S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
	Name of the Trade		Electronic Mechanic	
(i)	(ii)	(iii)	(iv)	(v)
1	Connecting screwdriver 100 mm	1	T. tool kit	Connecting screwdriver 100 mm slim insulated with plastic handle 3mm tip
2	Neon tester 500 V.	2	T. tool kit	A good quality CRYSTAL HANDLED 3 X 150mm slotted test pen screwdriver having capability of energizing the neon lamp when powered up and capable of testing voltage range upto 500 V AC
3	Screw driver set (set of 5)	3	T. tool kit	Standard Screw Driver Set of 5 pieces having length 100 mm ,150 mm,200 mm,250 mm and 300 mm respectively with non slip handle.
4	Insulated combination pliers 150 mm	4	T. tool kit	Standard Quality Combination Plier having Length of 150 mm and properly insulated with good quality insulating material
5	Insulated side cutting pliers 150 mm	5	T. tool kit	Standard Quality Side Cutting Plier having Length of 150 mm and properly insulated with good quality insulating material
6	Long nose pliers 150 mm	6	T. tool kit	Standard Quality Long Nose Plier having Length of 150 mm and properly insulated with good quality insulating material
7	Soldering iron 25 W. 240 V.	7	T. tool kit	Standard Soldering Iron ISI Marked of Power rating of 25 Watts 230 V respectively
8	Electrician knife	8	T. tool kit	A electrician knife made up of Stainless steel and a large blade ,electrician sheepfoot blade and a wire scraper.
9	Tweezers 100mm	9	T. tool kit	A good quality tweezer of 100 mm length made up of Stainless Steel straight tipped throughly covered with the insulating material

