit wiring in the installation is two core and earth V90 flat copper TPS, installed partially surrounded in thermal insulation.

Note: This installation will never be connected to the electrical supply. Some parts and equipment may not satisfy the requirements of AS/NZS3000:2018 and other associated standards, they are only used in the assessment environment to keep assessment costs to a minimum. Please ask your assessor if you have any questions in relation to this.

Calculate the maximum demand of the installation. Use the maximum demand table below for your working.

Maximum Demand Table Used:

| Circuits | Load Group | Calculations | MD | | |
|---|------------|--------------|-----|-------|------|
| | | | Red | White | Blue |
| 1 – 3Φ 15kW Air-conditioner | | | | | |
| 1 – 1Φ 5.6kW Oven | | | | | |
| 1 – 1Φ 15A Socket Outlet | | | | | |
| 38 – 1Φ 25W Luminaires | | | | | |
| Equipment 1Φ Distribution Board | | | | | |
| Circuits | Load Group | Calculations | MD | | |
| | | | Red | White | Blue |
| 1 – 1Φ 2.6kW storage water heater | | | | | |
| 5 – 1Φ 10A Double Socket Outlets | | | | | |
| 10 – 1Φ 12W LED downlights | | | | | |
| Distribution Board MD | | | | | |
| Total Installation MD | | | | | |

Based on the maximum demand calculation, select the current rating of the main switch, the **minimum** size of the consumer’s mains cable, and the **minimum** size of the main earth conductor.

Based on the maximum demand calculation, select the current rating of the distribution board isolator and the **minimum** size of the sub-mains cable.

Enter these details into the table below, and state the AS/NZS 3008.1.1 Table number and column number used for your cable selection:

| | | |
|---------------------------|-------|--------|
| Consumer’s Mains | Table | Column |
| Sub-mains | Table | Column |
| Three phase load | Table | Column |
| Single phase loads | Table | Column |

| Maximum Demand of the Installation | Current Rating of the Main Switch | Size of the Consumer’s Mains Cable | | Size of the Main Earth Conductor | |
|------------------------------------|-----------------------------------|------------------------------------|-----|----------------------------------|-----|
| | | O/head | U/G | O/head | U/G |
| | | | | | |

| Maximum Demand of the Distribution Board | Current Rating of the Distribution Board Sub-main Circuit Protection | Size of the Sub-main Cable |
|--|--|----------------------------|
| | | |

[Question 1 = 35 marks]

Question 2

| | |
|------------------|--|
| Testing Bay No.: | |
|------------------|--|

Electrical Installation Testing

A mark will be deducted for each missing or incorrect unit where required.

Using your insulation resistance and continuity tester, carry out the following tests, as required under AS/NZS3000:2018, on the electrical installation indicated by the assessor.

NEUTRAL CONDUCTORS MUST NOT BE DISCONNECTED.

Insert the meter readings with the correct units, and other information as required, in the appropriate places throughout question 2.

2.1 Resistance of Main Earth and Bonding Conductors

| Test | Record Instrument Reading and Units | Indicate if Test is Pass or Fail |
|---------------------------------|-------------------------------------|----------------------------------|
| Main Earthing Conductor | | |
| Bonding conductor to water pipe | | |

[1 + 1 = 2 marks]

2.2 Insulation Resistance of Wiring

| Circuit Test | Record Instrument Reading and Units | Indicate if Test is Pass or Fail |
|----------------------------------|-------------------------------------|----------------------------------|
| Whole Installation (wiring only) | | |
| Final sub-circuit 1 | | |
| Final sub-circuit 2 | | |
| Final sub-circuit 3 | | |
| Final sub-circuit 4 | | |

[5 x 2 = 10 marks]

2.3 Earthing and Insulation Resistance of Appliance

| Test | Record Instrument Reading and Units | Indicate if Test is Pass or Fail |
|---------------------------|-------------------------------------|----------------------------------|
| Earthing of Exposed Metal | | |
| Insulation Resistance | | |

[1 + 2 = 3 marks]

2.4 Resistance of Protective Earthing Conductors

Determine Pass or Fail using Table 8.2 of AS/NZS3000:2018 Wiring Rules

| Test | Active Cond. Size mm ² | Earth Cond. Size mm ² | Protective Device Rating Type C | Active Cond. Resistance (R _{ph}) (Given) | R _e Value and Units (Measured) | R _{phe} Value and Unit (Calculated) | Indicate if Test is Pass or Fail |
|-------------------|-----------------------------------|----------------------------------|---------------------------------|--|---|--|----------------------------------|
| Ceiling Rose | 1.5mm ² | 1.5mm ² | 10A | 0.60 Ω | | | |
| Fluorescent Light | 1.5mm ² | 1.5mm ² | 10A | 0.50 Ω | | | |
| Socket Outlet 1 | 2.5mm ² | 2.5mm ² | 16A | 0.20 Ω | | | |
| Socket Outlet 2 | 2.5mm ² | 2.5mm ² | 20A | 0.30 Ω | | | |

