

**NOTICE INVITING TENDER (NIT)**

Sealed tenders in a two bid system (Technical bid and Financial bid ) are invited from Original Equipment Manufacturers/Authorised Dealers/reputed suppliers for supply of machineries/equipments to different departments and laboratories of Shillong Polytechnic under AICTE–NEQIP Project sponsored by AICTE, New Delhi, details of which are available in the tender papers.

Tender papers may be obtained from the office of the Principal, Shillong Polytechnic, Shillong on payment of Rs.500/- towards the cost of the document. As the main institute website is under maintenance, the same may also be downloaded from the alternative website [shpalumni.eu5.org](http://shpalumni.eu5.org). However if downloaded document is used for tender, Rs 500/- should also be paid separately towards the cost of document by BC/DD, in addition to EMD, while applying.

Sl. No.	Activity	Date
1	Issue of Tender Document	From 29/09/2016 to 19/10/2016 (10:00 A.M to 2:00 P.M. on all working days)
2.	Last Date for Submission of Tender	19/10/2016 up to 12:00 Noon
3.	Opening of Tender (in presence of bidder or his/her authorized representative)	19/10/2016 at 2:00 P.M.

**After evaluation of technical bids, financial bids of the qualified bidders will be opened.**

**Venue of Bid Opening: Shillong Polytechnic, Mawlai Kyntonmassar, Shillong – 793022, Meghalaya, India**

**BID INSTRUCTIONS:**

**A. Quotations will have to be submitted in TWO SEALED COVERS.** One of the sealed cover containing the Technical bid to be marked 'TECHNICAL BID' and the other containing the Financial bid to be marked 'COMMERCIAL BID'. The address of the firm submitting the quotation and the officer to whom the quotation is addressed to, must appear distinctly on both the sealed covers. The TWO SEALED COVERS must be placed inside the THIRD SEALED COVER with the address of the firm submitting the quotation and the officer to whom the quotation is addressed to and the following distinctly written on it:

**(QUOTATION FOR SUPPLY & INSTALLATION OF MACHINES/EQUIPMENTS TO SHILLONG POLYTECHNIC UNDER NEQIP PROGRAM. DEPARTMENT: (name of the department/laboratory for which bid is submitted, as per Annexure V, to be mentioned.)**

**NIT Ref. No. SHP/AICTE –NEQIP/Tender-01/ADM-08/2014/322      Dated Shillong, the 28<sup>th</sup> Sept, 2016**

**(Out station bids will be received by registered post/speed post only till the last day of submission)**

**B. Submission of Compliance Certificate:** Duly filled and signed Compliance Certificates (as per formats at Annexure I (A & B) are must with the Technical bid.

**C. Bid not transferable:** The bid documents are not transferable and the seal and signature of the authorized official of the firms must appear on all the papers and envelopes submitted.

**D. QUALIFICATION REQUIREMENTS**

- i. The Bidder should be a firm of reputation having sufficient expertise and experience with sound warranty/service support capability and authorization from manufacturers.
- ii. Separate bid is to be submitted for individual department/laboratory. e.g. one for Mechanical Engg. Dept., one for Physics Dept. etc. (As per Annexure V.)
- iii. The Bidder quoting for all the items for a department/laboratory in the NIT will be given preference over those bidders who bid for part of the listed items for that particular department/laboratory.
- iv. Bidders must be having sound financial capability to be supported by bank statement to show financial capability/transaction equivalent to bidding amount in the last financial year.

Or

The annual turnover of the bidder for the last three years should not be less than Rs 15 lakh and should be supported by annual accounts duly audited by a chartered accountant.

- v. All taxes, levies, surcharges including the customs clearance, entry tax, etc and handling freight and insurance should be paid and handled by the Bidder. However the Institute may provide assistance in getting way bill for the equipment to be supplied.
- vi. The Bidder must furnish the following documents:-
  - a) A valid sales Tax and VAT registration certificate.
  - b) Income tax and sales tax clearance certificate.
  - c) Professional tax clearance certificate.
  - d) Trading license issued by respective Autonomous District Council wherever applicable.
  - e) 'Performance Certificate' for similar nature of supply of machineries/equipments for at least one similar work in an organization of repute of value not less than 50% of the quoted price.
- vii. Bidder should signed in all the pages of this tender document with his official seal and mention his address and contact number on the same.
- viii. Soft copy of the Technical bid in "doc" or "docx" format must also be submitted in a CD, in addition to the hard copies. Quotations not accompanied by soft copy will be rejected.

#### **E. NIT TERMS & CONDITIONS:**

1. **Rates:** Rates quoted in the Commercial Bid should be on **DOOR DELIVERY SHILLONG POLYTECHNIC, SHILLONG** basis, as per Annexure-IV.
2. **Bidders** shall indicate their rates in clear/visible figures as well as in words and shall not alter/overwrite/make cutting in the quotation. In case of a mismatch, the rates written in words will prevail.
3. **Validity of Quotation:** Quoted rates must be valid for **90 days** from the date of submission of bids.
4. **Warranty:** The quoted equipment and components must be warranted for a minimum period of one year specified against the item.
5. **Literature must:** All the quotations must be supported by the printed technical leaflet/literature and the specifications mentioned in the quotation must be reflected/ supported by such printed technical leaflet/literature. The model and specifications quoted should invariably be highlighted in the leaflet/literature for easy reference.
6. **After Sales Service:** Vendors should clearly state the available nearest after sales service facilities in the region with their address and telephone number, without which their offers will be rejected.
7. **Dealership Certificate:** Dealers or Agents quoting on behalf of a Manufacturer must enclose a valid dealership certificate.
8. **Earnest Money:** Refundable earnest money deposit (EMD) of Rs.10000/- (Rupees Ten thousand) only through demand draft drawn in favour of "The Principal , Shillong Polytechnic", payable at Shillong, will have to accompany the Technical bid. The EMD of unsuccessful bidders shall be returned after award of contract. EMD of the successful bidder will be released on submission of the Performance

Bank Guarantee or delivery of the ordered items, as applicable. Offers received without Earnest Money shall be summarily rejected.