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
10	Digital Multimeter (3 ½ digit)	10	T. tool kit	Handheld Digital Multimeters 3 ½ Digit with backlight LCD display incorporating latest technology can measure AC Voltage, DC Voltage, DC Current, AC current, Resistance, Capacitance, Temperature, Battery Test Voltage and Frequency. and can perform Diode Test, Transistor Check, Continuity check, Low Battery display, Data Hold and Auto Power Off and having a built in holster for anti-sliding and confirming to CAT IV 600V.
11	Soldering Iron Changeable bits 10 W	11	T. tool kit	A good quality changeable bit of Soldering iron having power rating of 10 W
12	De- soldering pump	12	T. tool kit	A quality desoldering pump having spring loaded retractable piston and having a antistatic tip and body made up of high grade plastic or aluminium
13	Steel rule 300mm	1	Equipment	A Standard Steel rule made up of Stainless Steel of 30 cm length having engraved readings in inch and cm .
14	Steel measuring tape-3 m	2	Equipment	A Standard Steel measuring tape of 3 Metre Length enclosed in a case and can be rearranged in a PVC/Metallic case .
15	Tools makers vice 100mm (clamp)	3	Equipment	A hand vice made up of Cast iron or steel having maximum jaw openings of 100 mm.
16	Tools maker vice 50mm (clamp)	4	Equipment	A hand vice made up of Cast iron or steel having maximum jaw openings of 50 mm.
17	Crimping tool (pliers)	5	Equipment	A hand operated crimping tool for crimping of cables sizes of upto 16 sq. mm respectively
18	Magneto spanner set	6	Equipment	A standard forged magneto spanner set of 8 spanners, spanner size ranging from 6 mm to 19 mm.
19	File flat 200mm bastard	7	Equipment	A Standard Flat File long Bastard Type made up of HCS having dimensions of 200 X 20.6 X 5 mm (LX W XT) and handle made of red coloured sheesham wood or good quality plastic.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
20	File flat 200mm second cut	8	Equipment	A Standard Half round File second cut type made up of HCS having dimensions of 200 X 20.6 X 5 mm (LX W XT) and handle made of red coloured sheesham wood or good quality plastic..
21	File flat 200mm smooth	9	Equipment	A Standard Flat File longmade up of HCS having dimensions of 200 X 20.6 X 5 mm (LX W XT) and handle made of red coloured sheesham wood or or good quality plastic
22	100mm flat pliers	10	Equipment	Standard Flat Nose Plier having Length of 150 mm
23	100mm round Nose pliers	11	Equipment	Standard Round Nose Plier having Length of 150 mm
24	Scriber straight 150mm	12	Equipment	A Scriber of 15 cm length made from good grade of steel suitable for tool and point made of Tungston Carbide .
25	Hammer ball pen 0.5Kg	13	Equipment	Forged Ball Peen Hammer Having weight of 0.5 KG as a Head Weight and wooden handle made of red coloured sheesham wood.
26	Allen key set (set of 9)	14	Equipment	Standard Hexagonal Allen key Set of 9 pieces size Ranging from 2 mm to 14 mm having champhered heads and made of Chrome Vanadium Steel
27	Tubular box spanner (set of 6Nos)	15	Equipment	Tubular box spanner (set of 6nos) with tommy bars ,hexagon shaft and holes , for turning either with spanner or tommy bar of sizes 6 x7,8X9,10X11,12X13,14X15,16X17 (mm)
28	Magnifying lenses 75mm	16	Equipment	Diameter of 75mm glass lens(3 inches),200m , 5x magnification optical material : glass , size of lense with frame needs to be of - 14.5x 7.5cm minimum
29	Continuity tester	17	Equipment	A Good quality Continuity tester having audible indication and LED indication ,short response time
30	Hacksaw frame adjustable	18	Equipment	Standard Hacksaw frame made of Steel or Iron suitable for 30 cm blade fitment(maximum).
31	Cold chisel 20mm	19	Equipment	Cold chisel made of High Carbon Steel (HCS) having dimension of 250mm Long X 20 mm.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
32	Scissors 200mm	20	Equipment	A straight cut scissor made up of stainless steel having a overall length of 200mm.
33	Handsaw 450mm	21	Equipment	A Hand saw of 450 mm blade length made up of High Carbon Steel and handle made up of wood or plastic.
34	Hand Drill Machine	22	Equipment	An hand operated manual drill machine capable of drilling of upto 12 mm hole in metal,cement and wood etc .
35	First aid kit	23	Equipment	Basic first Aid Box suitable for providing first aid to industrial accident victim
36	Fire Extinguisher	24	Equipment	Standard Fire Extinguisher of Dry Powder or CO2 Type capable to extinguish Class C Fire
37	Bench Vice	25	Equipment	A bench vice made up of Cast iron or steel having maximum jaw openings of 100 mm
38	Dual DC regulated power supply 30-0-30 V, 2 Amps	26	Equipment	Dual DC regulated power supply 30-0-30 V, 2 Amps continuosly variable , digital read out with LED display for current and voltage , short circuit and over load protection with the facility of fine and coarse fine tuning of voltage and current.
39	DC regulated variable power supply 0-24 V, 1Amp	27	Equipment	DC regulated power supply 0-24 V, 1Amp coutinuesly variable , digital read out with LCD display for volts and current,short circuit and over load protection with the facility of fine and coarse fine tuning of voltage and current.
40	LCR meter (Digital)	28	Equipment	Digital LCR Meter, Large LCD Display, Basic Accuracy : 0.01%, Test Parameters- L-Q, C-D, R-Q, IZl-Q, Test Frequency :100Hz, 120Hz, 1KHz, Inductance Range 0.01micro Henry to 9999 Henry, Capacitance range : 0.01pF – 9999mF, Resistance range : from 1 ohm to 10 Mega ohm

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
41	CRO Dual Trace 20 MHz (component testing facilities)	29	Equipment	CRO 20 MHz, Dual Trace Bandwidth: 20MHz Operating modes: Ch A, Ch B, Alt, Chop, Add Input impedance: 1MΩ±2%, 25pF±3pF Sensitivity: 5mV—5V per division Maximum input: 400V Sweep time: 0.1us—0.2s per division Sweep modes: A, XY, Alt, Mag, 5x Mag Capablity of testing active and passive components
42	Signal Generator, 0-100 KHz	30	Equipment	Signal Generator, 0-100 KHz capable of generating sinewave,square wave,triangular wave and saw tooth wave forms and Output dB Range Min -50 dBm (-50 dB) Output dB Range Max 10 dBm (10 dB) and having a facility of varying the output level and frequency with fine and coarse controls and capable of generating carrier wave form and Am,Fm PAM,PWM and PPM waveforms.
43	Battery Charger	31	Equipment	A Battery Charger which provide output ranging from 12V to 24 V and Current ranging from 3Amp to 15 Amp with overload protectionand built in ammeter & Voltmeter
44	Analog multimeter	32	Equipment	A quality Analog multimeter which can measures AC / DC Voltage up to 2500V, AC/DC Current up to 10A, Resistance up to 10M.Ohms, Diode and continuity test facility and having the facility of testing Active and Passive components

