

MODEL POLYTECHNIC COLLEGE, PAINAVU

No. A/MPTC/MHRD-PUR/2016-17

10.05.2017

Re – Tender Notice

Model Polytechnic College (under IHRD), Painavu

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Web: www.ihrd.ac.in , www.ihrdkerala.org

Separate sealed tenders are invited for the supply of the following items.

Sl. No	Name of Lab	Tender No.	Cost of tender form
1	Electronic Lab	A/MPTC/MHRD – PUR/2016-17(2)a	Rs. 949+VAT
2	Electronic Lab	A/MPTC/MHRD – PUR/2016-7(3)	Rs. 492+VAT
3	Computer Lab	A/MPTC/MHRD – PUR/2016-(3)b	Rs. 996+VAT
4	Computer Lab	A/MPTC/MHRD – PUR/2016-(4)	Rs. 960+VAT
5	Computer Lab	A/MPTC/MHRD – PUR/2016-(4)a	Rs. 900+VAT
6	Computer Lab	A/MPTC/MHRD – PUR/2016(4)b	Rs. 978+VAT
7	Computer Lab	A/MPTC/MHRD – PUR/2016(6)	Rs. 740+VAT
8	Computer Lab	A/MPTC/MHRD – PUR/2016(7)	Rs. 700+VAT

Tender details and specifications can be had from the IHRD web site. The last date and time of receiving tenders –7.6.2017 at 11 am. Date and time of opening tenders 07.06.2017, 2 pm

N.B – Tender cost as per be norms must be accompanied along with the tender in the form of DD in favour of the Principal Model Polytechnic College, Painavu.

PRINCIPAL

Model Polytechnic College

Painavu, Idukki

Tender No. A/MPTC/MHRD - PUR/2016-17(2)(a) dtd 17.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST
1	<u>Modem</u>	1500	5	7500
2	USB Drive 8 GB	600	5	3000
3	48 Port Hub: Specification: Network Interface: RJ-45: 100ohm, UTP/STP cable 10/100Base – EIA/TIA Categories 3 or 5 cable, Switching Method: Store – and – forward, Switch Fabric: 4.8Gbps, MAC Address Table: 8,000 entries, AC input: 100 to 240 VAC, 50 to 60 Hz	25000	3	75000
4	Network Cable (in meter)	75	500	37500
	Specification:- Freequency : 600MHz			
	Attenuation: 24dB			
	Characteristic Impedence: 100 ohms ± 15%			
	Propagation Delay: 548nsec			
	Topology:Physical Star			
Cable: OFC/ UTP				
5	Connector: RJ 45	20	400	8000
6	Network cable tester: Cable tester for RJ45 UTP, 10/100 COAX and TP (TC-NT2)	1200	5	6000
7	Crimping Tool kit: All in one Crimper for WE/SS- style data and phone cable provides multi fuction cutting Stipping and crimping, crimpes RJ45, RJ11/12, RJ22 handset plugs, Cuts and strips round UTP/STP common data cable	500	10	5000
8	<u>External hard disk drive</u>	2500	5	12500
	Specification:-			
	500gb portable usb 2.0			

9	SERVER COMPUTER Specifications: Two Processors Processor: Intel Xeon Quad Core, Configuration: Rack, CPU : Intel Xeon E 5506, 2.13 GHz ,4MB L3 Cache 800, Chipset : Intel 5500 or better, Memory : 8GB 1067/1333 MHz DDR3 RAM, Hard Disk Drive : 3 x 300 GB, 10,000 rpm SAS, Monitor : 43.2 cm (17") TFT/wide TFT, 110 Keys Keyboard, Mouse: Rack Mounted, DVD ROM : 8x or better DVD, Networking : Dual LAN (10/100/1000) NIC	120000	1	120000
10	Air Conditioner: 2 Ton Air conditioner with 5 star power conception Thermostat, 4Speed, turbo cooling	50000	4	200000
Total				474500

