

COMPARATIVE STATEMENT FOR PROJECT:193198- INTRODUCTION OF B.TECH PROGRAM AT GOVT. COLLEGE OF TECHNOLOGY KHAR DISTRICT BAJAUR

DATE OF TENDER OPENING 09-03-2022

ELECTRICAL TECHNOLOGY (Electric Circuits Lab)

Item No.	Name of Items	ESOLS MULTAN							Electrical Engineering Services, Lahore								
		C.S		P.C		P.L.P		T	Model	C.S		P.C		P.L.P		T	Model
		40	5	5	2	4	4	60		40	5	5	2	4	4	60	
1	Digital Oscilloscope Tektronix: TDS-2022C, 2 channels 200MHz 2 GS/s Digital Storage	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Under Specifications Rejected
2	Digital Multimeter Meterman 38XR, Resolution 100 μV 1000V AC/DC 10A AC/DC, 40MΩ	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Not Quoted
3	Dual Power Supply TTi EX-354D Dual Output, 35V, 4A, 280W	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Not Quoted
4	Function Generator Tektronix: FG-7005C 0.02Hz to 5MHz	0	0	0	0	0	0	0	Not Quoted	40	0	0	0	0	4	44	FG-7005C Tektronix
5	Protoboard GS PB-505A, 1.3 to15V, 500mA variable Dc supply 5V DC with 1A power supply	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Not Quoted
6	Parts Cabinet 25 Drawers Cabinet	0	0	0	0	0	0	0	Not Quoted	40	0	5	0	0	4	49	Local
7	DC technology Trainers (The product equivalent to the following characteristics or in closest match) 1 Experimentation platform with various resistor circuits, capacitor and coil 1 Experimentation platform with voltage divider circuits 1 Experimentation platform with circuits for studying temperature, light and voltage-dependent resistors	40	5	5	0	4	4	58	Base: SMT-1000 with SMT-1001 module	40	0	0	0	4	4	48	CO4204-4D Lucas-Nuelle
8	AC technology Trainers (The product equivalent to the following characteristics or in closest match) 1 Experimentation platform with R, L, C passive components for combination 1 Experimentation platform with RLC resonant circuits, 1 circuit tunable 1 Experimentation platform with 1 power transformer, 1 repeater transformer and load circuits	40	3	5	0	0	4	52	Base:SMT-1000 with Modules	40	0	0	0	4	4	48	CO4204-4F Lucas-Nuelle

9	Three-phase technology Trainers (The product equivalent to the following characteristics or in closest match) 1 Experimentation platform with 1 circuit in star configuration and 1 in delta configuration plus resistive and capacitive loads 1 Experimentation platform with multichannel oscilloscope for voltage and current measurement	40	0	5	0	0	4	49	Base:SMT-1000 with Modules	40	0	0	0	4	4	48	CO4204-4H Lucas Nuelle
10	Magnetism/ Electromagnetism Trainers (The product equivalent to the following characteristics or in closest match) 1 Experimentation platform with several specific circuits Transformer with removable iron core Compass needle for investigating magnetic fields Electromagnetic components: reed switches, Hall switches and relays	40	0	5	0	0	4	49	Base:SMT-1000 with Modules	40	0	0	0	4	4	48	CO4204-4A Lucas- Nuelle
11	Circuit Analysis Trainer It's a lucasNulle card Its part no is SO4204-4C (The product equivalent to the following characteristics or in closest match) Trainer having provision of setting up resistor networks 2 Constant current and 2 constant voltage sources Plug-in resistors on card It must have the following provisions Introduction to basic equations used in electrical networks Applying Kirchhoff's equations to a resistor network Analysing resistor networks using Kirchhoff's equations Power matching in resistor circuits Introduction to super position theorem and its application Simplification of resistor networks using Thevenin's theorem Simplification of resistor networks using Norton's theorem Thevenin-Norton equivalencies Analysing resistor networks using the loop or mesh current method Analysing resistor networks using the node voltage method	0	0	0	0	0	0	0	Not Quoted	40	0	0	0	4	4	48	CO4204-4C Lucas-Nuelle

