

Licensed Electrician's Theory (LET) Assessment Sample Paper 2025

Candidate Surname	
Candidate Given Names	

Reference Material

- Electrical Safety (General) Regulations 2019
- AS/NZS 3000:2018 Electrical installations – Wiring Rules
- AS/NZS 3012:2019 Electrical installations – Construction and demolition sites
- AS/NZS 3008.1.1:2017 Electrical installations – Selection of cables
- AS/NZS 4836:2023 Safe working on or near low-voltage and extra-low voltage electrical installations and equipment

Instructions

- Personal notepads and paper are not permitted.
- Permanent pens only must be used. Answers in pencil 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.
- Units must be shown to obtain full marks.

Working Time: 2 hours and 15 minutes (including reading time)

At the end of this time you will be asked to stop.

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.
- I have not attempted the Licensed Electrician's Theory Assessment at any venue within the past 14 days.

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

Marking

Assessors to enter the candidate's results in the table below.

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mark															
Question	16	17	18	Total											
Mark															

Final Percentage	Pass/Fail

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

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

AS/NZS 3000:2018 Electrical installations – Wiring Rules

In the following **four** Wiring Rules questions, you are required to:

- Answer the question; and
- Write the Clause number and/or Table number in the space provided. The complete Clause and Sub-Clause number must be given e.g., 3.5.2(b)(i).

The correct answer to both parts must be given to obtain full marks.

Question 1. Is it permissible to control a 15-amp socket-outlet with a 10-amp rated switch?

.....
Clause Number: [2 + 2 = 4 marks]

Question 2. Is the structural metalwork forming the frame of a shed that is permanently connected to electrical installation wiring required to be earthed?

.....
Clause Number: [2 + 2 = 4 marks]

Question 3. Where protection is installed against the effects of overvoltage arising from lightning, it shall be installed to operate at a voltage not less than or equal to what value?

.....
Clause Number: [2 + 2 = 4 marks]

Question 4. Is it permissible to have a smoke alarm installed on the lighting circuit?

.....
Clause Number: [2 + 2 = 4 marks]

AS/NZS 3012:2019 Electrical installations - Construction and demolition sites

In the following **two** AS/NZS 3012:2019 questions, you are required to:

- Answer the question; and
- Write the Clause number and/or Table number in the space provided. The complete Clause number and Sub-Clause number must be given e.g., 2.10.2 (f).

The correct answer to both parts must be given to obtain full marks.

Question 5. When conducting periodic verification, who shall visually inspect the construction wiring to verify compliance with AS/NZS 3000?

.....
Clause Number: [2 + 2 = 4 marks]

Question 6. Is it permissible to use an electrical portable outlet device (EPODS) on a construction or demolition site?

.....
Clause Number: [2 + 2 = 4 marks]

Electricity Safety (General) Regulations 2019

In the following Regulation question, you are required to:

- Answer the question; and
- Write the Regulation number in the space provided. The complete Regulation number and Sub-Regulation number must be given e.g., 401(e)(3).

The correct answer to both parts must be given to obtain full marks.

Question 7. Is the installation of submains, earthing systems and distribution boards related to individual occupiers portions of a multiple occupancy considered a prescribed installation?

.....
Regulation Number: [2 + 2 = 4 marks]

Electric Shock Survival

Question 8.

(i) How should the breathing of a non-responsive person be checked?

.....

(ii) At what point should CPR be performed on an injured person??

.....

[2 + 2 = 4 marks]

Cable Selection

Question 9.

THREE three-core X-HF-90 insulated and sheathed copper cables, including earthing conductors, are connected in parallel to supply a three-phase distribution board with a total maximum demand of 450A. The cables are protected by a circuit breaker and installed buried direct in the ground spaced apart at 0.6 metres and a depth of 0.8 meters.

- (i) Neglecting voltage drop, what is the minimum cable size that can be installed for this circuit?
- (ii) If the cables were buried direct at a distance of 0.15 metres what is the minimum cable size which can be installed for this circuit?

All calculations including the final answer must be completed to a maximum of **two decimal places**.

Table details and units must be shown below to obtain full marks. Part (ii) is over the page.