Tender No. A/MPTC/MHRD - PUR/2016-17(3) dtd 18.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST
1	Voltmeter 0-10 V	600	40	24000
2	Voltmeter 0-1 V	600	40	24000
3	Voltmeter 0-30 V	600	40	24000
4	Voltmeter 0-60 V	600	40	24000
	Specification:-			
	Display			
	Measurement			
	Range/Resolution			
	Accuracy			
	Input Impedance			
	Frequency response			
	AC/DC Converter			
	Polarity			
	Zero Adjustment			
	Sampling Time			
	Operating Temperature			
	Power Supply			
Power Consumption				
Input Terminal				
5	Ammeter 0-100 microA	750	40	30000
6	Ammeter 0-1 mA	750	40	30000

7	Ammeter 0-10 mA	750	40	30000
8	Ammeter 0-20 mA	750	40	30000
9	Ammeter 0-100 mA	750	40	30000
	Specification:-			
	Display			
	Measurement			
	Range/Resolution			
	Accuracy			
	Voltage drop of the full scale			
	Overload Protection			
	Frequency response			
	AC/DC Converter			
	Polarity			
	Zero Adjustment			
	Over-Input			
	Safety			
	Sampling Time			
Operating Temperature				
Power Supply				
Power Consumption				
Total				246000

Tender No. A/MPTC/MHRD - PUR/2016-17(3) b dtd 20.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST	
1	<u>LCR Meter</u>	18000	10	180000	
	Specification:-				
	Parameter L-Q, C-D, R-Q and Z-Q				
	Frequency 100 Hz, 120 Hz and 1 KHz				
	Accuracy Basic Accuracy : 0.3%				
	5 digits display for both primary and secondary				
	Measurement Range				
	L - 100 Hz, 120Hz 1mH - 9999H, 1KHz 0.1mH - 999.9H				
	C - 100 Hz, 120Hz 1pF - 9999mF, 1KHz 0.1pF - 999.9mF				
	R, Z - 0.0001W - 999.9 MW				
D, Q - 0.0001 - 9999					
2	Decade resistance box	5500	10	55000	
	Range				0 to 100MΩ
	Resolution				1Ω steps
	Decade				Accuracy
	1Ω				± 1%

	10Ω	± 0.5%			
	100Ω, 1 KΩ, 10kΩ, 100kΩ	± 0.1%			
	1MΩ	± 0.1%			
	10MΩ	± 1%			
	Residual Resistance	Less than 250mΩ			
	Power Rating	1 watt per resistor			
	Voltage Rating	Maximum 250V DC/AC RMS			
	Temperature Coefficient	50ppm/°C			
3	Decade Capacitance box		5000	10	50000
	Range	0 to 100μF			
	Resolution	10pF steps			
	Residual Capacitance	Approximately 55pF			
	Decade	Capacitor Type			
	10pF, 100pF, 1 nF, 10 nF	Silver mica			
	100nF, 1μF	Polycarbonate			
	10μF	Polyester			
4	Decade Inductance box		6000	10	60000
	Range	0 to 10H			
	Resolution	1mH steps			
	Decade	Accuracy at 1kHz			
	1mH, 10mH, 100mH, 1 H	3%			
	Residual Resistance	Less than 0.2Ω			
	Residual Inductance	Less than 1μH			
	Voltage Rating	Maximum 30V AC rms (non-switching). Subject to max current rating.			
Temperature Coefficient	0.1%/°C				
5	<u>Rheostat 500 W 300 mA</u>		300	30	9000
	Specification:-				
	Sliding Rheostat;				
	This Sliding Rheostat has nickel and copper alloy resistance wire; uses the oxide film insulating layer onto porcelain tube				
	Sliding pole				
	Surroundings temperature: -10°C~+40°C. It can continuously work under relative humidity ≤85%.				
	Three 4mm sockets				
	The total length of rheostat: 150mm				
Diameter of Tube: 30mm					
6	<u>Rheostat 1K 300 mA</u>		300	30	9000

