National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name :	NIIRT - CENTRE FOR CALIBRATION, ANALYSIS AND TESTING, # 306, INDUSTRIAL AREA, PHASE 1, PANCHKULA, HARYANA, 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)	AC Capacitance (1 kHz)	Using LCR meter by Direct Method	100 pF to 1 µF	0.7 % to 0.45 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	1 mA to 10 mA	0.18 % to 0.25 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	10 µA to 1 mA	0.87 % to 0.18 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using Current transformer and DMM by Direct Method	10 A to 1000 A	0.3 % to 0.8 %

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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	10 mA to 100 mA	0.25 % to 0.19 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	100 mA to 10 A	0.19 % to 0.28 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Energy @ 50 Hz (UPF to ± 0.5 PF) Single Phase / Three Phase 50 V to 300 V, 20 mA to 1000 A	Using Power / Energy Meter by Direct Method	1 Wh to 220 kWh	0.4 % to 0.94%
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power @ 50 Hz (UPF to ± 0.5 PF) Single Phase / Three Phase 50 V to 300 V, 20 mA to 1000 A	Using Power / Energy Meter by Direct Method	1 W to 220 kW	0.4 % to 0.94 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz)	Using HV Probe with DMM by Direct Method	0.5 kV to 28 kV	2.7 % to 3.2 %

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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz)	Using DMM by Direct Method	100 V to 1000 V	0.1 % to 0.1 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50Hz)	Using DMM by Direct Method	3 mV to 100 V	4.4 % to 0.1 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Inductance (1 kHz)	Using LCR meter by Direct Method	100 µH to 10 H	0.76 % to 0.5 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (50 Hz, Lead/ Lag)	Using Power / Energy Meter by Direct Method	1 (Unity) PF to 0.3 Lead and Lag PF	0.6 % to 2.3 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	10 A to 20 A	0.12 % to 0.2 %

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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	3 A to 10 A	0.19 % to 0.14 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	30 µA to 330 µA	0.6 % to 0.18 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	330 µA to 10 mA	0.18 % to 0.08 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	330 mA to 3 A	0.1 % to 0.19 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	10 mA to 330 mA	0.08 % to 0.1 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz)	Using multi-function calibrator and Current Coil by Direct Method	20 A to 1000 A	0.20 % to 0.93 %

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21	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Energy @ 50 Hz (UPF to ± 0.5 PF) Single/ Three Phase (10 V to 600 V, 20 A to 1000 A)	Using multi-function calibrator and Current coil by Direct Method	12 kWh to 220 kWh	0.3 % to 0.82 %
22	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Energy @ 50 Hz (UPF to ± 0.5 PF) Single/Three Phase (10 V to 600 V,0.1 A to 20 A)	Using multi-function calibrator by Direct Method	1 Wh to 12 kWh	0.72% to 0.27 %
23	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power @ 50 Hz (UPF to ± 0.5 PF) Single/ Three Phase (10 V to 600 V, 20 A to 1000 A)	Using multi-function calibrator and current coil by Direct Method	12 kW to 1 MW	0.3 % to 0.82 %
24	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power @ 50 Hz (UPF to ± 0.5 PF) Single/Three Phase (10 V to 600 V, 0.1 A to 20 A)	Using multi-function calibrator by Direct Method	1 W to 12 kW	0.72 % to 0.27 %
25	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	1 mV to 33 mV	2.5 % to 0.11 %
26	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	33 V to 1000 V	0.07 % to 0.11 %

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27	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 10 kHz)	Using multi-function calibrator by Direct Method	33 mV to 330 mV	0.11 % to 0.06 %
28	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 10 kHz)	Using multi-function calibrator by Direct Method	330 mV to 33 V	0.07%
29	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @100Hz	Using multi-function calibrator by Direct Method	1 µF to 100 µF	0.42 % to 0.66 %
30	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using multi-function calibrator by Direct Method	0.5 nF to 1 µF	3.5 % to 0.42 %
31	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Power Factor (50 Hz, Lead/ Lag)	Using multi-function calibrator by Direct Method	1 (Unity) to 0.2 Lead/ Lag PF	0.11 % to 2.2 %
32	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Capacitance	Using DMM by Direct Method	1 nF to 100 µF	5 % to 1.76 %

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33	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Capacitance	Using DMM by Direct Method	100 µF to 10 mF	1.76 % to 2 %
34	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	1 µA to 100 µA	3.7 % to 0.1 %
35	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	1 A to 10 A	0.19 % to 0.19 %
36	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using Shunt and DMM by Direct Method	10 A to 100 A	0.19 % to 0.5 %
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	100 µA to 400 mA	0.1 % to 0.06 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	400 mA to 1 A	0.06 % to 0.19 %

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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using HV Probe with DMM by Direct Method	0.5 kV to 40 kV	2.3%
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using DMM by Direct Method	0.1 mV to 1 V	4.04 % to 0.008 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using DMM by Direct Method	1 V to 10 V	0.008 % to 0.011 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using DMM by Direct Method	10 V to 1000 V	0.011 % to 0.007 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Insulation Resistance (250 V to 5 kV)	Using IR Tester by Direct Method	0.2 Mohm to 100 Mohm	0.12 % to 0.59 %
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Insulation Resistance (250 V to 5 kV)	Using IR Tester by Direct Method	100 Mohm to 1000 Gohm	0.59 % to 2.4 %

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45	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using multi-function calibrator and DMM by V/I method	1 mohm to 1 ohm	1.63 % to 0.36 %
46	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	1 Mohm to 100 Mohm	0.06 % to 2.43 %
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using multi-function calibrator and DMM by Direct/ V/I method	1 ohm to 10 ohm	0.36 % to 0.05 %
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	10 kohm to 1 Mohm	0.03 % to 0.06 %
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	10 ohm to 10 kohm	0.05 % to 0.03 %
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	100 Mohm to 1000 Mohm	2.43 % to 2.94 %

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51	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	1 µA to 330 µA	2.34 % to 0.03 %
52	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using current coil with multi-function calibrator by Direct Method	20 A to 1000 A	0.12 % to 0.82 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	3 A to 20 A	0.05 % to 0.12 %
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	330 µA to 330 mA	0.03 % to 0.013 %
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	330 mA to 3 A	0.013 % to 0.05 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (10 V to 1000 V / 20 A to 1000 A)	Using multi-function calibrator and current coil by Direct Method	20 kW to 1 MW	0.3 % to 0.6 %

