National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name :	ELECTRONICS TEST AND DEVELOPMENT CENTRE, 1ST AND 2ND FLOOR, CENTRAL BLOCK, HOUSEFED COMPLEX, GUWAHATI, KAMRUP METRO, ASSAM, INDIA		
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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	1P Active Power , 120 V/240 V, 0.05 A to 10 A, 0.5 PF to UPF, 50 Hz	Using Power Energy Comparator By Direct Method	3 W to 2.4 kW	0.03 % to 0.08 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	3P Active Power , 120 V/240 V, 0.05 A to 10 A, 0.5 PF to UPF, 50 Hz	Using Power Energy Comparator By Direct Method	9 W to 7.22 kW	0.03 % to 0.08 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @50 Hz to 1 kHz	Using 8½ Digital Multimeter By Direct Method	1 mA to 200 mA	0.05 % to 0.041 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @50 Hz to 1 kHz	Using 8½ Digital Multimeter By Direct Method	2 A to 20 A	0.082 % to 0.11 %

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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @50 Hz to 1 kHz	Using 8½ Digital Multimeter By Direct Method	200 mA to 2 A	0.05 % to 0.082 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage @50 Hz	Using High Voltage Probe with Digital Multimeter By Direct Method	1 kV to 5 kV	0.37 kV
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @50 Hz to 10 kHz	Using 8½ Digital Multimeter By Direct Method	10 mV to 100 mV	0.084 % to 0.015 %
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @50 Hz to 10 kHz	Using 8½ Digital Multimeter By Direct Method	100 mV to 1000 V	0.015 % to 0.022 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @1kHz	Using RLC Digi bridge By Direct Method	1 nF to 1 µF	0.58 % to 0.2 %

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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Inductance @1kHz	Using RLC Digi bridge By Direct Method	100 µH to 10 H	0.11 % to 0.25 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50 Hz to 1 kHz	Using Multiproduct Calibrator By Direct Method	10 A to 20 A	0.07 % to 0.2 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50 Hz to 1 kHz	Using Multiproduct Calibrator By Direct Method	100 µA to 200 mA	0.26 % to 0.017 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50 Hz to 1 kHz	Using Multiproduct Calibrator By Direct Method	2 A to 10 A	0.03 % to 0.1 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50 Hz to 1 kHz	Using Multiproduct Calibrator with current coil By Direct Method	20 A to 1000 A	0.87 % to 0.39 %

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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50Hz to 1kHz	Using Multiproduct Calibrator By Direct Method	200 mA to 2 A	0.06 % to 0.03 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @50 Hz to 10 kHz	Using Multiproduct Calibrator by Direct Method	100 V to 1000 V	0.032 % to 0.018 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @50 Hz to 20 kHz	Using Multiproduct Calibrator By Direct Method	10 mV to 100 mV	0.07 % to 0.02 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @50 Hz to 20 kHz	Using Multiproduct Calibrator By Direct Method	100 mV to 100 V	0.05 % to 0.01 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Decade Capacitance Box By Direct Method	10 pF to 100 pF	5.85 % to 0.6 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Decade Capacitance Box By Direct Method	100 pF to 1 µF	0.6 % to 0.06 %

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21	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Inductance @1kHz	Using Decade Inductance Box By Direct Method	100 µH to 10 H	2.4 % to 1 %
22	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ Digital Multimeter By Direct Method	1 mA to 200 mA	0.0021 % to 0.006 %
23	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ Digital Multimeter By Direct Method	2 A to 20 A	0.021 % to 0.051 %
24	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ Digital Multimeter By Direct Method	200 mA to 2 A	0.006 % to 0.021 %
25	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using High Voltage Probe with Digital Multimeter By Direct Method	1 kV to 10 kV	0.40 kV
26	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Tera Ohmmeter By Direct Method	100 Mohm @10 V	0.02 %

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27	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Tera Ohmmeter By Direct Method	1 Gohm @100 V	0.03 %
28	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using DCC Bridge and 8½ Digit Multimeter By Direct Method	1 ohm to 10 Mohm	0.006 % to 0.005 %
29	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Tera Ohmmeter By Direct Method	1 Tohm @200 V	0.15 %
30	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Tera Ohmmeter By Direct Method	10 Gohm @100 V	0.07 %
31	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Teraohm Meter, Digital Multimeter By Direct Method	10 Mohm to 100 Mohm	0.005 % to 0.01 %
32	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using DCC Bridge and Digital Multimeter By Direct Method	100 µohm to 1 ohm	0.012 % to 0.006 %

