higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

MULTI-DISCIPLINARY DRAWING OFFICE PRACTICE: ELECTRICAL DRAUGHTING

2 DECEMBER 2022

MARK ALLOCATION SUMMARY						
	QUESTION					
ELEMENT	**1**	**2**	**3**	**4**	**5**	**%**
Balanced layout and size	0	5	4	5	4	**18%**
Correctness	20	10	6	5	7	**48%**
Lettering	0	–	5	5	5	**15%**
Linework and neatness	0	5	5	5	4	**19%**
Total	**20**	**20**	**20**	**20**	**20**	**100%**

This marking guideline consists of 6 pages.

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QUESTION 1: GENERAL THEORY

1.1 1.1.1 Farad
1.1.2 F
1.1.3 Ohm
1.1.4 Ω
1.1.5 Candela per square metre
1.1.6 cd/m²

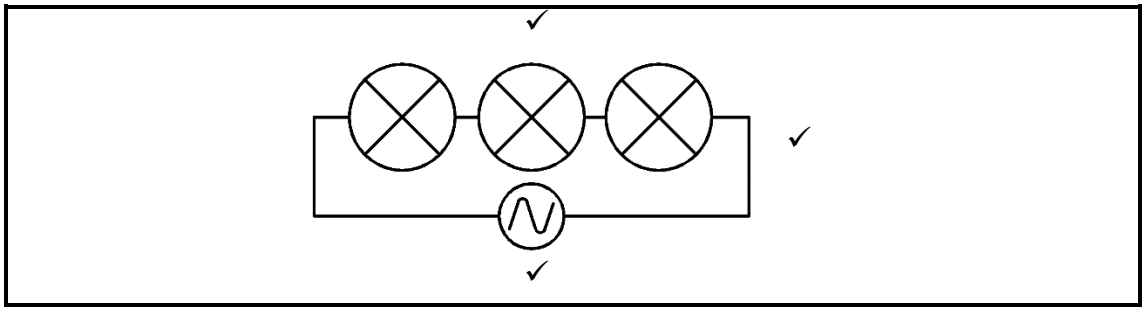
(6 × 1) (6)

1.2 Direct current√ and alternating current√ (1)

1.3
- Battery
- Generator
- Thermocouple

(3)

1.4



(3)

1.4.1 P_{tot} = P1 + P2 + P3
= 9 + 9 + 9
= **27W** ✓ (1)

1.4.2 I_{tot} = Wtot / Vtot
= 27 / 220
= **0,123 A or 123 mA**✓ (1)

1.4.3 V1 = P1 / Itot or V2 = P2 / Itot or V3 = P3 / Itot
= 9 / 0,123 = 9 / 0,123 = 9 / 0,123
= **73,17 V**✓ = **73,17 V** = **73,17 V** (1)

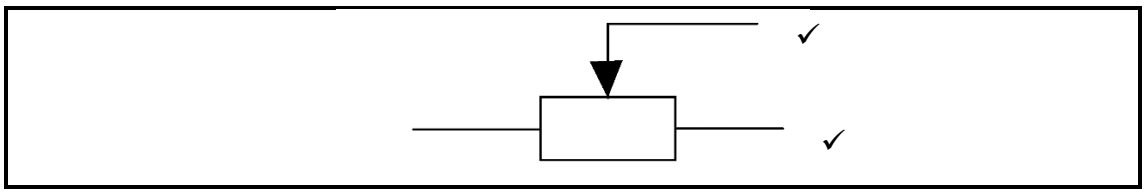
1.4.4 R1 = Vtot / I1 R2 = Vtot / I2 R3 = Vtot / I3
= 73,17 / 0,123✓ or = 73,17 / 0,123 or = 73,17 / 0,123
= **594,879 Ω** ✓ = **594,879 Ω** = **594,879 Ω** (2)

1.4.5 R_{tot} = Vtot / Itot
= 220 / 0,123 ✓
= **1788,618 Ω** or **1,788k Ω** ✓ (2)

[20]

QUESTION 2: GRAPHICAL SYMBOLS AND ELECTRONIC DIAGRAMS

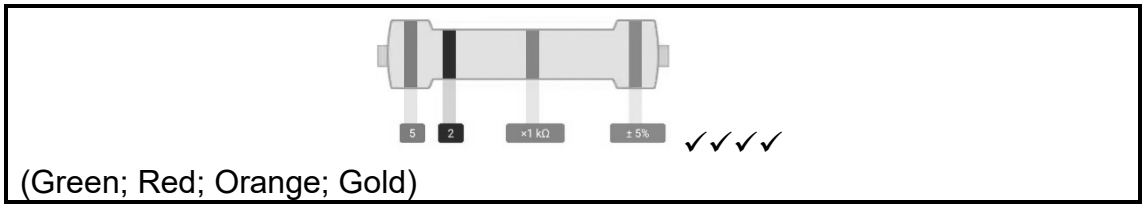
2.1



✓ ✓ (2)

