



Department of Electrical & Electronic Engineering

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List of Tests

I. Transformer			
Sl No.	Name of the Specific Tests	Sl No.	Name of the Specific Tests
1.	Measurement of Turns Ratio	8.	Measurement of Winding Resistance at 75°C
2.	Vector Group	9.	Measurement of Insulation Resistance
3.	Dimensional Test	10.	Measurement of No-load Loss and No-Load Current
4.	Impulse Test	11.	Measurement of Impedance Voltage and Load Loss at 75°C
5.	DC and Insulation Resistance	12.	Power Frequency High Voltage Test
6.	Current carrying capacity	13.	Test of Transformer Oil
7.	AC high voltage withstand	14.	Temperature Rise
II. Cable			
Sl No.	Name of the Specific Tests		
1.	Nominal cross sectional area of conductor		

2.	Minimum overall diameter of cable
3.	Maximum DC resistance
4.	Nominal thickness of insulation
5.	Nominal thickness of sheath
6.	High Voltage withstand test
7.	Current rating at 35 °C rise over 40 °C ambient temperature (75 °C)

III. Circuit Breaker (MCB/MCCB)

Sl No.	Name of the Specific Tests
1.	Mechanical operation test
2.	Insulation resistance test
3.	High voltage test
4.	Impulse voltage
5.	Tripping test
6.	Temperature rise

IV. Circuit Breaker (VCB/ACB)

Sl No.	Name of the Specific Tests
1.	Mechanical operation test
2.	Insulation resistance test
3.	High voltage test
4.	Impulse voltage
5.	Tripping test
6.	Temperature rise

V. Instrument Transformer (CT/PT)

Sl No.	Name of the Specific Tests
1.	Mechanical operation test
2.	Insulation resistance test
3.	High voltage test
4.	Ratio Test
5.	Temperature rise

VI. Overhead Conductor/Busbar

Sl No.	Name of the Specific Tests
1.	Dimensional Test
2.	DC Resistance Test
3.	Insulation Resistance Test (if insulated)
4.	Current carrying capacity Test
5.	AC high voltage withstand test (if insulated)

VII. LT Panel

Sl No.	Name of the Specific Tests
1.	Mechanism Operation Test
2.	Rated Current Test

3.	Temperature Rise Test
4.	Thermal Overload Test
5.	Magnetic Trip Test
6.	Insulation Resistance Measurement Test
7.	Power Frequency High Voltage Test

VIII. HT panel

Sl No.	Name of the Specific Tests
1.	Dimensional
2.	Fitment & Alignment
3.	Physical Test
4.	Measurement of IR Value a) Before HV Test b) After HV Test
5.	High Voltage test/Dielectric
6.	Impulse Test
7.	Partial Discharge Test
8.	Heat run /Temperature rise test
9.	Enclosure Protection Test/Ingress Protection (IP)
10.	Calibration
11.	Noise and Vibration
12.	Operational and functional check
13.	Clearance and creepage Distance

IX. Room Air-conditioning Unit

Sl No.	Name of the Specific Tests
1.	Earthing
2.	Insulation Resistance
3.	Total Harmonic Distortion

X. Earth Resistivity

Sl No.	Name of the Specific Tests
1.	Earth Resistivity

XI. Washing Machine

Sl No.	Name of the Specific Tests
1.	Earthing
2.	Insulation Resistance
3.	Total Harmonic Distortion

XII. PFI plant Test/Capacitor Bank

Sl No.	Name of the Specific Tests
1.	Discharge rate of the capacitor bank
2.	AC voltage test of the capacitor bank between terminals and the casing

