**ODISHA UNIVERSITY OF TECHNOLOGY AND RESEARCH**

(Formerly College of Engineering and Technology, Bhubaneswar)

Techno-Campus, Ghatikia, P.O.-Mahalaxmi Vihar

Bhubaneswar-751029, ODISHA, INDIA

 No.2696 / OUTR Date: 14.12.2021

**TENDER CALL NOTICE**

Sealed tenders are invited from reputed original manufacturers/registered firms /Agencies for the supply and installation of hardware trainer kits for Computer Organization Laboratory of Department of **Computer Science & Engineering**. The sealed tender will be received by speed post/ registered post only. **The authority will not be held responsible for any postal delay**. Tender received after the scheduled date and time will not be accepted. The date of opening the various tenders is mentioned in the respective tender document, which will be opened in the office of the HoD, CSE, Odisha University of Technology and Research, Bhubaneswar in the presence of bidders and/or their authorized representatives. **The last date of tender submission is 17. 01. 2022 at 3:00 P.M**. The tender bid documents with details of terms and conditions are to be downloaded from the Website: [**www.cet.edu.in**](http://www.cet.edu.in)**.**

The authority reserves the right to reject/cancel the tenders in whole or in part without assigning any reason thereof.

**-Sd/-**

Officer on Special Duty

**Bid Ref no.**2696 **/OUTR** Date: 14.12.2021

**BIDDING DOCUMENTS AND INSTRUCTION TO SUPPLY AND INSTALLATION**

**OF HARDWARE TRAINER KITS**

**FOR**

**COMPUTER ORGANIZATION LABORATORY**

**OF**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**ODISHA UNIVERSITY OF TECHNOLOGY AND RESEARCH**

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Techno-Campus, Ghatikia, P.O.-Mahalaxmi Vihar

Bhubaneswar-751029, ODISHA, INDIA

**INVITATION FOR BIDS**

**Officer on Special Duty (OSD), Odisha University of Technology and Research**, Bhubaneswar invites sealed bids from eligible bidders for supply and installation of hardware trainer kits to Department of Computer Science & Engineering.

 Interested eligible Bidders may obtain detail information and list of items with technical specifications from the website of the College[**www.cet.edu.in**](http://www.cet.edu.in)

 Particulars about submission of bidding document are as follows:

(a) Price of bidding document : **Rs. 1000/- (service tax is included)**

(non-refundable)

(b) First date of availability of Bidding Document in the website: 14.12.2021

(c) Last date and time for submission of bids: **16.01.2022 up to 4.00 pm**

(d) Time and date of opening of technical bids: **17.01.2022 up to 3.00 pm**

(e) Time and date of opening of financial bids. Will be communicated to the successful bidders.

(f) Place of opening of bids :

 **Office of the OSD**

 **ODISHA UNIVERSITY OF TECHNOLOGY AND RESEARCH**

 **(Formerly College of Engineering and Technology, Bhubaneswar)**

 **Techno-Campus, Ghatikia, P.O.-Mahalaxmi Vihar,**

 **Bhubaneswar-751029, ODISHA, INDIA**

(g) Address for communication :

 **Officer on Special Duty**

 **ODISHA UNIVERSITY OF TECHNOLOGY AND RESEARCH**

 **(Formerly College of Engineering and Technology, Bhubaneswar)**

 **Techno-Campus, Ghatikia, P.O.-Mahalaxmi Vihar**

 **Bhubaneswar-751029, ODISHA, INDIA**

 Sd/-

 **OSD**

**Financial bid & Technical bid must be enclosed separately.**

**The Tender documents can be downloaded from our website www.**[**cet.edu.in**](http://www.cet.edu.in) **and the tenderer has to submit a separate draft of Rs.1000/-(nonrefundable) along with submitted tender, otherwise the offer submitted by the tenderer will be cancelled.**

1. Eligibility of Tenderer and General Instructions

### 1.1 Eligibility

Those who fulfill the following criteria are eligible to participate in the tender.