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33	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Tera Ohmmeter By Direct Method	100 Gohm @200 V	0.1 %
34	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ Digital Multimeter By Direct Method	1 mV to 100 mV	0.16 % to 0.001 %
35	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ Digital Multimeter By Direct Method	10 V to 1000 V	0.0006 % to 0.001 %
36	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ Digital Multimeter By Direct Method	100 mV to 10 V	0.002 % to 0.0006 %
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator By Direct Method	10 A to 20 A	0.07 % to 0.12 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator By Direct Method	100 µA to 2 A	0.014 % to 0.01 %

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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator By Direct Method	2 A to 10 A	0.01 % to 0.07 %
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator with current coil By Direct Method	20 A to 1000 A	0.58 % to 0.33 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	1 ohm	0.001 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	1 Tohm	0.36 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	1 Gohm	0.18 %
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Multiproduct Calibrator By Direct Method	1 kohm to 100 Mohm	0.004 % to 0.08 %

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45	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Multiproduct Calibrator by Direct Method	1 ohm to 1 kohm	0.12 % to 0.004 %
46	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	10 Gohm	0.073 %
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	10 mohm	0.006 %
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	100 Gohm	0.59 %
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	100 µohm	0.06 %
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series by Direct Method	100 Mohm	0.2 %

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51	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator By Direct Method	1 mV to 100 mV	0.16 % to 0.0016 %
52	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator By Direct Method	10 mV to 10 V	0.005 % to 0.0006 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator By Direct Method	10 V to 1000 V	0.0006 % to 0.003 %
54	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Calibration:Deflection Factor (Amplitude) @1 kHz, 50 ohm	Using Multi Product Calibrator By Direct Method	1 mV to 6 V	4.75 % to 0.29 %
55	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Calibration: Time Base(Marker)	Using Multi Product Calibrator By Direct Method	2 ns to 5 s	0.034 % to 0.59 %
56	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Calibration: Vertical Deflection (Amplitude) at 1kHz, 1 Mohm	Using Multi Product Calibrator and Direct Method	1 mV to 6 V	4.58 % to 0.12 %

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57	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple B Type	Using Multi Product Calibrator By Direct Method	600 °C to 1800 °C	0.5 °C
58	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple C Type	Using Multi Product Calibrator By Direct Method	0 °C to 2300 °C	0.9 °C
59	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple E Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1000 °C	0.5 °C
60	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple J Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1200 °C	0.31 °C
61	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple K Type	Using Multi Product Calibrator By and Direct Method	-200 °C to 1300 °C	0.5 °C
62	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple L Type	Using Multi Product Calibrator By Direct Method	-200 °C to 900 °C	0.4 °C

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63	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple N Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1300 °C	0.4 °C
64	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple R Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.7 °C
65	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple S Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.6 °C
66	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple T Type	Using Multi Product Calibrator By Direct Method	-250 °C to 400 °C	0.7 °C
67	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple U Type	Using Multi Product Calibrator By Direct Method	-200 °C to 600 °C	0.6 °C
68	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD PT-100	Using Multi Product Calibrator By Direct Method	-200 °C to 800 °C	0.5 °C

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69	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple B Type	Using Multi Product Calibrator By Direct Method	600 °C to 1800 °C	0.5 °C
70	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple C Type	Using Multi Product Calibrator By Direct Method	0 °C to 2300 °C	0.9 °C
71	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple E Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1000 °C	0.5 °C
72	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple J Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1200 °C	0.31 °C
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple K Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1300 °C	0.5 °C
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple L Type	Using Multi Product Calibrator By Direct Method	-200 °C to 900 °C	0.4 °C

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75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple N type	Using Multi Product Calibrator By Direct Method	-200 °C to 1300 °C	0.4 °C
76	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple R Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.7 °C
77	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple S Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.6 °C
78	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple T Type	Using Multi Product Calibrator By Direct Method	-250 °C to 400 °C	0.7 °C
79	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple U Type	Using Multi Product Calibrator By Direct Method	-200 °C to 600 °C	0.6 °C
80	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency Counter By Direct Method	10 Hz to 3 GHz	0.00001 %