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57	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (10 V to 1000 V /0.1 A to 20 A)	Using multi-function calibrator by Direct Method	1 W to 20 kW	0.4 % to 0.3 %
58	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using multi-function calibrator by Direct Method	0.1 mV to 10 mV	3.6 % to 0.04 %
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using multi-function calibrator by Direct Method	10 mV to 330 mV	0.04 % to 0.008 %
60	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using multi-function calibrator by Direct Method	330 mV to 1000 V	0.008 % to 0.007 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box by direct method	0.001 ohm to 0.1 ohm	6 % to 0.85 %
62	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box by direct method	0.1 ohm to 11 ohm	0.85 % to 0.05 %

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63	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box / multi-function calibrator by Direct Method	11 ohm to 33 ohm	0.05 % to 0.07 %
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box / multi-function calibrator by Direct Method	110 kohm to 33 Mohm	0.02 % to 0.13 %
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using multi-function calibrator by Direct Method	33 Mohm to 1000 Mohm	0.13 % to 1.76 %
66	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box / multi-function calibrator by Direct Method	33 ohm to 110 kohm	0.07 % to 0.02 %
67	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	Transformer Turns Ratio Meter	Using DMMs by V/V method	0.1 to 300	0.15 % to 0.42 %
68	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Bandwidth	Using multi-function calibrator by Direct Method	50 kHz to 350 MHz	4.04 % to 6.2 %

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69	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Time Base	Using multi-function calibrator by Direct Method	5 ns to 1 s	0.012 % to 0.12 %
70	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Vertical Defection (DC)	Using multi-function calibrator by Direct Method	2 mV to 30 V	4.1 % to 0.34 %
71	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Vertical Defection (Square Wave @ 1 kHz)	Using multi-function calibrator by Direct Method	2 mV p-p to 50 V p-p	4.2 % to 3.5 %
72	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Vertical Deflection (Sine Wave 10 Hz to 10 kHz)	Using multi-function calibrator by Direct Method	2 mV p-p to 50 V p-p	4.1 % to 3.5 %
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - B type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	600 °C to 1800 °C	0.68°C
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - E type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1000 °C	0.2°C

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75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - J type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1200 °C	0.2°C
76	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - K type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1370 °C	0.2°C
77	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - N type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1300 °C	0.3°C
78	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - R type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	0 °C to 1700 °C	0.5°C
79	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - RTD	Using DMM and ITS-90 by Comparison method	-200 °C to 800 °C	0.2°C
80	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - S type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	0 °C to 1700 °C	0.5°C

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81	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - T type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 400 °C	0.2°C
82	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - B type Thermocouple	Using multi-function calibrator by Direct Method	600 °C to 1800 °C	0.59°C
83	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - E type Thermocouple	Using multi-function calibrator by Direct Method	-200 °C to 1000 °C	0.6°C
84	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - J type Thermocouple	Using multi-function calibrator / Temperature Calibrator by Direct Method	-200 °C to 1200 °C	0.32°C
85	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - K type Thermocouple	Using multi-function calibrator / temperature calibrator by Direct method	-200 °C to 1350 °C	0.5°C
86	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - N type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	-200 °C to 1300 °C	0.5°C

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87	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - R type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	0 °C to 1700 °C	0.66°C
88	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - RTD (PT-100)	Using multi-function calibrator/ Temperature Calibrator by Direct Method	-200 °C to 800 °C	0.3°C
89	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - S type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	0 °C to 1700 °C	0.53°C
90	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - T type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	-200 °C to 400 °C	0.7°C
91	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency Counter by Direct Method	1 MHz to 350 MHz	0.012 % to 0.0031 %
92	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using DMM / Frequency Counter by Direct Method	10 Hz to 1 MHz	0.04 % to 0.012 %

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93	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval	Using multi-function calibrator with counter/ Time Interval Meter by Comparison Method	0.1 s to 10 hr	0.001 s to 0.9 s
94	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using multi-function calibrator by Direct Method	10 Hz to 2 MHz	0.03 % to 0.003 %
95	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using multi-function calibrator by Direct Method (50 Ohm coaxial)	2 MHz to 350 MHz	0.003%
96	FLUID FLOW-FLOW MEASURING DEVICES	Turbine/ Ultrasonic/ RPD/ Flow element Flow meter - Totalizer (Medium: Liquid/water)	Using Ultrasonic Flow meter by comparison method	1.2 m3 to 200 m3	1.5%
97	MECHANICAL-ACCELERATION AND SPEED	Accelerometer Sensitivity (5 to 15000 Hz)	Using Reference Accelerometer and Shaker by comparison method	1 g	2%
98	MECHANICAL-ACCELERATION AND SPEED	RPM indication of Centrifuge, Motors	Using Non-contact Tachometer by Comparison method	12 rpm to 25000 rpm	1.55 % to 0.1 %

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99	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact type)	Using Non-contact Tachometer and RPM Source by Comparison method	12 rpm to 16000 rpm	1.55 % to 0.1 %
100	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-contact type), Stroboscope	Using Non-contact Tachometer and LED RPM Source by Comparison method	12 rpm to 90000 rpm	1.55 % to 0.07 %
101	MECHANICAL-ACCELERATION AND SPEED	Vibration Meter / Source - Acceleration (10-100 Hz)	Using Vibration meter by comparison method	0 m/s^2 to 300 m/s^2	2.2%
102	MECHANICAL-ACCELERATION AND SPEED	Vibration Meter / Source - Acceleration (100-1000 Hz)	Using Vibration meter by comparison method	0 to 300 m/s^2	1.8%
103	MECHANICAL-ACCELERATION AND SPEED	Vibration Meter / Source-Displacement (10-500 Hz)	Using Vibration meter by comparison method	0.01 mm to 1 mm	9.5%
104	MECHANICAL-ACCELERATION AND SPEED	Vibration Meter / Source-Displacement (10-500 Hz)	Using Vibration meter by comparison method	1 mm to 2 mm	2.9%
105	MECHANICAL-ACCELERATION AND SPEED	Vibration Meter / Source-Velocity (10-1000 Hz)	Using Vibration meter by comparison method	1 mm/s to 155 mm/s	3.23%

