For GCT, NOWSHERA LIST OF ELECTRICAL TECHNOLOGY B-TECH (ELECTRICAL)

S.NO.	ITEM NAME	QTY
	ELECTRICITY TRAINER along with base unit and modules to perform the following practical:	02
	DC Voltage Measurement Using an Ohmmeter	
	Resistor Characteristics	
	Resistor measurement	
	➢ Ohm's law	
	AC voltage/current measurement	
	Series/parallel circuit	
	Wheatstone bridge	
	Kirchoff's law	
	Thevenin's theorem	
	Norton's theorem	
	Maximum power transfer theorem and others	
	DC RC and RL transient phenomena	
	AC current/voltage experiment	
	AC RLC series/parallel circuit	
	Resonant circuit	
	Power in AC circuit	
	DC Current Measurement	
	Series-Parallel Network and Kirchoff's Law	
1	DC RC Circuit and Transient Phenomena	
	AC Voltage Measurement	
	AC Current Measurement	
	AC, RC Circuit	
	AC, RL Circuit	
	AC, RLC Circuit	
	Power in AC Circuit	
	Series-Resonant Circuit	
	Parallel-Resonant Circuit	
	> LC Filter	
	Magnetic Devices	
	> Magnetic Field	
	Drawing Magnetic Curves	
	Magnetic Field Strength	
	Lenz's and Faraday's Laws	
	> Ampere's Rule	
	Fleming's Rule	
	> Self-Induction	
	Mutual Induction	
	Magnetic Flux Detection	00
	Electronics Trainer along with base unit and modules to perform the following Practicals:	02
	Wheat stone Bridge Dimmore Circuit	
	Dimmer Circuit Multistage Casessing Amplifier	
	Multistage Cascading Amplifier	
	Relay Characteristics	
	Touch-Controlled Switch	
0	Silicon Diode	
2	Germanium Diode	
	Zener Diode	
	Light Emitting Diode	
	Optical Diode Clipping and Clemping Circuits with Diodea	
	Clipping and Clamping Circuits with Diodes	
	Clipping Circuit	
	Clamping Circuit Bestifier Circuite	
	Rectifier Circuits	L

	Half Wave Rectifier Circuit	
	Full Wave Rectifier Circuit	
	Bridge Rectifier Circuit	
	 Filter circuits (All types) 	
	 Dual Power Supply Rectifier Circuit 	
	> Transistors	
	> PNP Transistor	
	> NPN Transistor	
	Transistor Amplification Circuits	
	Common Emitter Transistor Amplification Circuit	
	Common Base Transistor Amplification Circuit	
	Common Collector Transistor Amplification Circuit	
	Switching Type Transistor Circuit	
	Darlington's Circuit	
	 Field Effect Transistors (FET) 	
	 Junction Type FET (JFET) 	
	 Metal-Oxide-Semiconductor FET (MOSFET) 	
	 DE & E-MOSFET 	
	OP Amplifiers Transister Differential Amplification Circuit	
	Transistor Differential Amplification Circuit	
	Characteristics of OP Amplifiers	
	✓ Input Impedance Measurement	
	✓ Output Impedance Measurement	
	✓ Bandwidth Measurement	
	✓ Slew Rate Measurement	
	✓ Offset Voltage Measurement	
	Basic Characteristics of OP Amplifier	
	Inverse Amplification	
	> Non-Inverse Amplification	
	 Voltage-Follower Circuit 	
	 Different Amplification 	
	 Sum Amplification (Adder) 	
	- FF J	
	Constant Voltage Circuit	
	Differentiator Circuit	
	> Integrator Circuit	
	Power electronics trainer along with base unit and modules to perform the following	02
	Practicals	
	> UJT Experiments	
	✓ UJT Characteristic	
	✓ UJT Equivalent Circuit	
	✓ PUT Experiments	
	✓ PUT Characteristic & Equivalent Circuit	
	✓ PUT Characteristic	
	✓ PUT Equivalent Circuit	
	✓ PUT & SCR Experiments	
3	 ✓ PUT Staircase Generator & Voltage Control Ramp Circuit 	
5	✓ PUT Staircase Generator Circuit	
	✓ PUT Voltage Control Ramp Circuit	
	SCR Characteristic & RC Shift Control Circuit	
	SCR Characteristic Curve	
	SCR RC Phase Control Circuit	
	SCS Experiment	
	✓ SCS Characteristic Experiment	
	✓ SCS Schmitt Circuit	
	✓ SCS Simulate PUT Circuit	
	✓ SCS Trigger Circuit Experiment	
		1

