LET Sample Paper 1 (2019) – Marking Guide

Q.1 – The work to restore the electrical installation to safe and sound working condition after deterioration or damage has occurred. (2 Marks)
Clause 1.4.101 (2 Marks)

Q.2 – special protective measures shall be adopted (2 Marks)
Clause 3.3.2.9 (2 Marks)

Q.3 – Yes (2 Marks)
Clause 4.15.3.1 (2 Marks)

Q.4 – 7% (2 Marks)
Clause 3.6.2 Exception 3 (2 Marks)

Q.5 – 2m (2 Marks)
Clause 2.6.10 (b) (2 Marks)

Q.6 – isolated, repaired or replaced and tested as required.
Clause 3.8.1 (1 Mark)

Q.7 – the consumers mains cables sheathed from the point of supply to the first protective device located within the installation
Clause 213(1)(b) (2 Marks)

Q.8 – Any 2 of the following (2 marks each):

- Place the casualty in the recovery position
- Send for help/call emergency services/call 000
- Monitor the casualty

Q.9
Table 3(3) Item 4 Table 13 Col 23 - 25mm^2 = 125A (1 Mark) *(Item number is optional do not deduct marks)*
125A x 2 = 250A (2 Marks)
Table 25(2) Col 2 Derating for more than one circuit = 0.87 (1 Mark)
Table 28(1) Col 3 Derating for Depth 0.8m = 0.97 (1 Mark)
250x0.87x0.97 = 210.97A(1 Mark)

(b) Table 25(2) Col 2 Derating for more than one circuit = 0.81 (1 Mark)
35mm^2 (2 Marks)
(Deduct 1 Mark for no or incorrect units)
(other valid calculation methods are also acceptable, e.g. 100/(0.87x.97)=118.5A)

Q.10
I = 5A
VD = 400V
P = 4000W
(Deduct 1 Mark for no or incorrect units)

Q.11

Table C2 Column 3 (1 Mark)

Air conditioned shop.

Equipment	Load Group	Calculation	Maximum Demand
10A Socket outlets 24 Points total	B(ii)	1000+(23x100) = 3300/230 = 14.35A	14.35A (2 Marks)
15 A Socket Outlets 4 Points total	B(iii)	15+((3x15)x0.75) = 48.75A	48.750A (1 Mark)
Lights 48 Points Total	A	((48x60)/230) = 12.52A	12.52A (1 Mark)
4kW air conditioner 3.6kW cooker	C	FCL of of highest rated plus 75% of the remainder 4000/230= 17.39 3600/230 x 0.75= 11.745A	17.39A (1 Mark) 11.74A (1 Mark)
		Total Maximum Demand	104.75A (1 Mark)

(Deduct 1 Mark for no or incorrect units on total, deduct 1 mark for no or incorrect load groups)

Q.12

Table 42 (Column 6 and 4)

Consumer Mains

Vd=1.62V (3 Marks) Vc= 1.11

Sub-mains

Vd=2.77V (3 Marks) Vc=1.54

Final sub-circuit

Vd=2.18V (3 Marks) Vc=3.67

Total Voltage Drop

1.62+2.77+2.18=6.57V (1 Mark)

(Deduct 1 Mark for no or incorrect units on total. Deduct 1 mark for no or incorrect table number)

Q.13

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

Minimum Time = Accept 4-6 seconds (1 Mark)

Maximum Time = Accept 12-18 seconds (1 Mark)

(Deduct 1 mark for no or incorrect time unit)

Q.14

Transformer impedance = 0.01479Ω (3 Marks)
MSB Fault Current = 10318A (3 Marks)
DB Fault Current = 3523A (3 Marks)
(Deduct 1 Mark from each answer if candidate has rounded transformer impedance to 4 decimal places instead of 5)
(Deduct 1 Mark for no or incorrect units)

Q.15

30A (3 Marks)

Q.16

B (2 Marks)

Q.17

3m (2 Marks)
Clause number: 2.4 (2 Marks)

Q.18

(2 marks for correct defect one mark for the correct clause)
(Only accept the first 5 defects candidate has listed)

1. Consumers' mains are not installed in a manner to maintain supply when exposed to fire **7.2.2.1**
2. The cable to the fire pump is undersized – **3.4.1**
3. Main switch distribution board does not indicate the on/off position – **2.3.2.2.1(c)**
4. The main neutral connection at the neutral bar is not labelled – **2.10.5.4**
5. The telecommunications earthing conductor is undersized, 6mm^2 minimum - **5.6.2.7 (iv)**
6. 'in the event of fire do not switch off' label not in upper case **7.2.4.4(b)**
7. Strip earth electrode not at minimum horizontal length **5.3.6.3(i)**