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
45	Function generator (Triangular, square and sine wave) or ELECTRONIC WORK BENCH Instead of sr no's (26,27,29,31,34)	33	Equipment	Function Generator 0-1 MHz capable of generating sinewave,square wave,triangular wave and saw tooth wave forms and Output dB Range Min -50 dBm (-50 dB) Output dB Range Max 10 dBm (10 dB) and having a facility of varying the output level and frequency with fine and coarse controls and capable of generating carrier wave form and Am,Fm PAM,PWM and PPM waveforms. OR Electronic Work Bench meeting the specifications as stated for items at standard list no l 26,27,29,31,34
46	Dimmer start 3 Amps	34	Equipment	Dimmerstat having max current range -3 Amps for voltage range from 0- 270 v AC suitable for single phase continuos operation
47	Analog Component Trainer	35	Equipment	Analog Component Trainer with all internally mounted components having the Facility to study of ohms law, kirchhoff's law , filters & rectifires ,voltage regulator TRANSISTOR,FET,MOSFET,UJI,all passive and active components with the help of banana socket and patch cords,built in variable power supply of range 0-12 V DC,having analog voltmeters and ammeter for the measurement of parameters. Trainer must have the facility to generate the faults with toggle switches/patch cords and maximum no. of test points to check the volatage and wave forms.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
48	Op Amp trainer	36	Equipment	Op Amp trainer study of op - amp(Operational Amplifier)with all internally mounted components to perform the following functions : inv,non -inv , difference amplifier, summing and voltage,follower ,built in variable DC power supply all passive and active components with the help of banana socket and patch cords Trainer must have the facility to generate the faults with toggle switches/patch cords and maximum no. of test points to check the volatage and wave forms.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
49	Digital IC Trainer	37	Equipment	A Digital IC trainer which can perform following Study of basic gates and verification of their truth tables (NOT, OR, AND, NOR, NAND, EX-OR, EX-NOR). • Study and verifications of the laws of Boolean Algebra and De-Morgan's Theorems. • Study of important TTL terminologies. Verification of important TTL circuit parameters. • Construction and verification of various types of flip - flops using gates & IC's (RS, JK, D, T, M / SJK). • Construction and verification of various types of combinational circuits such as Half Adder, Full Adder, Half Subtractor, Full Subtractor, Even I Odd Parity Checker, Multiplexer, Demultiplexer, Binary to Gray & Gray to Binary Converters. • Construction and verification of various types of Up / Down, Synchronous I Asynchronous, Ripple / Reverse, Ring, Binary, BCD & Decade Counters. • Construction and verification of 4 Bit Universal Shift Register (SR / SL operation). • Study of 7 - segment display and decoder / driver. • Many other experiments are possible using the onboard components and special veroboard provided. (for use of external components without soldering). • DC Power Supply 5 V I 500 mA (IC based regulated output). Clock Generators (TTL, 5V). i. Fixed: a. 0.1Hz b. 1Hz. (Simultaneous independent outputs). ii. Variable: One low frequency variable clock generator. Manual Pulser : One independent buffered bounceless manual pulser (useful or freezing the action of each stage of the counter after every lock pulse). Logic Probe : Logic probe with Low, High & pulse indicator Logic Level Inputs : Eight independent buffered logic level inputs to select High I Low TTL levels, each with a LED to indicate high flow status and termination. Logic Level Indicators : Eight independent buffered logic level indicators for High / Low status indication of digital outputs. Veroboard : Unique veroboard type socket with termination for use of external