**1.1.1**The tenderer should preferably be a reputed Original Manufacturer/Authorized Distributor, who should provide the documents relating to their **Manufacturing Capabilities** as follows**.**

* 1. The tenderer should possess valid GSTIN No.
	2. The Company should be ISO: 9001-2008.
	3. The Company should be registered with Tax Department.
	4. The turn-over of the company should be more than Rs. Two Crores in the last five years and must submit the audited certified copy by chartered accountant.
	5. The company should have its own R&D section.
	6. The company must have cleared all Tax payment up to date. Attested copies of all Tax Clearance Certificate or non-assessment certificate from the concerned Tax Authority valid up to date and attested copy of Income Tax Clearance Certificate or non-assessment certificate, as the case may be, from the competent authority, up to date and PAN Number and GSTIN No. must be enclosed along with the Tender documents.
	7. If the tenderer is an Authorized Distributor of a reputed manufacturer, necessary certificate to this effect from his manufacturer must be enclosed.
	8. All after sales support should be provided directly by the manufacturer only.
	9. The tenderer must have the willingness for providing comprehensive maintenance support of the Machine supplied by him.
	10. The tenderer must provide evidence of successful execution of supply orders with installation and successful after sales support in reputed organizations like NITs/IITs/Central Research Laboratories since last 3 years.

**1.1.2** If for any hardware trainer kits, the tenderer does not have the eligibility criteria as mentioned in para 1.1.1 (a to j), then department will consider to procure that hardware trainer kits from the manufacturer/authorized dealer with only the following eligibility criteria under para 1.1.2 (a to e)

* 1. If the tenderer is an Authorized Dealer of Manufacturer, necessary certificate to this effect from his Manufacturer must be enclosed.
	2. All after sales support should be provided directly by the Manufacturer only.
	3. The tenderer must have the willingness for providing comprehensive maintenance support of the Machine/kits supplied by him.
	4. The tenderer must provide evidence of successful execution of supply orders with installation and successful after sales support in reputed organizations since last 3 years.
	5. The company must have all Tax payment up to date. Attested copies of all Tax Clearance Certificates or non-assessment certificate from the concerned Tax Authority valid up to date and attested copy of Income Tax Clearance Certificate or non-assessment certificate, as the case may be, from the competent authority, up to date, GSTIN No. and PAN Number must be enclosed along with the Tender documents.

### 1.2 General Instructions

1. **The selection for procurement of Hardware Trainer kits will be based on quality and performance along with cost. In this context decision of technical committee is final based on documentary evidence or actual physical verification.**
2. Submission of more than one bid by a particular tenderer under different names is strictly prohibited. In case it is discovered later on that, this condition is violated, all the tenders submitted by such tenderer/s would be rejected or contract cancelled.
3. The tender should be mentioning the tender paper, the location of its service center nearest to Bhubaneswar.
4. All offers should be in English and the price quoted for each item should be firm.
5. Warranty period, Delivery period and After-Sale-Service conditions, etc. are also to be clearly indicated.
6. The rates and the conditions of the offer will remain valid for three months from the date of opening of the tender and no change or alteration of the rate will be acceptable on any account.
7. Submitted tender forms with overwriting or erased or illegible specifications and rates will be rejected.
8. Request from tenderer in respect of additions, alterations, modifications, corrections, etc. of either terms & conditions or rate after opening of the bid may not be considered. However, negotiation may be made before finalization.
9. Tenderers shall carefully examine the bid documents and fully inform themselves of all the conditions, which may in any way affect the work of the cost thereof.
10. Should a tenderer find discrepancies or omissions from the specification or other documents and any doubt as to their meaning, he should at once notify the purchaser and obtain clarification in writing.
11. This, however, does not entitle the tenderer to ask for time beyond the due date fixed for receipt of tenders.
12. The tenderer must also specify minimum time and maximum time to repair/replace in the event of a failure and penalty thereof.
13. Verbal clarification and/or information given by the purchaser or its employees or representatives shall not be binding on the purchaser.
14. Submission of sealed bid will carry with the implication that the tenderer agrees to abide by the conditions laid down in the detailed particulars of the bid notice.
15. Conditional offers and offers qualified by vague and indefinite expression, as ‘subject to immediate acceptance’ ‘subject to prior sale’, etc. will not be considered.
16. While tenders are under consideration, tenderers and their representatives or other interested parties are advised to refrain from contacting by any means, to the purchaser's personnel or representatives on matter relating to the tenders under study.
17. The purchaser, if necessary, will obtain clarification on tenders by requesting such information from any or all the tenderers either in writing or through personal contact as may be necessary.
18. The tenderer will not be permitted to change the substance of his offer after the tenders have been opened. In the event of non-compliance with this provision, the tenderer is liable to be disqualified.

