

TRADE: ELECTRICIAN

LIST OF TOOLS & EQUIPMENTS FOR 16 TRAINEES + 1**A. TRAINEES TOOL KIT FOR 16 TRAINEES +1 INSTRUCTOR**

TOOL KIT			
Sl. No.	Name of the items	Quantity	Remarks
1	Steel Tape, 15 m length	17 Nos.	Sr. No. 1 to 18 tool kits to be Common for 1 to 4 semesters.
2	Plier Insulated, 150 mm	17 Nos.	
3	Plier Side Cutting, 150 mm	17 Nos.	
4	Screw Driver, 100 mm	17 Nos.	
5	Screw Driver, 150 mm	17 Nos.	
6	Electrician Connector, screw driver insulated handle thin stem, 100 mm	17 Nos.	
7	Heavy Duty Screw Driver , 200 mm	17 Nos.	
8	Electrician Screw Driver thin stem insulated handle, 250 mm	17 Nos.	
9	Punch Centre , 150 mm X 9 mm	17 Nos.	
10	Knife Double Bladed Electrician	17 Nos.	
11	Neon Tester	17 Nos.	
12	Steel Rule 300 mm	17 Nos.	
13	Hammer, cross peen with handle	17 Nos.	
14	Hammer, ball peen With handle	17 Nos.	
15	Gimlet 6 mm.	17 Nos.	
16	Bradawl	17 Nos.	
17	Scriber (Knurled centre position)	17 Nos.	
18	Pincer 150 mm	17 Nos.	
NOTE: For 2nd Unit of the Trade, only Trainees Tool Kit (from Sl No- 1 to 18) is required additionally.			

B. SHOP TOOLS, INSTRUMENTS and MACHINERY

1	C- Clamp 200 mm, 150 mm and 100 mm	2 Nos each	Common for 1 to 4 semesters.
2	Spanner Adjustable 150 mm, 300mm	2 Nos each	
3	Blow lamp 0.5 ltr	1	
4	Melting Pot	1	Common for 1 to 4 semesters.
5	Ladel	1 No	
6	Chisel Cold firmer 25 mm X 200 mm	2	
7	Chisel 25 mm and 6 mm	2 Nos each	
8	Hand Drill Machine	1	
9	Portable Electric Drill Machine 6 mm capacity	1	

10	Pillar Electric Drill Machine 12 mm capacity	1	
11	Allen Key	1 set	
12	Oil Can 0.12 ltr	1	
13	Grease Gun	1 No	
14	Out Side Micrometer	2	Common for 1 to 3 semesters.
15	Motorised Bench Grinder	1	
16	Rawl plug tool and bit	2 set	Common for 1 to 4 semesters.
17	Pully Puller	2	
18	Bearing Puller	2	
19	Pipe vice	4	
20	Thermometer 0 to 100 deg Centigrade	1 No.	
21	Scissors blade 150 mm	4 Nos.	Common for 1 & 3 semesters
22	Crimping Tool	2 sets	Common for 1 to 4 semesters.
23	Wire stripper 20 cm	2 Nos.	
24	Chisel Cold flat 12 mm	2 Nos.	
25	Mallet hard wood 0.50 kg	4 Nos.	
26	Hammer Extractor type 0.40 kg	4 Nos.	
27	Hacksaw frame 200 mm 300 mm adjustable	2 Nos.each	
28	Try Square 150 mm blade	4 Nos.	Common for 1 to 3 semesters
29	Outside and Inside Divider Calliper	2 Nos.each	
30	Pliers flat nose 150 mm	4 Nos.	Common for 1 to 4 semesters.
31	Pliers round nose 100 mm	4 Nos.	
32	Tweezers 100 mm	4 Nos.	
33	Snip Straight and Bent 150 mm	2 Nos.each	Common for 1, & 3 semesters.
34	D.E. metric Spanner	2 Nos.	Common for 1 to 4 semesters.
35	Drill hand brace	4 Nos.	
36	Drill S.S. Twist block 2 mm, 5 mm 6 mm set of 3	4 Set	
37	Plane, smoothing cutters 50 mm	2 Nos.each	
38	Gauge, wire imperial	2 Nos.	
39	File flat 200 mm 2nd cut	8 Nos.	
40	File half round 200 mm 2nd cut	4 Nos.	
41	File round 200 mm 2nd cut	4 Nos.	
42	File flat 150 mm rough	4 Nos.	
43	File flat 250 mm bastard	4 Nos.	
44	File flat 250 mm smooth	4 Nos.	
45	File Rasp, half round 200 mm bastard	4 Nos.	
46	Soldering Iron 25 watt, 65 watt, 125 watt	2 Nos.each	
47	Copper bit soldering iron 0.25 kg.	2 Nos.	

