

**Office of the Principal,  
Govt. Polytechnic Kangra, Distt. Kangra, H.P.**  
(AN ISO 9001; 2000 Certified Institute)  
Phone No. 01892 - 265025 - 262285.

Tender No. GPK/ 2010/-

Dated: \_\_\_\_\_

**TENDER DOCUMENT**

**TENDER DOCUMENT FOR THE PROCUREMENT OF MACHINERY & EQUIPMENT ITEMS  
FOR  
Electronics & Communication Engg., Instrumentation Engineering  
&  
Computer Engineering disciplines**

Principal,  
Govt. Polytechnic Kangra,  
Distt. Kangra, H.P. – 176001.  
Phone No. 01892- 265025  
Telefax: 01892- 262285.

**GENERAL INFORMATION**

1.	Sale of Tender Document	12 to 30-06-2010 ( up to 12.00 Noon)
2.	<b>Last Date for submission of Tender</b>	<b>30-06-2010 (up to 01.00 PM)</b>
3.	Cost of Tender Form ( At Counter)	Rs. 300/- Non-Refundable
	Cost of Tender Form ( By Post)	Rs. 350/- Non-Refundable
	Cost of Tender Form”(Downloaded)	Rs.300/- (Non-Refundable in the shape of bank Draft in favour of Principal Govt Polytechnic Kangra H.P along with Tender Form.
4.	<b>Date of Opening of Tender</b>	<b>30-06-2010 (At 03.30 PM)</b>
5.	Total Pages of Tender Document	12 Pages

Sr. No.	Name of Branch/ Deptt.	Schedule No.	Remarks
1.	Machinery & Equipment for Electronics & Comm. Engg. & Instrumentation Engg.	Schedule No. -01	
2.	Machinery & Equipment for Computer Engg. Deptt.	Schedule No. -02	

### **Terms & Conditions:**

1. The regd./ authorized dealers having dump & depot in H.P. are eligible to apply.
2. The rates quoted should be FOR Govt. Polytechnic Kangra H.P. FOR GP Kangra means in the concerned Lab/ Workshop/ store of the Institution.
3. The VAT shall be charged @ 5% against "D" form, VAT, excise duty, other taxes should be indicated separately; otherwise the rates will be deemed to be inclusive of such levies/ taxes.
4. The firm/ supplier/ dealer rate contract firm will arrange the demonstration of equipment/ material for its quality/ specification check at our premises at his own cost if required by technical evaluation committee before placing the supply order.
5. The duly constituted institute committee before delivery shall inspect the material. The firms/ supplier/ dealer/ rate contract firms shall intimate the date when the material is ready for inspection.
6. The items/ equipments shall remain under guarantee/ warranty by the supplier for a period of one year. The date of guarantee/ warranty will be reckoned from the actual day of commissioning/ installation of equipment in the concerned Lab./ workshop.
7. 90% payment shall be released within one month of the receipt & installation of goods/ material strictly as per the specifications/ in good working condition. The balance payment will be released after completion of the guarantee/ warranty period.
8. **All the bids/ tenders must be accompanied by a bid security ( Earnest Money) @ 2% of the amount of goods inclusive of all taxes/ levies in respect of which, the vendor/ supplier intends to bid in the shape of bank draft payable in favour of Principal Govt Polytechnic kangra H.P and the same will be kept as security in case of successful bidder. The tenders without earnest money shall be out rightly rejected. The earnest money will stand automatically forfeited if the ordered firm fails to complete the supply within the stipulated period.**
9. All the quoted items must be branded, quoted with Model No. & should be supported with relevant catalogues & documents for technical evaluation. The tenders not conforming to the specifications/ descriptions of material will be summarily rejected as void.
10. The date of accepting/ opening the tenders happens to be a holiday; the tenders will be opened on the next working day at the same venue/ time.
11. Telegraphic, Fax, conditional & tenders without earnest money shall not be accepted.
12. The supplier will have to submit at least the attested copy of latest Income Tax Clearance Certificate with the tender.
13. The Tender form along with the earnest money & forwarding letter on letter head/ pad of the firm should be sent through Regd./ Speed Post/ By hand or through courier well in advance so as to reach to the Principal, Govt. Polytechnic Kangra, H.P. on or before the date of closing the offer i.e. 30-06-10 up to 01.00 PM. The Principal, Govt. Polytechnic Kangra, H.P. will not be responsible for any postal delay. The tenders will be opened on **30<sup>th</sup> June2010 at 03.30 PM** in the presence of bidders.
14. The offer shall be sent in the sealed envelope clearly indicating on the top of the **ENVELOPE WITH RED INK THE TENDER NO, DUE DATE & the Category of items.**
15. The Principal, Govt. Polytechnic Kangra, can also appoint a "**Negotiation Committee**" if required.