 UJT & PUT Trigger SCR Experiments UJT Trigger SCR Phase Control Circuit Phase Control Basic Circuit AC Phase Control Circuit SCR Control DC Motor & DIAC, TRIAC Characteristic Experiments SCR Control DC Motor Forward/Reverse Experiment SCR Cut-Off Principal SCR Control DC Motor Forward/Reverse Control Experiment DIAC, TRIAC Characteristic Experiment DIAC Characteristic DIAC Characteristic TRIAC Characteristic TRIAC Characteristic TRIAC Trigger Mode TRIAC Static Measurement
 Phase Control Basic Circuit AC Phase Control Circuit SCR Control DC Motor & DIAC, TRIAC Characteristic Experiments SCR Control DC Motor Forward/Reverse Experiment SCR Cut-Off Principal SCR Control DC Motor Forward/Reverse Control Experiment DIAC, TRIAC Characteristic Experiment DIAC Characteristic DIAC Operation Mode and Measurement TRIAC Characteristic TRIAC Characteristic TRIAC Characteristic TRIAC Characteristic
 AC Phase Control Circuit SCR Control DC Motor & DIAC, TRIAC Characteristic Experiments SCR Control DC Motor Forward/Reverse Experiment SCR Cut-Off Principal SCR Control DC Motor Forward/Reverse Control Experiment DIAC, TRIAC Characteristic Experiment DIAC Characteristic DIAC Operation Mode and Measurement TRIAC Characteristic TRIAC Characteristic TRIAC Characteristic TRIAC Characteristic TRIAC Characteristic
 SCR Control DC Motor & DIAC, TRIAC Characteristic Experiments SCR Control DC Motor Forward/Reverse Experiment SCR Cut-Off Principal SCR Control DC Motor Forward/Reverse Control Experiment DIAC, TRIAC Characteristic Experiment DIAC Characteristic DIAC Operation Mode and Measurement TRIAC Characteristic TRIAC Characteristic TRIAC Characteristic TRIAC Static Measurement
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 SCR Cut-Off Principal SCR Control DC Motor Forward/Reverse Control Experiment DIAC, TRIAC Characteristic Experiment DIAC Characteristic DIAC Operation Mode and Measurement TRIAC Characteristic TRIAC Characteristic TRIAC Trigger Mode TRIAC Static Measurement
 SCR Control DC Motor Forward/Reverse Control Experiment DIAC, TRIAC Characteristic Experiment DIAC Characteristic DIAC Operation Mode and Measurement TRIAC Characteristic TRIAC Trigger Mode TRIAC Static Measurement
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 ✓ TRIAC Characteristic ✓ TRIAC Trigger Mode ✓ TRIAC Static Measurement
 ✓ TRIAC Trigger Mode ✓ TRIAC Static Measurement
✓ TRIAC Static Measurement
 Automatic Control Lamp, TRIAC Control Speed Experiments
✓ Automatic Control Lamp Experiment
✓ TRIAC Shift Control
 ✓ TRIAC Automatic Control Lamp Experiment
 ✓ TRIAC Automatic Control Lamp Experiment ✓ TRIAC Control Motor Speed Experiment
 ✓ TRIAC Control Motor Speed Experiment ✓ TRIAC Control Motor Speed
✓ Photo-Couple & Touch Control Experiment
 ✓ Photo-Couple Control Circuit ✓ Semi and Full converters circuits
✓ AC to AC converters as AC Motor speed controller
✓ DC to DC converters
✓ PWM technique of frequency control
✓ Working as Cyclo-converter
✓ Inverters related experiments
SCR Rectifier Circuit Experiment
✓ Single-Phase Half-Wave Rectifier
✓ Single-Phase Full-Wave Rectifier
✓ Single-Phase Bridge's Rectifier
 Single-Phase half-wave & Full-wave controlled rectifier with Resistive & Inductive load
 Three-Phase half-wave and Full-wave controlled rectifier with Resistive and Inductive load
✓ Three-Phase Half-Wave Rectifier
✓ Three-Phase Full-Wave Rectifier
✓ Three phase full-wave control circuits for DC Motors
✓ JFET/MOSFET Characteristic & MOSFET
✓ JFET Characteristic Experiment
✓ MOSFET Characteristic Experiment
➢ IGBT Characteristic
Digital logic trainer along with base unit and modules to perform the following Practicals 02
> Threshold Voltage Measurement
✓ TTL Threshold Voltage Measurement
✓ CMOS Threshold Voltage Measurement
 Voltage/Circuit Measurement
✓ TTL/IO Voltage/Current Measurement
 ✓ CMOS Voltage/Current Measurement
 Measurement of Basic Logic Gates Characteristics
4 ✓ AND Gate Characteristics Measurement
✓ OR Gate Characteristics Measurement
✓ INVERTER Gate Characteristics Measurement
 ✓ NAND Gate Characteristics Measurement
 ✓ NAND Gate Characteristics Measurement ✓ NOR Gate Characteristics Measurement
Measurement Interface Between Logic Gates
✓ TTL to COMS interface
✓ CMOS TTL interface

ADP:- 1085 (100336) Provision of Infrastructure Facilities & Equipment to the Upgraded GPIs at Timergara, Takhtbhai, Swabi, Abbottabad, Kohat, Nowshera to the

 NOR Gate Circuit NAND Gate Circuit XOR Gate Circuit Constructing XOR Gate with NAND Gate Constructing XOR Gate with Basic Gate AND-OR-INVERT (AOI) Gate Circuit Comparator Circuit Comparator Circuit Comparator Constructed with Basic Logic Gates Comparator Constructed with TTL IC chmitt Gate Circuit Open-Collector Gate Circuits High Voltage/ CIRCUITS Constructing an AND Gate with Open-Collector Gate Bidirectional Transmission Circuit Half-Adder and Full-Adder Circuitsa. Constructing HA with Basic Logic Gates Full Adder Circuit 	
d. BCD Code Adder Circuit	
Half-Subtractor and Full-Subtractor Circuit	
 a. Subtractor Circuit Constructed with Basic Logic Gates b. Full Adder and Inverter Circuit Arithmetic Logic Unit (ALU) Circuit 	
Bit Parity Generator Circuit a. Bit Parity Generator Constructed with XOR Gates b. Bit Parity Generator IC Encoder Circuit a. Constructing a 4-to-2 Encoder with Basic Gates b. Constructing a 10-to-4 Encoder with TTL IC Decoder Circuit a. Constructing a 2-to-4 Decoder with Basic Gates b. Constructing a 2-to-4 Decoder with Basic Gates b. Constructing a 2-to-1 Decoder with TTL IC Multiplexer Circuit a. Constructing a 2-to-1 Multiplexer b. Using Multiplexers to Create Functions c. Constructing a 8-to-1 Multiplexer with TTL IC Demultiplexer Circuit a. Constructing a 2-to-1 Multiplexer with TTL IC Demultiplexer Circuit a. Constructing a 8-to-1 Multiplexer with TTL IC Demultiplexer Circuit a. Constructing a 8-to-1 Multiplexer with TTL IC Demultiplexer Circuit a. Constructing a 8-to-1 Multiplexer b Digitally Controlled Analog Multiplexer/Demultiplexer Circuit a. analog Switch Characteristics b. Bidirectional Transmission with CMOS IC Analog Switches Constructing Oscillator Circuit with Basic Logic Gates Constructing Oscillator Circuit with Schmitt Gate Voltage Controlled Oscillator (VCO) Circuit 555 IC Oscillator Circuit a. 555 Oscillator Circuit	
 b. VCO Circuit Monstable Multivibrator Circuits a. Low-Speed Monostable Multivibrator Circuits b. High-Speed Monostable Multivibrator Circuits c. Constructing Monostable Multivibrator Circuits d. Constructing Non-Retriggerable Circuit with TTL-IC e. Constructing Retriggerable Circuit with TTL-IC f. Variable Duty Cycle Oscillator Circuit with Sequential Logic Circuit Experiments Flip-Flop Circuits 	

