

SHRI RAM PRIVATE INDUSTRIAL TRAINING INSTITUTE,

ANNEXURE-I

List of Tools & Equipment

Trade:- **ELECTRICIAN** (for batch of 20 candidates)

S No.	Name of the Tools and Equipment	Specification	Quantity (as ncvt norms)	Total number actually available for all the units
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A. TRAINEES TOOL KIT (For each additional unit trainees tool kit Sl. 1-12 is required additionally)

1.	Measuring Steel Tape	5 meter	(20 +1) Nos.	(20 +1) Nos.
2.	Combination Plier Insulated	200 mm	(20 +1) Nos.	(20 +1) Nos.
3.	Screwdriver Insulated	4mm X 150 mm, Diamond Head	(20 +1) Nos.	(20 +1) Nos.
4.	Screwdriver Insulated	6mm X 150 mm	(20 +1) Nos.	(20 +1) Nos.
5.	Electrician screwdriver thin stem insulated handle	4mm X 100 mm	(20 +1) Nos.	(20 +1) Nos.
6.	Heavy Duty Screwdriver insulated	5mm X 200 mm	(20 +1) Nos.	(20 +1) Nos.
7.	Electrician Screwdriver thin stem insulated handle	4mm X 250 mm	(20 +1) Nos.	(20 +1) Nos.
8.	Punch Centre	9mm X 150 mm	(20 +1) Nos.	(20 +1) Nos.
9.	Knife Double Bladed Electrician	100 mm	(20 +1) Nos.	(20 +1) Nos.
10.	Neon Tester	500 V	(20 +1) Nos.	(20 +1) Nos.
11.	Steel Rule Graduated both in Metric and English Unit	300 mm with precision of 1/4th mm	(20 +1) Nos.	(20 +1) Nos.
12.	Hammer, cross peen with handle	250 grams	(20 +1) Nos.	(20 +1) Nos.

B. SHOP TOOLS & EQUIPMENT – For 2 (1+1) units no additional items are required

(i) List of Tools & Accessories

13.	Hammer, ball peen with handle	500 grams	4 Nos.	4 Nos.
14.	Pincer	150 mm	4 Nos.	4 Nos.
15.	C- Clamp	200 mm and 100 mm	2 Nos. each	2 Nos. each
16.	Spanner Adjustable drop forged, SS	150 mm & 300mm	2 Nos. each	2 Nos. each
17.	Blow lamp brass	0.5 ltr	1 No.	1 No.
18.	Chisel Cold	25 mm X 200 mm	2 Nos.	2 Nos.
19.	Chisel firmer with wooden Handle	6 mm X 200 mm	2 Nos.	2 Nos.
20.	Allen Key alloy steel	1.5-10 mm (set of 9)	1 Set	1 Set
21.	Grease Gun	0.5 ltr. Capacity	1 No	1 No
22.	Bradawl		2 Nos.	2 Nos.
23.	Pully Puller with 3 legs	150 mm & 300mm	1 each	1 each
24.	Bearing Puller (inside and outside)	200 mm	1 No. each	1 No. each
25.	Pipe vice Cast Iron with hardened jaw open type	100 mm	2 Nos.	2 Nos.
26.	Scissors blade, SS	200mm	4 Nos.	4 Nos.
27.	Scissors blade, SS	150 mm	2 Nos.	2 Nos.
28.	Crimping Tool	1.5 sq mm to 16 sq mm	2 Nos.	2 Nos.
		16 sq mm to 95 sq mm	2 Nos.	2 Nos.
29.	Wire Cutter and Stripper	150 mm	4 Nos.	4 Nos.
30.	Mallet hard wood	0.50 kg	4 Nos.	4 Nos.

