

Model Polytechnic College, Painavu

No. A/MPTC/MHRD – PUR/2016-17

Tender Notice

Model Polytechnic College (Under IHRD), Painavu

Idukki District Ph: 04862 – 232246

E – mail: mpainavu@gmail.com

Web: www.ihrd.ac.in

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) | Rs. 959+VAT |
| 2 | Electronic lab | A/MPTC/MHRD – PUR/2016-17(2)a | Rs. 949+VAT |
| 3 | Computer lab | A/MPTC/MHRD – PUR/2016-17(3) | Rs. 492+VAT |
| 4 | Computer lab | A/MPTC/MHRD – PUR/2016-17(3)b | Rs. 996+VAT |
| 5 | Computer lab | A/MPTC/MHRD – PUR/2016-17 (4) | Rs. 960+VAT |
| 6 | Computer lab | A/MPTC/MHRD – PUR/2016-17(4)a | Rs. 900+VAT |
| 7 | Computer lab | A/MPTC/MHRD – PUR/2016-17(4)b | Rs. 978+VAT |
| 8 | Computer lab | A/MPTC/MHRD – PUR/2016-17(6) | Rs. 740+VAT |
| 9 | Computer lab | A/MPTC/MHRD – PUR/2016-17(7) | Rs. 700+VAT |
| 10 | Bio – Medical Lab | A/MPTC/MHRD – PUR/2016-17(8) | Rs. 800+VAT |

Tender details and specifications can be had from the IHRD web site: www.ihrd.ac.in

The last date and time of receiving tenders 27.2.2017 at 11 am. Date and time of opening tenders 27.2.2017 at 2 pm.

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

PRINCIPAL

31.1.2017

Model Polytechnic College

Painavu, Idukki

Tender No. A/MPTC/MHRD - PUR/2016-17(2) dtd 16.1.2017

| SL. NO | NAME OF ITEMS/SPECIFICATION | UNIT COST | QTY RQD | TOTAL COST |
|--------|--|-----------|---------|------------|
| 1 | <u>LCD Projector</u> | 85000 | 2 | 170000 |
| | Specification:- Aspect 16:9 Number of Pixels 1920 x 1080 x 3 (2,073,600 pixels x 3) Progressive Brightness 1200 ANSI Lumens Contrast Ratio 3300:1 Power AC100-240V 50/60Hz Dimensions 19.7"W x 16.5"D x 6.3"H Included Accessories Remote control, lens cap, operation manual, power cable, DVI cable (2 meters) | | | |
| 2 | <u>LAPTOP</u> | 40000 | 1 | 40000 |
| | Specification:- screen resolution 1366*768 screen size 14in processor intel core i7 processor speed 2.3 GHz video card intel HD graphics 3000 audio integrated OS Windows 7 Home premium Wi=Fi Built in webcam Built in mic memory card reader bluetooth memory 6 GB Hard drive 640 GB Battery 9 hours | | | |
| 3 | <u>INTERACTIVE BOARD</u> | 75000 | 1 | 75000 |
| | Specification;- [Minimum Diagonal size (mm) : 1700,Aspect Ratio 4:3, linux compatibility : Yes, Auto Calibration : Yes] | | | |
| 4 | <u>OPTIONAL ITEMS FOR INTERACTIVE BOARDS AND PANELS</u> | 2500 | 1 | 2500 |
| | Specification;- Electronic Pen | | | |
| 5 | <u>MULTIMEDIA PROJECTOR</u> | 32000 | 1 | 32000 |
| | Specification;- [Multimedia Projector with Minimum 10% Zoom Ratio, Resolution : 800 x 600 (SVGA), Brightness : 2500 ANSI Lumens] | | | |
| 6 | <u>Installation of Ceiling Mount Kit</u> | 5000 | 1 | 5000 |
| | Specification;- (Including 2ft Ceiling Mount, 10 mtr VGA & Power Cables) | | | |
| 7 | Portable Interactive Board Compatibility : Windows | 39725 | 1 | 39725 |

| | | | | |
|--------------|---|-------|---|---------------|
| 8 | Vaccum cleaner: high Speed Vacuum Cleaner | 6000 | 4 | 24000 |
| 9 | Water Purifier: Electrically operated with UV treated | 15000 | 3 | 45000 |
| 10 | PORTABLE VISUALIZER | 46000 | 1 | 46000 |
| | Specification : Built in Memory High quality 3.2megapixel CMOS Camera sensor Total 3.2M Pixels Output Resolution HD 720p (1280 x 720) Total Zoom 16X Frame Rate 24fps Shooting Area 330 x 248 mm | | | |
| Total | | | | 479225 |