	a. Constructing a R-S Flip-Flop with a Basic Logic Gates	
	b. Constructing a D Flip-Flop with a R-S Flip-Flop	
	c. Constructing a T Flip-Flop with a D Flip-Flop	
	d. Constructing a J-K Flip-Flop with a R-S Flip-Flop	
	e. Constructing a Shift Register with a d Flip-Flop	
	f. Preset Left/Right Shift Register	
	g. Constructing a Noise Elimination Circuit with R-S Flip-Flop	
	J-K Flip-Flop Circuits	
	a. Asynchronous Binary Up-Counter	
	b. Asynchronous Decade Up-Counter	
	c. Asynchronous divide-by-N Up-Counter	
	d. Asynchronous Binary Down-Counter	
	e. Synchronous Binary Up-Counter	
	f. Synchronous Binary Up/Down Counter	
	g. Preset-able Synchronous Decimal Up/Down Counter	
	h. Preset-able Synchronous Decimal Up/Down Counter	
	Memory Circuit Experiments	
	Constructing READ ONLY MEMORY (ROM) with Diodes	
	ERASABLE PROGRAMMABLE READ ONLY MEMORY (EPROM) CIRUIT	
	Electronic EPROM (EEPROM) Circuit	
	Converter Circuit Experiment	
	Digital/Analog Converter (DAC) Circuit	
	a. Unipolar DAC Circuit	
	b. Bipolar DAC Circuit	
	Analog/Digital Converter Circuit (ADC) Circuit	
	a. 8-bit Converter Circuit	
	Microprocessor 8086/8088 Trainer with computer interface along with computer	02
	Read and Write Cycles	02
	Memory Control Signals, Address Decoding, Data Transfers	
	Ports: DAC and ADC Ports, PPI and Keypad Interface, Display and Serial Ports	
5	Non-maskable and Maskable Interrupts, Exceptions	
	 Immediate, Register and Memory Addressing Modes 	
	 Instruction Formats and Using the 8086 CPU Instructions 	
	Stepper Motor Control and Temperature Control application	
	Computer specification must be provided	
	(Along with all standard accessories mention in the brochure and instructional manual and	
	Student manual)	
	DIGITAL IC TESTER	04
	Features & Device Supports	
	 Tests a wide range of Digital IC's such as 74 Series, 40/45 Series of CMOS IC's. 	
6		
	It has Auto search facility of IC's.	
	ZIF: 40 pin DIP ZIF sockets.	
	Supply Input Voltage: 230V AC.	
	Dual oscilloscope analog (40mhz)	04
	40MHz Bandwidth, Dual Channel	
	High sensitivity 1mV/div	
7	ALT Triggering Function	
	TV synchronization	
	Z Axis input	
	with all standard accessories	
	Digital storage oscilloscope	04
8	100 MHz Bandwidth with 2 Input Channels with color display.	7
	(With all accessories mention in the brochure and instructional manual)	
		04
	Digital Function Generator	04
9	20MHz, Sine, Square, Ramp, Noise waveform Amplitude, DC Offset and other key setting	
-	information shown on the 5~8 digit display	
	(With all accessories mention in the brochure and instructional manual)	

	Digital Multimeter with dual measurement displays (Bench Type)	06
	DC Voltage :100 mV ~ 1000V DC Current: 100µA ~ 10À	
	Resistance : $100\Omega \sim 100 M\Omega$	
10	AC Voltage: 100mV ~ 750V	
	AC Current: 100mA ~ 10A	
	Power Source: 230 V	
	(With all accessories mention in the brochure and instructional manual)	
	Digital Multimeter (Hand Held)	06
	DC Voltage : 0~1000 V	
	DC Current: 0~10A	
11	Resistance : 0~20 MΩ	
	AC Voltage: 0~600 V	
	AC Current: 0~10 A	
	(With all accessories mention in the brochure and instructional manual)	
	Intelligent / frequency counter	02
	Frequency and Period Measurement	
	High Resolution at Both High and Low	
12	Frequency	
	0.01Hz~2.7GHz Frequency Range	
	With all standard accessories	
	Techometer (optical type)	02
13	With all standard accessories	02
	Current transformers 10VA	04
	Demonstration type	VT
14	Input: 30amp	
14		
	(MULTI TURNS MULTI RATIO)	0.4
	Potential transformers 10va	04
45	Demonstration type	
15	Input: 500Vac	
	Out-put 100Vac	
	(MULTI TURNS MULTI RATIO)	
	Frequency meter	04
16	Demonstration type	
	0-50, 0-100, 0-200, 0-500, Hz	
	Wheat stone bridge, kelvin double bridge, Schering bridge	02 each
	Can measure a lot range of	
	Resistances from milli Ohms to Mega Ohms	
17	Capacitances from nano farad to Farads	
	Inductances from milli henries to henries	
	Built in power supply, mains 230V AC	
	(that can measure Resistance, Inductance & Capacitance)	
	Maximum demand indicator	06
18	Burden 5amp, 500vac.	
	Calibrated at 50 or 60 Hz	
	Watt meters	06
19	Demonstration type	
	Multi range up to 3 KW or above in 3 or more equal ranges	
	Volt meters	06
20	Demonstration type	
	Multi range up to 1 KV or more in 3 or more equal range	
	Ampere meter	06
21	Demonstration type	
- '	Multi range up to 10amp or more in 3 or more equal range	
	Power factor meter (analog)	03
22	Demonstration type	00
22	Capable of measuring Power Factor of Single and Three Phase	
23	Power factor meter (Digital)	03
23	רטשפו ומכוטו ווופופו (טוטונמו)	03

	Capable of measuring Power Factor of Single and Three Phase	
24	Flux meter	06
25	Lux meter	03
25	Multi range up to 20000 LUX	
26	Capacitance decade box	06
20	(1000 pF to 1000 μF and above)	
27	INDUCTANCE decade box	06
	(0.01 mH to 1 H and above)	
28	Resistance decade box	06
_	$(100 \Omega \text{ to } 100 \text{ k} \Omega \text{ and above})$	0.4
	Switching DC power supply	04
	Three independent, isolated output	
	CH3 adjustable output : 5V/3A 0-30V x 2, 0-3A x 2	
	* 2 Independent Isolated Output	
	* Four "3 Digits" LED Displays	
29	* 0.01% Load and Line Regulation	
	* Low Ripple and Noise	
	* Tracking Operation and Auto Series/Parallel Operation	
	* Output ON/OFF Switch	
	Over Load and Reverse Polarity Protection	
	(With all accessories mention in the brochure and instructional manual)	
	High Precision LCR Meter	04
	12Hz~100kHz	
	0.05~0.1% Measurement Accuracy	
30	R/Q,C/D, C/R,L/Q test modes for all models Z/Ø, L/R	
	Absolute Value, Δ value, and Δ % Measurement Display	
	LCD Display	
	Computer Interface:	
	with all standard accessories	
	HAND HELD LCR METER	04
	Dual display Test Frequency: 100Hz ~ 10kHz	
	Measurement Parameters: L,C,R,(AC/DC) D,Q,0	
31	Data Hold and Zero Mode Supported	
	Auto Range, Auto Backlit	
	Low Battery Indication	
	Auto Power off	
	with all standard accessories	
	AC milli-Volt Meter analog and digital	02
32	(100uV~1V)	Each
	With all standard accessories	
	DC milli-Volt Meter analog and digital	02
33	(100uV~1V)	Each
	With all standard accessories	
	AC milli-Amp Meter analog and digital	_02
34	(100uA~1A)	Each
	With all standard accessories	
25	DC milli-Amp Meter analog and digital	02
35	(100uA~1A)	Each
	With all standard accessories Semiconductor curve tracer	02
	Collector Drain Sweep Voltage	UZ
	Frequency 120Hz or 100Hz	
36	• Voltage,5, 10, 20, 30, 40, 50, 60, 80,	
00	100,150 and 200V accuracy ±10%	
	(or continuously variable)	
	Sweep waveform Full wave rectified	
L		I