16. Principal, Govt. Polytechnic Kangra reserves the right to change the date for receiving, opening and also to accept or reject any or all the tenders without assigning any reasons.
17. The bidders will submit a copy of the customers to whom they have supplied the similar items during the last year.
18. The No. of items/ quantity may vary at the time of placing the supply order.
19. The rates quoted shall be valid for next six months.

SECTION –A

1	Name of Firm/ Organization	
2	Registration No.	

3	Complete Postal Address (with Phone No.)	
4	Whether manufacturer/ Dealer/ Supplier/ Rate Contractor	
5	Total amount of Items Tendered (Excluding Tax) in words.	
6	Financial Standing	
7	Past Experience	
8	Organizational Capacity	
9	Technical Particulars	
10	Details of Earnest money	Amount:  Draft No.:  Date:

(Signature of the Tenderer with Seal)

**SCHDEULE NO -01**

S.N.	Name of item with brief description	Approx Qty. to be Procured
1	2	3
1.	<b>Programmable Logic Control (PLC) Trainer with Learning function of different 19 Nos. modules and KGLWIN supports ladder diagram software of a PLC System.</b> *PLC (Allen Bradley/ LG/ Reputed Make), 12 digital inputs and 8 digital outputs, 24 VDC, 2Kstep (EEPROM), 0.4µsec per	

	<p>instruction, RS 232, RS 485 protocol for communication with PC, Supply voltage-110/220VAC.</p> <p>-2analog inputs and 1 analog output, 0-10VDC/4-20mA jumper settable with 10 bit resolution with Rack mounted panels.</p> <p>-Converter cum distribution panel for digital inputs and digital outputs: All digital I/Os are brought out on experiment panel for easy connection.</p> <p>-Converter cum distribution panel for analog inputs and outputs: All digital I/Os are brought out on experiment panel for easy connection.</p> <p>-Simulation + extension panel for digital inputs, analog inputs and analog outputs. Provided with 04 Nos. of switches and 4 Nos. of push buttons for digital inputs. 6 Nos. of potentiometer for analog inputs and 2 nos. of extension for analog output connection should provide.</p> <p>-Simulation extension panel for digital outputs with status LED indication. Should mounted on replaceable panel in sturdy" Aluminum Rack" with I/O is brought out on 4mm banana socket on converter cum distribution panel while simulation cum extension panel provided necessary switches lamps, pots etc.-</p> <p>Software Requirement: KGLWIN supports ladder diagram &amp; instruction set</p> <p>-The PLC should also support SCADA software (Optionally) for 19 static application module supplied.</p> <p>Static application modules compatible with above PLC should provide as under: -</p> <p style="padding-left: 40px;">Sequential control of Motors (2) Stat Delta Control (3) Door Bell Operation( 4) Switching of Lights( 5) Silo Control ( 6) 7 segment display (7)Starter Control (8) Resistance winding (9) Tank Level Control (10) Traffic Light Control (11) Bottling Plant (12) Reaction Vessel (13) Microwave Oven (14) Car parking Garage (15) Combination Lock (16) Elevator Simulator ( 17) Process Control Trainer (18) Washing Machine (19) Tank Level Control.</p>	02Nos.