2.2 22MΩ✓✓ 10%✓✓ (4)

2.3

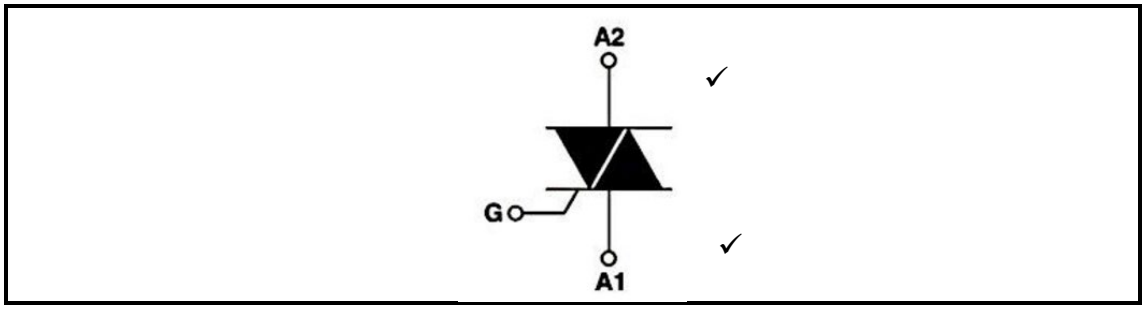


✓✓✓✓

(Green; Red; Orange; Gold) (4)

2.4 Light-dependent resistor (LDR)✓✓ (2)

2.5



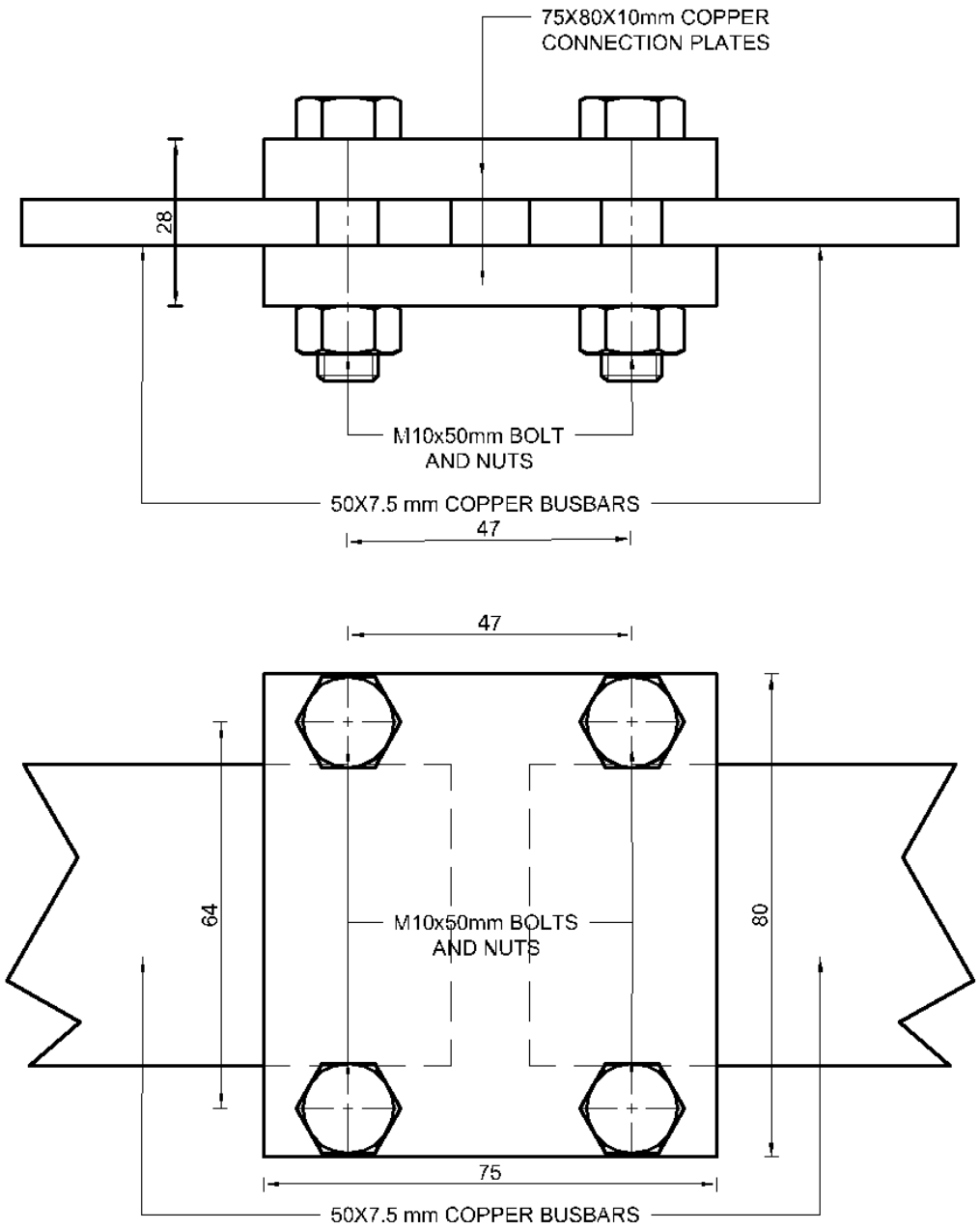
✓ ✓ (2)