9. **Performance Bank Guarantee (PBG):** The successful bidder shall furnish an unconditional PBG (as per format at Annexure II) for 10% of the Purchase Order value **for single item exceeding Rs. 300000/- (Rupees three lacs) only** from a scheduled Bank of India, after receiving the purchase order. Where the PBG is obtained by a foreign bank, it shall be confirmed by a Scheduled Indian bank and shall be governed by Indian Laws and be subjected to the jurisdiction of courts at Shillong. The PBG shall guarantee that:

- a) The Vendor guarantees satisfactory operation of the Equipment & components against poor workmanship, bad quality of materials used, faulty designs and poor performance.
- b) The Vendor shall, at his own cost, rectify the defects/replace the items supplied, for defects identified during the period of guarantee.
- c) This guarantee shall be operative from the date of installation till 60 days after the warranty period.

10. **Delivery, Installation and Commissioning:**

- a) **Time Limit:** Delivery should be **WITHIN THREE WEEKS** from the date of issue of purchase order. The installation should be completed **WITHIN ONE WEEK** from the date of delivery and commissioning of the equipment should be done **NO LATER THAN TWO WEEKS** from the date of delivery.
  - b) **Safe Delivery:** All aspects of safe delivery shall be the exclusive responsibility of vendor. At the destination site, the package will be opened only in the presence of SHILLONG POLYTECHNIC user/representative and vendor's representative. The intact condition of the package and the seals/indicators for not being tampered with, shall form the basis for certifying the receipt in good condition.
  - c) **If during unpacking,** testing, installation or commissioning of any equipment or item/component associated with an equipment or assorted accessories, inclusive of hardware and software, it is found that non-compliance with the specifications or the terms and conditions of NIT has occurred, then the supplier is bound to replace any or all such items at his own risk and cost.
  - d) **Detailed technical manuals,** handbooks, drawings, warranty card and Factory Quality Assurance checklist, test results and any other certification mentioned in the Technical specifications shall be supplied along with the consignment.
  - e) **Supplied manuals/handbooks** must cover detailed technical specifications and installation, operation, maintenance and System Safety procedures.
  - f) **For Experimental setups,** list of experiments, details of theory, procedure and methods of taking measurements etc. should be provided in the form of hand books, for each experiment that can be carried out with the machine, in duplicate.
  - g) **The receipts for taxes paid,** if any, for the supplied materials should also be submitted.
  - h) **Insurance:** The supplier is to establish 'All Risk Transit Insurance' coverage till door delivery at Shillong Polytechnic, Shillong.
  - i) **Part Delivery:** Acceptance of part delivery shall be a prerogative of the Principal, Shillong Polytechnic, Shillong.
  - j) **Shillong Polytechnic reserves the right** to reject any or all of the items if it does/they do not comply with the specifications during site testing, installation and commissioning stage & the firm will be responsible for replacing such rejected item(s) at its own risk and cost.
  - k) **All bid offers for heavy machines** costing more than one lac, must be accompanied by a separate Comprehensive Maintenance rates on an annual basis to be negotiated and effective at an appropriate time, preferably after expiry of warranty/PBG period.
11. **Conditional tenders not acceptable:** All the terms and conditions mentioned herein must be strictly adhered to by all the vendors. Conditional tenders shall not be accepted on any ground and shall be rejected straightway. Conditions mentioned in the tender bids submitted by vendors shall not be binding on SHILLONG POLYTECHNIC, SHILLONG.
12. **VAT deduction at source:** In case of suppliers within Meghalaya, VAT deduction at source, as per Order/Notification of the Govt. of Meghalaya will be applicable.

- 13. Hand written offers will be rejected.**
- 14. Late and delayed tender:** Late and delayed tender will not be considered. In case of any unscheduled holiday occurs on the prescribed closing/opening date, the next working day shall be the prescribed date of closing/opening.
- 15. Payment:** 100% payment within 30 (thirty) days from date of delivery, installation, commissioning, acceptance and on submission of PBG, if applicable.
- 16. Enquiry during the course of evaluation not allowed:** No enquiry from the bidder(s) shall be entertained during the course of evaluation of the tender till final decision is conveyed to the successful bidder(s). However, the Purchase Committee or its authorized representative may make enquiries/seek clarification from the bidders. In such a case, the bidder must extend full co-operation. The bidders may also be asked to arrange demonstration of the offered items, in a short period of notice.
- 17. Principals Discretion:** The acceptance of the quotation will rest solely with the **PRINCIPAL, SHILLONG POLYTECHNIC**, who in the interest of the Institute is not bound to accept the lowest quotation and reserves the right to himself to reject any or all the quotations received without assigning any reason thereof.
- 18. Force Majeure:** If the performance or the obligation of either party is rendered commercially impossible by any of the events hereafter mentioned, that party shall be under no obligation to perform the agreement under order, after giving a 15-day written notice, from the date of such an event, to the other party. The events referred to are as follows:
- a) Any law, statute or ordinance, order action or regulations of the Government of India,
  - b) Any kind of natural disaster, and
  - c) Strikes, acts of the Public enemy, war, insurrections, riots, lockouts, sabotage.
- 19. Applicable Laws:**
- a) The contract shall be governed by the laws and procedures established by Govt. of India and subject to exclusive jurisdiction of Competent Court and Forum in Shillong/Mehghalaya.
  - b) Any dispute arising out of this purchase shall be referred to The Principal, Shillong Polytechnic, Shillong and if either of the parties hereto is dissatisfied with the decision, the dispute shall be referred to the decision of an Arbitrator based in Shillong, who should be acceptable to both the parties, to be appointed by the Principal, Shillong Polytechnic, Shillong. The decision of such Arbitrator shall be final and binding on both the parties.

