higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE:
MULTIDISCIPLINARY DRAWING OFFICE PRACTICE

ELECTRICAL DRAUGHTING

3 DECEMBER 2019

This marking guideline consists of 7 pages.

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MARK ALLOCATION SUMMARY							
ELEMENT	**QUESTION**	**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%**
Line work and neatness		0	5	5	5	4	**19%**
TOTAL:		**20**	**20**	**20**	**20**	**20**	**100%**

QUESTION 1: GENERAL THEORY

1.1
1.1.1 × 10^{-9}
1.1.2 0,5
1.1.3 unity
1.1.4 AC three-phase
1.1.5 unenergised
1.1.6 it does not change the electrical properties of the circuit
1.1.7 three
1.1.8 anode
1.1.9 bigger than one
1.1.10 decrease
1.1.11 effective
1.1.12 discharge

(12 × 1) (12)

1.2
1.2.1 16 mm²
1.2.2 6–10 mm²
1.2.3 4 mm²
1.2.4 2,5 to 4 mm²
1.2.5 1,5 mm²

(5 × 1) (5)

1.3 Total resistance: $R_T = R_1 + R_2 = 2 + 4 = 6\ \Omega$✓

Total current: $I_T = V_T / R_T = 12/6 = 2\ A$✓

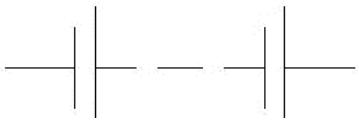
Volt drop across R_1: $V_1 = I.R_1 = 2 \times 2 = 4\ V$√

Volt drop across R_2: $V_2 = I.R_2 = 2 \times 4 = 8\ V$√ (3)

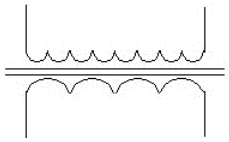
[20]

QUESTION 2: GRAPHICAL SYMBOLS AND ELECTRONIC DIAGRAMS

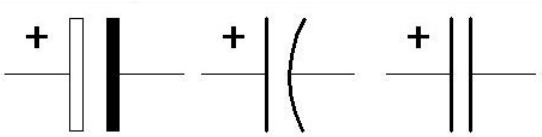
2.1 Battery



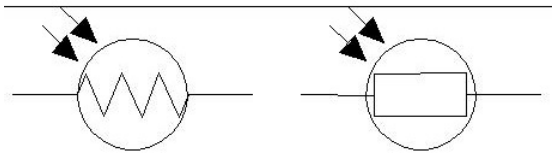
2.2 Transformer



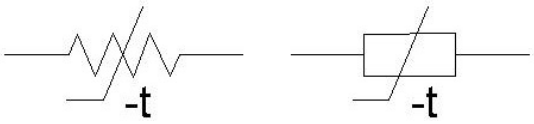
2.3 Polarised capacitor



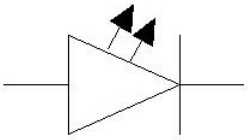
2.4 Light-sensitive resistor (photo-conductive device)



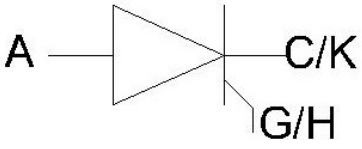
2.5 NTC thermistor



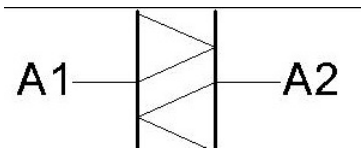
2.6 Light-emitting diode (LED)



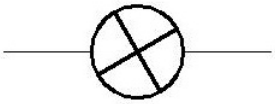
2.7 Silicon control rectifier (SCR)



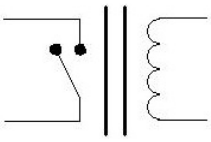
2.8 Bidirectional diode (Diac)