### 1.3 Procedure for Submission of Tenders

The Tenderers must submit their bids as required in two parts in separate sealed covers prominently super scribed as Part-I “**Technical Bid**” and Part-II “**Financial Bid**” and also indicating on each of the covers the “**Tender call Notice Number & Date**” and **due date and time of submission** as mentioned in Tender Cal Notice.

**Part-I (Technical Bid)**

1. Excepting the price schedule, all other documents as mentioned in para 1.1 i.e details of **technical specifications, leaflet, Copy of Firm Registration Certificate from the competent authorities, All Tax Clearance certificates, PAN Card copy, proof of GSTIN No., list of clients, authorization certificate from Manufacturer in case of Dealer**, **etc**. along with **tender document duly signed** by the authorized person in each page shall be covered in Part-I (Technical Bid).

**Part-II (Financial Bid)**

All indications of price shall be given in Part-II (Financial Bid)

1. Both sealed covers Part-I **“Technical Bid”** and Part-II “**Financial Bid**” should be placed in a third cover along with requisite **EMD & cost of Tender documents** (separately in the form of DD drawn in favor of **Principal, College of Engineering & Technology, Bhubaneswar** at any Nationalized Bank payable at Bhubaneswar), others requisite supporting documents etc. and sealed. The sealed cover containing tender documents as per procedure indicated above should be submitted by speed post /Registered Post of the office of the office of the OSD, Odisha University of Technology and Research(Formerly College of Engineering and Technology, Bhubaneswar), Techno-Campus, Ghatikia, P.O.-Mahalaxmi Vihar Bhubaneswar-751029, ODISHA, INDIA, within the due date and time as stipulated in Tender. **No hand or Courier delivery is accepted.** The sealed envelope must show the name of the tenderer and his address and should be super scribed as **“*Tender for supply and installation of hardware trainer kits for computer organization laboratories of Computer Science & Engineering Department****”* on the top of the envelope.
2. All the documents submitted must be in the papers showing signature of the tenderer and printed office name of the tenderer on official seal.
3. All the documents must be submitted in a **sequential manner** with **separator/flags** to help in quick scanning of the topics. Wherever possible, data in tabular form should be given.

# 2. Requirements by Tenderer before Supply and Installation

### 2.1 Rating Plate, Name Plate and Labels

Each of the hardware trainer kits is to have permanently attached to it, a rating plate of non-corrosive material in a conspicuous position, upon which the total specifications along with the manufacturer’s name, address, etc. are to be engraved.

### 2.2 Packaging

All the hardware trainer kits shall be suitably protected, covered in water -proof packing and crated to prevent damage or deterioration during transit and storage till the time of installation. The supplier shall be responsible for any loss or damage caused during transportation, handling or storage till their successful installation.

### 2.3Inspection

1. All hardware trainer kits shall be inspected and tested for completeness, proper assembly, operation, cleanliness and state of physical condition and performance as per quoted specification.
2. The test shall be conducted, reported and certifications to be provided by the tenderer.
3. The tenderer shall provide all test and measuring hardware trainer kits required for inspection / testing.
4. The cost of all such tests shall be borne by the Tenderer.
5. Odisha University of Technology and Research, Bhubaneswar reserves the right to reject any hardware trainer kits if it does not comply with the specifications during site testing, installation and commissioning stage.
6. Inspection & testing would be conducted, jointly, at various stages as applicable during unpacking, installation and commissioning of respective hardware trainer kits at the manufacturing site.

### 2.4 Environmental Condition

* 1. All the hardware trainer kits supplied shall be rugged and should operate without any deviation in quality, or degradation of hardware trainer kits performance. All the specification/parameters shall be guaranteed over the following environmental conditions:

\* Storage Temperature 0 to 70 degree Celsius

\* Operating Temperature 0 to 50 degree Celsius

\* Humidity 95% RH (non-condensing)

* 1. All the hardware trainer kits are intended to operate under 220 V/ 440V, 50 Hz power supply.