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81	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multiproduct calibrator, Signal Generator By Direct Method	10 Hz to 3 GHz	0.002 % to 0.000015 %
82	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Feeler gauge	Using Digital Micrometer , LC: 0.001 mm By Comparison Method	0.05 mm to 2.5 mm	3.2 µm
83	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bevel Protractor LC: 5 minute	Using Angle Gauge Block By Comparison Method	5 minute to 90 °	2.5 minute
84	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bore Gauge, Stem Size (18 mm-250 mm) LC-1µm	Using Dial Calibration Tester By Comparison Method	Up to 0.80 mm (transmission)	1 µm
85	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Gauge LC: 0.01	Gauge Block Set By Comparison Method	0 to 150 mm	17 µm

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86	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer LC: 0.001 mm	Using Gauge Block Set By Comparison Method	0 to 25 mm	2 µm
87	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer LC: 0.01 mm	Gauge Block Set By Comparison Method	25 mm to 150 mm	5.8 µm
88	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Inclinometer, LC : 0.01°	Using Angle Gauge Block By Comparison Method	5 minute to 90 °	1.2 arc second
89	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Tape, LC: 1mm	Using Tape & Scale Calibrator By Comparison Method	0 to 5000 mm	104 Sqrt(L) µm, Where L in meter
90	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Dial Gauge, LC:1 µm or coarser	Using Dial calibration Tester By Comparison Method	0 to 50 mm	1.4 µm

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91	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Steel Scale, LC: 1 mm	Using Tape & Scale Calibrator By Comparison Method	0 to 1000 mm	106 µm
92	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieves (Aperture size)	Using Profile Projector By Comparison Method	0.6 mm to 6.3 mm	5 µm
93	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Vernier Caliper LC: 0.02 mm	Using Gauge Block Set By Comparison Method	0 to 300 mm	24 µm
94	MECHANICAL-PRESSURE INDICATING DEVICES	Hydraulic Pressure Gauges	Using Digital Pressure Gauge/ Electronic Dead Weight Tester and Comparison Method as per DKD-R-6-1	1 bar to 700 bar	0.06 %
95	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauges	Using Digital Pressure Gauge and Comparison Method as per DKD-R-6-1	0 bar to 40 bar	0.025 %

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96	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauges	Using Digital Pressure Gauge and Comparison Method as per DKD-R-6-1	-1 bar to 0 bar	0.025 %
97	MECHANICAL-VOLUME	Micro Pipette	Using E2 Class Reference Weight and Precision Balance of readability 0.01 mg and Distilled water of Known density as per ISO 8655-6:2002	> 10 µl to 1000 µl	0.01 µl
98	MECHANICAL-VOLUME	Volume Burette, Pipette, Volumetric Flask, Measuring Cylinder	Using E2 Class Reference Weight, Precision Balance of readability 0.01 mg and Distilled water of Known density by Gravimetric Method Based on ISO 4787: 2021	>10 ml to 100 ml	0.11 µl
99	MECHANICAL-VOLUME	Volume Pipette, Measuring Cylinder	Using E2 Class Reference Weight, Precision Balance of readability 0.01 mg and Distilled water of Known density by Gravimetric Method Based on ISO 4787: 2021	1 ml to 10 ml	0.11 µl

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100	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Balance (Readability: 1 mg, Class I or coarser)	Using E2 Class Reference Weights as per OIML R -76-1	0 to 200 g	0.1 mg
101	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Balance (Readability: 10 g, Class III or coarser)	Using M1 Class Reference Weights as per OIML R -76-1	35 kg to 100 kg	1 g
102	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Balance (Readability: 0.1 g, Class II or coarser)	Using E2 Class Reference Weights as per OIML R -76-1	200 g to 30 kg	0.15 g
103	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111-1 & Comparison Method	10 g	0.05 mg
104	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg By ABBA Method as per OIMLR-111-1	100 g	0.051 mg

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105	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	2 g	0.02 mg
106	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	20 g	0.08 mg
107	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	200 g	0.11 mg
108	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg By ABBA Method as per OIMLR-111	200 mg	0.01 mg

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109	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA Method as per OIMLR-111	5 g	0.02 mg
110	MECHANICAL-WEIGHTS	Weights (F1 class and coarser)	Using E2 Class Reference Weights and Digital Balance of Resolution 0.01 mg By ABBA Method as per OIMLR-111	500 mg	0.02 mg
111	MECHANICAL-WEIGHTS	Weights (F1 class and Corser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	1 g	0.02 mg
112	MECHANICAL-WEIGHTS	Weights (F2 class & coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	20 mg	0.02 mg