[4 x 1 = 4 marks]

2.5 Polarity Test of Consumer's Mains

| Test | Record Instrument Reading and Units | Indicate if Test is Pass or Fail |
|--------------------------|-------------------------------------|----------------------------------|
| Consumer's Mains Active | | |
| Consumer's Mains Neutral | | |

[1 + 1 = 2 marks]

2.6 Operation of Switches

| Switch Under Test | Indicate which conductor is being switched ACTIVE / NEUTRAL / NEITHER | Indicate if Test is a Pass or Fail |
|-------------------|--|---------------------------------------|
| Ceiling Rose | | |
| Fluorescent Light | | |
| Socket Outlet 1 | | |
| Socket Outlet 2 | | |
| Fan Socket Outlet | | |

[5 x 1 = 5 marks]

2.7 Testing of Circuit for Automatic Disconnection of Supply

Measure the fault loop impedance of the final sub-circuit supplying the socket outlet listed in the table below.

The final sub-circuits are protected by Type C miniature circuit breakers. The nominal supply voltage of the electrical installation is 230 volts.

Complete the table below, and determine Pass or Fail using Table 8.2 of AS/NZS3000:2018 Wiring Rules

| Test Point | Conductor Size | | Type C Circuit Breaker Rating | Measured Value and Units | Value of R_{phe} and Units From T8.2 | Indicate if Test is a Pass or Fail |
|-------------------------------|------------------------|-----------------------|--|--------------------------------|---|--|
| | Active mm ² | Earth mm ² | | | | |
| Appliance socket outlet | 2.5 mm ² | 2.5 mm ² | | | | |

[2 marks]

2.8 Testing of Operation of RCDs

Using the RCD tester provided, test the three (3) RCD's and record their trip time and trip current at zero degrees.

| RCD Under Test | Earth Leakage | |
|----------------|---------------------------|------------------------------|
| | Trip Time Value and Units | Trip Current Value and Units |
| 1 | | |
| 2 | | |
| 3 | | |

[1 + 1 + 1 = 3 marks]

In a residential installation with only two lighting circuits, is it permissible to protect both lighting circuits with a single RCD?

| | |
|------------------------------------|--|
| Answer: | |
| Wiring Rules Clause Number: | |

[1 mark]

[3 + 1 = 4 marks]

Question 3

MEN System Voltage Measurements

A mark will be deducted for each missing or incorrect unit where required.

The equipment on this test panel consists of:

- The earth electrode from the 400/230V distribution system substation MEN star point.
- A single phase electrical installation with earth electrode and bonding to a metallic underground water pipe.

Using the instrument provided, carry out the following tests. On the simulated MEN electrical installation, you are required to take voltage measurements, as follows:

Question 3.1

- With the main switch “ON” and all circuit breakers in the “OFF” position, take a voltage measurement across the terminals of the point of supply.
- Measure the voltage between the:
 - independent earth and frame of the appliance (refrigerator)
 - independent earth and water tap/pipe
 - appliance terminals

in each of the switchboard conditions outlined in the table below.

The main switch is to be in the “ON” position in all cases.

On the following page:

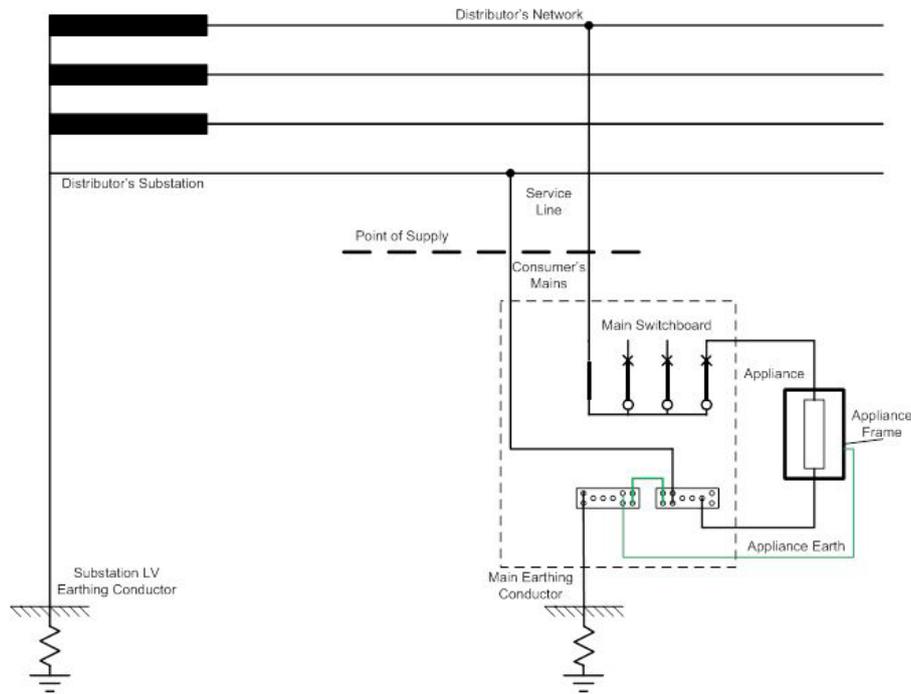
- Record the voltage readings and units and write them in the table.
- Answer the two questions in relation to your readings.
- Draw the current path, and the location of the fault (if any) on the diagram supplied.