3.	Insulation test
4.	Performance test at rated voltage of the capacitor banks
5.	Operations of the PFI controller, digital display, contactor, fuse and ON/OFF indicators
6.	Auto Mode Operation Sequence and Manual Mode Sequences
	MCCB test
XIII. ATS	
Sl No.	Name of the Specific Tests
1.	Mechanical Operation Test
2.	Functionality Test
3.	Rated Current and Temperature Rise Test
4.	Insulation Resistance Test
5.	Power Frequency High Voltage Test
XIV. Lift, Escalator, Moving Platform	
Sl No.	Name of the Specific Tests
1.	Control System
2.	Motor Braking System
3.	Sensor and any other opto-electrical component
XV. Auto Voltage Regulator (AVR)	
Sl No.	Name of the Specific Tests
1.	AVR Performance Test
2.	Efficiency
3.	Input Harmonic Distortion
4.	Input Power Factor
5.	Output Voltage Regulation
6.	Load Transfer Test
XVI. Uninterrupted Power Supply (UPS) Integrated Power System (IPS)	
Sl No.	Name of the Specific Tests
1.	UPS Performance Test
2.	Efficiency
3.	Input Harmonic Distortion
4.	Input Power Factor
5.	Output Voltage Regulation
6.	Protection (Under Voltage, Over voltage, Phase Failure)
7.	Load Transfer Test
8.	AC Main Input Failure and Return Test
9.	Step Load Test
10.	Overload Test
11.	Voltage Distortion with Balanced Load
12.	Voltage Distortion with Unbalanced Load

13.	Battery Capacity
XVII. Motor and Motor Starter	
Sl No.	Name of the Specific Tests
1.	Efficiency
2.	Power factor
3.	Torque
4.	Protection system
XVIII. Solar PV Panel	
Sl No.	Name of the Specific Tests
1.	Rated Power/Maximum Power under STC
2.	Open circuit voltage
3.	Short circuit current
4.	Maximum working voltage
5.	Maximum working current
6.	Cell efficiency
7.	Module efficiency
8.	Fill factor, FF
XIX. Charge Controller	
Sl No.	Name of the Specific Tests
1.	MPPT mechanism
2.	Labeling on charge controller casing
3.	Rated Voltage
4.	High voltage disconnect
5.	Low voltage disconnect
6.	Low voltage reconnect
7.	Maximum current handling capacity
8.	Maximum self-current drawn
9.	Reverse current leakage protection
10.	Short-circuit protection
11.	Reverse polarity protection
12.	Efficiency of the Charge Controller
13.	Charging indicator
XX. Switch/Socket	
Sl No.	Name of the Specific Tests
1.	Mechanical operation test
2.	Insulation resistance test
3.	High voltage test
4.	Ratio Test
5.	Temperature rise

XXI. Generator/Firefighting Generator	
Sl No.	Name of the Specific Tests
1.	Rated output
2.	Maximum output
3.	Power factor
4.	Rated voltage
5.	Voltage regulation
6.	Frequency
XXII. Optical Fiber	
Sl No.	Name of the Specific Tests
1.	Dimensional test
2.	Attenuation
3.	Dispersion
XXIII. LED Light/CFL/Fluorescent/ Incandescent	
Sl No.	Name of the Specific Tests
1.	LED Input Power (W)
2.	Color Rendering Index (CRI)
3.	Lumen
4.	Lumen per Watt
5.	PF
6.	Correlated Color Temperature (CCT)
7.	Efficiency
XXIV. Miscellaneous Tests	
Sl No.	Name of the Specific Tests
1.	Surge arrestor
2.	Test and calibration of meters
3.	PA system, PCB, Energy meter
4.	Variac, current injector
5.	Sound and Noise Test of electrical equipment
6.	Battery: Pb-acid Battery and Li-based Battery
7.	Street Light System consisting of Light, battery, charge controller
8.	Inverter, Drop out fuse
9.	DC - DC Converter with charge controller
10.	Solar Pump
11.	Fan Dimmer
12.	CCTV system
13.	Incubator
14.	Kitchen Appliances (Washing machine, grinder/blender/juicer, dish washer, rice cooker, microwave / electrical oven, kitchen hood etc.)
15.	Data communication Cables (all electrical tests)
16.	Wireless Walkie Talkie/ VHF test (repeater test)

17.	Cable connector, Router/switch/modem, Electrical Safety Test of any kind of equipment and Machinery
18.	Monitor, Personal computer and laptop, Biomedical Equipment
19.	Power Conditioning Unit, Fire-Pump Generator Set
20.	Electric Vehicle