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
50	Digital IC Tester	38	Equipment	A digital IC tester which can Tests a wide range of Digital IC's such as 74 Series,40/45 Series of CMOS IC's. ,can test Microprocessor 8085, 8086, Z80 and can test Peripherals like 8255, 8279, 8253, 8259, 8251, 8155, 6264,62256,8288,8284 can tests Seven segment display of common cathode & common anode type. It has Auto search facility of Ic's. Test by: Truth table/sequence table comparison. ZIF: 40 pin DIP ZIF sockets.and Keys: 28 Touch-keys Key pad with numerical & functional keys and Display: 9 Digit Seven Segment Display and Supply Input Voltage: 230V AC.
51	Digital and Analog Bread Board Trainer	39	Equipment	Digital and Analog Bread Board Trainer conforming to following specifications Variable Regulated Power Supply : 1.2V to 25V / 200mA for Transistor based experiments. Dual fixed Regulated Power Supply : ± 12V / 200mA.for Op-Amp. Based Experiments. Fixed Regulated Power Supply : (5V / 200mA) for Digital Logic Based Experiments. Accessories of 50 connecting wires for bread board experiments, 10 wires each of 5 colours. Banana to Crocodile (Red, Black, Green) to connect any of the power supply.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
52	Rheostats various values and ratings	40	Equipment	Rheostat of 120 Watts,200 Watts in single tube. Higher ratings with multiple tubes. Ohmic Value :0.3Ω to 25KΩ Current Range:0.3A to 40A Tolerance :±10%. Standard. Temperature Co-efficient :±50ppm/ºC to ±200ppm/ºC
53	POWER ELECTRONICS TRAINER with at least 6 no's of onboard applications	41	Equipment	POWER ELECTRONICS TRAINER with at least 6 no's of onboard applications with power semiconductor application ,panel converter/ invertor pannel , triggering,short circuit protection pannel , SC rapp head pannel , 1GB / MOSFET invertor pannel, power semi conductor application panel using IC 555 Trainer must have the facility to generate the faults with toggle switches/patch cords and maximum no. of test points to check the volatage and wave forms.
54	Computers in the assembled form (including cabinet, motherboards, HDD, DVD, SMPS, Monitor, KB, Mouse, LAN card, Blu-Ray drive and player), MS Office education version.	42	Equipment	Latest PC 4th Genration(Intel i7 microprocessor ,3.4 GHz,8 MB cache with 4 GB Ram and 1 TB Hardisk ,Wifi enabled ,USB optical mouse,multimedia key board LED and 23" LED Monitor ,Standard ports and connectors ,DVD Writer ,Speakers and Mic wih window 8.1 and antivirus preloaded.
55	Laptops latest configuration	43	Equipment	4th Generation intel i7 processor(3.4 GHz, 8 MB Cache with4 GB RAM, 1 TB harddisk, wi-fi enabled, USB optical mouse, 15"LED Screen , Standard ports and connectors, DVD Writer, inbuilt Speakers and Mic. with web camera with preloaded licensed window 8.1 or latest operating system and latest internet security input. preloaded licensed latest version MS Office

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
56	Laser jet Printer	44	Equipment	Workgroup printer - Laser - Laser - Monochrome - Monochrome Legal (8.5 in x 14 in) A4 (210 x 297 mm) A4 (8.25 in x 11.7 in) Legal (216 x 356 mm)Printer / Interface USB, minimum speed 30 PPM, Print Quality: Upto 2400x600 dpi with automatic image refinement. Prinet Resolutioin: Upto 600x600 dpi, having option of double sided printing, Automatic, Memory: minimum 16 MB.
57	INTERNET BROADBAND CONNECTION	45	Equipment	A Broad band Connection with all the accessories like modem ,ADSL splitter etc and wiring suitable for easy access to the place of PC
58	Electronic circuit simulation software with 6 user licenses	46	Equipment	Electronic circuit simulation software MULTISIM or SIMETRIX latest with 6 user licenses
59	Different types of electronic and electrical cables, connectors, sockets, terminations.	47	Equipment	FPC Connectors,PCB Connectors,Audio Visual Cable,VGA Cable,Extention Power Cords,Power cords Video Cable,
60	Different types of Analog electronic components, digital ICs, power electronic components, general purpose PCBs, bread board, MCB, ELCB	48	Equipment	1.Electronic components like transistor BC148, BC548, AC128, AC127., 2. Digital ICs like IC 555,IC 7805, IC 7812, IC 7809, IC 7905, IC,7909, IC 7912, 3. Power electronic compoments like IN4001, IN4002, IN4007, IN4009, BY127, SCR TY604, TY6004, 6N60 Mosfet, 5N80 Mosfet.
61	Crimping tools as necessary for performing terminations mentioned week no 17-21 of SEMSTER-1	49	Equipment	A hand operated crimping tool for crimping of cables sizes of upto 16 sq. mm respectively
62	Instructor's table	1	Furniture	Body made from MS square pipe 30 x 30 mm (16 gauge) top size 4' x 2.5' x 2.5' ,commercial ply 19 mm on 1 mm sunmica right hand 3 drawer with lock, MS sheet 22 GAUGE with powder coated paint.
63	Instructor's chair	2	Furniture	Chair Frame made of M.S Square Pipe 25 mm, thickness of pipe 1.5 mm, seat size18" x 18" , height 18" with arms, seat and back cushion,Suitable powder coating paint