Part (i)

	Answer		Answer
Table 3 (_____?)		Item	
Table		Column	
Derate/rating table		Column	Factor
Derate/rating table		Column	Factor

Calculation:

Part (i) Answer:

Question 9 Part (ii)

	Answer		Answer		Answer
Derate/rating table		Column		Factor	

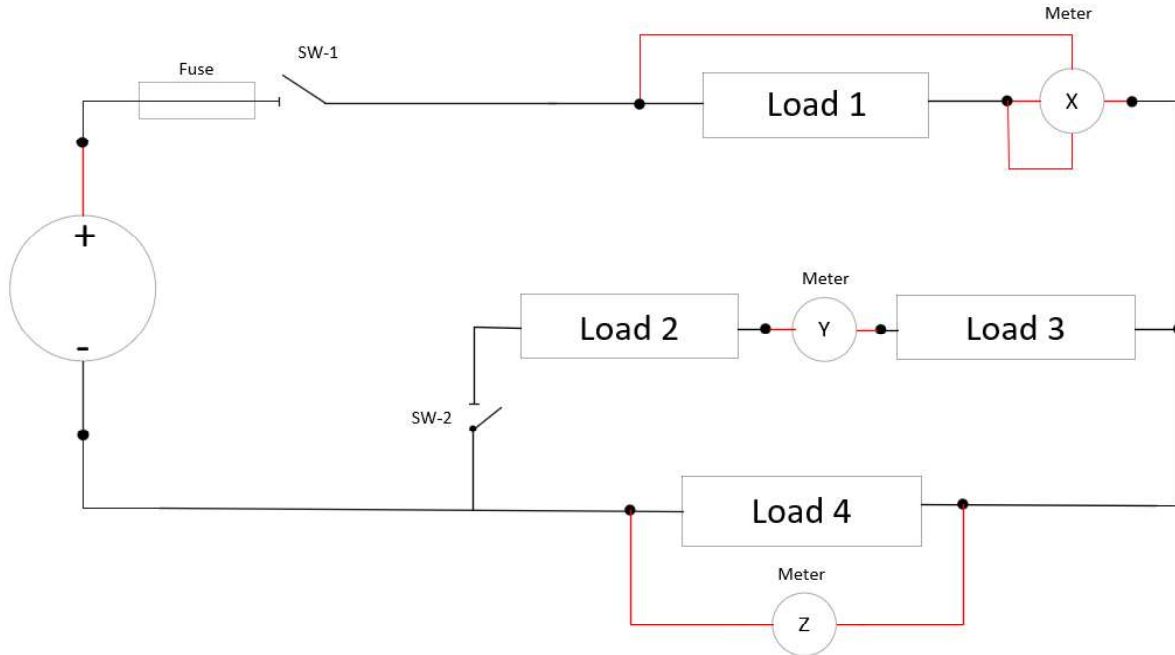
Calculation:

Part (ii) Answer:

[1 + 2 + 1 + 1 + 2 + 1 = 8 marks]

Ohms Law

Question 10.



For the circuit shown above, you have taken some measurements and recorded the following:

- Supply Voltage – 160V
- Current through load 4 – 1.33A
- Voltage across load 1 – 80V
- Resistance of load 2 – 100Ω
- Resistance of load 3 – 20Ω

Using these measurements, calculate the meter readings for the following when the **switch is closed**:

- (i) meter X
- (ii) meter Y

Using these measurements, calculate the continuity reading for the following when **switch 1 and 2 are open**:

- (iii) meter Z

All calculations including the final answer must be completed to a maximum of **two decimal places**.

Calculation:

Large empty rectangular box for calculation.

(i) Current:

(ii) Resistance:

(iii) Voltage:

[2 + 2 + 2 = 6 marks]

Maximum Demand

Question 11.

Calculate the Maximum Demand of the consumer's mains of a single phase 230V non-airconditioned school.

The load connected to the switchboard is:

- 1 - 4.5kW Instantaneous hot water service
- 1 - 4kW Oven
- 40 - 10W LED lighting points
- 2 - 15A socket outlets
- 5 - 10A double socket outlets

All calculations including the final answer must be completed to a maximum of **two decimal places**.

All relevant table details, including table, column and load groups used.

Calculations and units must be shown to obtain full marks.