Step Generator - Current per step 10, 20, 50µÅ; 0.1, 0.2, 0.5, 1.0, 2.0 mÅ; occuracy ±5% - - Voltage per step 0.1, 0.2, 0.5V; accuracy ±5% - External bias one curve display Poliantly Switch - Three modes of operation - NPN, PNP, DIODE. 02 with all standard accessories 02 37 Demonstration type 02 38 Moving iron (attraction & repulsion type) 02 38 Moving iron (attraction & repulsion type) 02 39 Demonstration type 03 Ampere meter 03 40 Had operated 03 41 Analog and Digital Earth tester (complete set) 01 600A AC /DC Clamp On Meter 03 03 600A AC /DC Clamp On Meter 03 03 611 Each AV/ Multi meters 04 Analog and Digital Type (2 in 1) 04 04 Actional & Solgial // Sole (2 // 10, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0		- Current 500m A movimum	
• Current per step 10, 20, 50µA; 0.1, 0.2, 0.5, 10, 2, 0 mA; accuracy ±5% • Voltage per step 01, 0.2, 0.5Y; accuracy ±5% • External bias one curve display Polarity Switch • Three modes of operation - NPN, PNP, DIODE. • With all standard accessories • Carpost 10, 20, 0.5Y; accuracy ±5% • Woring iron (attraction & repulsion type) 02 37 Demonstration type Volt meter • Carpost 10, 20, 0.5%; accuracy ±5% • Moving iron (attraction & repulsion type) 02 38 Demonstration type Volt meter • Carpost 10, 20, 0.5%; accuracy ±5% • Volt meter • Carpost 10, 20, 0.5%; accuracy ±5% • Carpost 10, 20, 0.5%; accuracy ±5% • Volt meter • Carpost 10, 20, 0.5%; accuracy ±5% • Carpost 10, 20, 0.5%; accuracy ±5% • Volt meter • Ol • Carpost 10, 20, 0.5%; accuracy ±5% • Carpost 10, 20, 0.5%; accuracy ±5% • Moving iron (attraction & repulsion type) 00 003 39 Demonstration type Both, Volt-meter ad Ammeter 01 40 Megger: 1000V/1000M.ohm Hand operated 01 41 Analog and Digital Earth tester (complete set) 01 42 Finction keys: Max/Min Hold Test Range: AcV, ACA, DCV, DCA, Q, Frequency, Watt, reactive power, Power factor with all standard accessories 04 <td></td> <td>Current 500mA maximum Step Congrature</td> <td></td>		Current 500mA maximum Step Congrature	
10, 2.0 mÅ, accuracy ±5% • Voltage per step 0.1, 0.2, 0.5V; accuracy ±5% • External bias one curve display Polarity Switch • Three modes of operation - NPN, PNP, DIODE. with all standard accessories 37 Demonstration type Volt meter 02 38 Demonstration type Volt meter 02 39 Demonstration type Ampere meter 03 39 Demonstration type Both, Volt-meter and Ammeter 03 40 Had operated 03 41 Analog and Digital Earth tester (complete set) 01 41 Analog and Digital Earth tester (complete set) 03 42 Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 DC (V) = 0.005V - 1000 V, R = 1 - 20 MQ or Above AC = 0.01A - 10A 01 44 Multimedia projector 300 or above Lumens 01 45 • Testing range: 0-200, 2000 LUX. • Function Keys: Data hold. ACCESSORIES 00 45 • Testing range: 0-200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES 06			
• Voltage per step 0.1, 0.2, 0.5V; accuracy ±5% • External bias one curve display Polarity Switch • Three modes of operation - NPN, PNP, DIODE. with all standard accessories 02 37 Demonstration type) 02 38 Demonstration type (attraction & repulsion type) 02 38 Permanent magnet instrument 03 39 Demonstration type (attraction deternation deternation type (attraction deternation deternatis deternatis deternation deternation deternati			
• External bias one curve display Polarity Switch • Three modes of operation - NPN, PNP, DIODE. with all standard accessories 02 37 Demonstration type (accessories) 02 37 Demonstration type (bit meter) 02 38 Demonstration type (bit meter) 02 38 Demonstration type (bit meter) 02 39 Demonstration type (bit meter) 03 40 Megger: 1000V/1000M.ohm (bit meter) 03 41 Analog and Digital Earth tester (complete set) 01 41 Analog and Digital Earth tester (complete set) 01 42 Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 Analog & Digital Type (2 in 1) AC (V) = 0.005V - 600 V, 43 DC (V) = 0.005V - 600 V, 44 01 44 Multimedia projector 300 or above Lumens 01 44 Multimeter) 45 • Testing range: 0-200, 2000, 2000 LUX. • • Function Keys: Data hold. ACCESSORIES 06 45 • Testing range: 0-200, 2000, 2000 LUX. • • Low battery indication. FUNCTIONS 06 45 • Testing range: 0-200, 2000, 2000 LUX. • • Low battery indication. FUNCTIONS 06 </td <td></td> <td></td> <td></td>			
Polarity Switch • Three modes of operation - NPN, PNP, DIODE. with all standard accessories 02 37 Moving iron (attraction & repulsion type) 02 38 Moving iron (attraction & repulsion type) 02 38 Moving iron (attraction & repulsion type) 02 38 Permanent magnet instrument 03 39 Demonstration type 01 8 Moving and Digital Earth tester (complete set) 01 40 Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 42 Each Display: 03 43 Renge: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor 03 44 Mold optical Earth tester (complete set) 04 45 -120 MD or Above 04 44 Multimeters 04 Analog & Digital Type (2 in 1) 04 44 Multimeter (use meter) 01 44 Multimeter (use meter) 01 45 •Testing range: 0-200, 2000, 20000 LUX. •Low battery indication. FUNCTIONS •Low battery indication. FU			
• Three modes of operation - NPN, PNP, DIODE. 02 with all standard accessories 02 37 Demonstration type Each Moving iron (attraction & repulsion type) 02 38 Demonstration type Each Moving iron (attraction & repulsion type) 02 39 Demonstration type Each Ampere meter 03 9 Demonstration type 03 40 Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 41 Each 03 42 Function keys: Max/Min Hold 03 Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor 04 43 DC (V) = 0.005V - 600 V, 04 44 Multimedia projector 04 44 Multimedia projector 01 3000 or above Lumens 04 45 • Testing range: 0-200, 2000, 2000 LUX. • • Lot Display • • • Lot Display • • • Lot Display • • • Lot			
with all standard accessories 02 Moving iron (attraction & repulsion type) 02 Bernonstration type Each Volt meter 02 Moving iron (attraction & repulsion type) 02 Bernonstration type 02 Ampere meter 03 Demonstration type 03 Bernonstration type 03 Bernonstration type 03 Bernonstration type 03 Both, Volt-meter and Ammeter 03 40 Hand operated 41 Analog and Digital Earth tester (complete set) 01 42 Clamp on meter 03 600A AC /DC Clamp On Meter 03 Display: 04 Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 Analog & Digital Type (2 in 1) AC (V) = 0.005V - 600 V, AC = 0.01A - 10A 04 Accessories 04 44 Mutimedia projector 3000 or above Lumens 04 Volt meter 06 U(utimedia projector 06 3000 or above Lumens 06 User Sing range: 0-200, 2000, 2000 LUX. Function Keys: Data hold.			
37 Demonstration type Volt meter Each Moving iron (attraction & repulsion type) 02 38 Demonstration type Ampere meter 03 39 Demonstration type Both, Volt-meter and Ammeter 03 40 Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 42 Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 DC (V) = 0.005V~600 V, DC (V) = 0.005V~600 V, R = 1 - 20 MQ or Above AC = 0.014 - 10A 04 44 Multimedia projector 3000 or above Lumens 01 50 Digital Type (2 in 1) AC (V) = 0.010 - 10A 01 45 • Testing range: 0-200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 01			
37 Demonstration type Volt meter Each Moving iron (attraction & repulsion type) 02 38 Demonstration type Ampere meter 03 39 Demonstration type Both, Volt-meter and Ammeter 03 40 Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 42 Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 DC (V) = 0.005V~600 V, DC (V) = 0.005V~600 V, R = 1 - 20 MQ or Above AC = 0.014 - 10A 04 44 Multimedia projector 3000 or above Lumens 01 50 Digital Type (2 in 1) AC (V) = 0.010 - 10A 01 45 • Testing range: 0-200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 01		Moving iron (attraction & repulsion type)	02
Volt meter Moving iron (attraction & repulsion type) 02 38 Demonstration type Each Ampere meter 03 9 Demonstration type 03 9 Demonstration type 03 40 Megger: 1000V/1000M.ohm 03 41 Analog and Digital Earth tester (complete set) 01 41 Analog and Digital Earth tester (complete set) 03 42 Clamp on meter 600A AC /DC Clamp On Meter 03 0isplay: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 DC (V)= 0.005V~ 600 V, AC (V)= 0.005V~ 1000 V, R= 1 - 20 MΩ or Above AC = 0.01A - 10A 04 44 Multimedia projector 3000 or above Lumens 01 01 3000 or above Lumens 06 01 3000 or above Lumens 06 04 Autimedia projector 3000 or above Lumens 01 0300 or above Lumens 01 06 01 3000 or above Lumens 06 04 Function Keys: Data hold. ACCESSORIES VUST	37		