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
64	Metal Rack, 100cm x 150cm x 45cm	3	Furniture	A Standard metal shelving rack open type made up of iron having structural arrangement of L angles so that the shelves can be easily adjusted into it and shelves should be made up of 20 SWG material and no. of shelves should be 5 .The Dimensions of the rack will be of 100 X 150 X 45 cm. .
65	Lockers with 16 drawers standard size	4	Furniture	A Standard Steel Locker having dimensions of 2.5 m x 1.20 m x 0.5 m having 16 compartments and material of the locker must be of 20 SWG and entire locker should be powder coated with locking arrangement for each compartment.
66	Steel Almirah, 2.5 m x 1.20 m x 0.5 m	5	Furniture	A Standard Steel Almirah made up of Steel having 2.5 M X 1.20 M X 0.5 M Dimensions (Length X Breadth X Height) and 4 shelves (5 compartments)The material of the almirah is of 20 SWG and entire almirah should be powder coated with proper locking arrangement.
67	Black board/white board	6	Furniture	A Framed Magnetic White board size of 8 Feet X 4 Feet made of steel which has a thickness of 2 mm of steel sheet supported on wooden arrangement ,rust free and stain resistant material fitted with duster and marker holder.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
68	DSO (colour)	1	Tool	● Up to 25MHz Bandwidth 1GSa/s sample rate ● 7"TFT-LCD display, 8*18 grids● Channels: 2CH+1EXT● Memory Depth: 40Kpts, 5Kpts/CH (SDS1202CNL)● 6 digits hardware frequency counter, real time counting display● Support SCPI programming command control● Interface: USB Device, USB Host, RS-232, Pass/Fail● Unique digital filter and data recorder function● Embedded 12 languages, online help, one key storing and one key printing CHARACTERISTIC: ● The highest Single real-time sampling rate can be up to 500MHzsa/s; Equivalent sampling rate is up to 50GSa/s. ● Memory Depth: 32Kpts● Trigger types: Edge, Pulse Width, Video, Slope, Alternative ● Unique Digital Filter function and Waveform recorder function ● Support Pass/Fail function. ●Thirty two parameters Auto measure function. ● Save/recall types: Setups, Waveforms, CSV file, Picture. ● Support Multilingual On-line help system ● Waveform Intensity and Grid Brightness can be adjusted.● Support twelve types Language ● Standard Configuration Port: USB Host: Support USB flash driver save/recall function and update firmware; USB Device: Support Pict Bridge compatible printer and support PC remote control; RS232; Pass/Fail Output.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
69	Soldering & De soldering Station	2	Tool	Input Voltage : 190 V to 270C Output Voltage : 24VAC Soldering Wattage : 60 Watts De-Soldering Wattage : 70 Watts Temp Range : 180 - 480°C Temp Accuracy : ± 1°C Tip to ground potential : Under 2MV Tip to ground Leakage : Under 2 Vacuum : 600mm/Hg High Quality 24V DC Pump with 4000 RPM Accessories : Control Unit --------------------------- 1 No. Soldering Iron------------------------- 1 No. De-Soldering Iron -------------------- 1 No. Combined Soldering & De-Soldering Stand --------------------1 No. Power Cord--------------------------- - 1 No. Tool Box Containing : Primary Filter -------------------------- 15 Nos Secondary Filters --------------------- 5 Nos Silicon Washer Set --------------------- 1 Set Glass Tube------------------------------- 1 No. Nozzle Cleaning Spring -------------- 1 No.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
70	SMD Soldering & De soldering Station with necessary accessories	3	Tool	A SMD soldering and desoldering station with following accessories Power Consumption: 20W Pump Type: Diaphragm pump Air flow rate: 24 L/min (max) and high precision air and heat control for welding and removing with security and reliability, anti-static design (prevents PCB from being damaged by static electricity or current leakage) with up to 320W power consumption.
71	DOL starter	4	Tool	A DOL Starter enclosed in a metallic box powder coated capable of starting the motor of upto 0.25 HP having indiviual indicators for POWER ON,MOTOR ON,MOTOR TRIP with EMERGENCY STOP SWITCH and protection against Voltage Surge
72	AC motor ¼ HP	5	Tool	A quality TEFC(Totally enclosed Fan Cooled) motor of capacity of 0.25 HP ,Single phase 2 pole motor having B or F class of insulation having duty cycle of S1 or S2 and having ambient tempreature of 40 C.
73	or ELECTRICAL TRAINER FITTED WITH RESOURCES MENTIONED AT Sl No (DOL starter, contactors, relays, MCB, Motor suitable for electrical control circuit exercises)	6	Tool	or ELECTRICAL TRAINER FITTED WITH RESOURCES MENTIONED AT Sl No (DOL starter, contactors, relays, MCB, Motor suitable for electrical control circuit exercises)