31.	Hammer Extractor type	250 grams	4 Nos.	4 Nos.
32.	Hacksaw frame	Adjustable 300 mm Fixed 150 mm	2 Nos. each	2 Nos. each
33.	Try Square	150 mm blade	4 Nos.	4 Nos.
34.	Outside Calliper	150 mm spring type	2 Nos.	2 Nos.
35.	Inside Calliper	150 mm spring type	2 Nos.	2 Nos.
36.	Divider	150 mm spring type	2 Nos.	2 Nos.
37.	Pliers long nose insulated	150 mm	4 Nos.	4 Nos.
38.	Pliers flat nose insulated	200 mm	4 Nos.	4 Nos.
39.	Pliers round nose insulated	100 mm	4 Nos.	4 Nos.
40.	Tweezers	150 mm	4 Nos.	4 Nos.
41.	Snip Straight and Bent heavy duty	250 mm	2 Nos. each	2 Nos. each
42.	D.E. metric Spanner Double Ended	6 - 32 mm	2 Set	2 Set
43.	Drill hand brace	0-100mm	4 Nos.	4 Nos.
44.	Drill S.S. Twist block	2 mm, 5 mm and 6 mm set of 3	4 Set	4 Set
45.	Plane cutters	50 mm X 200mm	2 Nos.	2 Nos.
46.	Smoothing cutters	50 mm X 200mm	2 Nos.	2 Nos.
47.	Gauge, wire imperial stainlees steel marked in SWG & mm	Wire Gauge - Metric	4 Nos.	4 Nos.
48.	File flat	200 mm 2nd cut with handle	8 Nos.	8 Nos.
49.	File half round	200 mm 2nd cut with handle	4 Nos.	4 Nos.
50.	File round	200 mm 2nd cut with handle	4 Nos.	4 Nos.
51.	File flat rough	150 mm with handle	4 Nos.	4 Nos.
52.	File flat bastard	250 mm with handle	4 Nos.	4 Nos.
53.	File flat smooth	250 mm with handle	4 Nos.	4 Nos.
54.	File Rasp, half round	200 mm bastard with handle	4 Nos.	4 Nos.
55.	Copper bit soldering iron.	0.25 kg	2 Nos.	2 Nos.
56.	De soldering Gun	Heat proof nozzle, PVC type, 250mm	4 Nos.	4 Nos.
57.	Hand Vice	50 mm jaw	4 Nos.	4 Nos.
58.	Table Vice	100 mm jaw	8 Nos.	8 Nos.
59.	Oil Can	250 ml	2 Nos.	2 Nos.
60.	Contactor & auxiliary contacts	3 phase, 415 Volt, 25 Amp with 2 NO	2 Nos. each	2 Nos. each
		and 2 NC		
61.	Contactor & auxiliary contacts.	3 phase, 415 volt, 32 Amp with 2 NO and 2 NC	2 Nos. each	2 Nos. each
62.	Limit Switch	Limit Switch, Liver operated 2A 500v, 2-contacts	2 Nos.	2 Nos.
63.	Rotary Switch	16 A/440v	2 Nos.	2 Nos.
64.	Relay- a. Cut out Relays b. Reverse current c. Over current d. Under voltage	a. 16A, 440V b. 16A, 440V c. 16A, 440V d. 360V-440V	2 No. each	2 No. each
65.	Pin Type, shackle type, egg type & suspension type insulators including hardware fitting		2 Nos. each	2 Nos. each
66.	Hydrometer		2 Nos.	2 Nos.

67.	Hand Drill Machine	0-6 mm capacity	2 Nos.	2 Nos.
68.	Portable Electric Drill Machine	0-12 mm capacity 750w, 240v with chuck and key	1 No.	1 No.
69.	Load Bank (Lamp / heater Type)	6 KW, 3Ph	1 No.	1 No.
70.	Brake Test arrangement with two spring balance rating	0 to 25 kg	1 No.	1 No.
71.	Laboratory Type Induction Coil	1000 W	2 Nos.	2 Nos.
72.	Out Side Micrometer	0 - 25 mm least count 0.01mm	2 Nos.	2 Nos.
73.	Thermometer Digital	0° C - 150° C	1 No.	1 No.
74.	Series Test Lamp	230V, 60W	4 Nos.	4 Nos.
75.	Knife Switch DPDT fitted with fuse terminals	16 Amp	4 Nos.	4 Nos.
76.	Knife Switch TPDT fitted with fuse terminals	16 Amp/ 440 V	4 Nos.	4 Nos.
77.	Miniature circuit Breaker	16 amp	2 Nos.	2 Nos.
78.	Earth Plate	60cm X 60cm X 3.15mm Copper Plate 60cm X 60cm X 6mm GI Plate	1 Each	1 Each
79.	Earth Electrode	Primary Electrode 2100x28x3.25mm Secondary Cu Strip 20x5mm	1 No.	1 No.
80.	MCCB	100Amps, Triple pole	1 No.	1 No.
81.	ELCB and RCCB	25Amps, double pole and 25Amps, double pole, IΔn 30 mA	1 Each	1 Each
82.	Fuses	HRC Glass Rewire Type	4 Each	4 Each
83.	Rheostat (Sliding type)	0 - 25 Ohm, 2 Amp 0 - 300 Ohm, 2 Amp 0 -1 Ohm, 10Amp	1 No. each	1 No. each
		0 -10 Ohm, 5 Amp		
84.	Capacitors	Electrolytic Ceramic Polyester film Variable Dual run	2 Each	2 Each
85.	Various Electronic components	Resistors, Diode, Transistor, UJT, FET, SCR, DIAC, TRAIC, IGBT, Small transformer etc.	As required	All Available
86.	Various Lamps	Halogen Incandescent Lamp Fluorescent tube HP mercury vapor Lamp High-pressure sodium Lamp Low-pressure sodium Lamp LED	1 Each	1 Each
87.	Plug socket Piano Switch Lamp Holder	230 V, 5 A	2 Each	2 Each