2.9 Incandescent lamp with two terminals



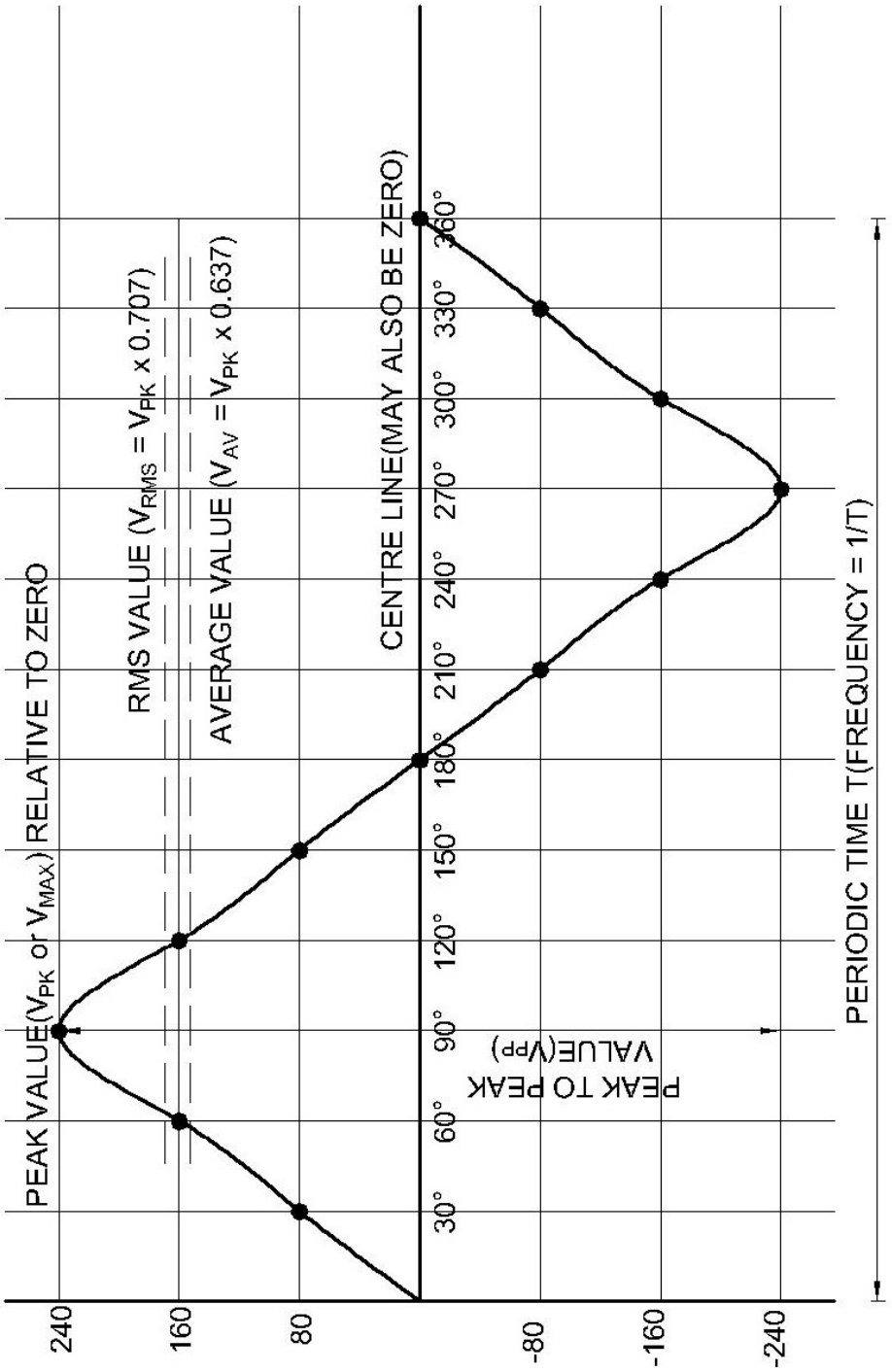
2.10 Relay



Balanced layout and size	10 × ½ = 5
Correctness	10 × 1 = 10
Line work and neatness	10 × ½ = 5

[20]