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106	MECHANICAL-ACCELERATION AND SPEED	Vibration meter/ Source - RPM / Frequency	using Tachometer / Vibration meter by comparison method	10 Hz to 1000 Hz	0.6%
107	MECHANICAL-ACOUSTICS	Sound Level Meter @1kHz	Using Sound Level Calibrator by Comparison Method	94 dB	0.7dB
108	MECHANICAL-ACOUSTICS	Sound Level Meter @1kHz	Using Sound Level Calibrator by Comparison Method	114 dB	0.7dB
109	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bevel Angle Protractor/ Combination Set (L.C. 5')	Using Angle Gauge by direct measurement	0 to 180 °	3'
110	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Coating Thickness Gauge (L.C. 0.001 mm)	Using Standard Thickness Foils by direct measurement	0.01 mm to 0.687 mm	3.2µm
111	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Caliper/ Gauge (Vernier/Digital) (L.C. 0.01 mm)	Using Slip Gauge (Grade '0') by direct method	0 to 200 mm	9µm

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112	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Micrometer (L.C. 0.01 mm)	Using Slip Gauge (Grade '0') by direct measurement	0 to 200 mm	8.3µm
113	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge/ Indicator (Puppy), Lever type (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') with comparator by direct measurement	0 to 1 mm	1µm
114	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge/ Indicator, Plunger type (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') with comparator by direct measurement	0 to 20 mm	1µm
115	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') by direct measurement	>100 mm to 200 mm	13µm
116	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') by direct measurement	>25 mm to 100 mm	3µm

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117	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') by direct measurement	0 to 25 mm	1.1µm
118	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Filler Gauge	Using Dial Indicator (L.C. 0.0001 mm) by comparison method	0.01 mm to 1 mm	1µm
119	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/ Dial/ Digital) (L.C. 0.01 mm)	Using Slip Gauge (Grade '0') & Caliper Checker by direct measurement	>300 mm to 600 mm	13µm
120	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/ Dial/ Digital) (L.C. 0.01 mm)	Using Slip Gauge (Grade '0') & Caliper Checker by direct measurement	0 to 300 mm	9.5µm
121	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Internal Micrometer (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') & accessories by direct measurement	>100 mm to 150 mm	4µm

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122	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Internal Micrometer (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') & accessories by direct measurement	>63 mm to 100 mm	3µm
123	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Internal Micrometer (L.C. 0.001 mm)	Using Slip Gauge (Grade '0') & accessories by direct measurement	50 mm to 63 mm	1µm
124	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Pin Gauge Set	Using Slip Gauge (Grade '0') with Dial Indicator (L.C. 0.0001 mm) & comparator stand by comparison method	0.1 mm to 20 mm	1.5µm
125	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Scale (L.C. 0.5 mm)	Using Scale and Tape Calibrator by Direct measurement	0 to 1000 mm	66µm
126	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Tape (L.C. 1 mm)	Using Scale and Tape Calibrator by Direct measurement	0 to 30 m	75 sqrt (L)µm (L in meter)

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127	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Microscope (Linear movement, L.C. 0.01 mm)	Using Slip Gauge (Grade '0') by direct method	0 to 25 mm	7µm
128	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Microscope (Magnification)	Using Slip Gauge (Grade '0') by comparison method	Upto 100x	0.5%
129	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	Using Slip Gauge (Grade '0') with Dial Indicator (L.C. 0.0001 mm) & comparator stand by comparison method	1 mm to 100 mm	3.5µm
130	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Radius Gauge	Using Profile Projector by comparison method	0.5 mm to 35 mm	102µm
131	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Snap Gauge	Using Slip Gauge (Grade '0') by direct measurement	1 mm to 150 mm	4µm

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132	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Standard Foil Set	Using Slip Gauge (Grade '0') with Dial Indicator (L.C. 0.0001 mm) by comparison method	0.01 mm to 1 mm	0.7µm
133	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieve	Using Digital Vernier Caliper (L.C. 0.01 mm) by direct measurement	>4 mm to 50 mm	16µm
134	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieve	Using Digital Vernier Caliper (L.C. 0.01 mm) by direct measurement	>50 mm to 100 mm	102µm
135	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieve	Using Profile Projector by direct measurement	30 µm to 4 mm	8µm
136	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Pitch Gauge	Using Profile Projector by direct measurement	0.1 mm to 25 mm	4µm

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137	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Vernier/ Dial/ Digital Caliper (L.C. 0.01 mm)	Using Slip Gauge (Grade '0') & Caliper Checker by direct measurement	>300 mm to 600 mm	9.5µm
138	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Vernier/ Dial/ Digital Caliper (L.C. 0.01 mm)	Using Slip Gauge (Grade '0') & Caliper Checker by direct measurement	0 to 300 mm	9µm
139	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector (Angle measurement, L.C. 2')	Using Angle Gauge Set by direct method	0 ° to 180 °	1'
140	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector (Linear Scale, L.C. 0.001 mm)	Using Slip Gauge (Grade '0') by direct measurement	0 to 200 mm	4.9µm
141	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector (Magnification)	Using Slip Gauge (Grade '0') & Vernier Caliper by comparison method	Up to 100 x	0.8%
142	MECHANICAL-PRESSURE INDICATING DEVICES	Differential Pressure Gauge, Magnehelic Gauge, Sensor, Transmitter	Using Differential Pressure Gauge with Comparator pump, DMM as per DKD R-6-1	0 Pa to 10000 Pa	1.31% rdg

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143	MECHANICAL-PRESSURE INDICATING DEVICES	Hydraulic Pressure Gauge, Sensor, Transmitter, Switch	Using Digital Pressure Calibrator pump, DMM as per DKD R-6-1	0 to 700 bar	0.5% rdg
144	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauge, Sensor, Transmitter, Switch	Using Digital Pressure Gauge with Comparator pump, DMM as per DKD R-6-1	0 bar to 7 bar	0.6% rdg
145	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauge, Sensor, Transmitter, Switch	Using Digital Pressure Gauge with Comparator pump, DMM as per DKD R-6-1	> 7bar to 30bar	0.45% rdg
146	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Gauge, Sensor, Transmitter, Switch	Using Digital Vacuum Gauge with Comparator pump, DMM as per DKD R-6-1	0 bar to -0.9 bar	0.7% rdg
147	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Tensile/ Compression Testing Machine	Using Load cell as per IS 1828-1	10 kN to 100 kN	0.6%