Sd/-  
**Principal, & CPC,**  
**AICTE-NEQIP Project,**  
**Shillong Polytechnic, Shillong**

Encl.: **ANNEXURE-I, ANNEXURE-II, ANNEXURE-III, ANNEXURE-IV & ANNEXURE-V**

**Annexure – I**

**A. COMPLIANCE CERTIFICATE FOR NIT TERMS**  
(To be enclosed in the Technical bid)

Sl. No.	NIT Terms and Conditions	Yes/No
01	Cost of bid document paid	
02	Qualification requirement agreed and respective certificates enclosed	
03	Validity of quoted rate for 90 days agreed	
04	All documents as per para vi of qualifying requirements enclosed	
05	EMD submitted (appropriate certificate enclosed)	
06	PBG term agreed	
07	Payment term agreed	
08	Delivery, Installation, Commissioning terms agreed	
09	Warranty period agreed	
10	CMC terms agreed	
11	Literature: Printed Literature provided	
12	Dealership /Distributorship certificate (in case of dealers/agents) provided	
13	Sales Service: address, phone no etc, of after Sales Service centre in India (for imported goods)/ in the region provided	
14	Applicable laws terms agreed	
15	All pages of tender document signed with official seal, address and contact no	
16	Soft copy of Technical Bid in “doc” or “docx” provided	

Signature with Seal:.....

Vendor: M/s.....

**B. COMPLIANCE CERTIFICATE FOR SPECIFICATIONS**  
**(One for each item must to be enclosed in the Technical bid)**

<b>Item Sl. No:</b>	<b>Item name:</b>	
<b>Specifications as per Annexure-V</b>	<b>Quoted Item Specs.*</b>	<b>Complied (Yes/No)</b>

Signature with Seal:.....

Vendor: M/s.....

**\* Vendor must quote the parameter specification of the quoted product in this column and not just copy the specification from the tender call document. Failure to do so will lead to rejection of the tender.**

**Annexure - II**

**PERFORMANCE BANK GUARANTEE**

To:  
SHILLONG POLYTECHNIC  
Mawlai Kyntonmassar, Shillong - 793022  
Meghalaya, India

**WHEREAS** ..... (Name of Supplier)  
hereinafter called "the Supplier" has undertaken, in pursuance of Contract No.....  
dated,..... 20... to supply..... (Description of  
Goods and Services) hereinafter called "the order".

**AND WHEREAS** it has been stipulated by you in the said order that the Supplier shall furnish  
you with a Bank Guarantee by a recognized bank for the sum specified therein as security for  
compliance with the Supplier's performance obligations in accordance with the order.

**AND WHEREAS** we have agreed to give the Supplier a Guarantee:  
**THEREFORE WE** hereby affirm that we are Guarantors and responsible to you, on behalf of  
the Supplier, up to a total of  
..... (Amount of the  
Guarantee in Words and Figures) and we undertake to pay you, upon your first written  
demand declaring the Supplier to be in default under the order and without cavil or argument,  
any sum or sums within the limit of ..... (Amount of  
Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for  
your demand or the sum specified therein.

This guarantee is valid until the .....day of.....20.....

Signature and Seal of Guarantors

.....  
.....  
.....

Date.....20....

Address:.....

.....  
.....

All correspondence with reference to this guarantee shall be made at the following address:

The Principal, Shillong Polytechnic, Shillong, Meghalaya

**Annexure - III**

**MANUFACTURERS' AUTHORIZATION FORM**

No.

Dated \_\_\_\_\_

SHILLONG POLYTECHNIC  
Mawlai Kyntonmassar, Shillong - 793022  
Meghalaya, India

Dear Sir,

We..... who are established and reputable  
manufacturers of .....having factories at

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(address of factory) do hereby certify that.....

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.....(Name of the Authorised Dealer) is our authorized dealer to quote against  
your tender enquiry no .....

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No other Company other than .....

(Name of the Authorised Dealer) is authorised to quote of our products against this Tender Enquiry

No.....

Yours faithfully,  
(Name)  
(Name of manufacturers)



**Annexure – IV**

**COMMERCIAL BID**

PRICE STRUCTURE

Tender No:-

Name of Item:

Name of Manufacturer:

Model No. :

Sl No	Particulars	Amount in INR
i)	Basic Price per Unit	
ii)	Excise Duty (if any) (Mention percentage of Excise Duty)	
iii)	Sales Tax / VAT Rs. (Specify rate at which S.T. / VAT Claimed)	
iv)	Packing & Forwarding Charges (Including loading and unloading)	
v)	Freight Charges	
vi).	Insurance Charges Rs	
vii)	Installation/Trial Commissioning charges	
viii)	Other charges if any (Please specify)	
ix)	CMC charges for two years after expiry of normal warranty.	
x)	Total Price (i to ix)	

Rs.

Sl. No.	Description of item	Price per Unit (all inclusive)	Indian or Foreign If Indian State Where Manufactured.

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Signature and Seal of the Bidder

**Annexure - V**

**LIST OF EQUIPMENTS FOR MECHANICAL ENGINEERING DEPARTMENT, SHILLONG  
POLYTECHNIC, SHILLONG - AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No.</u></b>	<b><u>Item</u></b>	<b><u>Technical specifications</u></b>
1	Solar Flat Plate Collector	Duda Solar water heater collector SRCC evacuated energy split panel, hot thermal 58mmX1.8m tubes and frame size 59.4 inch(lower end)X 78 inch(side)X61.4 inch(upper end)
2	Photo Voltaic Cell	Complete Solar Kit, 100W Photovoltaic PV 72 Cell Panel, 12 V Boat off grid.
3	Solar Cooker	Portable Solar cooker oven, all season outdoor stove oven
4	Horizontal Axis Wind Mill	Horizontal Axis Wind Mill 400W, rotor diameter – 3.8ft, weight 5.8kg, mount1.5inch, voltage configuration 12V, No. of blades 3, controller output 12V DC
5	HP Desktop computer	Processor
		Intel® 6th Generation Core i3 6100 with minimum clock speed of 3.7 GHz, 3MB Cache or better or Equivalent
		Chipset
		Intel Q150 chipset
		Motherboard
		OEM Motherboard with OEM logo embossed on the motherboard (No Sticker)