# 3. Requirements by Tender after Supply

### 3.1 Supply and Installation

1. The material would be delivered by the supplier at **Department of Computer Science & Engineering,** Odisha University of Technology and Research (Formerly College of Engineering and Technology), Bhubaneswar**, Techno Campus, P.O. Mahalaxmi Vihar, Ghatikia, Bhubaneswar – 751029, Odisha**.
2. The items should be supplied directly from the manufacturing terminal having passed all tests successfully with Certifications as required.
3. The hardware trainer kits should conform to the latest relevant National/International standards and shall be completed in all respect.
4. Any component, fitting etc. which may not have been specifically mentioned in the specifications but which are usual and necessary for the hardware trainer kits, shall be supplied by the tenderer at no extra cost.
5. In case, articles are found damaged in transit or found short at the time of delivery the full cost of the same will be deducted from the bill of the supplier in case the supplier does not replace the stock within a week from the date of the complaint.
6. The articles ordered must be supplied in one lot within **4 (four) weeks** of placing of the order.
7. OUTR reserves the right to procure the materials from alternative sources at the risk and cost of the successful tenderer giving 15 days’ notice.
8. Any increase in tax and duties after expiry of delivery period will be borne by the supplier.
9. In case the items supplied by the supplier are found not up to the specification shall be rejected.
10. The supplier will be intimated to take back the stocks at his own cost within three days from the date of rejection and to replace the same within 7 days, failing which the EMD will be invoked in addition to taking legal actions.
11. Imported consignment, if any, should be destined to **“The HOD, Department of Computer Science & Engineering,** Odisha University of Technology and Research (Formerly College of Engineering and Technology), **Techno Campus, P.O. Mahalaxmi Vihar, Ghatikia, Bhubaneswar – 751029, Odisha, India** through nearest custom clearing Airport (Bhubaneswar Air Port).
12. The suppliers shall be responsible for releasing the consignments from the carriers/transporters.
13. The hardware trainer kits shall be delivered and installed at site at the cost of the tenderer.
14. All taxes, levies, surcharges including the customs clearance and handling freight and insurance should be paid and handled by the tenderer.

### 3.2 Installation and Commissioning:

Installation and Commissioning shall include the following:

1. Installation and Testing of the hardware trainer kits, Machineries etc. should be supplied by the tenderer.
2. It will be the responsibility of the tenderer to provide all necessary spares and consumables, which may be required during installation and commissioning, at no extra cost to purchaser.
3. The tenderer is to bring their own testing and measuring instruments required for installation, testing, commissioning, which can be taken back after completion.
4. Installation must complete within 15 days after delivery on site.
5. The tenderer should provide all necessary raw materials for running of the machine during commissioning.

### 3.3 Documentation:

1. Detailed **technical manuals**, **handbooks**, **drawings**, **warranty card** and **Factory Quality Assurance checklist**, **test results** and any other certifications mentioned in the Technical specifications shall be supplied along with the consignment.
2. Supplied manuals/handbooks must cover detailed technical specifications and installation, operation, maintenance and System Safety procedures.
3. For Experimental setups **details of theory, procedure and methods of taking measurements etc. should be provided in the form of hand books for each experiment**.
4. The receipts for taxes paid, if any, for the supplied materials should also be submitted

### 3.4 Trial Operation and Performance Guarantee Test:

1. After successful completion of Installation and Commissioning of the hardware trainer kits, a 7-day continuous trial operation putting those on optimum use shall be conducted by the tenderer at site, during which the performance of the hardware trainer kits shall be demonstrated for trouble-free continuous operation, meeting the specified standards and proper training shall be imparted to two persons of the purchaser.
2. During trial operation, tenderer shall do all necessary adjustments required to ensure the performance as per the acceptable level.
3. In case, guaranteed performance is not established, the tenderer shall be given opportunity to rectify/replace the hardware trainer kits, and restart the 7 days continuous trial operation, at the risk and cost of the tenderer.