38 Demonstration type Ampere meter Each 9 Permanent magnet instrument Demonstration type Both, Volt-meter and Ammeter 03 40 Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 41 Analog and Digital Earth tester (complete set) 03 42 Clamp on meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 DC (V) = 0.005V~ 600 V, DC (V) = 0.005V~ 600 V, BO (V) = 0.005V~ 600 V, C = 0.01A - 10A 04 44 Mutimedia projector 3000 or above Lumens 01 51 • Testing range: 0~200, 2000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 01	-		
38 Demonstration type Ampere meter Each 9 Permanent magnet instrument Demonstration type Both, Volt-meter and Ammeter 03 40 Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 41 Analog and Digital Earth tester (complete set) 03 42 Clamp on meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 DC (V) = 0.005V~ 600 V, DC (V) = 0.005V~ 600 V, BO (V) = 0.005V~ 600 V, C = 0.01A - 10A 04 44 Mutimedia projector 3000 or above Lumens 01 51 • Testing range: 0~200, 2000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 01		Moving iron (attraction & repulsion type)	02
39 Permanent magnet instrument Both, Volt-meter and Ammeter 03 40 Megger: 1000V/1000M.ohm Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 Each 41 Clamp on meter 600A AC /DC Clamp On Meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 DC (V)= 0.005V- 600 V, DC (V)= 0.005V- 7000 V, R= 1 - 20 MΩ or Above AC = 0.01A - 10A DC = 0.01A - 10A 01 44 Multimetia projector 3000 or above Lumens 01 50 Digital light meter (lux meter) • LCD Display • Low battery indication. FUNCTIONS 01 45 • Testing range: 0-200, 2000, 2000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 01	38		Each
39 Demonstration type Both, Volt-meter and Ammeter 03 40 Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 42 Clamp on meter 600A AC /DC Clamp On Meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 A.V.O/ multi meters Analog & Digital Type (2 in 1) AC (V) = 0.005V~ 600 V, DC (V) = 0.005V~ 600 V, R = 1 - 20 MΩ or Above AC = 0.01A - 10A DC = 0.01A - 10A 01 44 Multimetia projector 3000 or above Lumens 01 45 Digital light meter (lux meter) +LCD Display + LCD Display + LOW battery indication. FUNCTIONS 01 45 • Testing range: 0-200, 2000, 2000 LUX. + Function Keys: Data hold. ACCESSORIES + User's manual 01		• •	
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40 Megger: 1000V/1000M.ohm Hand operated 03 41 Analog and Digital Earth tester (complete set) 01 Each 41 Clamp on meter 600A AC /DC Clamp On Meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 03 42 A.V.O/ multi meters Analog & Digital Type (2 in 1) AC (V) = 0.005V~ 600 V, DC (V) = 0.005V~ 1000 V, R = 1 - 20 MΩ or Above AC = 0.01A - 10A 04 43 Multimedia projector 3000 or above Lumens 01 44 Multimedia projector 3000 or above Lumens 01 45 • Testing range: 0-200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 06	39	Demonstration type	
40 Hand operated 01 41 Analog and Digital Earth tester (complete set) 01 41 Clamp on meter 600A AC /DC Clamp On Meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 A.V.O/ multi meters Analog & Digital Type (2 in 1) AC (V) = 0.005V~600 V, R = 1 - 20 MΩ or Above AC =0.01A - 10A DC =0.01A - 10A 04 44 Multimedia projector 3000 or above Lumens 01 45 Digital light meter (lux meter) • LOD Display • Low battery indication. FUNCTIONS • Testing range: 0-200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 01		Both, Volt-meter and Ammeter	
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41 Each 42 Clamp on meter 600A AC /DC Clamp On Meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 A.V.O/ multi meters Analog & Digital Type (2 in 1) AC (V)= 0.005V~ 600 V, BDC (V) = 0.005V~ 1000 V, R= 1 - 20 MΩ or Above AC = 0.01A - 10A 04 44 Multimedia projector 3000 or above Lumens 01 44 Digital light meter (lux meter) • LCD Display • Low battery indication. FUNCTIONS 06 45 • Testing range: 0~200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 04	40		
42 Clamp on meter 600A AC /DC Clamp On Meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 A.V.O/ multi meters Analog & Digital Type (2 in 1) AC (V) = 0.005V~ 600 V, DC (V) = 0.005V~ 600 V, R = 1 - 20 MΩ or Above AC = 0.01A - 10A DC = 0.01A - 10A 01 44 Multimedia projector 3000 or above Lumens 01 45 • Low battery indication. FUNCTIONS 06 45 • Testing range: 0~200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 01	11	Analog and Digital Earth tester (complete set)	01
42 600Å AC /DC Clamp On Meter Display: Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 A.V.O/ multi meters A.V.O/ multi meters 04 43 DC (V) = 0.005V~ 600 V, DC (V) = 0.005V~ 1000 V, R = 1 - 20 MΩ or Above AC = 0.01A - 10A DC = 0.01A - 10A 01 44 Multimedia projector 3000 or above Lumens 01 45 Digital light meter (lux meter) • LCD Display • Low battery indication. FUNCTIONS 06 45 • Testing range: 0~200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 04	41		
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42 Function keys: Max/Min Hold Test Range: ACV, ACA, DCV, DCA, Ω, Frequency, Watt, reactive power, Power factor with all standard accessories 04 43 A.V.O/ multi meters Analog & Digital Type (2 in 1) AC (V) = 0.005V~ 600 V, BC (V) = 0.005V~ 1000 V, R = 1 - 20 MΩ or Above AC = 0.01A - 10A DC = 0.01A - 10A 01 44 Multimedia projector 3000 or above Lumens 01 5 • Digital light meter (lux meter) • LCD Display • Low battery indication. FUNCTIONS 06 45 • Testing range: 0~200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual •			
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with all standard accessories04A.V.O/ multi meters04Analog & Digital Type (2 in 1)000000000000000000000000000000000			
A.V.O/ multi meters 04 Analog & Digital Type (2 in 1) 04 AC (V) = 0.005V~ 600 V, 000 V, DC (V) = 0.005V~ 1000 V, R= 1 - 20 MΩ or Above AC =0.01A - 10A 01 DC =0.01A - 10A 01 JOB or above Lumens 01 JOB or above Lumens 01 JOB or above Lumens 06 Use there indication. FUNCTIONS + LCD Display • Low battery indication. FUNCTIONS • Testing range: 0~200, 2000, 20000 LUX. + Function Keys: Data hold. ACCESSORIES • User's manual User's manual			
$\begin{array}{c c} \mbox{Analog \& Digital Type (2 in 1)} \\ \mbox{AC (V) = 0.005V~ 600 V,} \\ \mbox{DC (V) = 0.005V~ 1000 V,} \\ \mbox{R = 1 - 20 M\Omega or Above} \\ \mbox{AC = 0.01A - 10A} \\ \mbox{DC = 0.01A - 10A} \\ \mbox{DC = 0.01A - 10A} \\ \mbox{Multimedia projector} & 01 \\ \mbox{3000 or above Lumens} \\ \mbox{Jigital light meter} & 06 \\ \mbox{(lux meter)} \\ \mbox{-lCD Display} \\ \mbox{-Low battery indication.} \\ \mbox{FUNCTIONS} \\ \mbox{I - seting range: 0~200, 2000, 20000 LUX.} \\ \mbox{-Function Keys: Data hold.} \\ \mbox{ACCESSORIES} \\ \mbox{-User's manual} \\ \end{array}$			
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AC =0.01A - 10A 01 44 Multimedia projector 01 3000 or above Lumens 01 Digital light meter •LCD Display 06 •LOW battery indication. FUNCTIONS FUNCTIONS •Testing range: 0~200, 2000, 20000 LUX. •Function Keys: Data hold. ACCESSORIES • User's manual User's manual	43		
DC =0.01A - 10A 01 44 Multimedia projector 3000 or above Lumens 01 Digital light meter (lux meter) •LCD Display 06 •LOW battery indication. FUNCTIONS 100 45 • Testing range: 0~200, 2000, 20000 LUX. 100 • Function Keys: Data hold. ACCESSORIES 06 • User's manual 06			
44 Multimedia projector 3000 or above Lumens 01 Digital light meter (lux meter) 06 •LCD Display 06 •Low battery indication. FUNCTIONS 1000000000000000000000000000000000000			
44 3000 or above Lumens 06 Digital light meter 06 (lux meter) •LCD Display • Low battery indication. FUNCTIONS 45 • Testing range: 0~200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual User's manual			01
Digital light meter 06 (lux meter) •LCD Display • Low battery indication. FUNCTIONS 45 • Testing range: 0~200, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 06	44		01
(lux meter) •LCD Display • Low battery indication. FUNCTIONS 45 • Testing range: 0~200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual			06
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 Low battery indication. FUNCTIONS Testing range: 0~200, 2000, 20000 LUX. Function Keys: Data hold. ACCESSORIES User's manual 			
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 45 • Testing range: 0~200, 2000, 20000 LUX. • Function Keys: Data hold. ACCESSORIES • User's manual 			
Function Keys: Data hold. ACCESSORIES User's manual	45		
ACCESSORIES • User's manual			
User's manual			