12	Unitrain-I Interface with virtual instruments (basic VI) CO4203-2A	0	0	0	0	0	0	0	0	Not Quoted	40	0	0	0	4	4	48	CO4203-2A Lucas-Nuelle
13	Unitrain-I Experimenter CO4203-2B	0	0	0	0	0	0	0	0	Not Quoted	40	0	0	0	4	4	48	CO4203-2A Lucas-Nuelle
14	Unitrain-I Measurement accessories, shunts and connection cables SO4203-2J	0	0	0	0	0	0	0	0	Not Quoted	40	0	0	0	4	4	48	CO4203-2B Lucas-Nuelle
15	Digital multimeter MetraHit One M204D LM2330	0	0	0	0	0	0	0	0	Not Quoted	40	0	0	0	4	4	48	SO4203-2J Lucas-Nuelle
16	Unitrain-I Storage case for one system CO4203-2Y	0	0	0	0	0	0	0	0	Not Quoted	40	0	0	0	4	4	48	LM2330
17	Unitrain-I Interface with virtual instruments (basic VI) CO4203-2A	0	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Already Quoted in S.No.12 Rejected
18	Unitrain-I Extended three-phase power supply	0	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Cover in S.No.13

Engr: Sana Ullah, _____
Lecturer (Electrical) GCT, Nowshera

Mr. Sohail Gul, _____
Assistant Professor (Electrical) GCT, Peshawar

**COMPARATIVE STATEMENT FOR PROJECT:193198- INTRODUCTION OF B.TECH PROGRAM AT GOVT. COLLEGE OF TECHNOLOGY KHAR
DISTRICT BAJAUR
DATE OF TENDER OPENING 09-03-2022
ELECTRICAL TECHNOLOGY (Electrical Machine I Lab)**

Item No.	Name of Items	Electrical Engineering Services, Lahore							Model
		C.S		P.C		P.L.P		T	
		40	5	5	2	4	4	60	
1	DC Permanent Magnet Machine Can be operated as a motor and generator Power: 0.3-3 kW	35	0	5	0	0	4	44	Under Specification
2	DC Shunt Wound Machine Can Be operated as a motor and generator Power: 0.3-3 kW	35	0	5	0	4	4	48	Under Specification
3	DC Series Wound Machine Can Be operated as a motor and generator Power: 0.3-3 kW	35	0	5	0	4	4	48	IT-197-16 EES, Pakistan
4	DC Compound Wound Machine Can Be operated as a motor and generator Power: 0.3-3 kW	35	0	5	0	4	4	48	IT-197-17 EES, Pakistan
5	Universal Motor DC Power: about 0.3-3 kW AC Power: about 0.3-3 kW	35	0	5	0	4	4	48	IT-197-14 EES, Pakistan
6	Single Phase Transformer Power: 0.3-3 kVA Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-4 EES, Pakistan
7	Single Phase Transformer with Variable Output Power: 0.3-3 kVA Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-4V EES, Pakistan
8	Single Phase Auto Transformer Power: 0.3-3 kVA Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-4V EES, Pakistan