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113	MECHANICAL-WEIGHTS	Weights (F2 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	1 mg	0.02 mg
114	MECHANICAL-WEIGHTS	Weights (F2 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	10 mg	0.02 mg
115	MECHANICAL-WEIGHTS	Weights (F2 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	100 mg	0.02 mg

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116	MECHANICAL-WEIGHTS	Weights (F2 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	2 mg	0.02 mg
117	MECHANICAL-WEIGHTS	Weights (F2 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	5 mg	0.02 mg
118	MECHANICAL-WEIGHTS	Weights (F2 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	50 g	0.15 mg

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119	MECHANICAL-WEIGHTS	Weights (F2 class and coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.01 mg by ABBA method as per OIMLR-111 & Comparison Method	50 mg	0.02 mg
120	MECHANICAL-WEIGHTS	Weights (M1 Class & Coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.1 g By ABBA Method as per OIMLR-111	1 kg	33 mg
121	MECHANICAL-WEIGHTS	Weights (M1 Class & Coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.1 g By ABBA Method as per OIMLR-111	10 kg	33 mg
122	MECHANICAL-WEIGHTS	Weights (M1 Class & Coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.1 g by ABBA method as per OIMLR-111 & Comparison Method	2 kg	33 mg

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123	MECHANICAL-WEIGHTS	Weights (M1 class & Coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.1 g By ABBA Method as per OIMLR-111	20 kg	110 mg
124	MECHANICAL-WEIGHTS	Weights (M1 Class & Coarser)	Using E2 Class Reference Weights, and Weighing Balance of resolution 0.1 g By ABBA Method as per OIMLR-111	5 kg	33 mg
125	MECHANICAL-WEIGHTS	Weights (M2 Class & Coarser)	Using M1 Class Reference Weights, and Weighing Balance of resolution 10 g by ABBA method as per OIMLR-111 & Comparison Method	50 kg	3.33 g
126	THERMAL-TEMPERATURE	Liquid in Glass Thermometer	Using standard SPRT 4-Channel Thermometer, Liquid bath By Comparison Method	50 °C to 205 °C	1.05 °C

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127	THERMAL-TEMPERATURE	RTD/Thermocouple Sensor with or without indicator	Using Standard PRT with 4-Channel Thermometer, Oil Bath By Comparison method	50 °C to 205 °C	0.66 °C
128	THERMAL-TEMPERATURE	Temperature Indicator of Dry Block Bath, Liquid Bath (Single Position)	Using standard SPRT with indicator By Comparison Method	50 °C to 205 °C	0.66 °C
129	THERMAL-TEMPERATURE	Temperature Indicator with Sensor of Dry Block Bath, Liquid Bath, Muffle furnace (Single Position)	Using S-Type Standard Thermocouple with 4-Channel Thermometer By Comparison Method	205 °C to 1000 °C	2.53 °C
130	THERMAL-TEMPERATURE	Thermocouple Sensor with or without indicator	Using S-Type Standard Thermocouple with 4-Channel Thermometer and Dry Block Calibrator By Comparison Method	205 °C to 1000 °C	2.60 °C

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Site Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	1P Active Power , 120 V/240 V, 0.05 A to 10 A, 0.5 PF to UPF, 50 Hz	Using Power Energy Comparator By Direct Method	3 W to 2.4 kW	0.03 % to 0.08 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	3P Active Power , 120 V/240 V, 0.05 A to 10 A, 0.5 PF to UPF, 50 Hz	Using Power Energy Comparator By Direct Method	9 W to 7.22 kW	0.03 % to 0.08 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @50 Hz to 1 kHz	Using 8½ Digital Multimeter By Direct Method	1 mA to 200 mA	0.05 % to 0.041 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @50 Hz to 1 kHz	Using 8½ Digital Multimeter By Direct Method	2 A to 20 A	0.082 % to 0.11 %