Table		Column	
Equipment	Load Group	Calculation	Maximum Demand
Total Maximum Demand:			

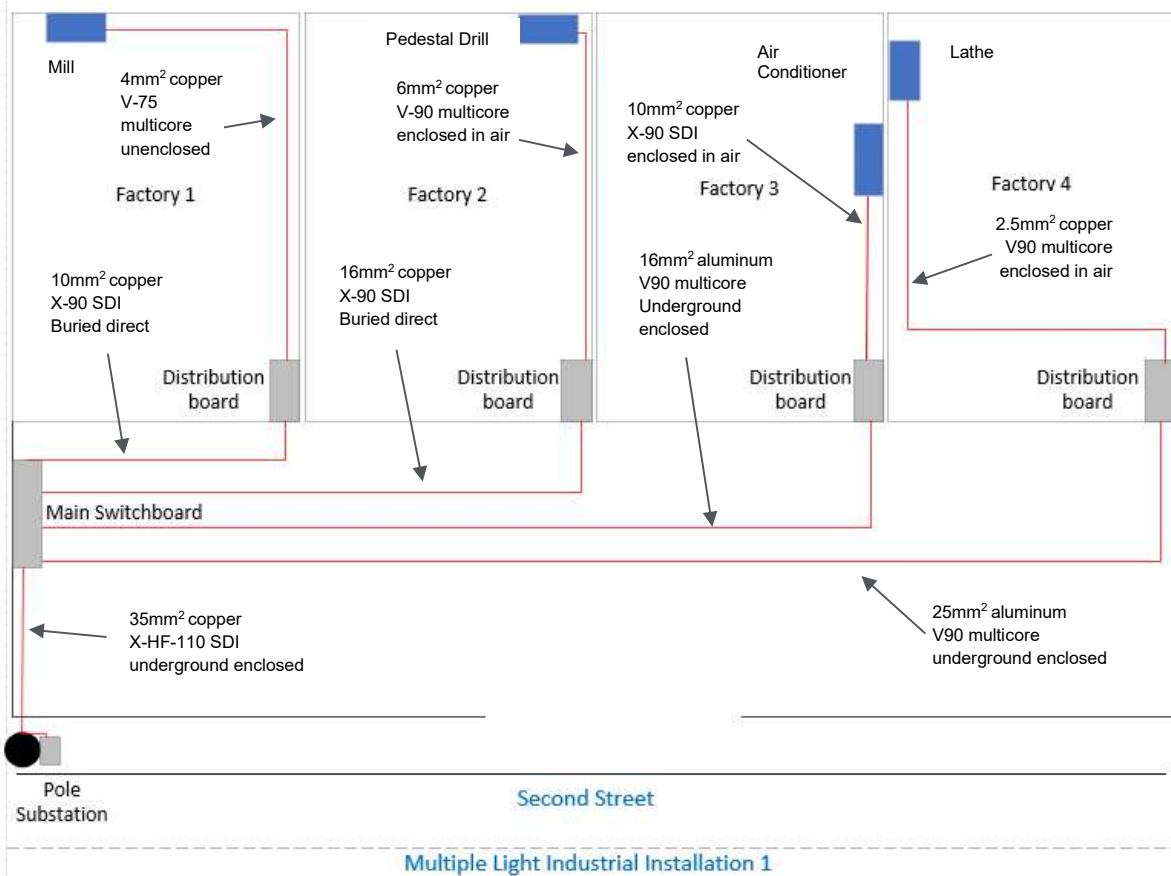
[1 + 1 + 1 + 1 + 1 + 1 + 2 + 1 = 8 marks]

Voltage Drop

Question 12.

In a 400/230V, three-phase factory installation, a three-phase 19A lathe is supplied from a sub-circuit originating at a distribution board in factory 4. The lathe is installed 35 meters away from the distribution board.

A site plan of the three phase commercial installation is shown below, all the circuits are operating under normal conditions.



Client: Darren Wall	Location	Cable	Distance	Maximum Demand	Voltage
Drawing title: Site plan	Main Switchboard	Consumer Mains	11m	130A	400/230V
Date: 5 November 2024	Factory 1 Distribution board	Sub Mains	14m	57A	400/230V
Location: 65 Imagine St, Carlton	Factory 2 Distribution board	Sub Mains	22m	48A	400/230V
	Factory 3 Distribution board	Sub Mains	34m	60A	400/230V
	Factory 4 Distribution board	Sub Mains	50m	55A	400/230V

Calculate the total voltage drop from the point of supply to the lathe terminals.

All calculations including the final answer must be completed to a maximum of **two decimal places**.

All relevant table details, calculations and units must be shown to obtain full marks.

