

**LINE MECHANIC TEACHING EXAMINATION PRESCRIPTON AND TEACHING GUIDELINES**

**MATRIX – GUIDELINES AND UNIT STANDARDS**

**Theory/Regulations**

**A. Basic Theory**

<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
<b>A1.1</b>	<b>Theory Basic electrical and energy concepts</b>	1.	19952 1.1
		2.	19952 1.3
		3.	18273 1.1
		4.	18273 1.1
		5.	18273 1.1
		6.	18273 1.2
		7.	18273 1.3
<b>A2.2</b>	<b>Theory Effects of current</b>		15851 1.1
<b>A3.3</b>	<b>Theory - Resistance</b>		18273 2

### C. a.c. Theory

<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
<b>C2.11</b>	<b>a.c. – Measurements V, A, P, pf</b>	1.	18273 3
		2.	18273 4

### D System Theory

<b>1.1</b>			
<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
<b>D1.12</b>	<b>System theory – 1 &amp; 3 –phase systems</b>	1.	18274 1.6
		2.	18274 1.7, 1.8
		3.	18274 1.10
		4.	18274 1.9
		5.	18274 2.4
		6.	10508
		7.	
<b>D3.21</b>	<b>System theory – Earthing of installations fittings and appliances</b>	1.	18274 1.5
		2.	
		3.	
<b>D4.22</b>	<b>System theory – MEN systems</b>	1.	15851 1.2
		2.	

## G. Transformers

<b>1.2</b>			
<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
<b>G2.24</b>	<b>Transformers Operating principles</b>	1	18274 1.2
		2.	18274 1.3

## H. Circuit and Cable Installation and Protection

<b>1.3</b>			
<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
<b>H1a.27</b>	<b>Protection and Control Protection characteristics</b>	1.	18274 2.1
		2	18274 2.1
		3.	
		4.	
		5.	
		6.	
<b>H1b.28</b>	<b>Protection and Control RCD characteristics</b>		15848 2.1, 2.3
<b>H1c.31</b>	<b>Protection and Control Selection of control and protection equipment</b>	1.	18274 2.2
		2.	18274 2.5
<b>H3c.35</b>	<b>Cables and Cords Overhead and underground</b>	1.	20423
		2.	18024
		3.	10522
		4.	10521

<b>1.3</b>			
<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
		5.	10518
		6.	10512
		7.	
		8.	
		9.	17632
<b>H3d.41</b>	<b><u>Cables and Cords Specifications</u></b>	1.	18274 1.1
		2.	18274 1.5
<b>H3e.42</b>	<b><u>Cables and Cords Termination of cords</u></b>	1.	20059
		2.	12298
		3.	10545
<b>H3i.48</b>	<b><u>Cables and Cords Consumer main termination</u></b>	1. 2.	
<b>H6.43</b>	<b><u>Selection of fittings and Appliances</u></b>		15848 4
<b>H8.52A</b>	<b><u>Design and connect switching circuits</u></b>	1.	18274 2.3
		2.	10511
<b>H9.62</b>	<b><u>Commission and decommission equipment and appliances</u></b>	1.	16283 1
		2.	10529 1,2,3
<b>H10.66</b>	<b><u>Fault diagnosis</u></b>	1.	16278 1
		2.	16278 2

## K. Testing, Certification and Inspection

<u>No.</u>	<u>Topic</u>	<u>Subject Matter</u>	<u>Unit standard</u>
K2.38	<b><u>Statutory testing and inspection requirements</u></b>	1..	
		2.	
		3.	
		4.	15848 2.2, 2.4
		5.	15848 3.3
K3.39	<b><u>Certification, verification, WOEf</u></b>	1.	
		2.	
		3.	
		4.	
		5.	
		6.	
		7.	
K4.46	<b><u>Testing and inspection methods</u></b>	1.	19952 2.3
		2.	19950 1.1, 1.2
		3.	19950 1.3, 1.4, 2
		4.	18029 1
		5.	18029 2
		6.	10513 1