9	Three Phase Transformer Power: 0.3-3 kVA Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-5 EES, Pakistan
10	DC Motor Field Regulator Compatible with the above machines	40	0	5	0	4	4	53	IT-197-30 EES, Pakistan
11	DC Generator Field Regulator Compatible with the above machines	40	0	5	0	4	4	53	IT-197-31 EES, Pakistan
12	Digital RPM Meter With 5 Digits Display Range: 0-9999 RPM	40	0	5	0	4	4	53	IT-197-57 EES, Pakistan
13	Digital Power Factor Meter Range: Induct.0-1-0.Capacit Accuracy: $\pm 1\%$	40	0	5	0	4	4	53	IT-197-58 EES, Pakistan
14	Magnetic Power Brake Unit Compatible with the Above Mentioned Machines	40	0	5	0	4	4	53	IT-197-21 EES, Pakistan
15	Brake Controller Unit Compatible with the magnetic powder brake unit and above machines Have display to show speed, torque, and power of the motor under test Have display to show voltage and current applied to brake unit	40	0	5	0	4	4	53	IT-197-21B EES, Pakistan
16	Coupling Sleeves For mechanically connecting two machines	40	0	5	0	4	4	53	IT-197-55 EES, Pakistan
17	Coupling Guard	40	0	5	0	4	4	53	IT-197-56 EES, Pakistan
18	Shaft End Guard	40	0	5	0	4	4	53	IT-197-56 EES, Pakistan
19	Power Supply Input Voltage: 220/400V,3-Phase,50 Hz Output Voltage: Fixed DC: 220V, 10A Var. DC: 0-220V,15A Fixed AC: 220/400 V 3-Phase, 10A, 50 Hz Variable AC: 0-400 V 3-Phase, 15 A, 50Hz	40	0	5	0	4	4	53	IT-197-1 EES, Pakistan
20	Load Switch Three Pole 15 A, 250VDC, 440VAC	40	0	5	0	4	4	53	IT-197-37 EES, Pakistan

21	Reversing Switch Capable of operating 3-Phase Machines 15 A, 440 V Reversing Switch Capable of operating 3-Phase Machines 15 A, 440 V	40	0	5	0	4	4	53	IT-197-39 EES, Pakistan
22	Star-Delta Switch Capable of operating 3-Phase Machines 15 A, 440 V	40	0	5	0	4	4	53	IT-197-41 EES, Pakistan
23	Selector Switch Three Pole, 2 Way Current: 15 A Voltage: 250 V DC/ 500 V AC	40	0	5	0	4	4	53	IT-197-41S EES, Pakistan
24	Universal Starter compatible with the above Mentioned AC and DC Machines	40	0	5	0	4	4	53	IT-197-26 + IT-197- 27
25	3-Phase Load Resistor Compatible with the above Mentioned Machines	40	0	5	0	4	4	53	IT-197-34 EES, Pakistan
26	3-Phase Load Inductor Compatible with the above Mentioned Machines	40	0	5	0	4	4	53	IT-197-36 EES, Pakistan
27	3-Phase Load Capacitor Compatible with the above Mentioned Machines	40	0	5	0	4	4	53	IT-197-35 EES, Pakistan
28	AC Power Energy Meter Voltage: 500 V AC Max Current: 15 A AC Max Active Power: 5 kW Reactive Power: 5 kVAR Accuracy: $\pm 0.2\%$	40	0	5	0	4	4	53	IT-197-61 EES, Pakistan
29	Ammeter AC: 10 mA-15 A DC: 100 μ A-15 A Frequency: 20-400 Hz	40	0	5	0	4	4	53	IT-197-48 + IT-197- 47 EES, Pakistan

30	Voltmeter AC: 1 V-1000 V DC: 100 mV-1000 V Frequency: 20-400 Hz	40	0	5	0	4	4	53	IT-197-46 + IT-197-45 EES, Pakistan
31	Machine Bed Dimensions (1500-1700)mm × (500-700)mm × (100-300)mm	35	0	5	0	0	4	44	IT-2L EES, Pakistan

Engr: Sana Ullah, _____ Lecturer (Electrical) GCT, Nowshera	Mr. Sohail Gul, _____ Assistant Professor (Electrical) GCT, Peshawar
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DATE OF TENDER OPENING 09-03-2022
ELECTRICAL TECHNOLOGY (Electrical Machine II Lab)**