Cable	Table	Column	Vc	Calculation	Vd
Consumer's Mains					
Sub-Mains					
Final Sub-Circuit					

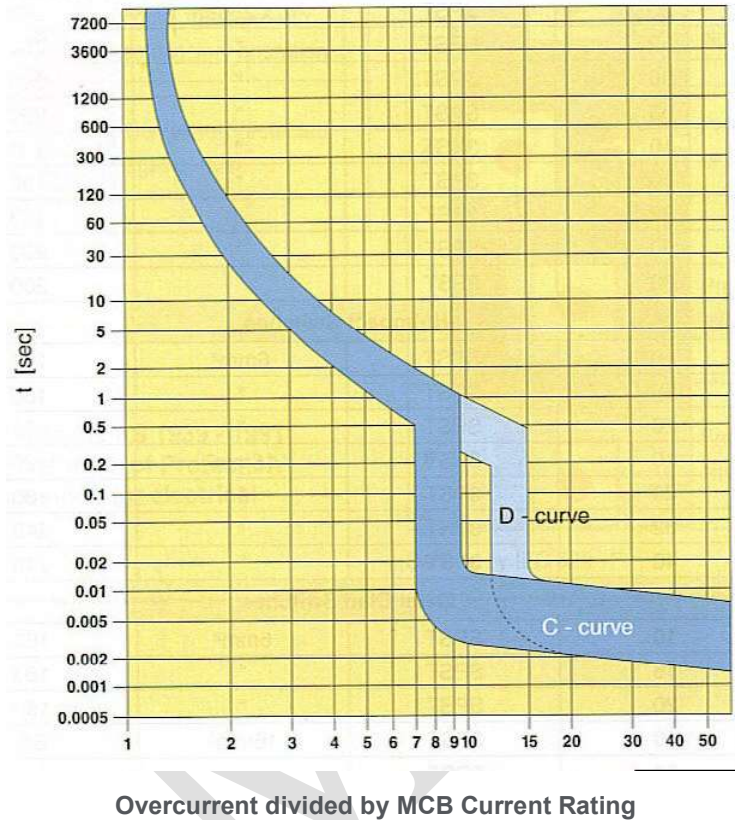
Answer Total Voltage Drop:	
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[1+1+1+1+1+1+1+1+1+1 = 10 marks]

Overload and Short Circuit Calculations

Question 13.

What are the minimum and maximum tripping times for a 50A Type D miniature over-current circuit breaker which is subjected to an over-current of 200A?



Overcurrent divided by MCB current rating:	
Minimum Time:	Maximum Time:

[1 + 1 + 1 = 3 marks]

Overload and Short Circuit Calculations

Question 14.

The main switchboard of a 400/230V industrial installation is directly supplied from a 500KVA transformer which has a prospective fault current of 22,000A per phase.

Sub-Mains supply a distribution board from the main switchboard.

The following information is known:

Impedance of the Consumer's Mains = 0.0019Ω

Impedance of the Sub-Mains cables = 0.0087Ω

Determine the prospective fault current at:

- (i) The main switchboard.
- (ii) The distribution board.

Work impedances to 5 decimal places.

All calculations must be shown to obtain full marks.

Calculation:

Transformer Impedance:

Main Switchboard:

Distribution Board:

[(2+1) + (2+1) + (2+1) = 9 marks]

Residual Current Devices

Question 15.

A 30mA Residual Current Device is to be installed to protect a lighting circuit and a circuit containing 10A socket outlets. The combined maximum demand is 24 amps. The lighting circuit is protected by a 16A circuit breaker and the circuit supplying the socket outlets is protected by a 20A circuit breaker.

State the minimum current rating of the Residual Current Device.

Answer

Motors and Starters

Question 16.

CIRCLE the letter in front of the statement you consider to be the most correct.

What is the main advantage of installing a primary resistance starter installed on a squirrel cage induction motor circuit?

- A. Precision speed control can be maintained.
- B. Lower starting current.
- C. Power factor correction.
- D. Increased starting torque.

[2 marks]

AS/NZS 4836:2023 Safe working on or near low-voltage and extra-low voltage electrical installations and equipment

Question 17.

This question relates to AS/NZS 4836:2023.

When shall insulating mats and covers be visually inspected for possible defects?