For GCT, NOWSHERA Electrical Machines B-Tech

S.NO	ITEM NAME/ SPECIFICATIONS/ DESCRIPTION	Qty
2	DISSECTABLE MACHINES	01
2	PRACTICAL COVERAGE	
	Equipment Familiarization	
	Assembly of the following machines:	
	» Direct Current Machine	
	» Split-Phase Capacitor-Start Motor	
	» Capacitor-Run Motor	
	» Universal Motor	
	» Three-Phase Wound-Rotor Induction Motor	
	» Three-Phase Squirrel Cage Induction Motor	
	» Synchronous Machine	
	» Synchronous Reluctance Motor	
	» Two-Speed Variable-Torque Motor	
	» Two-Speed Constant-Torque Motor	
4	DIGITAL SERVO TRAINING SYSTEM	01
	PRACTICAL COVERAGE	
	Digital Servo	
	» Equipment and Software Familiarization	
	» Open-Loop Servo Motor Static Characteristics	
	» Open-Loop Servo Motor Transient Characteristics	
	» Servo Motor Closed-Loop Speed Control – Steady	
	State Characteristics	
	» Servo Motor Closed-Loop Speed Control – Transient	
	Characteristics and Disturbances	
	» Linear Position Sensing	
	» Linear Position Control	
	» Following Error in Linear Position Control	

For GCT, NOWSHERA ELECTRICAL COMMUNICATION TECHNOLOGY B-TECH

S.NO		QTY
	ANALOG COMMUNICATION SYSTEM TRAINER	1
1	Should perform following Experiments:	
	(PRACTICAL COVERAGE	
	Analog Communications Concepts	
	Circuit Board Familiarization	
	Amplitude Modulation (AM)	
	RF Power Amplifier	
	Balanced Modulator	
	• RF Stage	
	Mixer, IF Filter, and Envelope Detector	
	Balanced Modulator and LSB Filter	
	Mixer and RF Power Amplifier	
	• RF Stage, Mixer, and IF Filter	
	Product Detector and Automatic Gain Control	
	Frequency Modulation (FM) and Phase Modulation (PM)	
	Demodulation (Quadrature Detector)	
	PLL (Phased-Locked Loop) Circuit and Operation	
0	• FM Detection with a PLL	04
2	Digital Communications Trainer	01
	Pulse Modulation and Sampling (PAM / PWM / PPM)	
	- Pulse Amplitude Modulation (PAM)	
	- Pulse-Time Modulation (PWM / PPM)	
	Digital Modulation (PCM / DPCM / Delta)	
	- Analog-to-Digital and Digital-to-Analog Conversion - Distortion and Quantization Noise	
	- Pulse Code Modulation (PCM) - Differential Pulse Code Modulation (DPCM)	
	- Delta Modulation (DM)	
	Basic Modems and Data Transmission (ASK / FSK / BPSK)	
	- Base band Data Transmission	
	- Amplitude-Shift Keying (ASK)	
	- Frequency-Shift Keying (FSK)	
	- Binary Phase-Shift Keying (BPSK)	
	Quadrature Phase Shift Keying (QPSK / DQPSK)	
	- QPSK Modulation	
	- QPSK Demodulation	
	- Differential QPSK (DQPSK)	
	- Data Scrambling and Descrambling	
	Quadrature Amplitude Modulation (QAM / DQAM)	
	- QAM Modulation	
	- QAM Demodulation	
	- Encoding and Decoding	
	- Data Scrambling and Descrambling	
	Concepts of Digital Communications, Circuit Board Familiarization	
	PAM Signal Generation, Demodulation, PAM TDM Transmission and Reception	
	PTM Signal Demodulation and Generation	
	PCM Signal Generation and Demodulation, Signal Time-Division Multiplexing	
	DM Transmitter, Receiver and Noise	
	Channel Bandwidth and Noise	
4	SATELLITE COMMUNICATIONS TRAINING SYSTEM	01
	Should perform following Experiments:	
	Satellite Communication Fundamentals	
	Analog Transmission	