		Memory	4 GB DDR4 RAM expandable to 64GB; Four DIMM slots; Non-ECC dual-channel upto 2133 MT/s DDR4 SDRAM
		Hard Disk Drive	500GB HDD, 7200 RPM, SATA III 6 Gbps, SMART IV
		Optical Drive	Super Multi DVD Writer
		Graphics	Integrated Graphics
		Audio	High Definition Integrated Audio with Internal Speaker
		Ethernet	Integrated Gigabit (10/100/1000 NIC) LAN
		Slots	Minimum 4 low profile PCI/PCIe Slots (3 x PClex1 and 1 x PClex16)
		Bays	Minimum 5 bays with atleast (2) 3.5" Drive bays & (1) ODD bay
		Ports	Front I/O (2) USB 2.0 ports, (4) USB 3.0 Ports 3.5mm headphone output and microphone jack Rear I/O (2) USB 2.0 ports, (2) USB 3.0 Ports (1) VGA video port; (1) DisplayPort/DVI-D Port (1) RJ-45 network connector (1) RS-232 serial port 3.5mm audio in/out jacks (2) PS/2 keyboard and mouse ports
		Form Factor	MT/SFF
		Power Supply	200 W active PFC Power Supply
		Keyboard/Mouse	PS/2 104 keys keyboard (Same make as PC) PS/2 2 Button Scroll Mouse (Same make as PC)
		Operating System	Licensed Windows OS with recovery CD/DVD
		Diagnostic Tool	Inbuilt Pre-Boot BIOS Diagnostics
		Security	TPM 1.2 Security Chip SATA port disablement (via BIOS) Serial, parallel, USB enable/disable (via BIOS Optional USB Port Disable at factory (user configurable via BIOS) Removable media write/boot control Power-On password (via BIOS) Administrator password (via BIOS) Setup password (via BIOS) Support for chassis padlocks and cable lock devices
		Compliance And Certification	Energy Star ver 6 EPEAT Certified for India Green Peace rating of 5.5 and above All Certifications should be furnished

		System Weight / Volume	Weight should be no more than 8 KG and volume no more than 13L
		Warranty	3 years onsite Warranty
		Monitor	18.5 LED Monitor from OEM of PCs

**Annexure - V**

**LIST OF EQUIPMENTS FOR PHYSICS LABORATORY, SHILLONG POLYTECHNIC,  
SHILLONG - AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No.</u></b>	<b><u>Item</u></b>	<b><u>Technical specifications</u></b>
1.	Vernier callipers with depth guage.	Craft: 15cm I.M.E. Type very superior in velvet lined box.
2.	Screw guage.	Craft: Moore & weight type steel screw 20 x 1/100 mm
3.	Spherometer.	Craft: Steel Screw, Brass disc, 1/100 mm
4.	Stop Clock.	Craft Indian: Metal Body, Start Stop and fly back action
5.	Physical Balance Varanasi.	Presision open beam physical balance with extend support divided door cas brass pans and wooden base capacity 250 grams. Sensitivity 1mgm.
6.	Specific Gravity Bottle.	Corning glass with cappillary stopper 25ml
7.	Object and image pins.	Steel rod: height 10-12 cm & 1 cm diameter
8.	Battery Eliminator.	Output 2-4-6-8-10 & 12 volts DC 3 Amps & 5 Amps
9.	Milliammeter (DC)	Weston with Indian Bakelite Stand Range: 0-1mA, 0-2mA, 0-3mA
10.	Ammeter (DC)	Weston with Indian Bakelite Stand Range: 0-1A, 0-2A, 0-3A
11.	Voltmeter(DC)	Western with Indian Bakelite stand Range
12.	Pointer galvanometer 30-0-30.	Weston with Indian Bakelite

13.	Resistance Box.	Plug type Craft-Constantor coils and manganin coils Range in ohms: 1-500
14.	Plug key one way.	Craft Bakelite base quality
15.	Plug key Commutator Four way.	Craft Bakelite base quality.

### **Annexure - V**

#### **LIST OF EQUIPMENTS FOR CHEMISTRY LABORATORY, SHILLONG POLYTECHNIC, SHILLONG - AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No</u></b>	<b><u>Item</u></b>	<b><u>Technical specifications</u></b>
1	pH meter	Craft digital with electrodes
2	Pencil pH meter	Pocket pH meter
3	Digital weight balance	Craft imported electronic digital weight balance Model – B
4	Hot plate	Craft Hot plates (30cm x 25 cm)
5	Conductivity meter	Craft digital conductivity meter with manual
6	Iron test kit	AE 313, Aquasol
7	Arsenic Test Kit	AE 408 Aquasol
8	Chlorine Test Kit	AE 246 Aquasol
9	Fluoride Test kit	AE 210 Aquasol
10	Dissolved Oxygen test kit	AE do8 Aquasol
11	Nitrate test kit	AE 308 Aquasol
12	Ammonium test Kit	AE 307 Aquasol
13	Magnetic Stirrer	Craft Magnetic Stirrer Capacity 2 lits
14	Prtri dish	5 cm diameter
15	Reagent Bottles	60 ml (Narrow mouth dust proof cover)
16	Volumetric Flask	100 ml
		250 ml
17	Glass crucibles with lids	10 ml
18	Calibrated pipette	20 ml
19	Laboratory Thermometer	360 0 C (With mercury)
20	Measuring Cylinder	10 ml
21	Reaction plate	Polypropylene ,D-NASE/R-NASE
22	Micro spatula	6 inch