	<p>Specification:-</p> <p>Sliding Rheostat;</p> <p>This Sliding Rheostat has nickel and copper alloy resistance wire; uses the oxide film insulating layer onto porcelain tube</p> <p>Sliding pole</p> <p>Surroundings temperature: -10°C~+40°C. It can continuously work under relative humidity ≤85%.</p> <p>Three 4mm sockets</p> <p>The total length of rheostat: 150mm</p> <p>Diameter of Tube: 30mm</p>			
7	<p>Rheostat 2.2K 100 mA</p> <p>Specification:-</p> <p>Sliding Rheostat;</p> <p>This Sliding Rheostat has nickel and copper alloy resistance wire; uses the oxide film insulating layer onto porcelain tube</p> <p>Sliding pole</p> <p>Surroundings temperature: -10°C~+40°C. It can continuously work under relative humidity ≤85%.</p> <p>Three 4mm sockets</p> <p>The total length of rheostat: 150mm</p> <p>Diameter of Tube: 30mm</p>	300	30	9000
8	<p>AUTOMATIC WIRE STRIPPER</p> <p>Specifications:</p> <p>Automatic wire stripper for Wires from 0.2-6.0 mm (AWC 24 - t0)</p> <p>No adjustment necessary for different Suitable for wires with insulation of PVC and other materials</p> <p>Adjustable length scale from 6,0 - 15,0 mm</p> <p>Outside safety wire cutter for wires up to max.2,5 mm'</p> <p>Pliers body made of fiberglass-reinforced polyamide</p>	1000	10	10000
9	<p>Spiral Binding machine:</p> <ul style="list-style-type: none"> • manual spiral binding machine • A4 size • punch selecting facility 	6000	2	12000
10	<p>Component Organizer:</p> <p>Length : 400mm,H :250mm,Depth:160mm , No of Boxes :25</p> <p>Drawer Spec:L:150mm H:35mm,W:70mm</p>	3000	10	30000
11	<p>Wire Stripper</p> <p>Chrome vanadium Steel</p> <p>Hardened & tempered</p>	100	40	4000
12	CRO Probe	100	200	20000
	BNC TO Crocodile connector			
	BNC TO BNC connector	100	200	20000

13	CRO Probe Holder	3000	10	30000
Total				498000

Tender No. A/MPTC/MHRD - PUR/2016-17(4) dtd 21.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST
1	<p>8051 Microcontroller Kit Specification:- 8051 Microcontroller Kit with Power Supply 8051/89C52 CPU operating @ 11.0592 MHz. 32K user RAM using 62256 with Battery Backup using NICD Battery 16K bytes of powerful monitor EPROM using 27512. One memory socket is provided for expansion up to 64k 48 I/O lines using 2 Nos. of 8255 brought at 26 Pins FRC Connector to interface with IC-XX Series. Three Channel Timer/Counter using 8253 brought out at 10 Pins FRC Connector. 20x2 Alphanumeric LCD Display with Backlite. 101 ASCII Keyboard interface using 89C2051 operating @ 12MHz. Two External interrupts INT0 & INT1 are available at 40 pin FRC connector. RS-232C using RX/TX of 8051 terminated on 9 Pins D-Type Connector.. Onboard Single Line Assembler / Disassembler. Two modes of operation:- ASCII Keyboard Mode.- Serial Mode. Facility for Downloading/Uploading files from/to PC. All Address, Data, Control & Port lines are available on 40 Pins & 10 Pins FRC Connector. All ICS are mounted on IC Sockets. In-Built Power Supply of +5V/1.5A, ±12V/250mA 8bit ADC & DAC interface, Stepper motor Interface, Seven segment display Interface, Temperature measurement Interface</p>	12000	40	480000
Total				480000

Tender No. A/MPTC/MHRD - PUR/2016-17(4)a dtd 23.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST
1	Embedded AVR Trainer Kit: Specification: High performance MCU, 8 bit 32K program flash, 8 bit I/O, ISP programming facility, USB to USART converter, RS 232 interface, On board LEDs (8 to 16 Nos.), 8 way dip switch, onboard 16X2 LCD, Seven segment display (min. 4 Nos.), Temperature sensor interface, onboard 12 V relay driver, onboard 4X4 keyboard interface, onboard stepper motor driver, Onboard supply: +/- 12 V, 5 V, Supply input voltage: 230 V AC	15000	30	450000
Total				450000