2.6 Double-pole circuit breaker✓✓ (2)

2.7 2.7.1 Capacitor
2.7.2 2 200 uF 16 V
(2 × 1) (2)

2.8 Opto triac IC ✓✓ (2)
[20]

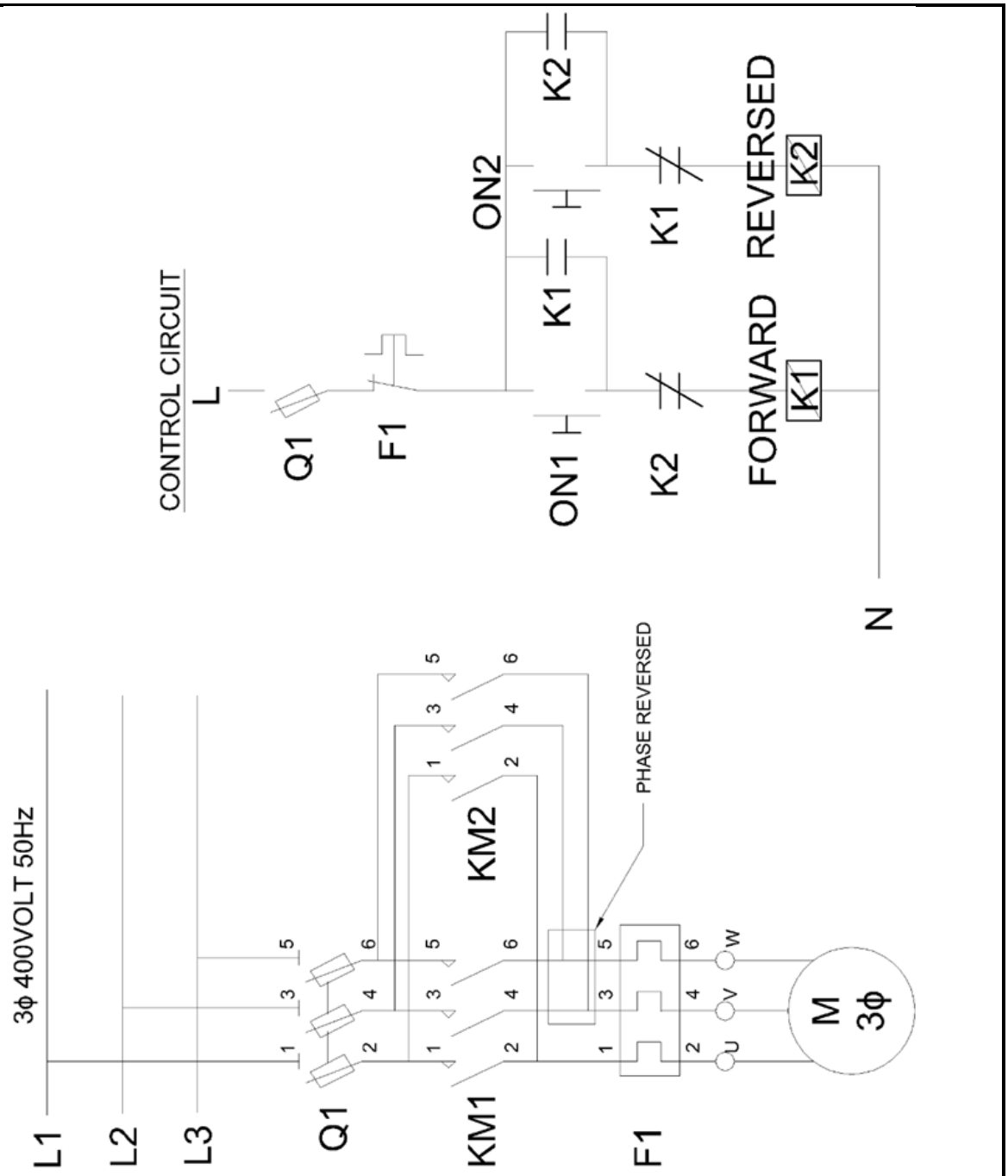
QUESTION 3: GENERATION AND DISTRIBUTION OF ELECTRICITY