23	Redwood viscometer	Stainless steel bath with electrical heating arrangement, 220 v AC mains with tap oil cup, Stainless steel jet, cupcore, ball valve, stirrer and M S steel stand
24	Wide range pH paper	Range 0- 14

#### **Annexure - V**

#### **LIST OF EQUIPMENTS FOR WORKSHOP DEPARTMENT, SHILLONG POLYTECHNIC, AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No.</u></b>	<b><u>Items</u></b>	<b><u>Specification &amp; Made</u></b>
1.	Friction Thimble Measuring Tool kit	0-6" / 0-150 mm micrometer range
2.	Eaton Aeroquip Thread Identification kit	0-3.5" micrometer range
3.	H.S.S. Lathe Tool Bit	3/8"x4"
4.	Adjustable Handle Tap Wrench (Lathe tool)	-
5.	Screw Driver set	Taparia
6.	Adjustable Wrench	10" & 12"
7.	Dovetail Milling Cutter	3/8"x60o
8.	Ring Spanner	
9.	Drive Socket Set	S1/4H, Square Taparia
10.	Combination Socket Wrench	
11.	Internal Grooving Boring Bar Inner Hold	
12.	Tool Bit Holder	
13.	Combination mini Plier	Taparia 1621
14.	Drill Bit	Titanium, Taparia
15.	Knurling Tool	
16.	Tailstock Live Centre (for lathe)	1" dia.
17.	Power Hacksaw Blade	38 cm length, 1" width
18.	Swivel Vice / Machine Vice (For drilling machine)	Universal type, Medium Size, Taparia/JK
19.	Try Square	150mm, India Smith
20.	Angle Plate	140mm, Taparia
21.	Chisel (for metal works)	150mm, Taparia
22.	C-Clamp (for job holding on working table)	150mm, Taparia
23.	Leg Vice	6" Jaw, Taparia/JK
24.	Cross Peen Hammer	800 gm, Taparia/JK
25.	Straight Peen Hammer	800 gm, Taparia/JK
26.	Fuller set	-
27.	Swage set	-

28.	Swage Block	50-100 Kg
29.	Angle Grinder	4" dia. Bosch/Hitachi
30.	Angle Grinder	7/8" dia. Bosch/Hitachi
31.	Bench Grinder	10" dia. Bosch/Hitachi
32.	Hand Grinder	6" dia. Bosch/Hitachi
33.	Set Hammer	Standard Taparia/JK
34.	Borax	-
35.	Wire Brush	-
36.	Cold Chisel	Taparia
37.	Hot Chisel	Taparia
38.	Power Planner	Bosch
39.	Core Cutter Set	Bosch
40.	Extension Cable (Electrical)	Copper, Power Line
41.	Iron Jack Plane	14" Amant
42.	Hand Saw	23"Speed, Japan
43.	Mortise Chisel(Lever)	1/4"
44.	Wooden Working Table	2.5mx1.5mx1m, 2.5" thickness top
45.	Iron Moulding Box	Standard Size (Square)
46.	Wooden Moulding Board	Standard Size (Square)
47.	Showel	Standard Size
48.	Knife	Local, Standard Size
49.	Bentonite Powder	-
50.	5mm <sup>2</sup> Copper Wire	ATC
51.	2.5mm <sup>2</sup> Copper Wire	ATC
52.	0.7mm <sup>2</sup> Earth Wire	ATC
53.	Multimeter (Digital)	Rishabh
54.	Earthing Plate (Copper)	1' x 1'
55.	Earth Continuity Conductor	10mm <sup>2</sup>
56.	Neon Line Tester	
57.	Flush Type Switch	6Amp, Maru
58.	3-pin Socket	6Amp, Maru
59.	5-in-1 Socket with Box	16Amp, Maru
60.	Incandescent Lamp	60W
61.	Square Box (Wooden)	8'x5'
62.	Angle Bulb Holder	Pin Type
63.	MCB Box	6-ways, Ameto
64.	MCB	6Amp,Havells
65.	MCB	16Amp,Havells
66.	Isolator	63Amp,Havells
67.	Contactor with Auxiliary Contact	3-pole,Siemens
68.	Start-push Button	Siemens
69.	Stop-push Button	Siemens
70.	Thermal Overload Relay	10Amp,Siemens
71.	Timer Relay	
72.	Electrician Hacksaw	
73.	Standard Wire Gauge	
74.	Hand Drilling Machine	12mm,Bosch
75.	Tachometer (Hand-type)	
76.	Ammeter	0-10 Am,Meco
77.	Earth Resistance Tester	

78.	Ceiling Fan	Bajaj
79.	Gang Box	4+1
80.	Insulation Tape	
81.	Room Heater	Bajaj
82.	Box Spanner	Taparia
83.	Wire Cutter-cum-Stripper	
84.	Pipe Vice	2"
85.	Adjustable Wrench	10", Taparia
86.	Open-ended Wrench	Taparia
87.	Pliers	Taparia
88.	Pipe Wrench	14", Taparia
89.	Pipe Wrench	12", Taparia
90.	Claw Hammer	Taparia
91.	Sledge Hammer	1 Kg, Taparia
92.	Hacksaw Frame	Taparia
93.	Freezer Water Heater	15 litre, Bajaj
94.	Wall Mixture with Overhead Shower	Bosch
95.	G.I. Pipe	1/2", Bansal
96.	Pipe Threader Dice (Double Handle)	1/2" - 1"
97.	Threader Dice Teeth	1/2"
98.	Pipe Bending Machine	Taparia