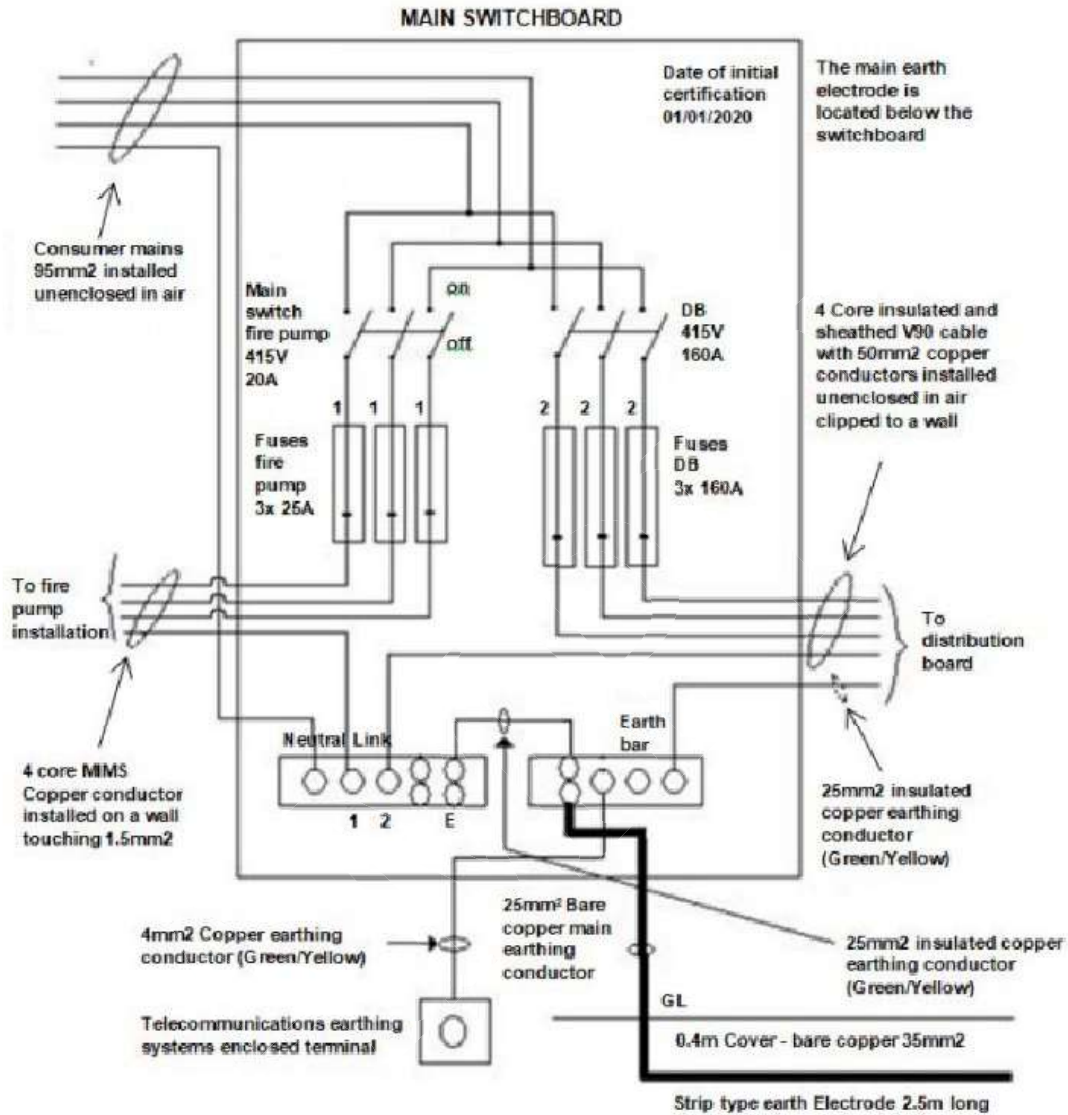
.....
.....

Clause Number:

[2 + 2 = 4 marks]

Installation Defects - Non-Domestic

Question 18.



The drawing above shows the MAIN SWITCHBOARD of an industrial installation originating at the consumer’s mains and contains contraventions to the Wiring Rules.

The consumer’s mains are V75 TPS copper cables installed on cable tray.

It supplies a distribution board having a connected load with a calculated maximum demand of 160A per phase and an automatically controlled 3 phase fire pump motor having a current rating of 24A per phase. The fire pump is not required to be RCD protected.

The multi-core MIMS cables are installed spaced from the wall and are 1/1 kV cables. Short circuit protection for the consumer’s mains has not been supplied by the supply authority.

The safety services main switch and the main switch for the general electrical installation are separated by a metal partition.

Question 18. Continued.

All screws in bars or links are 70% of the tunnel diameter.

Assume the MIMS cables are earthed in accordance with the Wiring Rules and are capable of maintaining supply to the equipment even when exposed to fire and mechanical damage.

All fuses shown are HRC type.

Complete the table below.

Use the diagram on the previous page.

List **FIVE different defects** together with the contravened Wiring Rules Clause/Table number in the table provided below.

Note: Only the first five defects will be considered.

DEFECT DETAILS	WIRING RULE CLAUSE/TABLE No.

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