	Digital Transmission	
	Link Characteristics and Performance	
	Satellite Orbits, Coverage, and Antenna Alignment	
	With All Standard Accessories	
	AM/FM TRANSMITTER & RECEIVER SYSTEM TRAINER	2
6	Should perform following experiments	
	AM transmitter & Receiver related	
	FM transmitter & Receiver related	
	Modules have switched fault DIP switches for fault-finding	
	experiments	
	Should consists of following modules	
	AM Transmitter	
	AM Receiver	
	FM Transmitter	
	FM Receiver	
	Power Supply	
	With All Standard Accessories	
7	FIBER-OPTIC TRANSMISSION TRAINING SYSTEM	2
1		2
	Should perform following Experiments	
	Characteristic of fiber optics experiment	
	Applications of fiber optics experiment	
	Light sources of fiber optics	
	Light and fiber optics interaction experiment	
	Fiber optic transmitters experiment	
	Receivers for fiber optic system experiment	
	Fiber optic expand and network experiment	
	Fiber optic connectors and lose-polishing experiment	
	Fiber optical data-transmission-self-transceiver experiment	
	 Fiber optical data-transmission-double-transceiver experiment 	
	 Fiber optical data transmission double transceiver experiment Fiber optical data-transmission - PC to PC experiment 	
	With All Standard Accessories	
	MICROWAVE TRAINER	2
8	Gunn Oscillator base system	_
0	Director Coupler & Horn Antenna	
	Frequency: (X Band)	
	Microwave output:	
	Should perform following Experiments:	
	The Gunn Oscillator	
	Square law characteristics of Microwave Crystal Detector	
	Frequency Wavelength and Phase Velocity Measurement	
	Q and Bandwidth Measurement in Cavity Resonator	
	Power measurement and Associated Errors	
	Measurement of Impedance	
	Measurement of Standing Wave Ratio (SWR)	
	Attenuation Measurements	
	Directional Coupler's Basic Properties	
	Study of a waveguide Hybrid-T	
	Should include:	
	Power meter	
	SWR Meter	
	SWR Meter	
	With All Standard Accessories	
9		2
9	With All Standard Accessories	2
9	With All Standard Accessories COMPUTER-ASSISTED MICROWAVE TECHNOLOGY TRAINING SYSTEM PRACTICAL COVERAGE	2
9	With All Standard Accessories COMPUTER-ASSISTED MICROWAVE TECHNOLOGY TRAINING SYSTEM PRACTICAL COVERAGE	2

	Microwaya Taoa, DIN Diadaa and Andiasticnes construction and sources for at DIN 21.	
	Microwave Tees, PIN Diodes and Applications: construction and operation of PIN diodes and hubrid tees, and how they are used in microwave, and listing terms will be the provided terms of the terms of terms	
	hybrid tees, and how they are used in microwave applications. Wireless video transmission	
	demonstration.	
	Microwave Variable-Frequency Measurements and Applications. Construction and operation	
	of variable-frequency oscillators (VCO's). Demonstration of three methods of measuring the	
	frequency of microwave signals. Frequency modulation and demodulation of microwave	
10	signals. POWER TRANSMISSION SMART GRID TECHNOLOGIES TRAINING SYSTEM	1
10		•
	Practical Coverage for Experiments	
	Voltage Regulation Characteristics	
	Voltage Compensation	
	Power Transmission Capacity	
	Voltage Compensation in Long AC Transmission Lines	
	Control of Active and Reactive Power Flow	
	Voltage Regulation and Displacement Power Factor (DPF) in Thyristor Three-Phase	
	Bridges	
	Basic Operation of HVDC Transmission Systems	
	DC Current Regulation and Power Flow Control in HVDC Transmission Systems	
	Commutation Failure at the Inverter Bridge	
	Harmonic Reduction using Thyristor Pulse Converters	
	Main Components of a Static Var Compensator (SVC)	
	Voltage Compensation of AC Transmission Lines using an SVC	
	Dynamic Power Factor Correction Using an SVC	
	Voltage compensation of AC transmission lines	
	Dynamic Power Factor Correction	
11	UNIVERSAL IC PROGRAMMER	06
11	Can program the various IC's including latest & Micro controller etc.	00
12	Sensor and Transducer Trainer	2
12	Introduction to Transducers and the Circuit Board	2
	Temperature Measurement, Control, RTD, Thermocouple	
	Capacitance Sensor, Touch and Position Sensing	
	Strain Gauge Characteristics	
	Bending Beam Load Cell (Strain Gauge)	
	Ultrasonic Principles, Distance Measurement	
	Infrared Transmission/Reception, IR Remote Control	
	Infrared Transmission/Reception, IR Remote Control Force Measurement	
	© Computerized Temperature Control and Measurement	
	Computenzed reinperature Control and Measurement Control Panels	
	 Plunger Switches 	
	Magnetic Proximity Sensors	
	Shock/Vibration Sensors	
	Electronic Active Sensors	
	Electronic Active Sensors Electronic Passive Sensors	
	Electionic Passive Sensors (Along with all standard accessories mention in the brochure and instructional manual	
	and Student manual)	
13	PLC Trainer	2
13		2
	DC output:	
	Voltage: 0 – 24V	
	Current: 0 – 2A	
	Ac Output:	
	Voltage: 220V	
	Current: 1 Amp	
	Input/output terminals is 32 or above	
	Memory: 32K or above	
	Internal memory: 2K	