### 3.5 On-Site Warranty:

1. The entire materials may be used continuously. The reliability and safety of the total installed system and trouble-free operation are, therefore, of prime importance. The supplied hardware trainer kits and components shall be covered under **Three-years or more** comprehensive on-site warranty from the date of issue of successful completion of Performance Guarantee Report.
2. During the period of warranty, it shall be the responsibility of the tenderer to provide all essential spares and consumables, which may be required for maintenance and trouble-free operation of the devices / components at the tenderer’s cost.
3. Software, if any, has to be tested with at least one-year warranty for trouble free operation.

### 3.6 Comprehensive Maintenance Contract:

1. The tenderer shall be under the obligation of entering into a Comprehensive Maintenance Contract (CMC) with OUTR for a minimum period of two years, renewable if felt necessary, on mutually acceptable rates, terms and conditions. CMC shall start after the completion of Warranty.
2. The scope of CMC shall cover maintenance and supply/replacement of materials and components, for smooth and reliable operation of the systems without trouble.
3. Accordingly, the tenderer has to offer rates for the CMC structure per hardware trainer kits along with the price for the Systems and other associated hardware trainer kits supplied.

### 3.7 After Sales Service:

1. During the warranty period and subsequently, after signing of Agreement for CMC the tenderer shall attend to the problems reported by the users of OUTR on a priority basis.
2. For any problem reported the tenderer shall attend and rectify the problem within 7 (seven) days or provide a standby system of the similar configuration.
3. The report on any problem will be informed through phone or fax number of which shall be given by the tenderer.
4. The branch office of the concerned manufacturing firm will be fully responsible to provide maintenance service, in case of any negligence, in providing the service by the tenderer.
5. On failure to comply with those instructions, the Bank Guarantee provided for the warranty period shall be invoked.

# 4. Financial Terms:

### 4.1 EMD

1. The tenderer has to submit a Demand Draft / Banker’s Cheque / Pay order of Rs. 10,000**/ -**in favor of **Principal, College of Engineering and Technology, Bhubaneswar** payable at Bhubaneswar in any Nationalized Bank towards EMD. **Without EMD, the tender will be summarily rejected.**
2. There will be no interest paid to the tenderer towards EMD money.
3. In no case, the EMD Money in cash or other forms will be accepted at the time of opening of the bid.
4. No request for adjustment of claims, if any, will be accepted.
5. The EMD of unsuccessful tenderers will be refunded as soon as possible after the tenders are finalized.

### 4.2 Performance Security Deposit

* 1. In case of successful Bidder **EMD** will be kept as **Performance Security Deposit** and will be **refunded after expiry of stipulated warranty periods from the completion date of installation and commissioning on satisfactory performance of the hardware trainer kits.**

### 4.3 Prices:

1. Price quoted should be **FOR Odisha University of Technology and Research (Formerly College of Engineering and Technology**), **Bhubaneswar only. Tax components as applicable should be mentioned clearly in the financial bid.**
2. Price should be quoted for unit item; however, the actual requirements may be much more. (A tenderer may propose to give discounts if any for purchase of more than one unit of a particular item.).
3. Purchase order will be placed as a single lot for each type of item or for all the items together, as the case may be.
4. In case of items of import, the tenderer should take full responsibility for customs clearance, handling, tax payment, etc. and specify the charge for the same in the price bid.

### 4.4. Discount:

1. Our Institute is a pioneer Institution in the field of Teaching and Research in Engineering and allied disciplines and do not run with profit motive.
2. As such we are availing price discount for purchase of hardware trainer kits.
3. The rate of discount or any other Institutional benefit arising out of Govt. Policy etc., on each item may also be indicated in the bid specifically.

### 4.5 Payments:

1. In case of imported items, payment will be made by opening LC in the name of the manufacturer subject to the condition that a Bank Guaranty for an equal amount will be submitted by the selected tenderer to OUTR for the period of completion of installation and commissioning.
2. In case of purchase in Indian Rupees, payment of 100 percent of the ordered value will be made after successful installation and commissioning of the hardware trainer kits subject to submission of satisfactory performance report by the concerned Head of the Department.