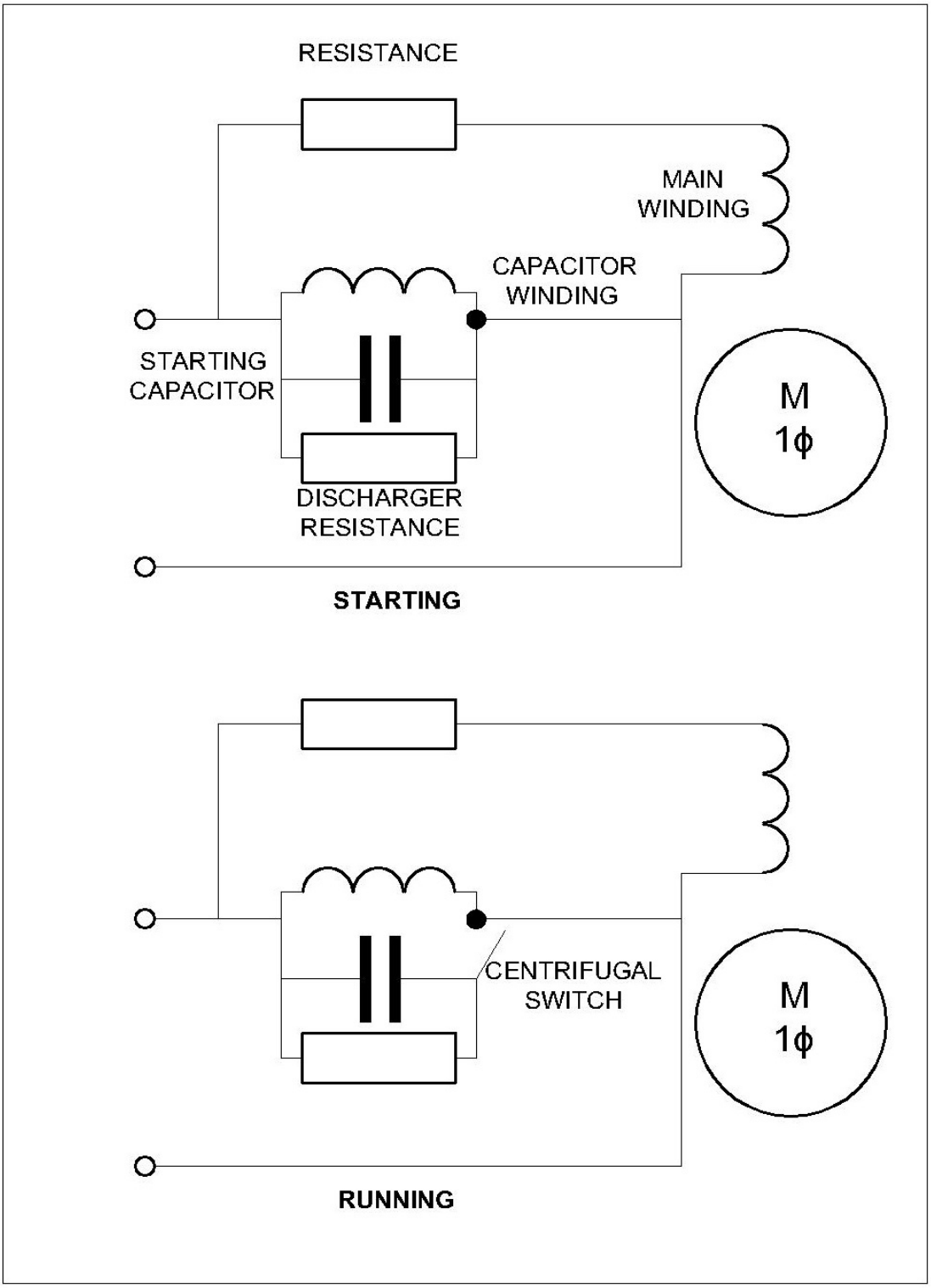
QUESTION 3: GENERATION AND DISTRIBUTION OF ELECTRICITY



Balanced layout and size	4
Correctness	6
Lettering	5
Line work and neatness	5

[20]