Base Module: Din Rail Power supply module: input:120/230 V (AC) Output: 24 V DOS A PC interface: USB or Ethernet With software supported (LAD, FBD, and STL). Accessories: Connection cords, PC cable, ac power cord, Program CD, Manual. PLC Application Modules: • Traffic Lights • Electro-Mechanical – O C Motor • Electro-Mechanical – O C Motor • Electro-Mechanical – Stepper Motor • Level Process Control 14 Digital spectrum analyzer 3 Frequency Range: H4-3GHz 4 Yerdency Range: H4-3GHz 4 Vith all Accessories mentioned in the brochure and instructional manual) 4 15 Digital Fe Signal Generator 4 16 Digital Function Generator 4 17 FMAM STANDARD SIGNAL GENERATOR 4 18 Switching DC power supply 6 19 Three independent, isolated output 6 19 Yaka Ax 2 2 1 20 Independent isolated output 6 19 Three independent, isolated output 6 19 Thaking Operation and Auto Series/Parallel Operation <th></th> <th>Timer/counter: 128/64</th> <th></th>		Timer/counter: 128/64	
Power supply module: input:120/230 V (AC) Output: 24 V DC/5 A PC interfaze: USB or Ethernet With software supported (LA), FBD, and STL). Accessories: Connection cords, PC cable, ac power cord, Program CD, Manual. PLC Application Modules:			
Output: 24' VDC5 A PC interface: UBB or Ethernet With software supported (LAD, FBD, and STL). Accessories: Connection cords, PC cable, ac power cord, Program CD, Manual. PLC Application Modules: • Traffic Lights • Electro-Nechanical – DC Moor • Electro-Machanical – Stepper Motor • Level Process Control 14 Digital spectrum analyzer Frequency Range: 412± - 3CHz (With all Accessories mentioned in the brochure and instructional manual) 15 Digital F Signal Generator 20MHz, Sine, Square, Ramp, Noise waveform Amplitude, DC Offset and other key setting information shown on the 5-8 digit display (With all Accessories mention in the brochure and instructional manual) 16 Digital Function Generator 20MHz, Sine, Square, Ramp, Noise waveform Amplitude, DC Offset and other key setting information shown on the 5-8 digit display (With all Accessories mention in the brochure and instructional manual) 17 FMLAW STANDARD SIGNAL GENERATOR Frequency Range 6 108 Switching DC power supply 16 Three independent, isolated output 17 FMLAW STANDARD Solated Output 18 Switching DC power supply			
PC interface: USB or Ethernet With software supported (LAD, FBD, and STL). Accessories: Connection cords, PC cable, ac power cord, Program CD, Manual. PLC Application Modules: • Traffic Lights • Electro-Mechanical – DC Moor • Electro-Mechanical – Stepper Motor • Level Process Control 14 Digital spectrum analyzer 7 Frequency Range: SkHz – 3GHz (With all Accessories mentioned in the brochure and instructional manual) 15 Digital Finction Generator 4 Yeight Accessories mentioned in the brochure and instructional manual) 16 Digital Function Generator 20MHz, Sine, Square, Ramp, Noise waveform Amplitude, DC Offset and other key setting information shown on the 5-8 digit display (With all accessories mention in the brochure and instructional manual) 17 FMAM STANDARD SIGNAL GENERATOR 18 Switching DC power supply Three independent, isolated output 6 CH3 adjustable output: SV/3A -2 2 Independent Isolated Output *1000472 - 110MHz 19 Digital Multimeter with dual measurement displays (Bench Type) 6 CH3 adjustable output: SV/3A -2 -2 / 100040 - 100 MQ			
Accessories: Connection Cords, PC cable, ac power cord, Program CD, Manual. PLC Application Modules: • Traffic Lights • Electro-Pneumatics • Electro-Pneumatics • Electro-Pneumatics • Electro-Pneumatics • Electro-Mechanical – OC Motor • Electro-Mechanical – Stepper Motor • Level Process Control 14 Digital Spectrum analyzer Frequency Range: SMt2 - 3GHz (With all Accessories mentioned in the brochure and instructional manual) 15 Digital Function Generator 20MHz, Sine, Square, Ramp, Noise waveform Amplitude, DC Offset and other key setting information shown on the 5–8 digit display (With all accessories mention in the brochure and instructional manual) 17 FM/AM STANDARD SIGNAL GENERATOR Frequency Range 10MHz 18 Switching DC power supply 18 Switching DC power supply 19 Four "3 Digits' LED Displays * 0.01% Load and Line Regulation * * Tracking Operation and Auto Series/Parallel Operation * 0.01% Load and Kerverse Polarity Protection * Tracking Operation and Auto Series/Parallel Operation * 0.01% Load and Reverse Polarity Protection <td></td> <td></td> <td></td>			
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Distribution Transformer			
Single-Phase Transformers Supplying Single-Phase Loads			
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	Circle Phase Perelleling	
	Single-Phase Paralleling	
	3-Phase Paralleling	
	 Efficiency calculation of each transformer 	
	Open/no load test	
	Load/Short circuit	
	Polarity test	
	Three-Phase Banking of Single-Phase Transformers	
25	Motor and Transformer Winding Trainer:	2
	Equipment Familiarization	
	Split-Phase Capacitor-Start Motor	
	Three-Phase Squirrel Cage Induction Motor	
	DC compound motor	
	Motor Winding machine with counter	
	Coil winding range up-to 8 inch	
	All motors should be without winding	
	(With complete accessories and instruction manual)	
26	DES TESTER OR TRANSFORMER OIL TESTER	2
20	Up to 40 KV or more with its operating manual & should be of digital type.	2
27	D.C. & A.C.	2
21		2
	HI-POT FOR INSULATOR & TRANSFORMER OIL TESTING	
	80 KV (AC & DC) with its operating manual & should be of digital type. CAPACITANCE & DISSIPATION FACTOR TESTER	2
28		2
	For checking Transformer oil Purity & for Insulation Power Factor.	
29	INSULATION TESTER (MEGGER)	3
	Up to 10 KV (Digital Type)	
30	RELAY TESTING SET	1
	For all type of latest relay testing along With laptop	
31	WATT OUR METER	2 each
	Single & Three Phase, also Analog & Digital	
32	KVAR METER	2 Each
	Single & Three Phase, also Analog and Digital	
33	SCHERING BRIDGES	2
	Capable of measuring wide range of Capacitance & Inductance use in Daily as well as Small	
	Industry.	
36	PROFESSIONAL ELECTRICAL / ELECTRONIC TOOLKIT FOR ENGINEERS	6
	Consist of all types of necessary tools for Trouble shooting etc, such as; Pliers, Soldering gun,	
	Screwdriver set, Multimeter, wire stripper, de-soldering pump, twizers etc	
37	11.5 KV TROLLY WITH V.C.B.	1
	For controlling 11.5 KV (use to control whole feeder at Primary Distribution side)	
38	EHV CIRCUIT BREAKER MODEL (HYDRAULIC TYPE)	1
	This model should shows each and every part of EHV C.B.	
39	CIRCUIT BREAKER RESISTANCE TESTER	1
	For checking contact resistance of Circuit Breaker	
40	CIRCUIT BREAKER (OPEN & CLOSED) TIMING TESTING SET	
40	For measuring Opening & Closing time of Circuit breaker contacts	
L		