2	<p><b><u>To Plot the Characteristics of optical devices like photo diodes, photo cells, light operated switch using Photo- Transistor and LDR Trainer:</u></b></p> <p>-Incandescent lamp with variable intensity</p> <p>-It should have Light Sensors: Photodiode with I to V converter, Phototransistor with I to V Converter, Photo resistor/ LDR with R to V converter using constant current source, Photovoltaic cell/ Solar Cell, Opto coupler, Laser diode, Infrared LED, Red LED.</p> <p>-The trainer should have built in power supply facilities</p> <p>- Complete with banana tags &amp; operational manual &amp; accessories.</p>	03Nos.
3	<p><b><u>To Measure Strain Using Strain Gauge transducer Trainer</u></b></p> <p>- Piezo resistive transducer for strain measurement</p> <p>-Micrometer 0-25mm (Accuracy 0.01mm) for strain generation.</p> <p>-Strain gauges in half &amp; full Wheat stone bridge arrangement</p> <p>-Zero &amp; span adjustment for calibration with instrumentation amplifier.</p> <p>-Experiments on Gauge factor determination, Strain indicator, Displacement measurement using Strain gauges &amp; cantilever.</p> <p>- The trainer should have built in power supply facilities</p> <p>- Complete with banana tags &amp; operational manual &amp; accessories.</p>	03 Nos.
4	<p><b><u>Temperature Sensing Transducers Trainer</u></b></p> <p>-Measurement of temperature using thermistor &amp; thermocouple, Instrumentation Amplifier to amplify thermocouple signals.</p> <p>-Built in heat bar/ mini oven driven by Power amplifier of sufficient wattage Temp. Selection up to 95° C in 5 ranges with ON/ OFF closed loop control. It should have Temp. Sensors: - Thermocouple J with room temperature calibration pot. Thermocouple K with room temp. Calibration pot. Thermistor ( 100K), PT100, IC sensor (AD590), Bimetallic switch</p> <p>-The trainer should have built in power supply facilities.</p> <p>-Complete with banana tags &amp; operational manual &amp; accessories.</p>	03 Nos.
5	<p><b><u>Measurement of Humidity Using Humidity Meter</u></b></p> <p>-Humidity measurement from 5.0% RH to 95.0%RH and fast time response</p> <p>-Temperature range- 20°C to +199°C</p> <p>-Data Hold and Max. Hold function</p> <p>-Display-LCD with status indication</p> <p>-Power Supply9V battery with auto power off facilities</p> <p>-Accessories 'K' type thermocouple, humidity probe &amp; operating manual should provide.</p>	03 Nos.
6	<p><b><u>Displacement Sensing Transducers Trainer:</u></b></p> <p>-Measurement frequency of 1KHZ sine wave@ 2Vpp</p> <p>-Zero &amp; span adjustment for calibration of following transducers: Resistive linear transducer 0-20mm</p> <p>-Capacitive Linear transducer 0-20mm</p> <p>-Capacitive angular transducer 0-90°</p> <p>-Inductive linear transducer 0-20mm</p> <p>-LVDT transducer 0-20mm or (-10mm to+10mm)</p> <p>-The trainer should have built in power supply facilities</p> <p>-Complete with banana tags &amp; operational manual &amp; accessories.</p>	03 Nos.
7	<p><b><u>To assemble and test an instrumentation amplifier measure its gain, input and output impedance:</u></b></p> <p>-Inverting &amp; Non inverting amplifier, summing &amp; difference amplifier Integrator circuit, Differentiating circuit.</p> <p>-Precision rectifier, half wave &amp; full wave, voltage to current converter, current to voltage converter, Op-amplifier characteristics, Inst. Amplifier.</p> <p>-Schmitt trigger, comparator, sign changer, offset Null, Peak detector, clipping circuit, clamping circuits (DC restorer), Waveform Generator.</p>	03 Nos.