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148	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Tensile/ Compression Testing Machine	Using Load cell as per IS 1828-1	1kN to 10 kN	0.3%
149	MECHANICAL-VOLUME	Micro-Pipette	Using Standard Mass of class E2 & Weighing Balance of resol. 0.01 mg by Gravimetric method as per ISO 8655 part 6	> 100 ul to 1000 ul	0.3ul
150	MECHANICAL-VOLUME	Micro-Pipette	Using Standard Mass of class E2 & Weighing Balance of resol. 0.01 / 0.1 mg by Gravimetric method as per ISO 8655 part 6	10 ul to 100 ul	0.1ul
151	MECHANICAL-VOLUME	Pipette, Burette, Flask, Beaker, Pyncnometer, Cylinder, Glassware	Using Standard Mass of class E2 & Weighing Balance of resol. 0.1 mg by Gravimetric method as per IS/ISO 4787:2010	> 1 ml to 50 ml	2ul

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152	MECHANICAL-VOLUME	Pipette, Burette, Flask, Beaker, Pyncnometer, Cylinder, Glassware	Using Standard Mass of class E2 & Weighing Balance of resol. 0.001 g by Gravimetric method as per IS/ISO 4787:2010	> 250 ml to 2 l	50ul
153	MECHANICAL-VOLUME	Pipette, Burette, Flask, Beaker, Pyncnometer, Cylinder, Glassware	Using Standard Mass of class E2 & Weighing Balance of resol. 0.1 g by Gravimetric method as per IS/ISO 4787:2010	> 5 l to 10 l	1.2ml
154	MECHANICAL-VOLUME	Pipette, Burette, Flask, Beaker, Pyncnometer, Cylinder, Glassware	Using Standard Mass of class E2 & Weighing Balance of resol. 0.001 g by Gravimetric method as per IS/ISO 4787:2010	> 50 ml to 250 ml	25ul
155	MECHANICAL-VOLUME	Pipette, Burette, Flask, Beaker, Pyncnometer, Cylinder, Glassware	Using Standard Mass of class E2 & Weighing Balance of resol. 0.1 g by Gravimetric method as per IS/ISO 4787:2010	>2 l to 5 l	0.55ml

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156	MECHANICAL-VOLUME	Pipette, Burette, Flask, Beaker, Pyncnometer, Cylinder, Glassware	Using Standard Mass of class E2 & Weighing Balance of resol. 0.01 mg by Gravimetric method as per IS/ISO 4787:2010	0.1 ml to 1 ml	0.3ul
157	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 10 g	Using Secondary Iron hook weights by comparison method	>1 kg to 10 kg	7g
158	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 100 g	Using Secondary Iron hook weights by comparison method	>50 kg to 100 kg	60g
159	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 5 g	Using Secondary Iron hook weights by comparison method	0 to 1 kg	3g
160	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 50 g	Using Secondary Iron hook weights by comparison method	>10kg to 50 kg	30g
161	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class I and coarser) d>= 0.01 mg	Using Standard Weight of Class E1 as per OIML R 76-1	0 mg to 80 g	0.01mg

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162	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class I and coarser) d>= 0.1 mg	Using Standard Weight of Class E1 as per OIML R 76-1	>80 mg to 200 g	0.08mg
163	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class II and coarser) d>= 1 mg	Using Standard Weight of Class E1 & E2 as per OIML R 76-1	>200 g to 1 kg	0.87mg
164	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class III and coarser) d>= 0.1 g	Using Standard Weight of Class E2 as per OIML R 76-1	>5 kg to 30 kg	0.082g
165	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class III and coarser) d>= 0.1 g	Using Standard Weight of Class E1 & E2 as per OIML R 76-1	0 to 5 kg	0.1g
166	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 20 g	Using Standard Weight of Class F2 & M1 as per OIML R 76-1	>100 kg to 200 kg	19 g
167	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 5 g	Using Standard Weight of Class E2, F1 & F2 as per OIML R 76-1	>30kg to 80 kg	4.7g
168	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 5 g	Using Standard Weight of Class E2, F1 & F2 as per OIML R 76-1	>80kg to 100 kg	7.1g

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169	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 50 g	Using Standard Weight of Class E2, F2 & M1 as per OIML R 76-1	>200 kg to 300 kg	47.4 g
170	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	10 mg	0.01mg
171	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	2 g	0.04mg
172	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.1 mg as per OIML R 111-1	200 g	0.3mg
173	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	50 g	0.1mg
174	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	1 g	0.03mg

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175	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E2 and Weighing Balance of L.C. 0.001 g as per OIML R 111-1	1 kg	1.6mg
176	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	10 g	0.06mg
177	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.1 mg as per OIML R 111-1	100 g	0.16mg
178	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	100 mg	0.015mg
179	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E2 and Weighing Balance of L.C. 0.001 g as per OIML R 111-1	2 kg	2mg
180	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	20 g	0.08mg

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181	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	20 mg	0.01mg
182	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	200 mg	0.02mg
183	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	5 g	0.05mg
184	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E2 and Weighing Balance of L.C. 0.01 g as per OIML R 111-1	5 kg	8mg
185	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	50 mg	0.01mg
186	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E2 and Weighing Balance of L.C. 0.001 g as per OIML R 111-1	500 g	0.83mg

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187	MECHANICAL-WEIGHTS	Mass (F1 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	500 mg	0.026mg
188	MECHANICAL-WEIGHTS	Mass (F2 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	1 mg	0.01mg
189	MECHANICAL-WEIGHTS	Mass (F2 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	2 mg	0.01mg
190	MECHANICAL-WEIGHTS	Mass (F2 Class and Coarser)	Using Standard Mass of class E2 and Weighing Balance of L.C. 0.1 g as per OIML R 111-1	20 kg	95mg
191	MECHANICAL-WEIGHTS	Mass (F2 Class and Coarser)	Using Standard Mass of class E1 and Weighing Balance of L.C. 0.01 mg as per OIML R 111-1	5 mg	0.01mg
192	MECHANICAL-WEIGHTS	Mass (M1 Class and Coarser)	Using Standard Mass of class E2 and Weighing Balance of L.C. 0.1 g as per OIML R 111-1	10 kg	89mg