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 | External hard disk drive | 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 100M Ω |
| | Resolution | | | | 1 Ω steps |
| | Decade | | | | Accuracy |
| | 1 Ω | | | | \pm 1% |
| | 10 Ω | | | | \pm 0.5% |
| | 100 Ω , 1 K Ω , 10k Ω , 100k Ω | | | | \pm 0.1% |
| | 1M Ω | | | | \pm 0.1% |
| | 10M Ω | | | | \pm 1% |
| | Residual Resistance | | | | Less than 250m Ω |
| | Power Rating | | | | 1 watt per resistor |
| | Voltage Rating | | | | Maximum 250V DC/AC RMS |
| | Temperature Coefficient | | | | 50ppm/ $^{\circ}$ C |
| 3 | Decade Capacitance box | 5000 | 10 | 50000 | |
| | Range | | | | 0 to 100 μ F |
| | Resolution | | | | 10pF steps |
| | Residual Capacitance | | | | Approximately 55pF |
| | Decade | | | | Capacitor Type |
| | 10pF, 100pF, 1 nF, 10 nF | | | | Silver mica |
| | 100nF, 1 μ F | | | | Polycarbonate |
| 10 μ F | 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 |
| | 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 | | | | |
| 7 | <u>Rheostat 2.2K 100 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 | | | |
| 8 | AUTOMATIC WIRE STRIPPER Specifications: Automatic wire stripper for Wires from 0.2-6.0 mm (AWC 24 - t0) No adjustment necessary for different Suitable for wires with insulation of PVC and other materials Adjustable length scale from 6,0 - 15,0 mm Outside safety wire cutter for wires up to max.2,5 mm' Pliers body made of fiberglass-reinforced polyamide | 1000 | 10 | 10000 |
| 9 | Spiral Binding machine: • manual spiral binding machine • A4 size • punch selecting facility | 6000 | 2 | 12000 |
| 10 | Component Organizer: Length : 400mm,H :250mm,Depth:160mm , No of Boxes :25 Drawer Spec:L:150mm H:35mm,W:70mm | 3000 | 10 | 30000 |
| 11 | Wire Stripper Chrome vanadium Steel Hardened & tempered | 100 | 40 | 4000 |
| 12 | CRO Probe | 100 | 200 | 20000 |
| | BNC TO Crocodile connector | | | |
| | BNC TO BNC connector | | | |
| 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 | 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 | 12000 | 40 | 480000 |

| | | | |
|---|--|--|---------------|
| <p>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> | | | |
| 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 | <p>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</p> | 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 | | | |

| | | | |
|--|--|--|---------------|
| 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 ± 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 | Mounting Base : Table Mounted | | | | |

| | | | | |
|----------------------------|--|-------|----|--------|
| Machine | / 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 | <u>Function generator10MHz</u> | 10000 | 12 | 120000 |
| | specification:- | | | |
| | Sine, Triangle, Square Output Waveforms | | | |
| | Easy Control of Generator Frequency | | | |
| | 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 ±10%, 50 Hz |
| | Dimension | | | | 160 (W) X 200 (D) X 100 (H) mm |
| | Weight | | | | 1.5 Kg (Approx) |
| Accessories | a) Four test tubes | | | | |
| 2 | <u>pH Meter</u> | 16000 | 2 | 32000 | |
| | Specification:- | | | | |
| | pH range | | | | 0 to 14.00pH |
| | millivolt range | | | | 0 to±1999mV |
| | Slope correction | | | | 85% t0 115% |
| | Resolution | | | | 0.01 pH,1mV mode |

| | | | | | |
|---------------------------------------|--|---|-------|---|-------|
| | Standardisation range | ±1pH | | | |
| | power | 230v±50Hz | | | |
| 3 | <u>Centrifuge</u> | | 10000 | 2 | 20000 |
| | Specification:- | | | | |
| | cap | 4×15 ml | | | |
| | rpm | 4500 | | | |
| | Power | 230V ±10%, 50 Hz | | | |
| 4 | <u>Glucometer</u> | | 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 | <u>Heart Rate Monitor cum ECG Trainer</u> | | 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 | <u>B.P. Apparatus</u> | | 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> | 22000 | 1 | 22000 |
| | 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. | | | |
| 13 | <u>12 Lead Real Time ECG Trainer</u> | 20000 | 1 | 20000 |
| | 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 | | | | |
| 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 | | | | 350000 |