Item No.	Name of Items	Electrical Engineering Services, Lahore							Model
		C.S		P.C		P.L.P		T	
		40	5	5	2	4	4	60	
1	3-Phase Induction Motor (Slip Ring) Power:0.3- 3 kW Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-7 EES, Pakistan
2	3-Phase Induction Motor (Squirrel Cage) Power: 0.3-3 kW RPM: 1300-1500 Voltage: 400-440 V Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-6 EES, Pakistan
3	3-Phase Synchronous Machine with Salient Poles As Generator: (0.3-3 kVA)*0.8 As Motor: 0.3-3 kW Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-10 EES, Pakistan
4	Reluctance Motor Power: 0.3-3 kW Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-10R EES, Pakistan
5	Induction Dahlander Motor Power: 0.3-3 kW RPM: 1300-1500 Voltage: 400-440 V 3-Phase Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-8 EES, Pakistan
6	Single Phase Induction Motor (Capacitor Start) Power: 0.3-3 kW Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-13 EES, Pakistan

7	Single Phase Induction Motor (Capacitor Start and Run) Power: 0.3-3 kW Frequency: 50 Hz	35	0	5	0	4	4	48	IT-197-11 EES, Pakistan
8	Magnetic Powder Brake Unit Compatible with the Above Mentioned Machines	40	0	5	0	4	4	53	IT-197-21 EES, Pakistan
9	Brake Controller Unit Compatible with the magnetic powder brake unit and above machines Have display to show speed, torque, and power of the motor under test Have display to show voltage and current applied to brake unit Ranges: RPM: 0-10000 RPM, Torque: 0-20 N-m	40	0	5	0	4	4	53	IT-197-21B EES, Pakistan
10	Coupling Sleeves For mechanically connecting two machines	40	0	5	0	4	4	53	IT-197-55 EES, Pakistan
11	Coupling Guard Coupling Guard	40	0	5	0	4	4	53	IT-197-56 EES, Pakistan
12	Shaft End Guard Shaft End Guard	40	0	5	0	4	4	53	IT-197-56 EES, Pakistan
13	Synchoscope / Synchronizing Unit Containing Dual Voltmeter Dual Frequency Meter Synchoscope	0	0	0	0	0	0	0	Rejected due to Specification not meet (Single Meter)
14	Dahlander Switch Voltage: 500 V Current: 15 A	40	0	5	0	4	4	53	IT-197-42 EES, Pakistan
15	Selector Switch Three Pole, 2 Way Current: 15 A Voltage: 250VDC/500VAC	40	0	5	0	4	4	53	IT-197-41S EES, Pakistan
16	Frequency Meter Range: 40-60 Hz	40	0	5	0	4	4	53	IT-197-49 EES, Pakistan

17	Machine Bed Dimensions: (1500-1700)mm×(500-700)mm×(100-300)mm	40	0	5	0	4	4	53	IT-2L EES, Pakistan
Engr: Sana Ullah, _____ Lecturer (Electrical) GCT, Nowshera		Mr. Sohail Gul, _____ Assistant Professor (Electrical) GCT, Peshawar							

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ELECTRICAL TECHNOLOGY (Power Systems, Transmission and Distribution Lab)

