Licensed Electrician's Theory (LET) Assessment Marking Guide

Sample Paper July 2025

AS/NZS 3000:2018 Electrical installations – Wiring Rules

Question 1

6mm^2 (2 marks)

Clause 3.12.2.2 (a) **or** 3.5.1 Table 3.3 (2 marks)

Both clause and table must be provided to be awarded the marks.

Question 2

By a shade, reflector, guard or enclosure. (2 marks)

Clause 4.5.2.2. (a) (2 marks)

Question 3

Not less than the maximum load of the connected appliance or luminaire. (2 marks)

Clause 4.3.6 (b) (2 marks)

Question 4

Wiring systems that are not associated with the refrigeration room. (2 marks)

Clause 6.6.3.2.1 (2 marks)

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

Question 5

Legibly and indelibly marked to identify the switchboard at which its final sub-circuit originates. (2 marks)

Clause 2.1.3 (2 marks)

Question 6

That part of the installation shall be isolated, repaired or replaced and tested as required. (2 marks)

Clause 3.7.1 (2 marks)

Electrical Safety (General) Regulations 2019

Question 7

Not less than one megohm. (2 marks)

Regulation 228 (2) (2 marks)

Electrical Shock Survival

Question 8

(i) push or pull the casualty clear of the live electrical contact. (2 marks)

(ii) Non-conductive material, wood, rope, plastic or rubber. (2 marks)

Cable Selection

Question 9

Part (i)

Table 3(3) Item 2 (1 mark - item number is optional do not deduct marks)

Table 8 Col 22 (2 marks)

Table 25(1) Col 3 Derating for touching 2 circuits = 0.81 (1 mark)

Table 28(1) Col 3 Derating for Depth 0.6m = 0.98 (1 mark)

2 cables in parallel 500 / 2 = 250A per cable

120mm^2 = 356A

356 x 0.81 x 0.98 = 282.59A

Part (i) Answer 120mm^2 (2 marks)

Part (ii)

Table 25(1) Col 6 Derating for spacing of 0.45 m = 0.91

95mm^2 = 313A

356 x 0.91 x 0.98 = 279.13A

Part (ii) Answer = 95mm^2 (1 mark for all)

Deduct 1 mark for no or incorrect units.

Ohms Law

Question 10

Meter X = 500W (2 marks)

Meter Y = 1A (2 marks)

Meter Y = 1.25A (2 marks)

Deduct 1 mark for no or incorrect units.

Maximum Demand

Question 11

Table C1 Column 2

1 - 5.2kW storage water heater

1 - 6kW Oven

46 - 10W LED lighting points

3 - 15A socket outlets

18 - 10A double socket outlets

Single domestic

Table C1 Column 2 (1 mark)

Equipment	Load Group	Calculation	Maximum Demand
1 – 5.2kW storage water heater	(f)	Full connected load 5200/230 = 22.61A	22.61A (1 mark)
1 – 6kW oven	(c)	50% connected load 6000/230 x 50% = 13.04A	13.04A (2 mark)
46 – 10W LED lighting points	(a)(i)	3 A for 1-20 points + 2 A for each additional 20 points 3 + 2 + 2	7A (1 mark)
3 – 15A socket outlets	(b)(ii)	10 A	10A (1 mark)
18 – 10A double socket outlets	(b)(i)	10 A for 1-20 points + 5 A for each additional 20 points (18 x 2 = 36 points) 10A + 5A = 15A	15A (1 mark)
		Total Maximum Demand	67.65A (1 mark)

Deduct 1 mark for no or incorrect units on total. Deduct 1 mark for no or incorrect load groups.

Voltage Drop

Question 12

Consumer's Mains

Table 41 Column 8 (1 mark)

Vc 2.55 (1 mark)

Vd = 11 x 45 x 2.55/1000

Vd 1.26V (1 mark)

Sub-mains

Table 42 Column 6 (1 mark)

Vc 3.86 (1 mark)

Vd = 30 x 23 x 3.86/1000

Vd 2.66V (1 mark)

Final Sub-circuit

Table 42 Column 6 (1 mark)

Vc 9.71 (1 mark)

Vd = 26 x 14 x 9.71/1000

Vd 3.53V (1 mark)

Total Voltage Drop = 1.26 + 2.66 + 3.53 = 7.45 V (1 mark)

Deduct 1 mark for no or incorrect units on total. Deduct 1 mark for no or incorrect table number/s.

Overload and Short Circuit Calculations

Question 13

Overcurrent divided by MCB current rating = 3 (1 mark)

Minimum Time = Accept 5 – 5.1 seconds (1 mark)

Maximum Time = Accept 20 - 25 seconds (1 mark)

Deduct 1 mark for no or incorrect time unit.

Question 14

Transformer impedance

230/16000 (2 marks)

0.01438Ω (1 mark) Answer must be to **5 decimal places.**

Main switchboard prospective fault

230/ (0.01438 +0.00623) (2 marks)

11,159A (1 mark)

Distribution board prospective fault

230/ (0.01438 +0.00623+ 0.01920) (2 marks)

5777A (1 mark)

Deduct 1 mark for no or incorrect units in final answer.

Residual Current Devices

Question 15

32A (3 marks)

Motor and Starters

Question 16

A (2 marks)

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

Question 17

'Electrical equipment to be worked on' OR 'Points of isolation' OR 'All energy sources, including non-electrical sources'. (2 marks)

Clause number: 3.1.2 (a) or (b) or (c) (2 marks)

Installation Defects – Non-Domestic

Question 18

2 marks for correct defect, 1 mark for the correct clause.

Only some of the defects have been listed below, there are more than 10 defects in the diagram. All correct defects and clauses will be awarded marks.

Only accept the first 5 defects a candidate has listed.

1) Submain earth conductor undersized 5.3.3.1.2 (a) Table 5.1
2) Isolating switch labelled Main Switch not Isolating Switch 2.3.4.4
3) The 16A RCBO not labelled to identify the equipment it is protecting 2.10.5.2
4) Lighting circuit is not protected by an RCD 2.6.3.2.3.3 (b)
5) The sump pump does not have an earth 5.4.7
6) Neutral and active cables are not arranged to identify the corresponding circuit in the terminal bar. 2.10.5.4
7) Access to switchboard is blocked by other equipment 2.10.2.2.1 (a)
8) Minimum distance of 1 meter from all faces of a closed switchboard is not provided. 2.10.2.2.1 (b) (i)
9) Submains are not protected against **overload** current. 2.5.1.3
10) The earthing system is not separated from the neutral conductor 5.1.3 figure 5.1