48	Desoldering Gun	4 Nos.	Common for 1 to 4 semesters.
49	Hand Vice 50 mm jaw	4 Nos.	
50	Table Vice 100 mm jaw	8 Nos.	
51	Pipe Cutter to cut pipes upto 5 cm. dia	4 Nos.	Common for 1, to 3 semesters.
52	Pipe Cutter to cut pipes above 5 cm dia	2 Nos.	
53	Stock and Die set for 20 mm to 50 mm G.I. pipe	1 set	
54	Stock and Dies conduit	1 No.	
55	Ohm Meter; Series Type & Shunt Type	2 Nos. each	Common for 1 to 4 semesters.
56	Multi Meter (analog) 0 to 1000 M Ohms, 2.5 to 500 V	2 Nos.	
57	Digital Multi Meter	6 Nos.	
58	A.C. Voltmeter M.I. 0 -500V A.C	1 No.	
59	Milli Voltmeter centre zero 100 - 0 - 100 m volt	1 No.	
60	D.C. Milli ammeter 0 -500m A	1 No.	
61	Ammeter MC 0-5 A, 0- 25 A	1 No. each	
62	A.C. Ammeter M.I. 0-5A, 0-25 A	1 No. each	
63	Kilo Wattmeter 0-1-3 kw	1 No.	
64	A.C. Energy Meter, Single phase 5 amp. Three Phase 15 amp	1 No. each	
65	Power Factor Meter	1 No.	
66	Frequency Meter	1 No.	
67	Flux meter	1 No.	
68	Wheat Stone Bridge with galvanometer and battery	1 No.	
69	Laboratory Type Induction Coil	1 No.	
70	DC Power Supply 0-30V, 2 amp	1 No.	Common for 1, to 3 semesters.
71	Rheostat	1 No. each	
	0 -1 Ohm, 5 Amp		
	0 -10 Ohm, 5 Amp		
	0- 25 Ohm, 1 Amp		
	0- 300 Ohm, 1 Amp		
72	1 Phase Variable Auto Transformer	1 No.	Common for 1 to 4 semesters.
73	Battery Charger	1 No.	
74	Hydrometer	1 No.	
75	Miniature Breaker 16 amp (Raw Material)	1 No.	Common for 1 to 4 semesters.
76	Working Bench 2.5 m x 1.20 m x 0.75 m	4 Nos.	
77	Fire Extinguisher CO2, 2 KG	2 Nos.	
78	Fire Buckets	2 Nos.	
79	Tachometer	1 No.	Common for 2 to 4 semesters
80	Current Transformer 415 Volt, 50 Hz, CT Ratio 150 / 5 Amp, 5VA	1 No.	
81	Potential Transformer 415 Volt, 50Hz, PT Ratio 11KV/ 110V, 10VA	1 No.	
82	Growler	1 No.	Common for 2 to 4
83	Tong Tester / Clamp Meter 0 - 100 amp. AC	1 No.	

84	Megger 500 volts	1 No.	semesters
85	Contactor & auxiliary contacts 3 phase, 440volt, 16amp (Raw Material)	1 No. each	
86	Contactor & auxiliary contacts 3 phase, 440 volt, 32 amp. (Raw Material)	1 No. each	
87	Limit Switch (Raw Material)	1 No.	
88	Rotary Switch 16 A (Raw Material)	1 No.	
89	Load Bank 5 KW(Lamp / heater Type)	1 No.	Common for 2 & 3 semesters
90	Brake Test arrangement with two spring balance 0 to 25 kg rating	1 No.	
91	Knife Switch DPDT fitted with fuse terminals 16 amp (Raw Material)	4 Nos.	
92	Knife Switch TPDT fitted with fuse terminals 16 amp(Raw Material)	4 Nos.	
93	Voltage StabiliserInput: 150 - 230 volt ACOutput: 220 volt AC	1 No.	
94	3- point D.C. Starter	1 No.	Common for 2 to 4 semesters
95	4- point D.C. Starter	1 No.	
96	Electrical Machine Trainer - * Suitable for demonstrating the construction and functioning of different types of DC machines and AC machines (single phase and three phase). Should be fitted with friction brake arrangement, dynamo meter, instrument panel and power supply unit	1 for 8 (4+4) Units	
97	Motor-Generator (AC to DC) consisting of: Squirrel Cage Induction Motor with star delta starter and directly coupled to DC shunt generator and switch board mounted with regulator, air breaker, ammeter, voltmeter, knife blade switches and fuses, set complete with case iron and plate, fixing bolts, foundation bolts and flexible coupling. Induction Motor rating: 7 HP, 400V, 50 cycles, 3 phase DC Shunt Generator rating: 5 KW, 440V	1 No.	
98	Used DC Generators-series, shunt and compound type for overhauling practice	1 No. each	
99	D.C. Shunt Generator with control panel, 2.5 KW, 220V	1 No.	Common for 2 to 4 semesters
100	D.C. Compound Generator with control panel including fitted rheostat, voltmeter, ammeter and breaker, 2.5 KW, 220 V	1 No.	
101	Diesel Generator Set with change over switch, over current breaker and water-cooled with armature, star-delta connections AC 3 phase, 5 KVA, 240 volt	1 No.	
102	DC Series Motor coupled with mechanical load 0.5 to 2 KW, 220 Volts	1 No.	
103	DC Shunt Motor 2 to 2.5 KW, 220 volts	1 No.	
104	DC compound Motor with starter and switch 2 to 2.5 KW, 220 volts	1 No.	Common for 2 & 4 semesters
105	Single phase Transformer, core type, air cooled 1 KVA, 240/415 V, 50 Hz	1 No.	
106	Three phase transformer, shell type oil cooled with all	1 No.	