Tender No. A/MPTC/MHRD - PUR/2016-17(4) b dtd 24.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST
1	Digital IC Trainer Kit	8000	30	240000
	Indicators			
	10 TTL/ CMOS Logic Level Inputs with Dual Colour LED indication for Logic low and logic high			
	10 LED for output indication			
	Clock generator			
	Fixed Clock generation of 1Hz,10Hz,100Hz,1KHz,10KHz,100KHz and 1MHz			
	Pulse generator :Logic Pulser provides single pole double throw bounce less pulses of Low to high and high to low transitions .			
	Logic Probe: Logic probe facility provided with LED indicators to indicate High,Low,and Tri-state			
	Potentiometers:Variable potentiometers of 1k,10k,100k provided on board			
	Bread Board Area FourDistribution Strip of 100 tie points each totaling 400tie ,Two Terminal Strip 630 tie Points totaling 1260 tie points			
	Function Generator : Provides Sine,Square and Triangular output waveforms ,			
	Display : Four digit seven segment LED display			
	Power Supplies : Fixed DC Power Supply +5V,+12 V			
One IC each of 7400,7402,7408,7432,7404,7490,7495,7486,7447, 7476				

2	<u>Universal IC Tester</u>		63000	3	189000
	Specification:-				
	Tests a wide range of Digital IC's such as 74 Series, 40/45 Series				
	It can test the following items				
	Peripherals 8255, 8279, 8253, 8259 8251, 8155,				
	Microprocessor 8085, 8086, Z80.				
	Tests a wide range of Analog Ic's such as ADC, DAC, Opamp, 555, Transistor Arrays, Analog Switches, Waveform Generator Line Drivers, Voltages References opto couplers, Comparators, Voltages Followers and Others.				
	Display: 16x2 Backlit LCD Display				
Supply Input Voltage: 230V AC.					
3	4 1/2 Auto Range Digital Multimeter		3000	20	60000
	DCV				
	200mV/2V/20V/200V/1000V	±(0.05%+5dgt) on all ranges except ±(0.1%+5dgt) on 1000V			
	ACV				
	200mV/2V/20V/200V/750V	±(0.8%+10dgt) on all ranges except ±(1.0%+15dgt) on 750V			
	DCA				
	2mA/20mA/200mA/20A	±(0.5%+5dgt)on 2/20mA ±(0.8%+5dgt)on 200mA ±(2.0%+10dgt)on 20A			
	ACA				
	20/200mA/20A	±(0.8%+10dgt)on 20/200mA ±(3.0%+10dgt) on 20A			
	Resistance	200Ω/2KΩ/20KΩ/200kΩ/2MΩ/200MΩ			
	Capacitance	20nF/200nF/2/200μF			
	Frequency	20KHz			
	Diode Test ,Hfe test,Overload Protection,Continuity buzzer,Data Hold,Capacitance,				
Total					489000

Tender No. A/MPTC/MHRD - PUR/2016-17 (6) dtd 25.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST	
1	<u>PCB DESIGN & FABRICATION UNIT</u>		250000	1	250000
	Specification :-				
	PCB Artwork Film Maker	Supply : 230 V AC ±10%, 50 Hz Operating Mode : Manual / Automatic			