	-The trainer should have built in power supply facilities. -Complete with banana tags & operational manual & accessories.	
8	<b>Strain Gauge Transducer Trainer with Measurement of pressure using Bourdon Tube:</b> -Piezo resistive transducer for pressure measurement (0-15psi) Pressure sensor (0-15psi), gauge type. - Pressure generating hand pump connected using T Connector to the sensor & bourdon pressure gauge for measurement & calibration. -Complete set up with operational manual & accessories	03 Nos.
9	<b>Study of an X-Y record and Graphical records:</b> -Inputs:2 Channels, 1 external trigger input -Transient Recorder; Time Scale 20 ms/ div. to 2000s/div -Max. record time 9.4 hour/ screen -Automatic storage data facilities -Marker for time & amplitude -Optical ISOLATED from computer -Powerful Window based software - Accessories Required; Probe, Users manual, CD Driver	03 Nos
<b>COMMUNICATION SYSTEM - II</b>		
10	<b>Trainer Kit for transmission of hamming code on a serial link:</b> CPU: Philips 89CXX Family,16x2LCD module, Keyboard interface, Level converter, RS 232/ TTL, Communication with PC Transmission of hamming code on serial link Hamming code should be generated automatically by micro controller. The correct data & faulty data should be saved with error with built in Power supply	01 No.
11	<b>Telephone Trainer Kit</b> The telephone trainer will provide with complete circuit MIMIC inscribed on it and all components will be mounted on PCB and visible to students, protected with acrylic sheet. Mute, Redial and On/ Off Hook switches, dialer & Ringer section, Pulse/ Tone Dialing, Music On Hold Facilities, Line in Section: One DOT Line Connection port, Hand Set: One Hand set connection port Keyboard: 4x3 Matrix Keyboard, Dialer: Tone & Pulse, Redial up to 32 digits, Mute and On/ Off Hook switches, Indicators: Line in, Hook, Tone & Ringer, Ringer Volume control, speed Path: Fully Non-Blocking Dial Pulse Ratio: 10pps±10%, Tone Frequency: 430 Hz, Input Power: From Telephone Lines, Interactive simulator/ software to support the training kit should be provided to perform various experiments, facility for student login etc., Test Points: 12 Nos., Switch Faults: 04 Nos., Complete all accessories & operating manual should be provided.	01 No.
12	<b>EPABAX Trainer Kit</b> Based on 89c51 CPU, Provision for up to 1 trunk Line & 3 extension lines, IBM PC compatible Keyboard for using commands, 20x2LCD Display will be provided. Complete circuitry of EPABAX is on board should provide. Working in 2 Modes: Trainer Mode & EPABAX Mode, Explanation, Observation, Alignment and adjustment of internal & external controls, Programme for different section should be written in RAM, Programs written by students will be executable 70dbm Cross Talk Attenuator, Telephone instruments 04 Nos will be provided. Experiments perform on the trainer: Redial, 1 Extension to Extension Call, Paging, To hold a line, Call Consult, Call parking, Call forwarding busy, Talk trunk to extension, Call pickup, Call transfer, Auto call back, locking/ Unlocking etc.	01 No.
<b>COMMUNICATION NETWORK LAB</b>		
13	<b>Data Communication Training System:</b> Communication ports: Serial & Parallel, Transmission media Fiber Optics, Twisted pair, infrared link and copper cable FSK modem communication technique, Protocols: Serial Port: X modem, Y Modem, Z Modem, Kermit Parallel Port: Stop & Wait, Go back to N, Selective repeat, High Speed Data Transmission, 8 bit ASCII representation of received data for data transfer through serial port, LED's for displaying status, control and data bus of parallel port, study of printer interface, Windows based operating software package, Supporting Hardware & software Flow controls, Switch faults: Min. 04 Nos. should provide, Test Points: Min. 20 Nos. test points should provide on board to study different effect on circuits; Ports: Serial RS-232C Parallel 25 pin LPT port, Transmission Media: Fiber Optics, twisted pair, infrared & Copper cable, Interactive simulator to support the training kit should provide to perform various experiments, facility for student login to perform following experiments: - Study of serial & parallel port, study of serial communication, study of flow control in serial communication, study of protocols in serial communication, Study of Fiber optic communication , Study of Wireless communication, Study of Modern communication, Study of Parallel communication with protocols, Stop & wait, Go back to N, Selective repeat protocols, study of Printer interface using parallel port etc. Simulator will have facility to print the completed experiment file with details like Aim, Objective, Equipments, Procedure and Observations & Conclusion along with student details like Branch, Division, Roll	01 No.