Balanced layout and size	**4**	
Correctness	**6**	
Lettering	**5**	
Linework and neatness	**5**	**[20]**

[20]

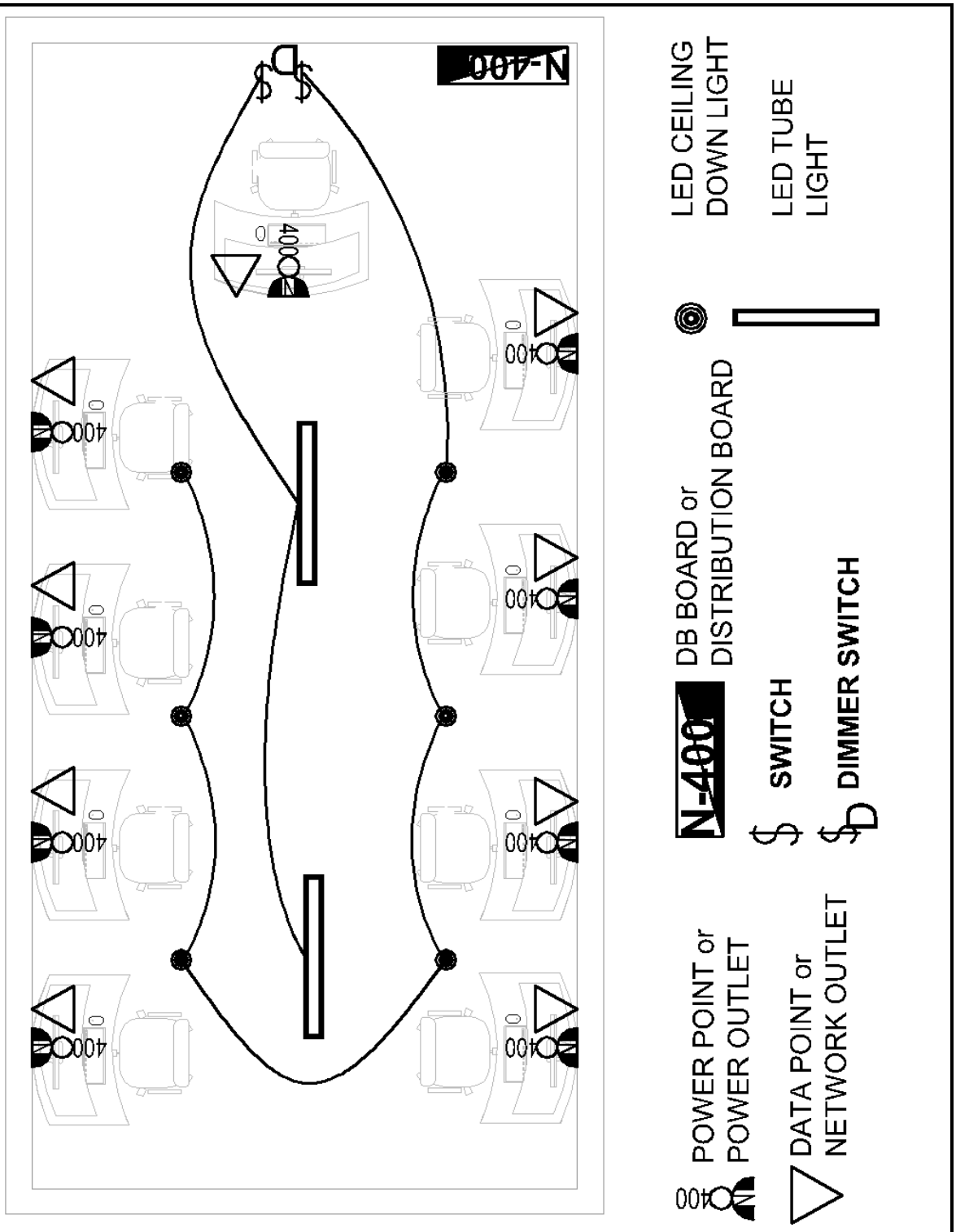
QUESTION 4: ELECTRICAL MOTORS AND CONTROL DEVICES



Balanced layout and size	**5**	
Correctness	**5**	
Lettering	**5**	
Linework and neatness	**5**	**[20]**

[20]

QUESTION 5: WIRING OF PREMISES



Balanced layout and size	4	
Correctness	7	
Lettering	5	
Linework and neatness	4	[20]

[20]

TOTAL: 100

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