	Timer : Adjustable from 1 Sec to 10 Sec with 1 sec interval			
	Display : 16 x 2 LCD for timer and lamp status display			
	Exposing area : 20" x 10"			
	Buzzer : For timer indication			
	Lamp indicator : Status of internal exposing lamp			
Photo Resist Dip Coating Machine	Supply : 230 V AC \pm 10%, 50 Hz			
	Timer : Adjustable from 1 Sec to 30 Sec at interval of 5 sec			
	Display : 16 x 2 LCD for timer			
	Buzzer : For timer indication			
	Dipping area : 12" x 10"			
PCB Shearing Machine	Mounting Base : Table Mounted / Floor Mounted			
	Cutting Area : 12"			
Artwork Table	Supply : 230 V AC \pm 10%, 50 Hz			
	Light Exposed area : 17" x 13"			
Solderable Lacquer Tank	Supply : 230 V AC \pm 10%, 50 Hz			
	Timer : Adjustable			
	Display : 16 x 2 LCD for timer			
	Buzzer : For timer indication			
	Dipping area : 12" x 10"			
PCB Curing Machine	type: Blower			
	Heating area: 12" x 12"			
PCB Designer Kit				
Drill Machine	Supply : 230 V AC \pm 10%, 50 Hz			
	rpm : 1500 (adjustable)			
	Drill bit: 0.8 mm, 1mm			
UV Exposure Unit	Supply : 230 V AC \pm 10%, 50 Hz			
	Timer : Adjustable			
	Exposing area : 20"X 10"			
	Display : 16 x 2 LCD for timer			
Etching Machine	Supply : 230 V AC \pm 10%, 50 Hz			
	Spray etching			
	0.6 HP Spray motor			
	Display : 16 x 2 LCD for timer			
2	Function generator 10MHz			
	specification:-			
	Sine, Triangle, Square Output Waveforms			
	Easy Control of Generator Frequency	10000	12	120000
	Frequency Readout in Hz, KHz, MHz			
	Output Attenuation upto 40dB			
Low Cost				

Frequency Range Sine : 1Hz to 10MHz.
Square : 1Hz to 5MHz.
Triangle : 1Hz to 1MHz.
Accuracy $\pm 1\%$ of the range.
Output Waveform Sine, Triangle, Square.
Output Level 20V p-p (without termination)
10V p-p (into 50 ohms termination).
Rise & Fall Time 100ns at 1MHz (typically).
Sine Wave Distortion <3%.
AC Mains Power 230V $\pm 10\%$, 50Hz. Optional 115V AC $\pm 10\%$.
Dimensions (mm) (approx.) 241 (W) x 66 (H) x 270 (D) w/o packing / 325 (W) x 153 (H) x 380 (D) with packing.
Weight (approx.) 3 Kg. approx. (w/o packing) / 4 Kg. (with packing).
Standard Accessories BNC to BNC Co-axial
Cable - 1 No.
Operation Manual - 1 No
Total
370000

Tender No. A/MPTC/MHRD - PUR/2016-17 (7) dtd 27.1.2017

SL. NO	NAME OF ITEMS/SPECIFICATION	UNIT COST	QTY RQD	TOTAL COST	
1	<u>Centrifuge</u>	18000	2	36000	
	Specification:-				
	Wavelength Range				400 nm to 700 nm with 8opticalfilters
	Filter's peak wavelength				420 nm, 440 nm, 490 nm, 520 nm,
	(typical)				540 nm, 570 nm, 600 nm, 700 nm.
	Measuring Modes				%T&Abs
	Photometric Resolution				1% T & 0.01in Abs upto 1.99 Abs (O.D.)
	Display				3-Digit LED
	K-Factor Range				
	Concentration				
	Memory				
	Sample Volume				1ml in 4ml Test tube
	Source				White LED
	Detector				Hermetically Sealed photodiode
	Printer Port				
	Power				230V $\pm 10\%$, 50 Hz

	Dimension	160 (W) X 200 (D) X 100 (H) mm			
	Weight	1.5 Kg (Approx)			
	Accessories	a) Four test tubes			
2	pH Meter		16000	2	32000
	Specification:-				
	pH range	0 to 14.00pH			
	millivolt range	0 to±1999mV			
	Slope correction	85% to 115%			
	Resolution	0.01 pH,1mV mode			
	Standardisation range	±1pH			
	power	230v±50Hz			
3	Centrifuge		10000	2	20000
	Specification:-				
	cap	4×15 ml			
	rpm	4500			
	Power	230V ±10%, 50 Hz			
4	Glucometer		1000	2	2000
	Specification:-				
	Test Sample	Whole blood			
	Test Result	Plasma equivalent			
	Sample Volume	1.5 micro L			
	Measuring Range (mg/dL)	19.8-599.4			
	Measuring Time (sec)	5			
	Memory Feature	Last test memory			
	Battery Type	One non replaceable 3.0 V lithium battery			
	Battery Life	4 years			
	Operating Temperature Range	12 to 42 C Deg			
	Coding	Coding required			
Strip format	Single				
5	Heart Rate Monitor cum ECG Trainer		18000	2	36000
	Specification:-				
	Self contained and easy to operate				
	3 Digit Digital display of heartbeats/minute				
	On board Heartbeat event indicator				
	Separate test points to observe ECG waveforms after each block				
	On board one minute indicator				
User selectable Heart Rate, Bradycardia limit, Tachycardia limit display					
6	B.P. Apparatus		5000	1	5000