No. & Date on which experiment carried out etc.		
<b>NETWORK FILTERS &amp; TRANSMISSION LINE (NFTL LAB)</b>		
14	<b>Crystal Filter trainer :</b> The trainer should provide on a single PCB with complete circuit diagram inscribed on it. Housed in ABS Plastic cabinet with protection cover. Built in power supply, With a set of patch cord, operating manual should provide.	01 No.
<b>POWER ELECTRONICS LAB</b>		
15	<b>Semiconductor &amp; Power Semiconductor Devices Characteristics Experiments Trainer:</b> DC Power supply: $\pm 12V$ , 500mA, Un-Regulated Power Supply 17V, 750mA, Regulated 13.5V/3A, O/P is provided as 12V Battery charging supply, Isolated DC supply+12V, 300mA with isolated common, On board inverter transformer of primary 230 V and secondary12-0-12,3A, On board lamp load of 15W(100W)230VAC line voltage, Aux. DC Power supply variable up to 200 Vdc/0.5A, Field ON/ OFF control with field failure relays & over current protection circuit, Two pulse transformers of 1:1:1 will be provided, Selector switch of 2 pole 6 way for selecting different types of firing pulses. Load resistor of 10 $\Omega$ /40W, Centre tapped 3A Choke 4mH/16mH, commutation capacitors of 10 $\mu$ F/100V, AC paper capacitor of 4 $\mu$ F/440V, The above trainer should be provided with 4mm sufficient banana patch cords and experiment module panel will covering the following characteristics inscribed on it, Housed in ABS plastic cabinet with protection cover, built in power supply, with a set of patch cord, operating manual should provide.	02 Nos.
16	<b>Power Semiconductor Application Trainer:</b> DC Power Supply $\pm 12V$ ,500mA, Un-Regulated Power Supply 17V, 750mA, Regulated 13.5V/3A O/P is provided as 12V battery charging supply, Isolated DC supply+12V,300mA with isolated common, On Board inverter transformer of primary 230V and secondary12-0-12,3A, On board Lamp load of 15W(100W) should be provided. 230VAC line voltage should be available, Aux. DC power supply variable up to 200Vdc/ 0.5A, Field ON/ OFF control with field failure relays & over current protection circuit two pulse transformers of 1:1:1 should be provided. Selector switch of 2 poles 6 ways for selecting different types of firing pulses, Load resistor of 10 $\Omega$ /40W, Centre tapped 3A choke 4mH/ 16mH, Commutation capacitors of 10 $\mu$ F/100V, AC paper capacitor of 4 $\mu$ F/440V. The above trainer should be provided with 4mm banana sufficient patch cords & experiment module panel will cover the applications of (1) Triac lamp dimmer (2) AC fan regulator (3) SCR operated light sensitive switch using LDR (4) SCR operated temperature sensitive switch using thermistor (5) UJT relaxation Oscillator (6) Half & full wave rectifier using SCR (7) Timer using SCR & UJT (8) Built in Lamp Load.	01 No.
17	<b>UPS Training System:</b> It should be consisting of Input range: 170 - 270V, AC/ 50Hz, Output (Input present): 195-250Vsine, Output (Input absent): $\pm 230$ 5% Q-sine, Capacity: 200W lamp load on AVR, Battery: 12V/7AH maintenance free lead acid, Backup for 5 mins on 200W Lamp Load or 20 min on 1 PC with monitor (14"), Minimum14 Nos. test points should be provided. It should be divided into 4 circuits diagrams panels for easy understanding like: Input module, Output Module, AVR/ Charger module, Inverter module etc., It should have the facility of test points to observe different outputs, It should be provided with : "Aluminum Racks" to house all Circuit panels together on board to perform various experiments on trainers. Set of patch cords, Operating manuals with all experiments should provide.	01 No.
18	<b>DC Motor Thyristorised speed Control Trainer:</b> -DC Full wave controlled converter with 200V/200W Chasis mounted, PMDC motor with 10V/ 1000rpm electrical techo generator and brake pulley loading arrangement with Powder coated sturdy aluminum flat panel ( table top) system carrying Half bridge SCR based 0V-195V/5A cosine firing with linear characteristics. Supporting signal conditioning circuit for speed, torque in Kg wt to output 0-2.5Vdc, -Set of patch cords, Instruction Guide, Student Workbook with all experiments covered should provide.	02 Nos.
<b>CONSUMER ELECTRONICS LAB</b>		
19	<b>Microphone Experiment Training Kit with built in power supply:</b> It should be consisting of Frequency and directional response of Carbon Microphone, Dynamic/ Moving Coil Microphone, Condenser/ elect set Microphone and Crystal Microphone, Operating manual and 15 Nos. banana tags should provide	01 No.
20	<b>Trainer Kit for measurement of frequency response of Microphone &amp; Loudspeaker:</b>	01 No.
21	<b>Tape Recorder System demonstration working model with fault breakpoints:</b> The trainer should have Mechanism Control: Record, Play, Reverse, Forward, Stop, Pause etc. Frequency: 100Hz to 8 KHz, Audio Power Output: 7 W each channel, Tape Speed; 4.75 cm/sec., Erase Head: Fixed Magnet, Motor: 12 VDC, The trainer should have colorful circuit diagram printed on PCB, Recording should be built in microphone input. Number of faults: Minimum 10 Nos. should provide. Number of test Points: Minimum 45 Nos. should provide, Speaker should be built in with provision for external speakers, Power Supply: 230V AC, 50 Hz, Complete with all accessories & operating manual should provide.	01 No.
22	<b>Colour TV Trainer Kit</b>	