88.	Cables: Twisted Pair Non-Metallic Sheathed Cable Underground Feeder Cable Ribbon Cable Metallic Sheathed Cable Multi-Conductor Cable Coaxial Cable Direct-Buried Cable	1 mtr each	1 Each	1 Each
89.	Bus bar with brackets	1 mtr each	3 Nos.	3 Nos.
90.	Rubber mat	2' x 4' x 1"	2 Nos.	2 Nos.
91.	Electrician Helmet	Yellow Colour	2 Nos.	2 Nos.
92.	RCC Pole with accessories (MS angle iron, 'C' clamp, stay insulator etc.) and materials	6 Mtr	1 No.	1 No.
93.	Safety Belt	Standard quality	2 Nos.	2 Nos.

(ii) List of Equipment

94.	Ohm Meter; Series Type & Shunt Type, portable box type	50/2000-ohm analog	2 Nos. each	2 Nos. each
95.	Digital Multi Meter	DC 200mv -1000v, 0 – 10A & AC 200mv- 750v , 0-10A, resistance 0-20 MΩ and 3 1/2 digit	12 Nos.	12 Nos.
96.	A.C. Voltmeter M.I. analog, portable box type housed in Bakelite case	Multi range 75 V - 150V - 300V - 600V	3 Nos.	3 Nos.
97.	Milli Voltmeter centre zero analog, portable box type housed in Bakelite case	100 – 0 – 100 mV	2 Nos.	2 Nos.
98.	Ammeter MC analog, portable box type housed in Bakelite case	0 - 500 mA, 0-5 A, 0-25 A	2 Nos. each	2 Nos. each
99.	AC Ammeter MI, analog, portable box type housed in Bakelite case	0 - 1 A, 0-5 A, 0-25 A	2 Nos. each	2 Nos. each
100.	Kilo Wattmeter Analog	0-1.5-3KW, pressure coil rating-240v/440v, current rating-5A/10A Analoge, portable type Housed in Bakelite case	2 Nos.	2 Nos.
101.	Digital Wattmeter	230 V, 1 KW, 50 Hz	2 Nos.	2 Nos.
102.	A.C. Energy Meter	Single Phase, 10 A, 240 V induction type	2 Nos.	2 Nos.
103.	A.C. Energy Meter	Three Phase, 15 A , 440 V induction type	2 Nos.	2 Nos.
104.	Power Factor Meter Digital	440 V, 20 A, Three Phase portable box type	2 Nos.	2 Nos.
105.	Frequency Meter	45 to 55 Hz	2 Nos.	2 Nos.
106.	Magnetic Flux Meter	0-500 tesla	2 Nos.	2 Nos.
107.	Lux meter	lux meter LCD read out 0.05 to 7000 lumens with battery.	2 Nos.	2 Nos.
108.	Tachometer	Analog Type - 10000 RPM	1 No.	1 No.
109.	Tachometer	Digital Photo Sensor Type - 10000 RPM	1 No.	1 No.