Item No.	Name of Items	ESOLS Multan							Electrical Engineering Services, Lahore								
		C.S		P.C		P.L.P		T	Model	C.S		P.C		P.L.P		T	Model
		40	5	5	2	4	4	60		40	5	5	2	4	4	60	
1	Three Phase Transformer DL 1080TT or Equivalent	40	0	5	0	4	4	53	EST-1080TT ESOLS-PAK	40	0	5	0	4	4	53	DL 1080TT EES, Pakistan
2	Experiment Transformer DL 1055TT or Equivalent	40	0	5	0	4	4	53	EST-1055TT ESOLS-PAK	40	0	5	0	4	4	53	DL 1055TT EES, Pakistan
3	Power Circuit Breaker DL 2108T02 or Equivalent	40	0	5	0	4	4	53	EST-2108T02 ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T02 EES, Pakistan
4	Double bus bar with two disconnecter DL 2108T02/2 or Equivalent	40	0	5	0	4	4	53	EST-2108T02/2 ESOLS-PAK	40	0	5	0	4	4	53	DL 2080T02/2 EES, Pakistan
5	Double bus bar with four disconnecter DL 1080T02/4 or Equivalent	40	0	5	0	4	4	53	EST-2108T02/4 ESOLS-PAK	40	0	5	0	4	4	53	DL 1080T02/4 EES, Pakistan
6	Line Capacitor DL 1080T03 or Equivalent	40	0	5	0	4	4	53	EST-2108T03 ESOLS-PAK	40	0	5	0	4	4	53	DL 1080T03 EES, Pakistan
7	Petersen Coil DL 1080T04 or Equivalent	40	0	5	0	4	4	53	EST-2108T04 ESOLS-PAK	40	0	5	0	4	4	53	DL 1080T04 EES, Pakistan
8	C.T Load DL 1080T10 or Equivalent	40	0	5	0	4	4	53	EST-2108T10 ESOLS-PAK	40	0	5	0	4	4	53	DL 1080T10 EES, Pakistan
9	V.T Load DL 1080T11 or Equivalent	40	0	5	0	4	4	53	EST-2108T11 ESOLS-PAK	40	0	5	0	4	4	53	DL 1080T11 EES, Pakistan
10	Under Over Voltage time relay DL 2108T12 or Equivalent	40	0	5	0	4	4	53	EST-2108T12 ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T12 EES, Pakistan
11	Inverse Time Over Current Relay DL32108T12 or Equivalent	40	0	5	0	4	4	53	EST-2108T13 ESOLS-PAK	40	0	5	0	4	4	53	DL 32108T12 EES, Pakistan
12	Definite Time Over Current Relay DL 2108T13 or Equivalent	40	0	5	0	4	4	53	ST-2108T14 ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T13 EES, Pakistan
13	Combined Over Current and Earth Fault Relay DL 2108T14 or Equivalent	40	0	5	0	4	4	53	EST-2108T15 ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T14 EES, Pakistan

14	1-Phase Directional Relay DL 2108T16 or Equivalent	40	0	5	0	4	4	53	EST-2108T16 ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T16 EES, Pakistan
15	L/C loads DL 2108T17 or Equivalent	40	0	5	0	4	4	53	EST-2108T17 ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T17 EES, Pakistan
16	Earth Fault Warning Relay DL 2108T18 or Equivalent	40	0	5	0	4	4	53	EST-2108T18 ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T18 EES, Pakistan
17	1-Phase Current Transformer DL 2109T21 or Equivalent	40	0	5	0	4	4	53	EST-2109T21 ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T21 EES, Pakistan
18	3-Phase Current Transformer DL 2109T22 or Equivalent	40	0	5	0	4	4	53	EST-2109T22 ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T22 EES, Pakistan
19	1-Phase Voltage Transformer DL 2109T23 or Equivalent	40	0	5	0	4	4	53	EST-2109T23 ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T23 EES, Pakistan
20	3-Phase Voltage Transformer DL 2109T24 or Equivalent	40	0	5	0	4	4	53	EST-2109T24 ESOLS-PAK	40	0	5	0	4	4	53	DI 2109T24 EES, Pakistan
21	Summation Current Transformer DL 2109T25 or Equivalent	40	0	5	0	4	4	53	EST-2109T25 ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T25 EES, Pakistan
22	Three Phase power Supply DL 2108TAL or Equivalent	40	0	5	0	4	4	53	EST-2108TAL ESOLS-PAK	40	0	5	0	4	4	53	DL 2108TAL EES, Pakistan
23	Variable DC Power Supply DL 1013T2 or Equivalent	40	0	5	0	4	4	53	EST-2108T01 ESOLS-PAK	40	0	5	0	4	4	53	DL 1013T2 EES, Pakistan
24	Three Phase Power Meter DL 2109T29 or Equivalent	40	0	5	0	4	4	53	EST-2109T29 ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T29 EES, Pakistan
25	Variable Three Phase Power Supply DL 1013T1 or Equivalent	40	0	5	0	4	4	53	EST-1013T1 ESOLS-PAK	40	0	5	0	4	4	53	DL 1013T1 EES, Pakistan
26	3-Phase kWh meter DL 2109T28 or Equivalent	0	0	0	0	0	0	0	Not Meet Specification Rejected	40	0	5	0	4	4	53	DL 2109T28 EES, Pakistan
27	Moving Iron Ammeter DL 2109T5A or Equivalent	40	0	5	0	4	4	53	EST-2109T5A ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T5A EES, Pakistan
28	Moving Iron Voltmeter DL 2109TPV or Equivalent	40	0	5	0	4	4	53	EST-2109TPV ESOLS-PAK	40	0	5	0	4	4	53	DL 2109TPV EES, Pakistan
29	Moving Coil Voltmeter DL 2109T2VB or Equivalent	40	0	5	0	4	4	53	EST-2109T2VB ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T2VB EES, Pakistan