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
74	Frequency modulator and Demodulator trainer kit	7	Tool	Frequency modulator and Demodulator trainer kit conforming to following On-board message signal with variable Amp/Freq On Board carrier signal , FM Modulation and Demodulation using PLL Detector LPF4th Order LPF Internal Power Supply +5V , +12V/ 500 mA Number of test point to study the FM system User friendly front panel block diagram Technical Specification Message Signal : Sine wave Frequency 100 Hz to 2.8 KHz Amplitude 0 to 3V Carrier Signal : Sine wave Frequency 100 KHz Amplitude 5V Modulation Demodulation : PLL Detector & LPFLow Pass Filter : 4th Order LPF Supply Voltage (Board) : +12V, +5V / DC Supply current : 100 mA (Minimum) Input Voltage : 230 V/ 50 Hz ACInterface connectors : 2mm socket Trainer must have the facility to generate the faults with toggle switches/patch cords and maximum no. of test points to check the volatage and wave forms.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
75	PAM, PPM,PWM trainer kit	8	Tool	PAM, PPM,PWM trainer kit conforming to following Pulse Modulation : 1. Pulse Amplitude Modulation 2. Pulse Position Modulation 3. Pulse Width Modulation On board Sampling Frequency (Pulse) : 8 KHz, 16 KHz, 32 KHz, 64 KHz On board Generators : 1. Sinewave 1 KHz & 2 KHz (Gain Adjustable) 2. Square wave 1 KHz & 2 KHz Low Pass Filter : for sampling Voice Communication : Voice Link using Dynamic Mic & Speaker AC Amplifier : With adjustable gain control DC Output : 0- 4 V Interconnections : 2 mm Sockets Power Supply : 230 V ± 10%; 50 Hz Power Consumption : 3 VA (approximately) Trainer must have the facility to generate the faults with toggle switches/patch cords and maximum no. of test points to check the volatage and wave forms.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
76	AM/FM Commercial radio receivers	10	Tool	Specifications: Telescopic Anteena of 2 Feet minimum length Frequency of Operation: AM Band 500 KHz to 1750 KHz FM Band 88MHz -108 MHz Ground plane required: None AM capture length: 300 inches AM / FM Band Separator Performance: FM rejection in AM band: > 50 dB AM rejection in FM band: > 60 dB AM/FM Pass-band loss: < 1dB AM load impedance: 300 ohms FM load impedance: 75 ohm
77	Microcontroller kits (8051) along with programming software (Assembly level Programming)	11	Tool	Microcontroller kits (8051) along with programming software (Assembly level Programming)
78	Application kits for Microcontrollers 6 different applications	12	Tool	Application kits for Microcontrollers 6 different applications
79	Sensor trainer kit (containing Various sensors like Thermocouple, RTD, Thermocouple, load cell, strain gauge, LVDT, smoke sensors, speed sensor)	13	Tool	Sensor trainer kit (containing Various sensors like Thermocouple, RTD, Thermocouple, load cell, strain gauge, LVDT, smoke sensors, speed sensor and the medium/monitoring system to display the output of sensors enlisted as above.
80	Various analog and digital ICs useful for doing project works mentioned in the digital and analog IC applications modules	14	Tool	Various analog and digital ICs useful for doing project works mentioned in the digital and analog IC applications modules