### 4.6 Rate Contract with DGS&D or any other Government Organisation:

In case the tenderer has entered into a Rate Contract with DGS & D or any other Government Organization such as EPM, rate contract preference, number & copy of rate contract have to be submitted along with tender.

# 5. Instruction to the Tenderer:

1. Some of the minimum specifications specified may be redundant, obsolete or incompatible and in these cases, quote the particulars of correct specification of latest trend and technology.
2. Higher specifications instead of minimum specifications are allowed if a minimum specification is not available, obsolete or incompatible.
3. Otherwise, model with higher specification should be in addition to the model with minimum specifications.
4. Specify brand name and full model name and number for each offer.
5. Include the printed catalogue and pricelist if any for each of the hardware trainer kits quoted.
6. Specify the list of Accessories required along with each of the hardware trainer kits.
7. Quote the additional price of the accessories; only those, which are fully compatible with the quoted model, should be furnished.
8. Specify the list of Accessories to be given free of cost, along with the hardware trainer kits as “**Free Accessories”**; these should be fully compatible with the quoted models.

### 5.1 Solving Disputes:

1. OUTR, the tenderer and the manufacturer shall make all efforts to resolve amicably by direct informal negotiation on any disagreement or dispute arising between them under or in connection with this contract.
2. All disputes arising out of the contract shall be referred to courts under the jurisdiction of the Bhubaneswar court only.

***The above terms and conditions except those otherwise agreed upon, shall form a part of the Purchase Order***.

***Sign on each page of this tender document and Return it along with the offer enclosing this part together with the Technical Offer.***

***\*\* \* The OUTR authority has all rights to accept / reject any tender without assigning any reasons thereof.***

# 6. Technical Specifications

Following are the minimum specifications of the hardware trainer kits.

* The minimum specifications are indicative and not exhaustive.
* The models with higher specifications may be quoted.
* The quoted materials should be of latest trend and technology.
* Each hardware trainer kits should be complete in itself without needing any extra requirements except the requirement of general test and measuring instruments.

**Financial Bid will be opened only if Tenders must qualify in Technical evaluation.**

**List of hardware trainer kits with technical specification required for Computer Organization Laboratory of Computer Science & Engineering Engineering Department:**