## L. Safety, Safe Working Practices, Basic First Aid and CPR

<u>No.</u>	<u>Topic</u>	<u>Subject Matter</u>	<u>Unit standard</u>
L1.40/ 54	<b><u>Isolation Equipment and Personal safety</u></b>	1.	17602
		2.	17602 15851 3.1
		3.	16283 15851

<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
		4.	
		5.	19952 15852
		6.	1178 8
		7.	17026
		8.	17026 3.1
		9.	17026 3.2
		10.	10509
<b>L2.53</b>	<b><u>Statutory safety requirements</u> H&amp;S, Supervision</b>	1.	17602 2 15851 2
		2.	10507
		3.	15851 3.2
		4.	15851 3.2
		5.	1178 9
<b>L4.56</b>	<b><u>Safe use of electrical equipment</u></b>	1.	19952 3.1
		2.	15851 6.1, 6.2
		3.	15848 1
		4.	15848 5
		5.	15848 3.1, 3.2, 3.4
		6.	10507 1178 3
		7.	10507
		8.	1178 7
		9.	18276 1
		10.	19952 3.2
		11.	18276 3
<b>L5.59</b>	<b><u>HV, _____ LV distribution</u></b>	1.	17027

<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
	<u>systems</u>		
		2.	10526 1
		3.	10526 3
<b>L6.57/ 58</b>	<u>CPR and basic first aid</u>	1.	6401
		2.	17025 1

## **P. Legislation**

<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
<b>P1.13</b>	<u>Legislation</u> Fundamental principles		12300 1
<b>P2.13</b>	<u>Legislation</u> Registration	1.	
		2.	
		3.	
		4.	
		5.	
<b>P3.13</b>	<u>Legislation</u> Practising licences		
<b>P4.13</b>	<u>Legislation</u> Discipline		
<b>P5.13</b>	<u>Legislation</u> Accidents		17025 3
			15851 7

## Practical Assessment

Each student should be able to demonstrate a thorough knowledge of and be able to carry out each skill.

### G. Transformers

<u>No.</u>	<u>Topic</u>	<u>Subject Matter</u>	<u>Unit standard</u>
G4.26	<b><u>Transformers</u> <u>Application and safety issues</u></b>	<u>Skill 4</u> <u>Skill 6</u>	10507 17026 15852 15851 10526 10507 1178

### H. Circuit and Cable Installation and Protection

<u>No.</u>	<u>Topic</u>	<u>Subject Matter</u>	<u>Unit standard</u>
H1c.31	<b><u>Protection and Control</u> <u>Selection of control and protection equipment</u></b>	<u>Skill 4</u> <u>Skill 6</u>	10507 17026 15852 15851 10526 10507 1178
H3c.35	<b><u>Cables and Cords</u> <u>Overhead and underground</u></b>	<u>Skill 1</u> <u>Skill 2</u>	19952 17602 15851 12295 10529 10522

### K. Testing, Certification and Inspection

<u>No.</u>	<u>Topic</u>	<u>Subject Matter</u>	<u>Unit standard</u>
K4.46	<b><u>Testing and inspection methods</u></b>	<u>Skill 5</u>	18029
		<u>Skill 8</u>	19950
		<u>Skill 9</u>	19950 18029



**L. Safety, Safe Working Practices, Basic First Aid and CPR**

<b>No.</b>	<b>Topic</b>	<b>Subject Matter</b>	<b>Unit standard</b>
<b>L1.40/ 54</b>	<b>Isolation Equipment and Personal safety</b>		
<b>L4.56</b>	<b>Safe use of electrical equipment</b>	<u>Skill 7</u>	18276
<b>L5.59</b>	<b>HV, LV distribution systems</b>	<u>Skill 3</u>	10507 17026 15852 15851 12295 10526 10507 1178
<b>L6.57/ 58</b>	<b>CPR and basic first aid</b>	<u>Skill 10</u>	6401
		<u>Skill 11</u>	17025