	mounting 3 KVA, 415/240 V, 50 Hz, (Delta/Star)		
107	Oscilloscope Dual Trace, 30 MHZ	1 No.	
108	Function Generator	1 No.	
109	Discrete Component Trainer	1 No.	
110	Linear I.C. Trainer	1 No.	
111	Digital I.C. Trainer	1 No.	
112	Oil Testing Kit	1 No.	Common for 2 & 4 semesters
113	Hygrometer	1 set	
114	a. Cut out Relays b. Reverse current c. Over current d. Under voltage	1 No. each	Common for 3 & 4 semesters
115	Starters for 2 to 5 H.P. A.C Motors a. Resistance type starter b. Direct on line Starter c. Star Delta Starter- manual, semi-automatic and automatic d. Auto Transformer type	1 No. each	
116	Motor Generator(DC to AC) set consisting of - Shunt Motor with starting compensator and switch directly coupled to AC generator with exciter and switch board mounted with regulator, breaker, ammeter, voltmeter frequency meter, knife blade switch and fuses etc. Set complete with cast iron bed plate, fixing bolts, foundation bolts and flexible coupling. Shunt Motor rating : 5 HP, 440V AC Generator rating : 3-Phase, 4 wire, 3.5 KVA, 400/230 Volts, 0.8 pf, 50cycles	1 No.	
117	AC Squirrel Cage Motor with star delta starter and triple pole iron clad switch fuse. 2 to 3 HP, 3-phase, 400 volts, 50 cycles	1 No.	
118	AC phase-wound slip ring Motor with starter and switch 5 HP, 400 volts, 3-phase, 50 cycles	1 No.	
119	A.C. Series type Motor with mechanical load ¼ HP, 230V, 50 Hz	1 No.	
120	Single Phase Capacitor Motor with starter switch 1 HP 230 volt 50 cycles	1 No.	
121	Universal Motor with starter/switch 230 volt, 50 cycles ¼ HP	1 No.	
122	Stepper Motor with Digital Controller	1 No.	
123	Shaded Pole Motor	1 No.	
124	Bath Impregnating	1 No.	
125	Oven Stove	1 No.	
126	Synchronous motor 3 Phase, 3 HP, 415V, 50Hz, 4 Pole, with accessories.	1 no.	
127	Lux meter	1 no.	
128	Inverter- 1 KVA with 12 V Battery Input- 12 volt DC, Output- 220 volt AC	1 No.	
129	Domestic Appliances –		

	a. Electric Hot Plate 1500 watt b. Electric Kettle, 1500 watts c. Electric Iron 1500 watts d. Immersion Heater 1500 watt e. A.C. Fan f. Geyser (Storage type) 15 ltr minimum g. Mixture & Grinder	1 No. 1 No. 1 No. 1 No. 1 No. 1 No. 1 No.	
130	Thyristor /IGBT controlled D.C. motor drive with tacho-generator feedback arrangement 1 HP	1 No.	
131	Thyristor/IGBT controlled A.C. motor drive with VVVF control 3 Phase, 2 HP	1 No.	
132	Pentium IV Computer or latest (Server- Linux), 2.8 GHz & above, 1 GB RAM, 80 GB HDD, DVD Combo Drive, 15/17" Monitor, optical scroll mouse, multimedia key board, 32 bit LAN card with UPP port, necessary Drivers, etc.	2 Nos.	
133	Ink jet/ laser printer	1 No.	
134	Washing Machine	1 No.	
135	Motor Pump set 1 HP, 1 Phase, 240 V	1 No.	
136	Pin Type, shackle type & suspension type insulators (Raw Material)	2 Nos. each	
137	Pentium IV Computer or latest (Server- Linux), 2.8 GHz & above, 1 GB RAM, 80 GB HDD, DVD Combo Drive, 15/17" Monitor, optical scroll mouse, multimedia key board, 32 bit LAN card with UPP port, necessary Drivers, etc.	2 Nos.	

Note: The items which are available in the market nearest of the specification as mentioned above may be procured.

Sl no. 96 , Electrical Machine trainer up to 8 (4+4) units- one no.

Sl no. 97 to 137 for 4(2+2) units no additional items are required.

FURNITURE :

<i>Sl. No.</i>	<i>Name of the items</i>	<i>Quantity</i>	<i>Remarks</i>
1	Instructor's table	1 No.	Common for 1 to 4 semesters
2	Instructor's chair	2 Nos.	
3	Metal Rack 100cm x 150cm x 45cm	4 Nos.	
4	Lockers with 16 drawers standard size	2 Nos.	
5	Almirah 2.5 m x 1.20 m x 0.5 m	1 No.	
6	Black board/white board	1 No.	