|  |  |
| --- | --- |
| **Sr. No** | **Description** |

|  |  |
| --- | --- |
| 1 | **COMPUTER HARDWARE TRAINER KIT****Specification: -*** CPU with fan: Latest Motherboard with compatible Processor
* Mother Board: with Intel Chipset
* Memory (RAM): 2 GB DDR 3 RAM
* Display Adaptor card: built in Mother Board
* Hard Disk: Above 160GB (SATA)
* SATA CD Drive
* Monitor: 15" TFT Color SVGA
* Key Board: Multimedia key board
* Mouse: Scroll Mouse (Optical)
* SMPS: 450 Watts
* Sound Cord: built in Mother Board
* Speakers & Mike: Stereo Speakers
* Video Camera: Web CAM
* Post Code PCI Card for Post code display
* Fault creating facilities for CD Drive, Sound Ports, Com Port, LPT Port, USB Ports, VGA Port, PS2 Port.
* Operating System: Win 7 / 32Bit
* Enclosed in Metal enclosure with see through Components.
* AC Input: 190 to 260 V, 50 Hz.
* Piggy Bag Modules
* Piggy Bag XILINX SPARTAN XC3S50 FPGA
* Piggy Bag XILINX SPARTAN XC3S400 FPGA(optional)
* Indicators
* 16 Input Switch with LED indication to indicate logic low and logic high
* 16 LED for output indication.
* Onboard Interfaces
* 4 Digit Seven Segment Displays
* On board PS/2 interface
* On board VGA interface
* On board RS-232 interface
* On-board ISP Programmer for Piggy Bag Modules
* Clock generator
* On-board 10MHz, 5MHz, 1MHz, 100 KHz & 100 Hz.
* Power selection
* On-board of 5V, 3.3V, 2.5V, 1.5V & 1.2V.
* I/O expansions are provided through 26 pin FRC Connector for other application interface.
* All ICS are mounted on IC Sockets.
* Bare board Tested Glass Epoxy SMOBC PCB is used.
* In-Built Power Supply of +5V/1.5A, ±12V/250mA
* Attractive ABS Plastic enclosures
* User’s E-Manual & Software
* Experiments
* Study of Computer based on Latest Motherboard with compatible Processor
* To understand the overall functioning of Computer
* Study the section of Computer
* To identify different faults CD Drive, Sound Ports, Com Port, Parallel Port, USB Port, VGA Port, PS2 Ports and to study the troubleshooting in Computer.
 |
| 2 | **PRINTER TRAINER KIT****Specification*** **Printing Technology**
* Print Method: Impact dot matrix
* Print Direction: Bi-direction with logic seeking
* Number of Pins in Head: 24 pins
* Control Code: ESC/P2 and IBM PPDS emulation
* **Print Speed:**
* High Speed Draft
* Draft
* Draft Condensed
* Letter Quality
* Draft Condensed
* **Supported OS**
* Windows 95 / 98 / 2000 / Me /XP / Vista / 7 / 8 / 8.1 / 10
* **Interface**
* Bi-directional parallel interface (IEEE-1284 nibble mode supported)
* USB 2.0 Full-Speed
* Serial
* 19 Test points are provided to analyze signals at various points.
* 8086/8088 CPU operating at 2.5/5MHz
* 8086 Processor can be replaced by 8088 Processor
* On-board sockets provided to facilitate the use of 8087 Co-processors and 8089 I/O processor
* 16K bytes of RAM expandable up to 256KB.
* 16K bytes of EPROM
* RS-232C interface using 8251
* Dot Matrix Printer Interface with 8086
* On-board 4 No’s of 8255
* On-board 1 No’s of 8253
* On-board Interrupt controller using 8259
* On-board using ADC 0809 & DAC 0800
* On-board Real Time Clock using RTC- 6424
* On-board Temperature sensor using Lm35
* 8-bit digital switch for 8 digital input and 8 led for 8 digital output
* 20x2/40x2/20x4 Alphanumeric LCD Display with Backlite
* All ICS are mounted on IC Sockets.
* Bare board Tested Glass Epoxy SMOBC PCB with Block Diagram.
* Attractive ABS Plastic Enclosure
* User Manual for Experiments
* Experiments
* Study of Dot Matrix Printer
* Hardware detail
* Working of Dot Matrix Printer Trainer
* Interfacing Dot Matrix Printer with 8086 Microprocessor
* Voltages at various test points
* Study of fault switches
 |
| 3 | **SMPS TRAINER KIT****Specification*** Input:80 to 230VAC±10%, 50Hz
* Outputs: +12 V DC regulated, - 12 V DC regulated, +5 V DC regulated, -5V DC regulated
* Switching Transformer Input: 320 V DC switching at 132 KHz
* Fuse: 2A
* Load provided for testing the DC outputs
* Variac Is Also Provided as optional for Input Voltage
* All interconnections are made using 2mm socket.
* Test points are provided to analyze signals at various points.
* Circuit Diagram provided on the front panel.
* Bare board Tested Glass Epoxy SMOBC PCB with Block Diagram.
* Attractive ABS Plastic Enclosure.
* User Manual in CD
* Experiments that can be performed
* Study of Switching Transformer.
* Study of PWM switching device.
* Study of Opto coupler.
* Study of Regulation.
* Study of SMPS with Variac input
 |
| 4 | **Hardware Kit for Simulation of Half Adder, Full Adder, Multiplexer & Demultiplexer****Specification*** **Piggy Bag Modules**

- Piggy Bag XILINX SPARTAN XC3S400 FPGA - Piggy Back Module for XILINX FPGA Spartan 6 XC6SLX4/LX9 (optional) * **INDICATORS**

- 16 Toggle Input Switch with LED indication to indicate logic low and logic high- 16 LED for output indication.* **ONBOARD INTERFACES**

- 4 Digit Seven Segment Displays- 16x1 Alphanumeric LCD Display.- 4x4 Keys Keyboard Matrix.- PS2 Keyboard interface.- ADC 0809 interface- DAC 0800 interface- DC motor interface.- Relay interface.- Buzzer interface- Stepper motor interface* On-board ISP Programmer for Piggy Bag Modules
* RS 232 interface using MAX232 provided at 9PIN D type connector.
* USB interface using FT232 device provided at USB connector.
* 3.3V battery backup for RTC
* Clock generator