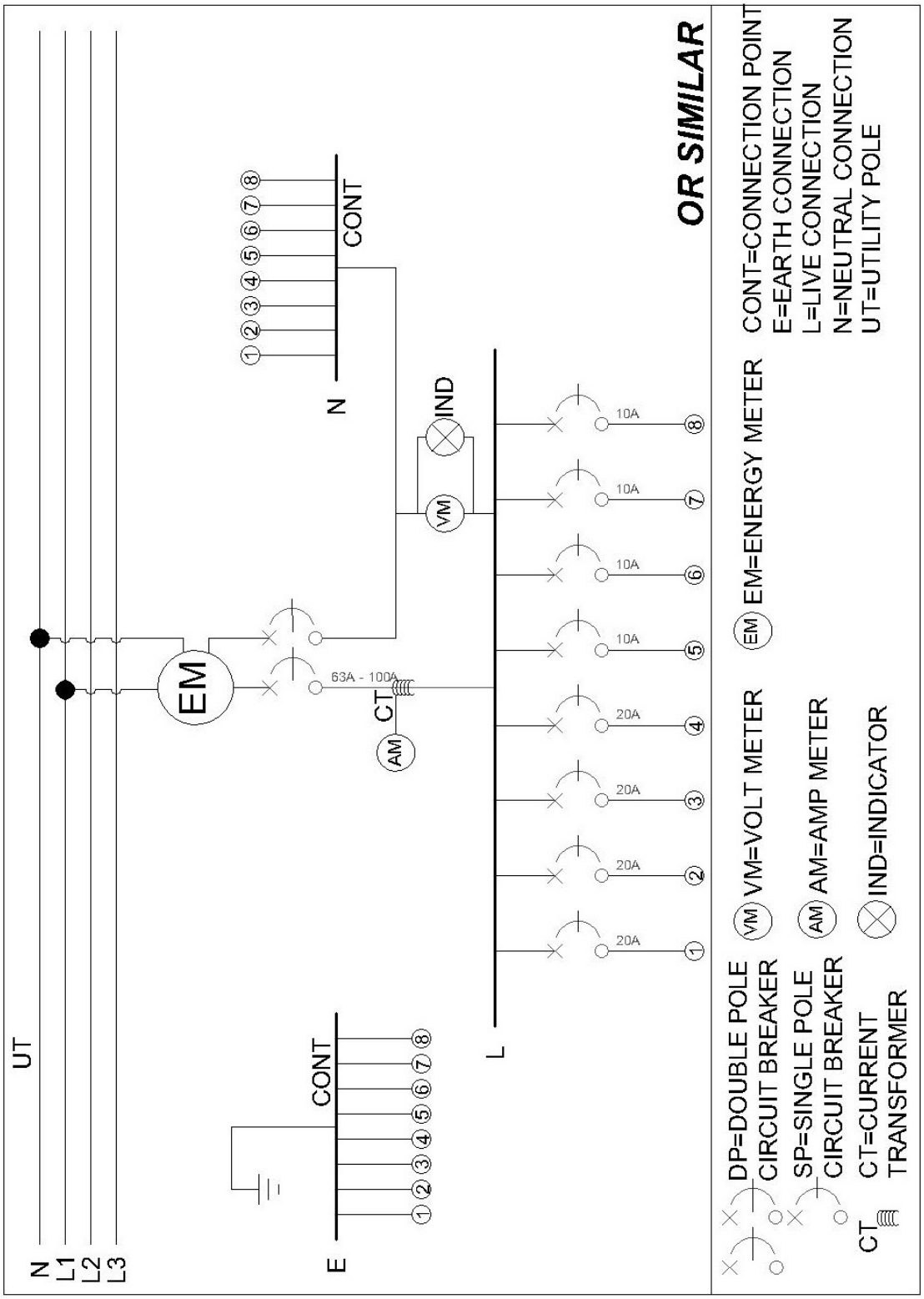
QUESTION 4: ELECTRICAL MOTORS AND CONTROL DEVICES



Balanced layout and size	5
Correctness	5
Lettering	5
Line work and neatness	5

[20]

QUESTION 5: WIRING OF PREMISES



Balanced layout and size	4
Correctness	7
Lettering	5
Line work and neatness	4

[20]

TOTAL: 100

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