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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @50 Hz to 1 kHz	Using 8½ Digital Multimeter By Direct Method	200 mA to 2 A	0.05 % to 0.082 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage @50 Hz	Using High Voltage Probe with Digital Multimeter By Direct Method	1 kV to 5 kV	0.37 kV
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @50 Hz to 10 kHz	Using 8½ Digital Multimeter By Direct Method	10 mV to 100 mV	0.084 % to 0.015 %
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @50 Hz to 10 kHz	Using 8½ Digital Multimeter By Direct Method	100 mV to 1000 V	0.015 % to 0.022 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @1kHz	Using RLC Digi bridge By Direct Method	1 nF to 1 µF	0.58 % to 0.2 %

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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Inductance @1kHz	Using RLC Digi bridge By Direct Method	100 µH to 10 H	0.11 % to 0.25 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50 Hz to 1 kHz	Using Multiproduct Calibrator By Direct Method	100 µA to 300 mA	0.3 % to 0.05 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50 Hz to 1 kHz	Using Multiproduct Calibrator with current coil By Direct Method	20 A to 1000 A	0.87 % to 0.39 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @50 Hz to 1 kHz	Using Multiproduct Calibrator By Direct Method	300 mA to 20 A	0.05 % to 0.2 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @50 Hz to 10 kHz	Using Multiproduct Calibrator By Direct Method	10 mV to 1000 V	0.096 % to 0.04 %

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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Decade Capacitance Box By Direct Method	10 pF to 100 pF	5.85 % to 0.6 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Decade Capacitance Box By Direct Method	100 pF to 1 µF	0.6 % to 0.06 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Inductance @1kHz	Using Decade Inductance Box By Direct Method	100 µH to 10 H	2.4 % to 1 %
18	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ Digital Multimeter By Direct Method	1 mA to 200 mA	0.0021 % to 0.006 %
19	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ Digital Multimeter By Direct Method	2 A to 20 A	0.021 % to 0.051 %
20	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ Digital Multimeter By Direct Method	200 mA to 2 A	0.006 % to 0.021 %

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21	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using High Voltage Probe with Digital Multimeter By Direct Method	1 kV to 10 kV	0.40 kV
22	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using 8½ Digital Multimeter By Direct Method	1 ohm to 10 Mohm	0.03 % to 0.005 %
23	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using 8½ Digital Multimeter By Direct Method	10 Mohm to 100 Mohm	0.005 % to 0.02 %
24	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using 8½ Digital Multimeter By Direct Method	100 Mohm to 1 Gohm	0.02 % to 0.18 %
25	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ Digital Multimeter By Direct Method	1 mV to 100 mV	0.16 % to 0.001 %
26	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ Digital Multimeter By Direct Method	10 V to 1000 V	0.0006 % to 0.001 %

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27	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ Digital Multimeter By Direct Method	100 mV to 10 V	0.002 % to 0.0006 %
28	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator By Direct Method	100 µA to 300 mA	0.11 % to 0.015 %
29	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator with current coil By Direct Method	20 A to 1000 A	0.58 % to 0.35 %
30	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator By Direct Method	300 mA to 20 A	0.015 % to 0.12 %
31	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	1 ohm	0.001 %
32	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	1 Tohm	0.36 %

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33	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	1 Gohm	0.18 %
34	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Multiproduct Calibrator By Direct Method	1 kohm to 100 Mohm	0.004 % to 0.08 %
35	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Multiproduct Calibrator by Direct Method	1 ohm to 1 kohm	0.12 % to 0.004 %
36	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	10 Gohm	0.073 %
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	10 mohm	0.006 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	100 Gohm	0.59 %

SCOPE OF ACCREDITATION

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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series By Direct Method	100 µohm	0.06 %
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance	Using Standard Resistor Series by Direct Method	100 Mohm	0.2 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator By Direct Method	1 mV to 100 mV	0.16 % to 0.0016 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator By Direct Method	10 mV to 10 V	0.005 % to 0.0006 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator By Direct Method	10 V to 1000 V	0.0006 % to 0.003 %
44	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Calibration:Deflection Factor (Amplitude) @1 kHz, 50 ohm	Using Multi Product Calibrator By Direct Method	1 mV to 6 V	4.75 % to 0.29 %

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45	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Calibration: Time Base(Marker)	Using Multi Product Calibrator By Direct Method	2 ns to 5 s	0.034 % to 0.59 %
46	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Calibration: Vertical Deflection (Amplitude) at 1kHz, 1 Mohm	Using Multi Product Calibrator and Direct Method	1 mV to 6 V	4.58 % to 0.12 %
47	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple B Type	Using Multi Product Calibrator By Direct Method	600 °C to 1800 °C	0.5 °C
48	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple C Type	Using Multi Product Calibrator By Direct Method	0 °C to 2300 °C	0.9 °C
49	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple E Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1000 °C	0.5 °C
50	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple J Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1200 °C	0.31 °C