**Annexure - V**  
**LIST OF EQUIPMENTS FOR CENTRAL COMPUTER CENTRE, SHILLONG**  
**POLYTECHNIC, SHILLONG - AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No.</u></b>	<b><u>Item</u></b>	<b><u>Technical specifications</u></b>
1	HP Desktop computer	Processor - Intel® 6th Generation Core i5 6500 with minimum clock speed of 3.2 GHz, 6MB Cache or better or Equivalent
		Chipset - Intel Q150 chipset
		Motherboard - OEM Motherboard with OEM logo embossed on the motherboard (No Sticker)
		Memory - 4 GB DDR4 RAM expandable to 64GB; Four DIMM slots; Non-ECC dual-channel upto 2133 MT/s DDR4 SDRAM
		Hard Disk Drive - 500GB HDD, 7200 RPM, SATA III 6 Gbps, SMART IV
		Optical Drive – Super Multi DVD Writer
		Graphics - Integrated Graphics
		Audio - High Definition Integrated Audio with Internal Speaker
		Ethernet - Integrated Gigabit (10/100/1000 NIC) LAN
		Slots - Minimum 4 low profile PCI/PCI e Slots (3 x PCIe1 and 1 x PCIe16)
		Bays - Minimum 5 bays with at least (2) 3.5" Drive bays & (1) ODD bay



	<p>Ports – Front I/O  (2) USB 2.0 ports, (4) USB 3.0 Ports  3.5mm headphone output and microphone jack  Rear I/O  (2) USB 2.0 ports, (2) USB 3.0 Ports  (1) VGA video port; (1) Display Port/DVI-D Port  (1) RJ-45 network connector  (1) RS-232 serial port  3.5mm audio in/out jacks  (2) PS/2 keyboard and mouse ports</p>
	Form Factor - SFF (Small Form Factor)
	Power Supply - 200 W active PFC Power Supply
	Keyboard/Mouse - PS/2 104 keys keyboard (Same make as PC) PS/2 2 Button Scroll Mouse (Same make as PC)
	Operating System - Licensed Windows Operating System with individual recovery CD/DVD
	Diagnostic Tool - Inbuilt Pre-Boot BIOS Diagnostics
	Security - TPM 1.2 Security Chip SATA port disablement (via BIOS) Serial, parallel, USB enable/disable (via BIOS) Optional USB Port Disable at factory (user configurable via BIOS) Removable media write/boot control Power-On password (via BIOS) Administrator password (via BIOS) Setup password (via BIOS) Support for chassis padlocks and cable lock devices
	Compliance And Certification - Energy Star ver 6 EPEAT Certified for India Green Peace rating of 5.5 and above All Certifications should be furnished
	System Weight / Volume - Weight should be no more than 8 KG and volume no more than 13L
	Warranty - 3 years onsite Warranty
	Monitor - 18.5 LED Monitor from OEM of the PCs

#### **Annexure - V**

#### **LIST OF EQUIPMENTS FOR LANGUAGE LABORATORY, SHILLONG POLYTECHNIC, AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No</u></b>	<b><u>Item</u></b>	<b><u>Technical specifications</u></b>
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1	Benq W 750 L.C.D Projector (Ceiling mounted) with installation complete	Resolution - 1280 x 720 pixels Type - 3D Display Mode - 480p, 720p, 576i, 480i, 567p, 1080i, 1080p Projection Ratio - 1.31:1.57 Device Chipset - DLP Lamp - 210 W Lamp Life - 4000 hr Aspect Ratio - 16:09 (Native) Maximum Projection Size - 300 inch Brightness - 2500 lm (Maximum) Zoom Ratio - 1.2:1 warranty - 2 Years on Projector and 6 Months / 500 hrs on Lamp (Whichever is Earlier) RS-232 Connectors - 1 x (DB 9-pin) Audio In - 1 x Mini Jack S Video - Yes USB - 1 Mini B Type USB Port VGA - 1 x 1 x (D-sub 15-pin) HDMI - 2 HDMI Port, Version 1.4 Audio Out - 1 x Mini Jack AV In - RCA Composite Audio In, RCA Composite Video In Component Video In - Component Video In Other Connectors - 1 x S Video Input (Mini DIN 4-pin), 1 x Audio L/R Input (RCA), 2 x IR Receiver, 1 x Composite Video Input (RCA), 1 x Component Video Input Signal Type - NTSC, PAL, SECAM, SDTV Remote Control - Yes Mounting kit with cables - Universal Projector Ceiling Mount Kit with accessories and VGA HD15 Male to Male M/M Connector Cable Cord including wiring
2	Microphone	Wired/Wireless – Wired Cable Type - 1.5 m Height of Microphone - 160 mm Microphone Polar Pattern – Omnidirectional Microphone Sensitivity - -80 dB 3 Db Impedance - 600 ohms Frequency Response for Microphone - 100 - 10000 Hz Other Features - 3.5 - 6.3 mm Mono Connector, Dynamic Function, 25 mm Diaphragm, Windshield for Better Sound Quality
3	5 in 1 wall mounted Speakers	Wired/Wireless - Wired Compatible Devices - Mobile, Computer Configuration - 5.1 Channel Subwoofer – 1 Input Power - 230V AC, 50Hz Power Output - 3W (Satellite), 13W (Subwoofer) Power Source - AC Adapter Impedance - 4 Ohms (Subwoofer), 6 Ohms (Satellite) Total Power Output RMS (W) - 3W (Satellite), 13W (Subwoofer) Frequency Response - 35 - 200Hz(Subwoofer), 200 - 20000 Hz (Satellite) Max Output RMS - Center Satellite (W) - 28 W Memory Card Slot – Yes USB Ports - 1 USB Ports