	System: CCIR-B-PAL-G, 625 lines, Power Consumption: 75 Watts, Fuse: 2A, IF Frequency: 38.9 MHz for Video, 33.4 MHz for Audio, Sound: O/p: 20 Watts, Picture Tube : 51 Cms. Flat, Channels: 230 Channels, RF I/P Impedance: 75 Ohms, Circuit blocks: System control circuit, Video IF, Sound Selection, Tuner Selection, Horizontal & Vertical Osc. & output, Video & chroma section, Power supply Section, AV Section and remote section. On Screen: Volume, Brightness, Remote Control Function: Volume, Brightness, Contrast, Colour, Channel, Selection, Audio Mute, Scan, Zoom etc. No. of fault: 20 Nos. should be provided, No. of Test Points: 50 Nos. should be provided Power Supply: 230V±15% AC, 50 Hz, Experiment manual with circuit diagram should provide	01 No.
23	<b>Demonstration working model of VCD transport mechanism:</b> It should have min. 35 test points of signal for different functions, Built in IC6392 should provide for control of spindle motor, tracking motor, carriage motor and Laser power control assembly, Optical assembly to read- write the digital data, display panel control, Demodulated RF output, built in Audio/ Video signal decoder IC-SSL9908, Built-in 8V & 5VDC, 1 Amp power supply, Block diagram should be printed on top for easy understanding of Connecting VCD player to a television receiver, connecting VCD player and TV receiver, Connecting VCD Player and TV, Connecting VCD player to an Audio System, The trainer should have following trouble shooting techniques with fault inserted by jumper: - General trouble shooting should be described, detailed fault finding procedure, Miscellaneous problems, System: PAL, NTSC, Laser: Semiconductor Laser Type. The trainer should have following circuit blocks: Digital signal processor section, Audio Amplifier section, RF Converter section, Display & Panel control section. The trainer should have PCB size 430x254mm, Power Supply: 230V AC, 50 HZ, Cabinet should be housed in metal molded with on board test point, Complete with all accessories & operating manual should provide.	01 No.
24	<b>DVD demonstration working model with fault breakpoint:</b> The trainer should have function switches i.e. Play/ Pause, Stop, Open/ Close, Display: Program, Time and Track status, Audio O/P: 10 Watt PMPO (5Wx2 Channels), Speakers: 8 Ohm/ 3 Watt, CD Format: Audio CD, MP3CD, MP4CD, VCD2.0/3.0, DVD etc. Remote control function should provide as Play/ Pause, Forward, Rewind, Stop, Program Select/ Repeat, Skip Forward, Skip reverse, Open/ Close, track select. Distortion: 5 to 10% for expanded PCB, Out Put Required: RF out Put, Video Out Put, CR Out Put, CB out put, Y Out put, SW out put, FR out put, FL out put, Optical Out put, S. Video out put, Coaxial out put, M-R out put, M-L out put, Centre out put, SR- Out put, SL out- put. The Trainer part should be soldered on tags on SINGLE PCB of size 15"x12" with complete circuit diagram screen printed. Power Supply: 230V AC, 50 Hz. Complete with all accessories & operating manual should provide.	01 No.
<b>Computer Engineering Department ( Schedule- 02)</b>		
1.	Visual Studio with msdn libraries latest version	01No.
2	JAVA software (JDK, Core JAVA, JAVA enterprise)	01 No.
3	Turbo C complier	01 No.
4	Windows 7.0 Latest Education Version	01 No.
5.	Adobe Dreamweaver latest version	01 No.
6.	Oracle (Latest client version) with multiuser platform	01 No.
7.	Latest Antivirus ( 50 Users), 1 yr/ 2yr/3yr Option, Edu/ Corporate Option	01 No.
8.	Laser Colour Printer ;Print resolution: up to 600x600 dpi, Print at up to 8ppm colour, up to 12 ppm black, Recommended monthly page volume: 250 to 1000 1 paper tray up to 150 sheet in put capacity, Host based printing	01 No.
9.	Battery for Lap top; Compaq Armada 1750 Notebook PC 6366/T/6400/D/M/1	01 No.
<b>CC-IV &amp; DNSW Lab</b>		
10	<b>Computer System</b> , Intel I 3 core, 17" TFT with keyboard, optical mouse, speakers, window 7.0 Professional, Net work Card 802.3/ 802.11 compatible, 2 GB/ Higher RAM, 240GB/ Higher SATA HDD, DVD dual layer writer, 4 USB with front Options, Anti Virus.	12 Nos.
11	<b>Lap Top/Note Book Computer Intel 3 core</b> , Web Camera, 3 GB/ higher RAM, 320 GB HDD, DVD Writer, USB Card Reader, 802.3/ 802.11 a/b/d/8 standard Wi-fi/ Wimax Compatible, Blue Tooth enabled, 4 Hrs. back up, 14 or 15.3" Screen, Window 7.0 Prof./ Education with Anti Virus for ½ Years.	01 No.
12	<b>UPS 600VA offline</b>	19 Nos.
13	<b>Laser Printer Desktop (B&amp;W) up to 600x600 dpi, 8ppm or higher.</b>	02 Nos.
14	<b>Computer Chairs (without arms)</b>	30 Nos.
15	<b>A.C. with Voltage Stabilizers ( Split/ Window- 1.5 ton)</b>	02 Nos.
16	<b>Blinds on windows of CC-IV and DSNW Lab (10 Windows) (1.6x1mm) ( H&amp;W)</b>	
17	<b>Cat-05 Cable (UTP)</b>	100 Mtrs.
18	<b>RJ-45 Connectors</b>	150 Nos.
19	<b>Familiarization of ICs Trainer:</b> a) 7400 (b) 7402 (c) 7422 (d) 7486 (e) 7408 (f) 7404 (g) 7483 (h) 7485 (i) 7457 (j) 74151 (k) 74138. It should cover the following features: O/P DC Voltage: Fixed 5 V and □ 15 V □1%, O/P current: 1 Amp Variable Clock freq. 1 Hz to 1 MHz Logic Input: 16 switches for High/ Low, Output Indicators, Bright Red LEDs, Seven segment display: Common Anode type Red LED, Voltmeter 0-20 V, Bread Board Set 1&2: two, Half main & one full main strip, BCD input: 3	05 Nos.