30	Moving Coil Ammeter DL 2109T3VB or Equivalent	40	0	5	0	4	4	53	EST-2109T3VB ESOLS-PAK	40	0	5	0	4	4	53	DL 2109T3VB EES, Pakistan
31	Double Frequency Meter DL 2109T16/2 or Equivalent	40	0	5	0	4	4	53	EST-2109T16/2 ESOLS-PAK	40	0	5	0	0	4	49	DL 2109T16/2 EES, Pakistan
32	Electronic Tachometer DL 2025DT or Equivalent	40	0	5	0	4	4	53	EST-2025DT ESOLS-PAK	40	0	5	0	0	4	49	DL 2025DT EES, Pakistan
33	Reactive Power Controller DL 2108T19 or Equivalent	40	0	5	0	4	4	53	EST-2108T19) ESOLS-PAK	40	0	5	0	4	4	53	DL 2108T19 EES, Pakistan

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DATE OF TENDER OPENING 09-03-2022

ELECTRICAL TECHNOLOGY (Instrumentation & Measurement Lab)

Item No.	Name of Items	ESOLS Multan							Electrical Engineering Services, Lahore								
		C.S		P.C		P.L.P		T	Model	C.S		P.C		P.L.P		T	Model
		40	5	5	2	4	4	60		40	5	5	2	4	4	60	
1	LVDT Kit Electro-mechanical Transducers Variable Resistor 10 k Ω , 0.5 W linear. Variable Capacitor (Area) 2.5 – 20 pF. Variable Capacitor (Distance) 15 – 40 pF. Variable Inductor 9 Ω , 23 – 81 μ H. Variable Differential Transformer Primary	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Rejected Specification not match
2	Strain Gauge Kit Electro-mechanical Transducers Variable Resistor 10 k Ω , 0.5 W linear. Variable Capacitor (Area) 2.5 – 20 pF. Variable Capacitor (Distance) 15 – 40 pF. Variable Inductor 9 Ω , 23 – 81 μ H. Variable Differential Transformer Primary resistance: 6.3 Ω , 140 turns. Secondary resistance: 2.5 Ω , 140 turns. Strain Gauge 2 off, 120 Ω resistance. An electro-mechanical transducers kit containing six linear displacement transducers and a probe assembly.	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	Rejected Specification not match
3	Photo Transducers Kit Photo-transistor BP X25(or Equivalent). Photo-diode RS components. Photo-resistor RPY33. Lamp holder MBC. 14.4 V, 0.1 A. Optical Filters 9 slide-mounted. 440, 470, 490, 520, 550, 580, 600, 690,700 nm. 1 infra-red. TK2941L (or Equivalent). A light transducers kit containing three photo-electric transducers, a light source, nine coloured and one heat absorbing optical filters.	0	0	0	0	0	0	0	Not Quoted	40	0	5	0	0	4	49	IT-5932 EES, Pakistan