### **Annexure - V**

**LIST OF EQUIPMENTS FOR STAFF DEVELOPMENT PROGRAMME AND  
MODERNIZATION OF TUTORIAL CLASSROOMS, SHILLONG POLYTECHNIC,  
SHILLONG - AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No.</u></b>	<b><u>Item</u></b>	<b><u>Technical specifications</u></b>
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1	HP Desktop computer	<p>Processor - Intel® 6th Generation Core i5 6500 with minimum clock speed of 3.2 GHz, 6MB Cache or better or Equivalent</p> <p>Chipset - Intel Q150 chipset</p> <p>Motherboard - OEM Motherboard with OEM logo embossed on the motherboard (No Sticker)</p> <p>Memory - 4 GB DDR4 RAM expandable to 64GB;</p> <p>Four DIMM slots; Non-ECC dual-channel upto 2133 MT/s DDR4 SDRAM</p> <p>Hard Disk Drive - 500GB HDD, 7200 RPM, SATA III 6 Gbps, SMART IV</p> <p>Optical Drive – Super Multi DVD Writer</p> <p>Graphics - Integrated Graphics</p> <p>Audio - High Definition Integrated Audio with Internal Speaker</p> <p>Ethernet - Integrated Gigabit (10/100/1000 NIC) LAN</p> <p>Slots - Minimum 4 low profile PCI/PCI e Slots (3 x PCIe1 and 1 x PCIe16)</p> <p>Bays - Minimum 5 bays with at least (2) 3.5” Drive bays &amp; (1) ODD bay</p> <p>Ports – Front I/O</p> <p>(2) USB 2.0 ports, (4) USB 3.0 Ports</p> <p>3.5mm headphone output and microphone jack</p> <p>Rear I/O</p> <p>(2) USB 2.0 ports, (2) USB 3.0 Ports</p> <p>(1) VGA video port; (1) Display Port/DVI-D Port</p> <p>(1) RJ-45 network connector</p> <p>(1) RS-232 serial port</p> <p>3.5mm audio in/out jacks</p> <p>(2) PS/2 keyboard and mouse ports</p> <p>Form Factor - SFF (Small Form Factor)</p> <p>Power Supply - 200 W active PFC Power Supply</p> <p>Keyboard/Mouse - PS/2 104 keys keyboard (Same make as PC)</p> <p>PS/2 2 Button Scroll Mouse (Same make as PC)</p> <p>Operating System - Licensed Windows Operating System with individual recovery CD/DVD</p> <p>Diagnostic Tool - Inbuilt Pre-Boot BIOS Diagnostics</p> <p>Security - TPM 1.2 Security Chip</p> <p>SATA port disablement (via BIOS)</p> <p>Serial, parallel, USB enable/disable (via BIOS)</p> <p>Optional USB Port Disable at factory (user configurable via BIOS)</p> <p>Removable media write/boot control</p> <p>Power-On password (via BIOS)</p> <p>Administrator password (via BIOS)</p> <p>Setup password (via BIOS)</p> <p>Support for chassis padlocks and cable lock devices</p> <p>Compliance And Certification - Energy Star ver 6</p> <p>EPEAT Certified for India</p> <p>Green Peace rating of 5.5 and above</p> <p>All Certifications should be furnished</p> <p>System Weight / Volume - Weight should be no more than 8 KG and volume no more than 13L</p> <p>Warranty - 3 years onsite Warranty</p> <p>Monitor - 18.5 LED Monitor from OEM of the PCs</p>
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2	UPS	Power Capacity 1000VA, Power Provided -600 Watt Voltage Required -AC 100 V Output voltage - 230V. Battery Run Time (Up To) -10 mins at full load Battery Technology -lead acid Service & Support details-2 years Cables details- power cable, serial cable Frequency required- 50/60 Hz
3	Digital camera	<ul style="list-style-type: none"> <li>• Make – Nikon coolpix P900</li> <li>• 16 MP CMOS Image Sensor</li> <li>• Full HD Video Recording</li> <li>• Electronic Viewfinder with Dioptre Adjustment</li> <li>• Built-In Flash Light</li> <li>• 3 inch Vari-Angle TFT LCD Monitor</li> <li>• 7 Continuous Shots at 7 fps</li> <li>• ISO 100 – 1600 (extendable up to 6400)</li> <li>• EXPEED 3 Image Processing System</li> <li>• Expandable Memory</li> <li>• Rechargeable Battery</li> <li>• Special Effects Mode</li> <li>• Dimension: 139.5 mm x 103.2 mm x 137.4 mm approx.</li> <li>• Weight: 899 Grams (With Battery &amp; Memory Card)</li> <li>• SUPC: SDL161723947</li> </ul>
4	Tripod for digital camera	<ul style="list-style-type: none"> <li>• Brand - Simpex</li> <li>• Model - 2400</li> <li>• Folded Length - 620 mm</li> <li>• Leg Tip - Radial</li> <li>• Load Capacity - 2900 g</li> <li>• Maximum Operating Height - 1575 mm</li> <li>• Special Features - Multiple Section Aluminum Channel Legs, Independent Leg Adjustments Extra Wide Stance and Stability, Quick Release Mounting Platform for Fast Removal from Tripod, Hand Held Shooting, Simpex-C Nylon Carry Case</li> <li>• Technical Details - 3 Way Pan Head Pin Video / Photo Design, Fluid Effect Pan Head, Aluminum Channel Legs, Radial Leg, Geared Center Column Design</li> <li>• Weight - 1340 g</li> <li>• Maximum Height - 620 mm</li> </ul>

**Annexure - V**  
**LIST OF EQUIPMENTS FOR LIBRARY DEPARTMENT, SHILLONG POLYTECHNIC,**  
**SHILLONG - AICTE-NEQIP PROJECT PHASE-II**