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193	MECHANICAL-WEIGHTS	Mass (M1 Class and Coarser)	Using Standard Mass of class E2 & F2 and Weighing Balance of L.C. 1 g as per OIML R 111-1	50 kg	0.8g
194	THERMAL-SPECIFIC HEAT & HUMIDITY	Environmental/ Stability/ Humidity Chamber (	using minimum 9 Data Loggers by Multiposition calibration	20 %rh to 95 %rh @ ~25°C	2.36% rh
195	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Indicator of Environmental/ Humidity Chamber (Single Position)	using Thermo-Hygrometer by Comparison Method	20% rh to 95% rh @ ~25°C	1.63% rh
196	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using RTD with Indicator / Thermo-Hygrometer and Temperature & RH Chamber by Comparison Method	0 °C to 60 °C @ ~ 50%rh	0.5°C
197	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using Thermo-Hygrometer with Portable RH Generator by Comparison Method	20 %rh to 95 %rh @ ~25°C	2.17%rh

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198	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using Thermo-hygrometer and Fixed Point Salt solutions by Comparison Method	22 %rh @ ~25°C	1.12%rh
199	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using Thermo-hygrometer and Fixed Point Salt solutions by Comparison Method	43 %rh @ ~25°C	0.9% rh
200	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using Thermo-hygrometer and Fixed Point Salt solutions by Comparison Method	75 %rh @ ~25°C	0.9%rh
201	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using Thermo-hygrometer and Fixed Point Salt solutions by Comparison Method	92 %rh @ ~25°C	0.9%rh

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202	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor @ ~25°C	Using Thermo-hygrometer and Fixed Point Salt solutions by Comparison Method	54 %rh	0.9% rh
203	THERMAL-TEMPERATURE	Black Body Source @ Emissivity e = 0.99	Using Infrared thermometer and black body source by Comparison Method:	25°C to 300°C	2.74°C
204	THERMAL-TEMPERATURE	Black Body Source @ Emissivity e = 0.99	Using Infrared thermometer and black body source by Comparison Method	300°C to 1050°C	3.71°C
205	THERMAL-TEMPERATURE	Digital Thermometer, RTD, Thermocouple, Temperature Sensor with or without Indicator/ Controller/ Logger/ Recorder, Temperature Transmitter	Using SSPRT with Indiactor/ DMM and High Temp furnace by Comparison Method	250 °C to 600 °C	0.9°C

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206	THERMAL-TEMPERATURE	Incubator (Industrial Purpose), Freezer, Refrigerator, Chamber, Liquid Bath	Multi-position calibration (9-Channel Mapping) Using minimum 9 RTDs with Data logger by Comparison Method	-80 °C to 50 °C	1.79°C
207	THERMAL-TEMPERATURE	Infrared radiation thermometer/ Pyrometer @ Emissivity e = 0.99	Using Infrared thermometer and black body source by Comparison Method	300 °C to 1050 °C	3.71°C
208	THERMAL-TEMPERATURE	Infrared radiation thermometer/ Pyrometer@ Emissivity e = 0.99	Using Infrared thermometer and black body source by Comparison Method	25 °C to 300 °C	2.74°C
209	THERMAL-TEMPERATURE	Liquid -in- Glass Thermometer	Using SSPRT with Indicator and oil bath by comparison Method	25 °C to 250 °C	0.2°C
210	THERMAL-TEMPERATURE	Liquid -in- Glass Thermometer	Using SSPRT with Indicator / DMM and low temperature bath by comparison Method	-80 °C to 25 °C	0.2°C
211	THERMAL-TEMPERATURE	Oven, Chamber, Autoclave (Industrial purpose), Sterilizer, Liquid Bath, Furnace	Using minimum 9 RTDs with Data logger by Multi-position calibration	50 °C to 250 °C	1.39°C

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212	THERMAL-TEMPERATURE	Oven, Chamber, Liquid Bath, Furnace	Using minimum 9 TCs with data logger by Multi-position calibration	250 °C to 990 °C	4.5°C
213	THERMAL-TEMPERATURE	Temperature Gauge, Digital Thermometer, RTD, Thermocouple, Temperature Sensor with or without Indicator/ Controller/ Logger/ Recorder, Temperature Transmitter	Using SSPRT with Indicator ,DMM and oil bath by comparison method	25 °C to 250 °C	0.2°C
214	THERMAL-TEMPERATURE	Temperature Gauge, Digital Thermometer, RTD, Thermocouple, Temperature Sensor with or without Indicator/ Controller/ Logger/ Recorder, Temperature Transmitter	Using S-type Thermocouple with DMM and High Temp furnace by comparison method	600 °C to 1200 °C	1.55°C

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215	THERMAL-TEMPERATURE	Temperature Gauge, Digital Thermometer, RTD, Thermocouple, Temperature Sensor with or without Indicator/ Controller/ Logger/ Recorder, Temperature Transmitter	Using SSPRT with Indicator / DMM and low temperature bath by comparison method	-80 °C to 25 °C	0.2°C
216	THERMAL-TEMPERATURE	Temperature Indicator with sensors of Muffle Furnace / Dry Block Furnace / Calibrator (Single position)	using S type Thermocouple with Indicator by comparison method	250 °C to 1100 °C	3.73°C
217	THERMAL-TEMPERATURE	Temperature Indicators with sensors of Oven, Incubator(Industrial purpose only), Autoclave (Industrial purpose only), Freezer, Chamber, Sterilizer, Liquid Bath, Dry Block Calibrator	using RTD with Indicator ,DMM (Single Position)by comparison method	-80 °C to 250 °C	0.3°C

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Site Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Capacitance (1 kHz)	Using LCR meter by Direct Method	100 pF to 1 µF	0.7 % to 0.45 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	1 mA to 10 mA	0.18 % to 0.25 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	10 µA to 1 mA	0.87 % to 0.18 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using Current transformer and DMM by Direct Method	10 A to 1000 A	0.3 % to 0.8 %

