Laboratory	**Taj Calibration Services, SCO No. 9, 2nd Floor, HUDA Market, Part-II, Sector-18, Faridabad, Haryana**
Accreditation Standard	**ISO/IEC 17025: 2005**
Certificate Number	**CC-2591** **Page 1 of 7**
Validity	**05.03.2018 to 04.03.2020** **Last Amended on -**

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
		ELECTRO-TECHNICAL CALIBRATION		
I.	**SOURCE**			
1.	DC Voltage#	1 mV to 1000 V	0.37 % to 0.01 %	Using Fluke 5502 A Multifunction Calibrator by Direct Method
2.	AC Voltage#	**50 Hz to 1 kHz** 10 mV to 1000 V	0.38 % to 0.06 %	Using Fluke 5502 A Multifunction Calibrator by Direct Method
3.	DC Current#	10 µA to 2 A 2 A to 20 A 10 A to 1000 A	0.27 % to 0.04 % 0.04 % to 0.12 % 0.9 % to 0.60 %	Using Fluke 5502 A Multifunction Calibrator Current Coil by Direct Method
4.	AC Current#	**50 Hz to 1 kHz** 30 µA to 2 A 2 A to 20 A **50 Hz** 10 A to 1000 A	 0.56 % to 0.07 % 0.07 % to 0.20 % 0.7 % to 0.65 %	Using Fluke 5502 A Multifunction Calibrator Current Coil by Direct Method
5.	DC Resistance#	1 Ω to 3.2 MΩ 3.2 MΩ to 1GΩ	0.93 % to 0.06 % 0.06 % to 1.8 %	Using Fluke 5502 A Multifunction Calibrator by Direct Method
6.	Low Resistance#	1 mΩ 10 mΩ, 100 mΩ, 1 Ω, 10 Ω, 100 Ω, 1 kΩ	0.76 % 0.60 %	Using Standard Fixed Resistance Box by Direct Method

Naveen Jangra
Convenor

Avijit Das
Program Director

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
7.	High Resistance#	1 MΩ, 5 MΩ, 10 MΩ, 20 MΩ, 50 MΩ, 100 MΩ, 190 MΩ, 500 MΩ, 1 GΩ, 2 GΩ	3.50 %	Using HV Megaohm Box By Direct Method
8.	Frequency#	10 Hz to 2 MHz	0.06 % to 0.003 %	Using Fluke 5502 A Multifunction Calibrator by Direct Method
9.	Temperature Simulation Method# (Indicator, Controller, Recorder)			
	RTD (PT-100) J Type K Type T Type N Type R Type S Type	(-) 200 ºC to 600 ºC (-) 200 ºC to 1000 ºC 0 ºC to 1300 ºC (-) 150 ºC to 400 ºC 0 ºC to 1300 ºC 0 ºC to 1700 ºC 0 ºC to 1700 ºC	0.06 ºC to 0.14 ºC 0.33 ºC to 0.28 ºC 0.2 ºC to 0.47 ºC 0.29 ºC to 0.2 ºC 0.23 ºC to 0.32 ºC 0.67 ºC to 0.47 ºC 0.56 ºC to 0.54 ºC	Using Fluke 5502 A Multifunction Calibrator by Simulation Method
10.	DC Power#	10 V to 600 V / 0.1 A to 20 A (1 W to 12 KW)	0.96 % to 0.23 %	Using Fluke 5502 A Multifunction Calibrator by Direct Method
11.	AC Power#	**50 Hz / 60 Hz** 10 V to 600 V 0.1 A to 20 A 0.5 PF to UPF	0.57 % to 0.20 %	Using Fluke 5502 A Multifunction Calibrator by Direct Method
12.	Power Factor#	**50 Hz** 0.2 to 1.0 PF (Lead/lag)	0.003 PF	Using Fluke 5502 A Multifunction Calibrator by Direct Method
13.	Capacitance$	**1 kHz** 500 pF to 1 µF **100 Hz** 1 µF to 100 µF	2.9 % to 0.42 % 0.42 % to 0.64 %	Using Fluke 5502 A Multifunction Calibrator by Direct Method