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| SL. NO | NAME OF ITEMS/SPECIFICATION | UNIT COST | QTY RQD | TOTAL COST |
|--------|-----------------------------|-----------|---------|------------|
| 1 | Digital steel Podium | 37000 | 1 | 37000 |

| | | | | |
|---|---|-------|---|-------|
| | Built in 60W RMS Amplifier | | | |
| | Built in three 4" Woofer & 2 " Tweeter | | | |
| | One flexible Gooseneck Microphone | | | |
| | One Led Gooseneck light | | | |
| | Two VHF Handheld microphones | | | |
| | MIC2/line output for speaker | | | |
| | ACpower switch and light power operation | | | |
| | Wooden top, steel body and bottom | | | |
| 2 | <p>POWER AMPLIFIER 350W</p> <p>Power Output : 450W Max., 350W RMS at 10% THD 320W RMS at 5% THD, 300W RMS at 2% THD</p> <p>Output Regulation: 2 dB, no load to full load at 1kHz</p> <p>Input Channels: 7 × Mic 0.8mV/4.7k, 1 × Aux 100mV/470k ,1 × Aux 200mV/470k, 1 × Line 1V/50k</p> <p>Frequency Response : 50-15,000Hz ±3dB</p> <p>Signal to Noise Ratio: 60dB</p> <p>Outputs: Preamp 200mV/600, Line 1V/1k Speaker Outputs: 4Ω, 8Ω, 70V & 100V</p> | 21000 | 1 | 21000 |
| 3 | <p>DJ MIXER</p> <p>Mic Input (Impedance/Gain) :2kohm Balanced/62 dB 1k Unbalanced/62dB</p> <p>Line Input (Impedance/Gain):20kohm Balanced/42dB 10k Unbalanced/42dB</p> <p>THD : < 0.1 %</p> <p>Frequency Response : 20Hz-18 kHz (-1dB)</p> <p>Equalisation (Bass/Treble) : ±12dB at 100 Hz / ±12dB at 10kHz</p> <p>Line Output L/R Nominal : 0dBm (775mv)</p> <p>Maximum :+18dBm (6.5V)</p> <p>Output Impedance :600ohm</p> <p>S/N Ratio : > 68dB</p> <p>Clip LED Indication : 4dB prior to true clip</p> | 14500 | 1 | 14500 |
| 4 | <p>Microphone Stands</p> <p>Type : Table/Floor Stand</p> <p>Height :350-530 mm</p> <p>Base Dia : 150 mm</p> <p>Weight : 2.20kg</p> | 4000 | 5 | 20000 |
| 5 | <p>MICROPHONE</p> <p>Unidirectional Dynamic</p> <p>Speech & Vocal</p> | 4500 | 6 | 27000 |

| | | | | | |
|-----------------------------|---|-------------|--------|---|---------------|
| | frequency Response | 50-16,000Hz | | | |
| | Sensitivity | 2mV/Pa | | | |
| | Impedance | 300 | | | |
| 6 | LoudSpeaker 100W | | 6000 | 2 | 12000 |
| 7 | LoudSpeaker 200W | | 10000 | 2 | 20000 |
| 8 | LoudSpeaker 500W | | 15000 | 2 | 30000 |
| 9 | Public Address System: PA System with 250W RMS, 6 Channel MIC input, 4ohm, 8ohm 70V and 100V, Two BOX Type Speakers 8W RMS | | 30000 | 1 | 30000 |
| 10 | <u>5KVA Portable silent Diesel generator</u> | | 150000 | 1 | 150000 |
| | Rating : 5 KVA | | | | |
| | Phase : Single | | | | |
| | Frequency : 50 hz | | | | |
| | Voltage : 230 volts | | | | |
| | Power Factor : 0.8 | | | | |
| | Starting System : Electric | | | | |
| | Fuel Tank : 12.5 ltrs | | | | |
| | Weight : 195 kg | | | | |
| | Size : 1140 * 550 * 820 | | | | |
| | ENGINE: | | | | |
| | Model : CC418 | | | | |
| | BHP : 7.5 | | | | |
| | No.Of Cylinder : 1 | | | | |
| | Displacement : 418 cc | | | | |
| | RPM : 3000 | | | | |
| | Bore*stroke : 86*72 mm | | | | |
| | Cooling: Air cooled | | | | |
| | Aspiration: Naturally inspirated | | | | |
| Type: 4 stroke, Diesel | | | | | |
| CONTROL PANEL: | | | | | |
| Voltmeter : Yes | | | | | |
| Voltage Indicator Lamp: Yes | | | | | |
| MCB: Yes | | | | | |
| 11 | WIRELESS MICROPHONE | | 3900 | 6 | 23400 |
| 12 | PUBIC ADDRESS WALL SPEKERS | | 3000 | 5 | 15000 |
| Total | | | | | 399900 |

PRINCIPAL