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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	10 mA to 100 mA	0.25 % to 0.19 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz)	Using DMM by Direct Method	100 mA to 10 A	0.19 % to 0.28 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Energy @ 50 Hz (UPF to ± 0.5 PF) Single Phase / Three Phase 50 V to 300 V, 20 mA to 1000 A	Using Power / Energy Meter by Direct Method	1 Wh to 220 kWh	0.4 % to 0.94%
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power @ 50 Hz (UPF to ± 0.5 PF) Single Phase / Three Phase 50 V to 300 V, 20 mA to 1000 A	Using Power / Energy Meter by Direct Method	1 W to 220 kW	0.4 % to 0.94 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz)	Using HV Probe with DMM by Direct Method	0.5 kV to 28 kV	2.7 % to 3.2 %

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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz)	Using DMM by Direct Method	100 V to 1000 V	0.1 % to 0.1 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50Hz)	Using DMM by Direct Method	3 mV to 100 V	4.4 % to 0.1 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Inductance (1 kHz)	Using LCR meter by Direct Method	100 µH to 10 H	0.76 % to 0.5 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (50 Hz, Lead/ Lag)	Using Power / Energy Meter by Direct Method	1 (Unity) PF to 0.3 Lead and Lag PF	0.6 % to 2.3 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	10 A to 20 A	0.12 % to 0.2 %

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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	3 A to 10 A	0.19 % to 0.14 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	30 µA to 330 µA	0.6 % to 0.18 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	330 µA to 10 mA	0.18 % to 0.08 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	330 mA to 3 A	0.1 % to 0.19 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	10 mA to 330 mA	0.08 % to 0.1 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz)	Using multi-function calibrator and Current Coil by Direct Method	20 A to 1000 A	0.20 % to 0.93 %

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21	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Energy @ 50 Hz (UPF to ± 0.5 PF) Single/ Three Phase (10 V to 600 V, 20 A to 1000 A)	Using multi-function calibrator and Current coil by Direct Method	12 kWh to 220 kWh	0.3 % to 0.82 %
22	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Energy @ 50 Hz (UPF to ± 0.5 PF) Single/Three Phase (10 V to 600 V,0.1 A to 20 A)	Using multi-function calibrator by Direct Method	1 Wh to 12 kWh	0.72% to 0.27 %
23	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power @ 50 Hz (UPF to ± 0.5 PF) Single/ Three Phase (10 V to 600 V, 20 A to 1000 A)	Using multi-function calibrator and current coil by Direct Method	12 kW to 1 MW	0.3 % to 0.82 %
24	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power @ 50 Hz (UPF to ± 0.5 PF) Single/Three Phase (10 V to 600 V, 0.1 A to 20 A)	Using multi-function calibrator by Direct Method	1 W to 12 kW	0.72 % to 0.27 %
25	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	1 mV to 33 mV	2.5 % to 0.11 %
26	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 1 kHz)	Using multi-function calibrator by Direct Method	33 V to 1000 V	0.07 % to 0.11 %

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27	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 10 kHz)	Using multi-function calibrator by Direct Method	33 mV to 330 mV	0.11 % to 0.06 %
28	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (45 Hz to 10 kHz)	Using multi-function calibrator by Direct Method	330 mV to 33 V	0.07%
29	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @100Hz	Using multi-function calibrator by Direct Method	1 µF to 100 µF	0.42 % to 0.66 %
30	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using multi-function calibrator by Direct Method	0.5 nF to 1 µF	3.5 % to 0.42 %
31	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Power Factor (50 Hz, Lead/ Lag)	Using multi-function calibrator by Direct Method	1 (Unity) to 0.2 Lead/ Lag PF	0.11 % to 2.2 %
32	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Capacitance	Using DMM by Direct Method	1 nF to 100 µF	5 % to 1.76 %

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33	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Capacitance	Using DMM by Direct Method	100 µF to 10 mF	1.76 % to 2 %
34	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	1 µA to 100 µA	3.7 % to 0.1 %
35	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	1 A to 10 A	0.19 % to 0.19 %
36	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using Shunt and DMM by Direct Method	10 A to 100 A	0.19 % to 0.5 %
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	100 µA to 400 mA	0.1 % to 0.06 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DMM by Direct Method	400 mA to 1 A	0.06 % to 0.19 %

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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using HV Probe with DMM by Direct Method	0.5 kV to 40 kV	2.3%
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using DMM by Direct Method	0.1 mV to 1 V	4.04 % to 0.008 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using DMM by Direct Method	1 V to 10 V	0.008 % to 0.011 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using DMM by Direct Method	10 V to 1000 V	0.011 % to 0.007 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Insulation Resistance (250 V to 5 kV)	Using IR Tester by Direct Method	0.2 Mohm to 100 Mohm	0.12 % to 0.59 %
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Insulation Resistance (250 V to 5 kV)	Using IR Tester by Direct Method	100 Mohm to 1000 Gohm	0.59 % to 2.4 %

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45	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using multi-function calibrator and DMM by V/I method	1 mohm to 1 ohm	1.63 % to 0.36 %
46	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	1 Mohm to 100 Mohm	0.06 % to 2.43 %
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using multi-function calibrator and DMM by Direct/ V/I method	1 ohm to 10 ohm	0.36 % to 0.05 %
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	10 kohm to 1 Mohm	0.03 % to 0.06 %
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	10 ohm to 10 kohm	0.05 % to 0.03 %
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using DMM by Direct Method	100 Mohm to 1000 Mohm	2.43 % to 2.94 %

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51	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	1 µA to 330 µA	2.34 % to 0.03 %
52	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using current coil with multi-function calibrator by Direct Method	20 A to 1000 A	0.12 % to 0.82 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	3 A to 20 A	0.05 % to 0.12 %
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	330 µA to 330 mA	0.03 % to 0.013 %
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using multi-function calibrator by Direct Method	330 mA to 3 A	0.013 % to 0.05 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (10 V to 1000 V / 20 A to 1000 A)	Using multi-function calibrator and current coil by Direct Method	20 kW to 1 MW	0.3 % to 0.6 %