	seven segment display Decoder: 1 seven segment display, Input Voltage 230V/ 50Hz AC Mains, Operating Manual & patch cord should be provided.	
20	<b>EX-OR and Ex-NOR gates and construction of the Ex-OR logic gates, Ex- Or logic gate using NAND gates, Ex-NOR Gate, EX- NOR logic gate using NAND gates and verification of its truth table trainer:</b> It should cover the following features: +5V, DC at 100mA Power Supply Five, 2 input NAND Gate, One, 2-input EX-OR and one 2 input EX- NOR gate, Two switches for giving binary inputs. Two LED's indicators for checking logic state of output- Input Voltage: 230 V/ 50 Hz AC Mains: Operating manual & patch cord should be provided	05 Nos.
21	<b>OR, AND, NAND GATES USING NAND GATES TO MAKE OR, NOR, NOT, AND &amp; EX-OR GATES AND VERIFY TRUTH TABLES TRAINER:</b> It should cover the following features: +5VDC at 100mA Power Supply, 4 Input NAND Gates, 2 input NAND and OR Gate-Switches for logic selection, LED for visual indication of status-Input Voltage: 230 V/ 50 Hz AC Mains-Operating manual & patch cord should be provided.	05 Nos.
22	<b>8 Bit Digital Multiplexer : With 8 inputs &amp; one multiplexed output using IC 74151 Trainer Operating Manual &amp; patch cord should be provided</b>	05 Nos.
23	<b>8 Bit 1:8 line De- Multiplexer using IC 74138 Trainer: Operating manual &amp; patch cord should be provided</b>	05 Nos.
24	<b>Multiplex Two BCD numbers to seven segment display Trainer:</b> It should cover the following features: +5V/ 100mA Power Supply seven Segment display of Common Anode Decoder Driver IC, Four SPDT switches corresponding to four variables A,B,C & D for giving logic '1' & logic '0' inputs, Input Voltage 230V/ 50Hz AC Mains, Operating manual & patch cord should be provided	05 Nos.
25	<b>Implementing NOT, OR, AND, NOR and XOR gates using NAND gate implementing NOT, OR, AND, NOR and XOR gates using NAND gate Trainer:</b> It should cover the following features: +5V.DC at 100mA Power Supply Ten 2 Input NAND Gates- Sixteen, 2 input NAND gates switches for logic selection, LED for visual indication of status-Input Voltage: 230 V/ 50 Hz AC Mains, operating manual & patch cord should be provided.	05 Nos.
26	<b>Trainer to study of Rs. D &amp; J-K, T and Mater Slave J-K Flip Flop with built in Power Supply</b>	05 Nos.
27	<b>3 bit asynchronous up- counter using gates, 3 bit synchronous down- counter using gates Trainer.</b> It should cover the following features: +5V.DC at 100mA Power Supply, Four master slave J-K flip- flops with preset and clear terminals, Three, 2 input, AND-OR gate combinations, One inverter( NOT gate), 4 Input NAND gate, Switches for logic selection, LED for visual indication of status. Input Voltage: 230 V/ 50 Hz AC Mains- Operating manual & patch cord should be provided.	05 Nos.
28	<b>Trainer to study of shifting of 4 bit data using IC 74LS194</b> in modes i.e. Serial Left IN-serial left and Right OUT, Serial Left and Right IN- Parallel OUT, Parallel IN- Serial Left and Right OUT, Parallel IN- Serial OUT.	05 Nos.
29	<b>Implement a circuit to add two nos, realize the look, ahead carry adder to add 3 two bit Nos. Trainer:</b> It should cover the following features Five stages of IC flip flops, Clock circuit generating negative clock pulses, Band switch for presetting a particular bit, Five toggle switches for isolating or combining the five flip flops, Slide switches for add/ sub. Resetting the flip flops to 00000, 5 LED Indicators representing a 5 bit binary, input Voltage 230 V/ 50 Hz AC Mains, Operating manual & patch cord should be provided.	05 Nos.
30	<b>Subtraction of two-bit nos. using 7483 and subtraction by 2's complement method using IC 7483 Trainer:</b> It should cover the following features+ 5 VDC at 100mA Power Supply Seven, 2 Input AND gates each following by an inverter to give, Seven2- Input NAND gates, Four-3- input AND gate each following by an inverter to give four 3- input NAND gates, One gated flip Flop, A clock generator with a repetition frequency of 500Hz, Switches for logic selection-LED for visual indication of status, Input Voltage: 230V/ 50 Hz AC Mains- Operating manual & patch cord should be provided	05 Nos.
31	<b>Study of D-Latch &amp; D flip-Flop Trainer:</b> It should cover the following features: +5V DC at 100mA Power Supply, Four, 2 input NAND gates, Four ,3 input NAND gates, One inverter (NOT gate) Four LED's with driver circuit to observe the O/P of Flip-Flop: A pulsar to provide the pulses for triggering Input voltage: 230 V/ 50 Hz AC Mains* Operating manual & patch cord should be provided	05 Nos.