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
81	Different types of electronic and electrical cables, connectors, sockets, terminations.	15	Tool	A mixture of electical cables of 2C X 1.5 Sq.mm or 2C X 1 Sq.mm like flexible cables,armoured and unarmoured cables of length having approximately 10 Ft. A mixture of electronic cable of single core to 12 core having different colour coded having length of each type tentatively -1 Metre Connectors ,sockets and termination material (like Lugs,Insulating tape
82	Fiber optic communication trainer	1	Tool	Fiber optic communication trainer having following SPECIFICATION Transmitter : 01 no. Fiber Optic LED Receiver : 01 no. Fiber Optic Photo detector Modulation Techniques : 1. AM 2. FM 3. PWM. Drivers : 01 no. with Analog & Digital modes PLL Detector : 01 no. Provided. Comparator : 01 no. provided. Analog Bandwidth : 350 KHz. Digital Bandwidth : 2.5MHz. Function Generator : 1 KHz Sine wave (amplitude adjustable). 1 KHz Square Wave (TTL). Fiber Optic Cable : 02 nos of different Lengths viz: a. 0.5 meter & b. 1 meter (with standard SMA type connector). Cable Type : Step indexed multimode PMMA plastic cable. Power Supply : 230V + 10% VAC, 50 Hertz, single phase. Accessories Included : Detailed Instruction Manual,Microphone, Headphone, Set of 8 assorted multicoloured multistrand wires with 4 mm plug terminations at both ends having different test points to observe the waveform and measure other parameters.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
83	Seven segment DPM	2	Tool	A seven segment DPM having following specifications 10-pin connection Supply voltage: 5V common ground Recommended supply voltage range: 4.75-5.25VDC Full scale input range: 0-200mV User-selectable decimal point Mounting: Bezel screw mount Suitable for common ground applications

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications

84	LCD based DPM	3	Tool	LCD based DPM having following specifications
				
				Digits : 3 ½ digits (±1999 counts)
				 Type : 0.38" (9 mm) high-contrast reflective LCD
				 Polarity : automatic, displayed
				 Decimal Points : 3 position, user-selectable
				  Hold : available
				 Ranges : ±200.0 mV, ±2.000 V
				 Configuration : bipolar differential
				  Impedance : >10 MΩ, (>1 MΩ, on 2 V range)
				 Accuracy : ± 0.1%
				 Conversion Rate : 2.5 per second
				  Zero Adjustment : automatic
				 Warmup : 10 minutes typical
				 ENVIRONMENT
				 Operating Range : 0 to 50 °C
				 Storage Range : -20 to 70 °C
				POWER SUPPLY, 5V powered: +5 VDC (± 5%) at 5 mA
				 MOUNTING snap-In bezel mount
				CONNECTION 26 pins, in 2 rows(minimum)

85	SMPS of different make	4	Tool	SMPS of following type . D.C. to D.C. Converter: · Forward Converter: · Flyback Converter: · Self-Oscillating Flyback Converter of different make

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
86	UPS trainer	5	Tool	An UPS trainer capable of performing of following functions Study of PWM Technology To understand the overall functioning of UPS Trainer Study of AVR transformer section of UPS To study the UPS circuit in load condition To identify different faults and to study the systematic procedure of their troubleshooting in UPS circuit
87	UPS 3 KVA with backup time minimum 30 minutes	6	Tool	A quality inline UPS of 3 KVA having surge protection a ,fault indications,circuit diagram printed ,Full time multi-pole noise filtering : 5% IEEE surge let-through : zero clamping response time,Resettable circuit breakers, along with batteries for providing the back up of 3KVA for 30 minutes along with the connecting leads,rack for batteries and for UPS
88	Mobile phone (different models) at least one 3 G mobile	7	Tool	A Latest quality mobiles on android platforms and one mobile out of these must support 3G on android platform.
89	Smart phones of different make (android/Windows)	8	Tool	A latest quality smartphones as available in the market for windows and android platform

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications

90	Precision set of screw drivers- T5, T6, T7	9	Tool	A precision set of Screwdrivers T5,T6,T7 conforming to following specifications with a cushioned grip handle .
				