110.	Tong Tester / Clamp Meter	0 - 100 A (Digital Type)	2 Nos.	2 Nos.
111.	Megger	Analog - 500 V	2 Nos.	2 Nos.
112.	3- point D.C. Starter	For 2.5 KW DC motor	1 No.	1 No.
113.	4- point D.C. Starter	For 2.5 KW DC motor	1 No.	1 No.
114.	Wheat Stone Bridge with galvanometer and battery		2 Nos.	2 Nos.
115.	Single Phase Variable Auto Transformer	0 - 270 V, 10Amp (Air cooled)	2 Nos.	2 Nos.
116.	Phase Sequence Indicator	3 Phase, 415 V	2 Nos.	2 Nos.
117.	Growler	230 V, 50 Hz, Single Phase, Adjustable jaws, Testing armature with ampere meter and testing probes.	1 No.	1 No.
118.	AC Starters: - a. Resistance type starter b. Direct online Starter c. Star Delta Starter- Manual d. Star Delta Starter – Semi automatic e. Star Delta Starter – Fully automatic f. Star Delta Starter - Soft starter g. Auto Transformer type	For A.C Motors of 2 to 5 H.P.	1 No. each	1 No. each
119.	Oscilloscope Dual Trace	20 MHz	1 No.	1 No.
120.	Function Generator	2 to 200 KHz, Sine, Square, Triangular 220 V, 50 Hz, Single Phase	1 No.	1 No.
121.	Soldering Iron	25-Watt, 65 Watt and 120-Watt, 230 Volt	2 Nos. each	2 Nos. each
122.	Temperature controlled Soldering Iron	50-Watt, 230 Volt	2 Nos.	2 Nos.
123.	Discrete Component Trainer	Discrete Component (for diode and transistor circuit) with regulated power supply +5,0- 5 V,+12 ,0-12 V	2 Nos.	2 Nos.
124.	Linear I.C. Trainer	Linear I.C. Trainer with regulated power supply 1.2V to 15V PIC socket 16pin and 20 pins with bread board	1 No.	1 No.
125.	Digital I.C. Trainer	Digital I.C. Trainer 7 segment display and bread board	1 No.	1 No.
126.	Domestic Appliances –			
	a. Electric Induction plate	a. 1500 Watt, 240V	1 No. each	1 No. each
	b. Electric Kettle	b. 1500 Watts, 240V		
	c. Electric Iron	c. Automatic - 750 W, 240 V		
	d. Immersion Heater	d. 1500 Watt, 240V		
	e. A.C. Ceiling Fan and AC Table Fan	e. 68-Watt, 230 V		
	f. Geyser (Storage type)	f. 10 litre		
	g. Mixture & Grinder	g. 750 W, 240 V		
	h. Washing Machine Semi-Automatic	h. 5 Kg,		
	i. Motor Pump set	i. 1 HP, 1 Phase, 240 V		

127.	Oil Testing Kit	Oil Testing Kit 230 V, single phase 50 Hz 60 VA output 0-60 KV Variable	1 No.	1 No.
128.	Inverter with Battery	1 KVA with 12 V Battery Input- 12 volt DC, Output- 220 volt AC	1 No.	1 No.
129.	Voltage Stabilizer	AC Input - 150 - 250 V, 600 VA AC Output - 240 V, 10 A	1 No.	1 No.
130.	DC Power Supply	0 - 30 V, 5 A	2 Nos.	2 Nos.
131.	Battery Charger	0 - 6 - 9 - 12 - 24 - 48 V, 30amp	1 No.	1 No.
132.	Current Transformer	415 V, 50Hz, CT Ratio 25 / 5 A, 5VA	2 Nos.	2 Nos.
133.	Potential Transformer	415 V, 50Hz, PT Ratio, 440V/110V, 10VA	2 Nos.	2 Nos.
134.	Solar panel with Battery	18 Watt	1 Set	1 Set
135.	i5 and i7 Computer or latest Version	2.8 GHz & above, 1 GB RAM, 80 GB HDD, DVD Combo Drive, 19/21" Monitor, optical scroll mouse, multimedia keyboard, 32 bit LAN card with UPP port, necessary Drivers, etc. OR (Latest Version)	2 Nos.	2 Nos.
136.	Ink jet/ laser printer		1 No.	1 No.

C. Shop Machinery - For 4 (2+2) units no additional items are required

137.	D.C. Shunt Generator with control panel	D.C. Shunt Generator with control panel, 2.5 KW, 220V & 3phase Squirrel cage Induction Motor, 5HP, 440V with control panel & star delta starter	1 No.	1 No.
138.	Motor-Generator (AC to DC)	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: 7.5 HP, 415V, 50 cycles, 3 phases. DC Shunt Generator rating: 5 KW, 440V (Output voltage varies 110-440v)	1 No.	1 No.
139.	D.C. Compound Generator with control panel including fitted rheostat, voltmeter, ammeter and breaker	D.C. Compound Generator with control panel including fitted rheostat, voltmeter, ammeter and breaker, 2.5 KW, 220V & 3phase Squirrel cage Induction Motor, 5HP, 440V, with control panel & star delta starter	1 No.	1 No.