4	Optical Transducer Kit 1. Transducers: a. Photoconductive Cell. b. Photovoltaic Cell. c. Phototransistor. d. PIN Photodiode. 2. Light Source: Filament Lamp. 3.Signal Conditioning Circuitry: a. Power Amplifier b. Current Amplifier c. DC Amplifier d. Comparator. e. Electronic Switch. f. Buffer. 4. Input Circuits: Rotary and Slid Potentiometers. 5. Output Circuits: a. Moving Coil Mete b. Relay c. LED 6. Interconnections: 4 mm banana sockets. 7. Power Supply: 230 V + 10 % 50 Hz. 8. Standard Accessories: Detailed Instruction Manual.	40	0	5	0	4	4	53	Optical Transducer Trainer (SMT-3215- C) ESOLS, PAKISTAN	0	0	0	0	0	0	0	0	Rejected Specification not match
5	Probe Oscilloscope Probe Oscilloscope (DC – 200 MHz)	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	0	Not Quoted
6	Kelvin’s Double Bridge On board oscillator section. On board circuit for designing Kelvin’s double Bridge, On board amplifier section, On board unknown Resistors for conducting the experiment, On board Speaker interface, Test points are provided to analyse signals at various points.	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	0	0	Not Quoted

7	LCR Meter Measuring ranges Z , R, X 0.01 mΩ → 100 MΩ Y , G, B 10 nS → 1000 S C 0.01 pF → 100 mF L 10 nH → 100 kH D 0.0001 → 9.9999 Q 0.1 → 9999.9 θ -180 → +180° Δ -999.99% → 999.99% M 1 μH → 100 H N 0.95 → 500 General data Basic accuracy 0.05% Measuring frequency range 20 Hz → 200 kHz	0	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	Not Quoted
8	Mechatronics Kit Custom 12V motor designed for Digilent robot kits (or Equivalent) Motor Adapter for NI myRIO (6002-410-011): Compatible with gear motors and servos Pmod Cable kit: 6", 6-pin Pmod cable Pmod Cable Kit: 6", 12-pin Pmod cable MTE Cable (250-061): 4-pin to 2x2-pin MTE cable 6-pin Headers (240-004): 6-pin header and gender	0	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	Not Quoted
9	Probe (Function Generator) 50Ω	0	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	Not Quoted

13	<p>Digital Multimeter</p> <p>AC current: Sector/resolution/accuracy (50/60 Hz): 200 A/100 mA/± 3.0% + 8 digits Sector/resolution/accuracy 200 A/100 mA/± 3.0% + 8 digits</p> <p>DC current: Sector/resolution/accuracy 200 A/100 mA/± 2.8% + 8 digits Sector/resolution/accuracy 200 A/100 mA/± 2.8% + 8 digits</p> <p>AC test voltage (without contact): 100 VAC to 600 VAC 50/60 Hz 100 VAC to 600 VAC 50/60 Hz</p> <p>Frequency: Sector/resolution/accuracy 40 to 50 Hz/0.01 Hz/± 1.2% + 5 digits 51 to 510 Hz/0.1 Hz/± 1.2% + 3 digits</p> <p>0.51 to 1 kHz/0.001 kHz/± 1.2% + 3 digits Sector/resolution/accuracy 40 to 50 Hz/0.01 Hz/± 1.2% + 5 digits 51 to 510 Hz/0.1 Hz/± 1.2% + 3 digits 0.51 to 1 kHz/0.001 kHz/± 1.2% + 3 digits</p> <p>Illumination of the measurement area: white LEDs white LEDs</p> <p>Diameter of the conductor: max. 18 mm max. 18 mm</p> <p>Display: with white LEDs, backlit LCD with 3 2/3 positions with white LEDs, backlit LCD with 3 2/3 positions</p> <p>Power: 2 AA batteries 2 AA batteries</p>	0	0	0	0	0	0	0	Not Quoted	0	0	0	0	0	0	Not Quoted
<p>Engr: Sana Ullah, _____ Lecturer (Electrical) GCT, Nowshera</p>	<p>Mr. Sohail Gul, _____ Assistant Professor (Electrical) GCT, Peshawar</p>															