| Measure and record the supply voltage at the point of supply (Main switch on, all circuit breakers off) | | | | _____ Volts | | |
|--|-------------------|-------------------|-------------------|--|--------------------------------------|------------------------------------|
| Test Condition | Circuit Breaker 1 | Circuit Breaker 2 | Circuit Breaker 3 | Independent Earth and Appliance Frame (refrigerator) | Independent Earth and Water Tap/Pipe | Appliance Terminals (refrigerator) |
| 1 | ON | Off | Off | | | |
| 2 | ON | ON | Off | | | |
| 3 | ON | ON | ON | | | |

Is the electrical installation you have measured above safe? Yes / No

Draw the current path of your measured circuit on the diagram below and indicate on the diagram the location of the fault (if any). Indicate if you have drawn a:

High impedance circuit / Open circuit / No fault circuit (Cross out those not applicable.)



[3 + 1 + 2 + 4 = 10 marks]

Question 3.2

Answer the following four (4) questions about the MEN system.

Note: These questions do not relate to your measurements or diagram on the previous page.

Questions 1 and 2 are in relation to the following scenario:

You are running single-phase sub-mains to an outbuilding from a main switchboard. The distribution board is to be supplied with **active** and **neutral** conductors.

No **protective earthing** conductor is being installed:

1. Select the correct statement.

- a) An MEN link and earth electrode **must** be installed at the distribution board.
- b) An MEN link must be installed but not an earth electrode.
- c) An MEN link and earth electrode must **NOT** be installed at the distribution board.
- d) Given the supplied equipment, this installation would be non-compliant.

2. Select the correct statement.

- a) The installation described is non-compliant. All installations that include sub-mains require an **earthing conductor**.
- b) In an active to earth fault, current flows through the **protective earth** to the MEN link and then through the sub-main **neutral**.
- c) Without a **protective earthing** conductor, fault current will return to supply through the ground.
- d) The installation described is best defined as an 'isolated supply'.

Questions 3 and 4 are in relation to the following scenario:

You have been called to an installation where a customer has reported that appliances are not operating correctly, and they are feeling a tingling sensation when touching metal appliances around the home.

It is a domestic installation with an overhead supply that you cannot easily access due to foot traffic. When you visually inspect the main switchboard, it appears in a satisfactory state. You isolate the supply and ensure that all terminals in the switchboard are secure.

Upon re-energising the installation, you notice incandescent lights are dim, flickering and LED downlights will not light up.

You have taken the following voltage readings.

- Main switchboard: **active** to neutral & **earth** bar – **103V**
- Resistive cooktop: **active** to neutral – **100V**
- Light switch: **active** to neutral – **90V**
- Electric water heater: **active** to neutral – **108V**
- Independent **earth** to main switch **active** – **230V**
- Independent **earth** to neutral & earth bar – **127V**

3. The tingling sensation (shock) would be caused by:

- a) Static electricity due to copper pipe not being bonded correctly.
- b) A touch voltage between accessible earthed conductive parts.
- c) An incorrect polarity.
- d) An overvoltage of supply.

4. Given that you have done a visual inspection and checked terminations in the main switchboard and the fault is still present, your next step would be to:

- a) Replace the consumer mains.
- b) Replace the MEN link and protective devices.
- c) Rewire all circuits showing unexpected readings.
- d) Report the fault to the supply company.

[2 + 2 + 2 + 2 = 8 marks]

Question 4

Your workstation to inspect is:

Visual Defects

When instructed by the assessor, carry out a visual inspection of the installation.

You are to find five (5) installation defects and record them in the table below. **A maximum of three (3) defects may be taken from the switchboard enclosure.**

- Record five **different** instances of non-compliance with the Wiring Rules AS/NZS3000:2018.
- Record the defect in the column provided. (1 mark)
- Record the complete Wiring Rules Clause. (2 marks)
- Indicate the switch or socket outlet number and panel location when recording the defect.
- Only the first five recorded defects will be marked.

| Panel Location | Wiring Defect | Wiring Rules Clause Number |
|----------------|---------------|----------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |

[5 x (1 + 2) = 15 marks]