<u>Sl. No.</u>	<u>Item</u>	<u>Technical specifications</u>
1.	Server in the library	<p>Model: HP Proliant ML 330 G6 Server  Processor Intel Xeon E5606 Processor  Processor Included: 1  Processor Speed: 2.5 Ghz or higher  Processor Sockets: 1  Memory/RAM: 8 GB  Memory Type: DDR 3  DIMM Slots: 24  Hard Disk/Storage: Open Bay HDD Storage 6X600 GB 10K RPM  2.5"SAS Hot Plug HDD  Hard Drive Bays: 8  Hard Drive Type: Hot Plug  Write Speed 22 X  DVD Drive: Data Transfer Rate(per second) 22.16 Mbytes/s (16x)max  Buffer Size 2MB  Operating System: Debian Linux Server OS with CD/DVD  Network Controller: Gigabit 4 Port  Power Wattage: 460W HP  Power supplies: 1  Installation: Yes  Mouse: Standard HP USB Mouse  Keyboard: Standard HP USB Keyboard  Monitor: 18.5" or higher LED/LCD  Warranty: 3 Years Onsite</p>
2.	HP Laserjet Printer	<p>Print technology - Laser  Print colours - No  Mac compatible - Yes  Duplex printing - Manual (driver support provided)  Print speed black (normal, letter) - Up to 19 ppm  Print speed black (normal, A4) - Up to 18 ppm  Processor speed - 266 MHz  Media weight, supported - 60 to 163 g/m<sup>2</sup>  Cable included - Yes  Warranty - 1 Year  Minimum system requirements - Windows 8, Windows 7 (32-bit/64-bit): 1 GB RAM; Windows Vista (32-bit/64-bit), Windows XP, Windows Server 2008 (32-bit/64-bit), Windows Server 2003: 512 MB RAM; all systems: 350 MB free hard disk space, CD-ROM drive, USB port  Storage temperature range - 20 to 40°C  Operating humidity range - 10 to 80% RH  Operating humidity range - 30 to 70% RH  Storage humidity - 10 to 90% RH  Operating temperature range - 15 to 32.5°C</p>

3.	Bar-code scanner	<p>           Eyeball CS-153 linear barcode scanner            Features:            Light Source: Linear Sensor            Scan Rate: 270 Scans/Sec            Minimum Bar Width: 0.1mm (4 mil)            Depth Of Scan Field: 10~390 mm            Minimum Print Contrast: = &gt; 35%            Indicator LED: Red LED 660nm            Interface: USB Interface            Decode Capability: UPC/EAN, Codabar, Code 39, Code 93, Code 128, Industrial 2 of 5, Interleave 2 of 5, Matrix 2 of 5, MSI/Plessey, Code 11, code 32, Chinese Post, Telepen, RSS (option).            Current Consumption: Less than 110 mA            Operating Temperature: 0 to 50            Storage Temperature: -20~60?            Humidity: 10%~90%         </p>
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**Annexure - V**  
**LIST OF EQUIPMENTS FOR RESEARCH AND DEVELOPMENT WORKS, SHILLONG**  
**POLYTECHNIC, SHILLONG - AICTE-NEQIP PROJECT PHASE-II**

<b><u>Sl. No.</u></b>	<b><u>Item</u></b>	<b><u>Technical specifications</u></b>
1	Mohr' Salt ( Ferrous Ammonium Sulphate)	1kg
2	1, 10 – phenanthroline	100mg
3	Acetone	500ml
4	Ammonia	2.5ltrs
5	Ammonium Chloride	500gm



6	Ammonium Nitrate	100gm
7	Brucine Soln for Nitrate	100ml
8	Conc. Hydrochloric Acid	500ml
9	Conc. Nitric Acid	1000ml
10	Conc. Sulphuric Acid	500ml
11	Dithizone reagent (for detection of Lead)	100ml
12	EDTA	100g
13	Ferroun 0.025M Solution AR	100ml
14	Formaldehyde	500ml
15	Glacial Acetic Acid	500ml

16	Hydroxylamine hydrochlorine solution	100g
17	Iodine solution for TLC spray	125ml
18	Mercury Sulphate 98% Extra pure	100g
19	Potassium Chromate	500g
20	Potassium Dichromate	500g
21	Potassium Iodide	100g
22	Potassium Permanganate	500g
23	Silver Sulphate	25g
24	Silver Nitrate	10g
25	Sodium Acetate	500ml

26	Sodium Alizarin mono Sulphonate (Alizarin Red S)	25g
27	Sodium Arsenite	100g
28	Sodium Azide 99% pure	100g
29	Sodium Flouride	500g
30	Sodium Hydrogen Carbonate	500g
31	Sodium Hydroxide	500g
32	Sodium sulphite Anhydrous	500g
33	Sodium Thiosulphate pentahydrate	500g
34	Starch solution	500g
35	Tetrahydrate Maganaous Sulphate	500g

36	Zirconium oxychloride	100g
37	Polythene Bottles	500ml
38	Anion exchange Resin	1 litre
39	BOD bottles	300 ml
40	BOD Incubator	Crafts BOD incubator 125 ltrs capacity 455X605X465 mm, Stainles steel, Memmert type
41	Cation exchange resin	1litre
42	Extension cord	5 meters
43	Quartz Cuvettes	10 mm, 4 ml
44	Sample Vials with Lid	5 ml
45	Spectrophotometer	To be Borrowed from Civil Engg. Department

46	TDS Tester	1-1990 ppm digital
47	Test Tube Stand	Wooden stand with 6 holes and pegs
48	Voltage Stabilizer	Automatic, 110 to 290 volts, 0.5 KVA
49	Tissue Paper	Ten rolls
50	Sampling Bottles	250 ml, 500 ml, 1000 ml
51	Turbidity meter	To be assisted by Civil Engg. Department.
52	Chemical Labels	Acid proof

53	CPU with 2GB RAM	<p>Asus All In One Desktop  ET2230IUK-BC029M  I5/black/4GB/1TB/DVD/DOS/1YW  Hard drive Capacity: 1TB  Product Line: ET2230IUK-BC029M  Operating System Edition: Dos Model:  ET2230IUK-BC029M  Bundled Items: Keyboard,  Mouse MPN: ET2230IUK-BC029M  Warranty: Manufacturer  Warranty Operating System: DOS  Duration: 1Year  Screen Size: 21.5”  Serviced In India: Yes  Processor Speed: core i5 4460T  Warranty Partner Name: ASUS india  Graphic processing Type: Integrated/On-Board Graphics</p>
54	UPS	INTEX Protector 725
55	Printer for Spectrophotometer	HP Deskjet Ink Advantage 1115 Printer