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57	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (10 V to 1000 V /0.1 A to 20 A)	Using multi-function calibrator by Direct Method	1 W to 20 kW	0.4 % to 0.3 %
58	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using multi-function calibrator by Direct Method	0.1 mV to 10 mV	3.6 % to 0.04 %
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using multi-function calibrator by Direct Method	10 mV to 330 mV	0.04 % to 0.008 %
60	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using multi-function calibrator by Direct Method	330 mV to 1000 V	0.008 % to 0.007 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box by direct method	0.001 ohm to 0.1 ohm	6 % to 0.85 %
62	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box by direct method	0.1 ohm to 11 ohm	0.85 % to 0.05 %

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63	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box / multi-function calibrator by Direct Method	11 ohm to 33 ohm	0.05 % to 0.07 %
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box / multi-function calibrator by Direct Method	110 kohm to 33 Mohm	0.02 % to 0.13 %
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using multi-function calibrator by Direct Method	33 Mohm to 1000 Mohm	0.13 % to 1.76 %
66	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Resistance Box / multi-function calibrator by Direct Method	33 ohm to 110 kohm	0.07 % to 0.02 %
67	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	Transformer Turns Ratio Meter	Using DMMs by V/V method	0.1 to 300	0.15 % to 0.42 %
68	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Bandwidth	Using multi-function calibrator by Direct Method	50 kHz to 350 MHz	4.04 % to 6.2 %

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69	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Time Base	Using multi-function calibrator by Direct Method	5 ns to 1 s	0.012 % to 0.12 %
70	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Vertical Defection (DC)	Using multi-function calibrator by Direct Method	2 mV to 30 V	4.1 % to 0.34 %
71	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Vertical Defection (Square Wave @ 1 kHz)	Using multi-function calibrator by Direct Method	2 mV p-p to 50 V p-p	4.2 % to 3.5 %
72	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope - Vertical Deflection (Sine Wave 10 Hz to 10 kHz)	Using multi-function calibrator by Direct Method	2 mV p-p to 50 V p-p	4.1 % to 3.5 %
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - B type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	600 °C to 1800 °C	0.68°C
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - E type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1000 °C	0.2°C

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75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - J type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1200 °C	0.2°C
76	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - K type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1370 °C	0.2°C
77	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - N type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 1300 °C	0.3°C
78	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - R type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	0 °C to 1700 °C	0.5°C
79	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - RTD	Using DMM and ITS-90 by Comparison method	-200 °C to 800 °C	0.2°C
80	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - S type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	0 °C to 1700 °C	0.5°C

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81	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation - T type Thermocouple	Using DMM and ITS-90 / multi-function calibrator by Comparison method	-200 °C to 400 °C	0.2°C
82	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - B type Thermocouple	Using multi-function calibrator by Direct Method	600 °C to 1800 °C	0.59°C
83	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - E type Thermocouple	Using multi-function calibrator by Direct Method	-200 °C to 1000 °C	0.6°C
84	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - J type Thermocouple	Using multi-function calibrator / Temperature Calibrator by Direct Method	-200 °C to 1200 °C	0.32°C
85	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - K type Thermocouple	Using multi-function calibrator / temperature calibrator by Direct method	-200 °C to 1350 °C	0.5°C
86	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - N type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	-200 °C to 1300 °C	0.5°C

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87	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - R type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	0 °C to 1700 °C	0.66°C
88	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - RTD (PT-100)	Using multi-function calibrator/ Temperature Calibrator by Direct Method	-200 °C to 800 °C	0.3°C
89	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - S type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	0 °C to 1700 °C	0.53°C
90	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation - T type Thermocouple	Using multi-function calibrator/ Temperature Calibrator by Direct Method	-200 °C to 400 °C	0.7°C
91	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency Counter by Direct Method	1 MHz to 350 MHz	0.012 % to 0.0031 %
92	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using DMM / Frequency Counter by Direct Method	10 Hz to 1 MHz	0.04 % to 0.012 %

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93	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval	Using multi-function calibrator with counter/ Time Interval Meter by Comparison Method	0.1 s to 10 hr	0.001 s to 0.9 s
94	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using multi-function calibrator by Direct Method	10 Hz to 2 MHz	0.03 % to 0.003 %
95	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using multi-function calibrator by Direct Method (50 Ohm coaxial)	2 MHz to 350 MHz	0.003%
96	FLUID FLOW-FLOW MEASURING DEVICES	Turbine/ Ultrasonic/ RPD/ Flow element Flow meter - Totalizer (Medium: Liquid/water)	Using Ultrasonic Flow meter by comparison method	1.2 m3 to 200 m3	1.5%
97	FLUID FLOW-FLOW MEASURING DEVICES	Turbine/ Ultrasonic/ RPD// Flow element Flow meter - Flow Rate (Medium: Liquid/water)	Using Ultrasonic Flow meter by comparison method	1.2 m3/hr to 200 m3/hr	1.5%
98	MECHANICAL-ACCELERATION AND SPEED	RPM indication of Centrifuge, Motors	Using Non-contact Tachometer by Comparison method	12 rpm to 25000 rpm	1.55 % to 0.1 %

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99	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Microscope (Linear movement, L.C. 0.01 mm)	Using Slip Gauge (Grade '0') by direct method	0 to 25 mm	7µm
100	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Microscope (Magnification)	Using Slip Gauge (Grade '0') by comparison method	Upto 100x	0.5%
101	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector (Angle measurement, L.C. 2')	Using Angle Gauge Set by direct method	0 ° to 180 °	1'
102	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector (Linear Scale, L.C. 0.001 mm)	Using Slip Gauge (Grade '0') by direct measurement	0 to 200 mm	4.9µm
103	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector (Magnification)	Using Slip Gauge (Grade '0') & Vernier Caliper by comparison method	Up to 100 x	0.8%
104	MECHANICAL-PRESSURE INDICATING DEVICES	Differential Pressure Gauge, Magnehelic Gauge, Sensor, Transmitter	Using Differential Pressure Gauge with Comparator pump, DMM as per DKD R-6-1	0 Pa to 10000 Pa	1.31% rdg