140.	DC Series Motor coupled with spring balance load	2.5 KW, 220 Volts	1 No.	1 No.
141.	DC Shunt Motor	2.5 KW, 220 V	1 No.	1 No.
142.	DC compound Motor with starter and switch	2.5 KW ,220 volts	1 No.	1 No.
143.	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.	1 No.
144.	AC Squirrel Cage Motor with star delta starter and triple pole iron clad switch fuse with Mechanical Load.	5 HP, 3-Phase, 415 V, 50 Hz	1 No.	1 No.
145.	AC phase-wound slip ring Motor with starter switch	5 HP, 440 V, 3 Phase, 50 Hz	1 No.	1 No.
146.	Universal Motor with starter/switch	240 V, 50 Hz, 1 HP	1 No.	1 No.
147.	Synchronous motor with accessories like starter, excitation arrangements.	3 Phase, 3 HP, 440V, 50Hz, 4 Pole	1 No.	1 No.
148.	Thyristor /IGBT controlled D.C. motor drive with tachogenerator feedback arrangement	1 HP	1 No.	1 No.
149.	Thyristor/IGBT controlled A.C. motor drive with	VVVF control 3 Phase, 2 HP	1 No.	1 No.
150.	Single phase Transformer, core type, air cooled	1 KVA , 240/415 V, 50 Hz	3 Nos.	3 Nos.
151.	Three phase transformer, shell type oil cooled with Delta/ Star	3 KVA , 415/240 V, 50 Hz	2 Nos.	2 Nos.
152.	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	1 for 8 (4+4) Units
153.	Diesel Generator Set with changeover switch, over current breaker and water/ air-cooled with armature, star-delta connections AC 3 phase	7.5 KVA, 415 volt or higher rating	1 No. per institute	1 No. per institute
154.	Used DC Generators-series, shunt and compound type for overhauling practice		1 No. Each	1 No. Each

155.	Pillar Electric Drill Machine Motorized	12-20 mm Capacity, 1HP, 440V, 3 phase, Induction Motor with DOL starter, Bench Type	1 No.	1 No.
156.	Motorised Bench Grinder	1 HP. 3 phase, 440V with DOL starter, Double side with smooth and rough wheel with Tool Base	1 No.	1 No.
157.	A.C. Series type Motor	1 HP, 240 V, 50 Hz	1 No.	1 No.
158.	Single Phase Capacitor Motor with starter switch	1 HP, 240 V, 50 Hz	1 No.	1 No.
159.	Manual Motor coil Winding Machine	With step arbor	1 No.	1 No.
160.	Ceiling fan coil Winding Machine	250V, 50 Hz, 1-Φ, with speed control	1 No.	1 No.
161.	Primary current injection set	220V, 50 Hz, 1-Φ, output current - 200 A (min) with timer	1 No.	1 No.
162.	Stepper Motor with Digital Controller		1 No.	1 No.
163.	Shaded Pole Motor	Fractional HP, 240 V, 50 Hz	1 No.	1 No.
164.	Smart Meter	1 Phase - Smart Energy Meter 3 Phase - Smart Energy Meter	1 No. each	1 No. each
165.	EV Charger	3 phase input	1 No.	1 No.
166.	EV Charger (Home)	1 Phase input	1 No.	1 No.

D. Shop Floor Furniture and Materials - For 2 (1+1) units no additional items are required

167.	Working Bench	2.5 m x 1.20 m x 0.75 m	4 Nos.	4 Nos.
168.	Wiring Board	3-meter x1 meter with 0.5 meter projection on the top	1 No.	1 No.
169.	Instructor's table		1 No.	1 No.
170.	Instructor's chair		2 Nos.	2 Nos.
171.	Metal Rack	100cm x 150cm x 45cm	4 Nos.	4 Nos.
172.	Lockers with drawers		1 for Each Trainee	1 for Each Trainee
173.	Almirah	2.5 m x 1.20 m x 0.5 m	1 No.	1 No.
174.	Black board/white board	(minimum 4X6 feet)	1 No.	1 No.
175.	Fire Extinguisher CO2	2 KG	2 Nos.	2 Nos.
176.	Fire Buckets	Standard size	2 Nos.	2 Nos.

Note: -

1. All the tools and equipment are to be procured as per BIS specification.
2. Internet facility is desired to be provided in the class room.