				 Size Point-to-point
				             distance
				             Inch MM
				 T5 0.055 1.42
				
				 T6 0.066 1.70
				 T7 0.078 1.99

91	Tweezers – Bend tip	10	Tool	A good quality tweezer 100 mm long made up of Stainless Steel bend tipped throughly covered with the insulating material
92	Cell phone power source with charger chords for different cell phones	11	Tool	A quality Cell phone Charger/Power source with the different ports for charging of different type of cell phones

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
93	LCD TV (Trainer kit)	12	Tool	LCD TV Trainer kit having following features 1. The block diagram should be printed on single PCB. 2. Fault creation facilities should be provided by switches. 3. Section wise different colored screen printed circuit should be on the PCB for easy understanding of functions of different sections. , 4. Typical ICs should be provided on sockets. 5. Explanation, Observation, Alignment and adjustment of internal and External controls should be possible at a glance . 6. Having the facility of easy measurement of Voltages and observation of waveforms at any point. Also typical voltages and waveforms should be printed on the kit. and conforming to following specifications A1. Display : 21"Diagonal Size ,Flat panel display / TFT active matrix, Max Resolution : 1280 x 1024 Aspect ratio : 4:3 or other compatible 2. Image : - Image Brightness : 300 cd/m2 , Image Contrast Ratio : 1000:1 (minimum) , Image Max H-View Angle : 160 , Image Max V-View Angle : 160 , 3. Interface : - Analog Video Input : RGB VGA (HD-15) , Analog Video Input : S-Video , Composite Video Input : RCA Yellow, Audio Input : RCA- Left (White), Right (Red) Antenna RF Input : RF - SDTV/ PAL, USB and HDMI interface 4.. On Screen display : Volume, Brightness, Contrast, Color, Channel, Tuning. 5. Remote Control functions : On screen display of Volume, Brightness, Contrast, Channel 6. Audio Amplifier : 3 W PMPO 7. Power supply : 230V AC, 50 Hz.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
94	LCD TV (21")	13	Tool	A quality LCD TV based on latest techoology of Screen size 21 inch having Native Display Resolution of 1920 x 1080 and Contrast Ratio (DCR) of 100,000:1 and Response Time of 4 ms ,Aspect Ratio of 16:9 with the Aspect Ratio correction and screen size of 21 inch with inbuilt speakers dolby surround sound and having the facility of HDMI and USB connectivity having RS232 and HDMI ,USB port connectivity.

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
95	LED TV (Trainer kit)	14	Tool	LED TV Trainer kit having following features 1. The block diagram should be printed on single PCB. 2. Fault creation facilities should be provided by switches. 3. Section wise different colored screen printed circuit should be on the PCB for easy understanding of functions of different sections. 4. Typical ICs should be provided on sockets. 5. Explanation, Observation, Alignment and adjustment of internal and External controls should be possible at a glance . 6. Having the facility of easy measurement of Voltages and observation of waveforms at any point. Also typical voltages and waveforms should be printed on the kit. and conforming to following specifications A1. Display : 21"Diagonal Size ,Flat panel display / TFT active matrix Max Resolution : 1280 x 1024 Aspect ratio : 16:9 and other compatible 2. Image Image Brightness : 300 cd/m2 Image Contrast Ratio : 1000:1 (minimum) Image Max H-View Angle : 160 Image Max V-View Angle : 160 3. Interface Analog Video Input : RGB VGA (HD-15) Analog Video Input : S-Video Composite Video Input : RCA Yellow, Audio Input : RCA- Left (White), Right (Red) Antenna RF Input : RF - SDTV/ PAL USB and HDMI interface 4.. On Screen display : Volume, Brightness, Contrast, Color, Channel, Tuning. 5. Remote Control functions : On screen display of Volume, Brightness, Contrast

S.No.	Name of the item	Std List No.	Type of the item (Tool / Equipment / Machinery)	Specifications
96	LED TV (21")	15	Tool	A quality LED TV based on latest techoology of Screen size 21 inch having refresh rate of 100 Hz clear motion rate ,active noise reduction facility,aspect ratio of 16:9 with the facility of aspect ratio correction having down firing and full range speakers and having the facility of HDMI and USB connectivity having RS232 and HDMI ,USB port connectivity.
97	Home theatre system	16	Tool	A good quality 4.1 Home thetre system i.e with 4 speakers and 1 woofer having the functions uch as Built-in FM Radio,LED Display, Fully Functional Remote Control Supports SD / MMC Memory Cards & Pen Drives
98	Solar Power Inverter 500VA	17	Tool	A high quality Solar power inverter capable of producing 500VA power .inclusive of batteries,connecting leads and rack for inverter
99	LED lighting system	18	Tool	A LED lighting system compomising of following LED Bulb 3W,6W,9W,12W Power rating