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51	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple K Type	Using Multi Product Calibrator By and Direct Method	-200 °C to 1300 °C	0.5 °C
52	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple L Type	Using Multi Product Calibrator By Direct Method	-200 °C to 900 °C	0.4 °C
53	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple N Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1300 °C	0.4 °C
54	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple R Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.7 °C
55	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple S Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.6 °C
56	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple T Type	Using Multi Product Calibrator By Direct Method	-250 °C to 400 °C	0.7 °C

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57	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple U Type	Using Multi Product Calibrator By Direct Method	-200 °C to 600 °C	0.6 °C
58	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD PT-100	Using Multi Product Calibrator By Direct Method	-200 °C to 800 °C	0.5 °C
59	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple B Type	Using Multi Product Calibrator By Direct Method	600 °C to 1800 °C	0.5 °C
60	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple C Type	Using Multi Product Calibrator By Direct Method	0 °C to 2300 °C	0.9 °C
61	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple E Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1000 °C	0.5 °C
62	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple J Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1200 °C	0.31 °C

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63	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple K Type	Using Multi Product Calibrator By Direct Method	-200 °C to 1300 °C	0.5 °C
64	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple L Type	Using Multi Product Calibrator By Direct Method	-200 °C to 900 °C	0.4 °C
65	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple N type	Using Multi Product Calibrator By Direct Method	-200 °C to 1300 °C	0.4 °C
66	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple R Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.7 °C
67	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple S Type	Using Multi Product Calibrator By Direct Method	0 °C to 1700 °C	0.6 °C
68	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple T Type	Using Multi Product Calibrator By Direct Method	-250 °C to 400 °C	0.7 °C

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69	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple U Type	Using Multi Product Calibrator By Direct Method	-200 °C to 600 °C	0.6 °C
70	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency Counter By Direct Method	10 Hz to 3 GHz	0.00001 %
71	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multiproduct calibrator, Signal Generator By Direct Method	10 Hz to 3 GHz	0.002 % to 0.000015 %
72	MECHANICAL-PRESSURE INDICATING DEVICES	Hydraulic Pressure Gauges	Using Digital Pressure Gauge/ Electronic Dead Weight Tester and Comparison Method as per DKD-R-6-1	1 bar to 700 bar	0.06 %
73	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauges	Using Digital Pressure Gauge and Comparison Method as per DKD-R-6-1	0 bar to 40 bar	0.025 %
74	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauges	Using Digital Pressure Gauge and Comparison Method as per DKD-R-6-1	-1 bar to 0 bar	0.025 %

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75	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Balance (Readability: 1 mg, Class I or coarser)	Using E2 Class Reference Weights as per OIML R -76-1	0 to 200 g	0.1 mg
76	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Balance (Readability: 10 g, Class III or coarser)	Using M1 Class Reference Weights as per OIML R -76-1	35 kg to 100 kg	1 g
77	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Balance (Readability: 0.1 g, Class II or coarser)	Using E2 Class Reference Weights as per OIML R -76-1	200 g to 30 kg	0.15 g
78	THERMAL-TEMPERATURE	RTD/Thermocouple Sensor with or without indicator	Using Standard PRT with 4-Channel Thermometer, Oil Bath By Comparison method	50 °C to 205 °C	0.66 °C
79	THERMAL-TEMPERATURE	Temperature Indicator of Dry Block Bath, Liquid Bath (Single Position)	Using standard SPRT with indicator By Comparison Method	50 °C to 205 °C	0.66 °C
80	THERMAL-TEMPERATURE	Temperature Indicator with Sensor of Dry Block Bath, Liquid Bath, Muffle furnace (Single Position)	Using S-Type Standard Thermocouple with 4-Channel Thermometer By Comparison Method	205 °C to 1000 °C	2.53 °C

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81	THERMAL-TEMPERATURE	Thermocouple Sensor with or without indicator	Using S-Type Standard Thermocouple with 4-Channel Thermometer and Dry Block Calibrator By Comparison Method	205 °C to 1000 °C	2.60 °C

*** CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.**