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105	MECHANICAL-PRESSURE INDICATING DEVICES	Hydraulic Pressure Gauge, Sensor, Transmitter, Switch	Using Digital Pressure Calibrator pump, DMM as per DKD R-6-1	0 to 700 bar	0.5% rdg
106	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauge, Sensor, Transmitter, Switch	Using Digital Pressure Gauge with Comparator pump, DMM as per DKD R-6-1	0 bar to 7 bar	0.6% rdg
107	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Gauge, Sensor, Transmitter, Switch	Using Digital Pressure Gauge with Comparator pump, DMM as per DKD R-6-1	> 7bar to 30bar	0.45% rdg
108	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Gauge, Sensor, Transmitter, Switch	Using Digital Vacuum Gauge with Comparator pump, DMM as per DKD R-6-1	0 bar to -0.9 bar	0.7% rdg
109	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Tensile/ Compression Testing Machine	Using Load cell as per IS 1828-1	10 kN to 100 kN	0.6%

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110	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Tensile/ Compression Testing Machine	Using Load cell as per IS 1828-1	1kN to 10 kN	0.3%
111	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 10 g	Using Secondary Iron hook weights by comparison method	>1 kg to 10 kg	7g
112	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 100 g	Using Secondary Iron hook weights by comparison method	>50 kg to 100 kg	60g
113	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 5 g	Using Secondary Iron hook weights by comparison method	0 to 1 kg	3g
114	MECHANICAL-WEIGHING SCALE AND BALANCE	SPRING BALANCE LC = 50 g	Using Secondary Iron hook weights by comparison method	>10kg to 50 kg	30g
115	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class I and coarser) d>= 0.01 mg	Using Standard Weight of Class E1 as per OIML R 76-1	0 mg to 80 g	0.01mg
116	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class I and coarser) d>= 0.1 mg	Using Standard Weight of Class E1 as per OIML R 76-1	>80 mg to 200 g	0.08mg

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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)(±)
117	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class II and coarser) d>= 1 mg	Using Standard Weight of Class E1 & E2 as per OIML R 76-1	>200 g to 1 kg	0.87mg
118	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class III and coarser) d>= 0.1 g	Using Standard Weight of Class E2 as per OIML R 76-1	>5 kg to 30 kg	0.082g
119	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class III and coarser) d>= 0.1 g	Using Standard Weight of Class E1 & E2 as per OIML R 76-1	0 to 5 kg	0.1g
120	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 20 g	Using Standard Weight of Class F2 & M1 as per OIML R 76-1	>100 kg to 200 kg	19 g
121	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 5 g	Using Standard Weight of Class E2, F1 & F2 as per OIML R 76-1	>30kg to 80 kg	4.7g
122	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 5 g	Using Standard Weight of Class E2, F1 & F2 as per OIML R 76-1	>80kg to 100 kg	7.1g
123	MECHANICAL-WEIGHING SCALE AND BALANCE	WEIGHING BALANCE (Class IV and coarser) d>= 50 g	Using Standard Weight of Class E2, F2 & M1 as per OIML R 76-1	>200 kg to 300 kg	47.4 g

SCOPE OF ACCREDITATION

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124	THERMAL-SPECIFIC HEAT & HUMIDITY	Environmental/ Stability/ Humidity Chamber (	using minimum 9 Data Loggers by Multiposition calibration	20 %rh to 95 %rh @ ~25°C	2.36% rh
125	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Indicator of Environmental/ Humidity Chamber (Single Position)	using Thermo-Hygrometer by Comparison Method	20% rh to 95% rh @ ~25°C	1.63% rh
126	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using RTD with Indicator / Thermo-Hygrometer and Temperature & RH Chamber by Comparison Method	0 °C to 60 °C @ ~ 50%rh	0.5°C
127	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometer, Hygrometer, RH / Temperature Indicator / controller / Recorder / Logger, RH indicator with sensor	Using Thermo-Hygrometer with Portable RH Generator by Comparison Method	20 %rh to 95 %rh @ ~25°C	2.17%rh
128	THERMAL-TEMPERATURE	Digital Thermometer, RTD, Thermocouple, Temperature Sensor with or without Indicator/ Controller/ Logger/ Recorder, Temperature Transmitter	Using SSPRT with Indiactor/ DMM and High Temp furnace by Comparison Method	250 °C to 600 °C	0.9°C

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129	THERMAL-TEMPERATURE	Incubator (Industrial Purpose), Freezer, Refrigerator, Chamber, Liquid Bath	Multi-position calibration (9-Channel Mapping) Using minimum 9 RTDs with Data logger by Comparison Method	-80 °C to 50 °C	1.79°C
130	THERMAL-TEMPERATURE	Liquid -in- Glass Thermometer	Using SSPRT with Indicator and oil bath by comparison Method	25 °C to 250 °C	0.2°C
131	THERMAL-TEMPERATURE	Oven, Chamber, Autoclave (Industrial purpose), Sterilizer, Liquid Bath, Furnace	Using minimum 9 RTDs with Data logger by Multi-position calibration	50 °C to 250 °C	1.39°C
132	THERMAL-TEMPERATURE	Oven, Chamber, Liquid Bath, Furnace	Using minimum 9 TCs with data logger by Multi-position calibration	250 °C to 990 °C	4.5°C
133	THERMAL-TEMPERATURE	Temperature Gauge, Digital Thermometer, RTD, Thermocouple, Temperature Sensor with or without Indicator/ Controller/ Logger/ Recorder, Temperature Transmitter	Using SSPRT with Indicator ,DMM and oil bath by comparison method	25 °C to 250 °C	0.2°C

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134	THERMAL-TEMPERATURE	Temperature Gauge, Digital Thermometer, RTD, Thermocouple, Temperature Sensor with or without Indicator/ Controller/ Logger/ Recorder, Temperature Transmitter	Using S-type Thermocouple with DMM and High Temp furnace by comparison method	600 °C to 1200 °C	1.55°C
135	THERMAL-TEMPERATURE	Temperature Indicator with sensors of Muffle Furnace / Dry Block Furnace / Calibrator (Single position)	using S type Thermocouple with Indicator by comparison method	250 °C to 1100 °C	3.73°C
136	THERMAL-TEMPERATURE	Temperature Indicators with sensors of Oven, Incubator(Industrial purpose only), Autoclave (Industrial purpose only), Freezer, Chamber, Sterilizer, Liquid Bath, Dry Block Calibrator	using RTD with Indicator ,DMM (Single Position)by comparison method	-80 °C to 250 °C	0.3°C

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