7	<u>Respiration-Rate Monitor</u>	17000	2	34000
	Specification:-			
	Self contained and easy to operate.			
	User selectable Respiration-Rate, Tachypnea limit display.			
	On board Tachypnea and Apnea Indicator.			
	On board Tachypnea limit adjustment.			
	User selectable Apnea period control.			
	On board Respiration event Indicator.			
	3 Digit Digital display of breaths/minute.			
	On board sensitivity control and noise rejection.			
	User selectable buzzer for abnormality indication.			
On board Reset arrangement for display and one minute timer				
8	<u>Electro-Myograph Trainer</u>	20000	1	20000
	Specification:-			
	Separate test-points to observe waveforms after each block			
	Provides amplified real time EMG output			
	Inbuilt EMG Simulator			
Provides information about 10 simulated EMG outputs				
Visible LED indication for all the simulated EMG outputs				
9	<u>Phonocardiograph Trainer</u>	19000	2	38000
	Specification:-			
	Provides amplified Phonocardiogram output.			
	User selectable filter section.			
	On board Variable gain control facility.			
	Separate test-points to observe waveforms after each block.			
	Buffer stage for oscilloscope display.			
	With Real time PCG acquisition software.			
Self contained and easy to operate and Specially designed for educational purpose.				
10	<u>Heart/Pulse Rate Measurement Trainer</u>	21000	2	42000
	Specification:-			
	Provide amplified pulse output			
	On board variable gain control facility			
	Separate test points to observe waveform after each block			
	Self contained and easy to operate			
	LCD display for different accuracy level			
Accuracy +4%				
11	<u>Blood Pressure Measurement (Oscillometric)</u>	37000	1	37000
	Specification:-			
	Provide accurate value of systolic and diastolic			

	pressure			
	Separate test points to observe the waveform after each block			
	Self contained and easy to operate			
	Provide LCD display facility			
	Korotkoff sound can also be detected using headphone			
	Oscilloscope can be used to observe the waveform			
	Specially designed for educational purpose			
12	<u>Single Channel ECG Telemetry Trainer</u> Specification:- Provides amplified ECG output with P, Q, R, S, T, U waves. Inbuilt ECG Simulator and Real Time ECG Measurement System. Provides depth study of all Standard Unipolar and Bipolar Leads Configuration of ECG Measurement. Variable Heart-Rate Generation from 30-300 Heartbeats/Minute. Variable ECG amplitude 200mV ? 4V DC. Every Systole indication is given by LED (visible). Provides 12 leads real time amplified ECG output.	22000	1	22000
13	<u>12 Lead Real Time ECG Trainer</u> Specification:- Provides in-depth study of Standard Unipolar and Bipolar Leads Configuration for all ECG wave measurement in real time. Inbuilt touch screen 7.5 LCD for examining wave shapes and measurements. Provides on screen information about different types of heart diseases (Bradycardia & Tachycardia). Provides on screen information about leads connection and electrode placement on the patient body. On screen Amplitude and heart frequency calculation. On screen Calculation of wave duration and wave interval	20000	1	20000
14	Stethoscope: Double sided chest piece with diaphragm on both sides, Yshaped tubing with concealed spring	200	5	1000
15	Sphygmomanometer: Portable type, cloth cuff, Velero grip, rubber bulb	1000	5	5000
Total				35000

PRINCIPAL