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
14.	Inductance[$]	**1 kHz** 100 µH, 1 mH, 10 mH, 100 mH, 1 H, 10 H	3.47 %	Using Fixed Inductance Box by Direct Method
15.	AC Resistance[$]	**1 kHz** 1 Ω, 10 Ω, 100 Ω, 1 kΩ, 10 kΩ, 100 kΩ	1.18 %	Using Fixed Resistance Box by Direct Method
II.	**MEASURE**			
1.	DC Voltage[#]	1 mV to 1000 V	0.42 % to 0.006 %	Using Fluke 8846 A DMM by Direct Method
2.	AC Voltage[#]	**50 Hz to 1 kHz** 10 mV to 1000 V	0.54 % to 0.1 %	Using Fluke 8846 A DMM by Direct Method
3.	DC Current[#]	10 µA to 10 A	0.30 % to 0.20 %	Using Fluke 8846 A DMM by Direct Method
4.	AC Current[#]	**50 Hz to 1 kHz** 100 µA to 1 A 1 A to 10 A	 0.17 % 0.17 % to 0.26 %	Using Fluke 8846 A DMM by Direct Method
5.	DC Resistance[#]	1 Ω to 10 MΩ 10 MΩ to 1GΩ	0.4 % to 0.05 % 0.05 % to 3.0 %	Using Fluke 8846 A DMM by Direct Method
6.	Frequency[#]	10 Hz to 1 MHz	0.082 % to 0.013 %	Using Fluke 8846 A DMM by Direct Method
7.	Temperature Simulation Method[#] (Sourcing Instruments)			
	RTD (PT–100) J Type K Type T Type N Type R Type S Type	(-) 200 ºC to 600 ºC (-) 200 ºC to 1000 ºC 0 ºC to 1300 ºC (-) 150 ºC to 400 ºC 0 ºC to 1300 ºC 0 ºC to 1700 ºC 0 ºC to 1700 ºC	0.16 ºC 0.32 ºC to 0.28 ºC 0.2 ºC to 0.47 ºC 0.3 ºC to 0.2 ºC 0.23 ºC to 0.33 ºC 0.67 ºC to 0.48 ºC 0.57 ºC	Using Fluke 8846 A DMM Using Fluke 5502 A Multifunction Calibrator by Simulation Method

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
8.	Time Interval Meter / Stop Watch#	1 s to 9900 s	0.015 s to 3.18 s	Using Timer Calibrator by Direct / Comparison Method
9.	DC High Voltage♣	1 kV to 10 kV	3.82 %	Using High Voltage Probe and DMM by Direct Method
10.	AC High Voltage♣	**50 Hz** 1 kV to 10 kV	2.73 %	Using High Voltage Probe and DMM by Direct Method

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
	MECHANICAL CALIBRATION			
I.	**PRESSURE INDICATING DEVICES**			
1.	Pneumatic Pressure Analog/ Digital Pressure Gauge, Transmitter, Switch, Calibrator, Manometer#	0 to 2 bar 0 to 40 bar	0.002 bar 0.024 bar	Using Digital Pressure Calibrator Using Pneumatic / Vacuum Comparator Pump Based on DKD-R6-1
2.	Negative Pressure Analog/ Digital Pressure Gauge, Transmitter, Switch, Calibrator, Manometer#	(-) 0.85 bar to 0	0.002 bar	Using Digital Pressure Calibrator Using Pneumatic / Vacuum Comparator Pump Based on DKD-R6-1
3.	Hydraulic Pressure Analog/ Digital Gauge, Transmitter, Switch, Calibrator, Manometer#	0 to 700 bar	0.40 bar	Using Digital Pressure Gauge And Hydraulic Comparator Pump Based on DKD-R6-1

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
	THERMAL CALIBRATION			
I.	**TEMPERATURE**			
1.	RTD/Thermocouple with or without Temp. Indicator / Controller / Data Logger/ Recorder, Digital / Dial Thermometer, Temperature Transmitter#	(-) 10 ºC to 250 °C	0.30 °C	Using Standard PRT, 6½ DMM & Dry Block Bath by Comparison
2.	Thermocouple with or without Temperature Indicator / Controller / Data Logger/ Recorder, Temperature Transmitter, Digital / Dial Thermometer#	250 ºC to 650 °C	1.42 °C	Using R Type Thermocouple, 6½ DMM & Dry Block Bath by Comparison
3.	Temperature Indicator with sensor of Freezer, Oven, Environment Chamber, Incubator, Liquid Bath, Dry Block Furnace♣	(-) 80 °C to 50 °C 50 °C to 250 °C	0.27 °C 0.9 °C	Using Standard PRT, 6½ DMM single position calibration (at measuring location in DUC)
4.	Temperature Indicator with sensor of Oven, Chamber, Furnace, Dry Block Furnace♣	250 °C to 1200 °C	2.66 °C	Using Standard Type R Thermocouple and 6½ DMM single position calibration (at measuring location in DUC)

Laboratory	**Taj Calibration Services, SCO No. 9, 2nd Floor, HUDA Market, Part-II, Sector-18, Faridabad, Haryana**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Certificate Number	**CC-2591**	**Page**	**7 of 7**
Validity	**05.03.2018 to 04.03.2020**	**Last Amended on**	**-**

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
II.	**SPECIFIC HEAT & HUMIDITY**			
1.	Humidity Indicator of Humidity Chamber/ Generator/ Environment Chamber♣	15 % RH to 95 % RH @ 25°C	1.6 % RH	Using standard RH sensor with Indicator single position calibration (at measuring location in DUC)

*** Measurement Capability is expressed as an uncertainty (±) at a confidence probability of 95%**
$Only in Permanent Laboratory
♣Only for Site Calibration
 # The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

Naveen Jangra
Convenor

Avijit Das
Program Director