#### Terms & Conditions:

1. The regd./ authorized dealers having dump & depot in H.P. are eligible to apply.
2. The rates quoted should be FOR Govt. Polytechnic Kangra H.P. FOR GP Kangra means in the concerned Lab/ Workshop/ store of the Institution.
3. The VAT shall be charged @ 5% against "D" form, VAT, excise duty, other taxes should be indicated separately; otherwise the rates will be deemed to be inclusive of such levies/ taxes.
4. The firm/ supplier/ dealer rate contract firm will arrange the demonstration of equipment/ material for its quality/ specification check at our premises at his own cost if required by technical evaluation committee before placing the supply order.

5. The duly constituted institute committee before delivery shall inspect the material. The firms/ supplier/ dealer/ rate contract firms shall intimate the date when the material is ready for inspection.
6. The items/ equipments shall remain under guarantee/ warranty by the supplier for a period of one year. The date of guarantee/ warranty will be reckoned from the actual day of commissioning/ installation of equipment in the concerned Lab./ workshop.
7. 90% payment shall be released within one month of the receipt & installation of goods/ material strictly as per the specifications/ in good working condition. The balance payment will be released after completion of the guarantee/ warranty period.
8. **All the bids/ tenders must be accompanied by a bid security ( Earnest Money) @ 2% of the amount of goods inclusive of all taxes/ levies in respect of which, the vendor/ supplier intends to bid in the shape of bank draft payable in favour of Principal Govt Polytechnic kangra H.P and the same will be kept as security in case of successful bidder. The tenders without earnest money shall be out rightly rejected. The earnest money will stand automatically forfeited if the ordered firm fails to complete the supply within the stipulated period.**
9. All the quoted items must be branded, quoted with Model No. & should be supported with relevant catalogues & documents for technical evaluation. The tenders not conforming to the specifications/ descriptions of material will be summarily rejected as void.
10. The date of accepting/ opening the tenders happens to be a holiday; the tenders will be opened on the next working day at the same venue/ time.
11. Telegraphic, Fax, conditional & tenders without earnest money shall not be accepted.
12. The supplier will have to submit at least the attested copy of latest Income Tax Clearance Certificate with the tender.
13. The Tender form along with the earnest money & forwarding letter on letter head/ pad of the firm should be sent through Regd./ Speed Post/ By hand or through courier well in advance so as to reach to the Principal, Govt. Polytechnic Kangra, H.P. on or before the date of closing the offer i.e. 30-06- 10 up to 01.00 PM. The Principal, Govt. Polytechnic Kangra, H.P. will not be responsible for any postal delay. The tenders will be opened on **30<sup>th</sup> June 2010 at 03.30 PM** in the presence of bidders.
14. The offer shall be sent in the sealed envelope clearly indicating on the top of the **ENVELOPE WITH RED INK THE TENDER NO, DUE DATE & the Category of items.**
15. The Principal, Govt. Polytechnic Kangra, can also appoint a "Negotiation Committee" if required.
16. Principal, Govt. Polytechnic Kangra reserves the right to change the date for receiving, opening and also to accept or reject any or all the tenders without assigning any reasons.
17. The bidders will submit a copy of the customers to whom they have supplied the similar items during the last year.
18. The No. of items/ quantity may vary at the time of placing the supply order.
19. The rates quoted shall be valid for next six months.

**All the above conditions are acceptable to us.**

For Authorized Signatory: \_\_\_\_\_

Name of Firm; \_\_\_\_\_

Complete Address \_\_\_\_\_