- On-board 10MHz, 2MHz, 1MHz, 200 KHz.* Power selection

- On-board of 5V, 3.3V, 2.5V, 1.5V & 1.2V.* I/O expansions are provided through 26 pin FRC Connector for other application interface.
* All ICs are mounted on IC Sockets.
* Bare board Tested Glass Epoxy SMOBC PCB is used.
* In-Built Power Supply of +5V/1.5A, ±12V/250mA
* Attractive ABS Plastic enclosures.
* User's Manual with sample experimental programs
 |
| 5 | **HARD DISK DRIVE TRAINER KIT****Specification*** Formatted capacity (512 bytes/sector)-320 GB
* Guaranteed sectors -

625,142,448* Heads-2
* Disks-1
* Bytes per sector- 512
* Default sectors per track- 63
* Default read/write heads- 16
* Default cylinders- 16,383
* Recording density (max.)-1417 kb/in
* Track density (avg.) - 236 ktracks/in
* Areal density(avg.)-341.5Gb/in2
* Spindle speed- 5900 RPM
* Internal data transfer rate (max.)- 1285 MB/s
* Sustained data transfer rate (max.)- 120 MB/s
* I/O data-transfer rate (max.) -300 MB/s
* Cache buffer- 8MB
* Power-on to ready (typical)- <6s
* Standby to ready (typical) -<6s
* Non recoverable read errors - 1 per 1015 bits’ read
* All ICS are mounted on IC Sockets.
* Bare board Tested Glass Epoxy SMOBC PCB with Block Diagram.
* Attractive ABS Plastic Enclosure
* User Manual in CD
* Hard Disk Monitoring Software for Hard Disk Performance, Health Temperature, Speed etc.
 |
| 6 | **Hardware Trainer Kit for Real Time Clock****Specification*** **Piggy Bag Modules**

- Piggy Bag XILINX SPARTAN XC3S400 FPGA - Piggy Back Module for XILINX FPGA Spartan 6 XC6SLX4/LX9 (optional) * **INDICATORS**

- 16 Toggle Input Switch with LED indication to indicate logic low and logic high- 16 LED for output indication.* **ONBOARD INTERFACES**

- 4 Digit Seven Segment Displays- 16x1 Alphanumeric LCD Display.- 4x4 Keys Keyboard Matrix.- PS2 Keyboard interface.- ADC 0809 interface- DAC 0800 interface- DC motor interface.- Relay interface.- Buzzer interface- Stepper motor interface* On-board ISP Programmer for Piggy Bag Modules.
* RS 232 interface using MAX232 provided at 9PIN D type connector.
* USB interface using FT232 device provided at USB connector.
* 3.3V battery backup for RTC
* Clock generator

- On-board 10MHz, 2MHz, 1MHz, 200 KHz.* Power selection

- On-board of 5V, 3.3V, 2.5V, 1.5V & 1.2V.* I/O expansions are provided through 26 pin FRC Connector for other application interface.
* All ICs are mounted on IC Sockets.
* Bare board Tested Glass Epoxy SMOBC PCB is used.
* In-Built Power Supply of +5V/1.5A, ±12V/250mA
* Attractive ABS Plastic enclosures.
* User's Manual with sample experimental programs
 |
| 7 | **LAN Trainer Kit****Specification*** Serial Communication: RS-232 port (9 pin & 25 pin)
* Parallel Communication: 25 Pin LPT Port
* Wire Less Communication: -

- Infrared Transmitter: IR LED 920nm- Infrared Receiver: Direct TTL output- Baud Rate: 2.4kbps (max)- Carrier Frequency: 38Khz* Optic Fiber Communication: -

- Transmitter: Peak wavelength of emission 660nm visible Red- Receiver: Photo detector with TTL Logic output- Baud Rate: 115Kbps* Fiber Optic Cable: -

- Type: Plastic Fiber, Step Index, Multimode- Length: 1 meter* Modem Communication: -

- Modulation: FSK Modulation- Mark Frequency: 300KHz- Space Frequency: 200KHz- Demodulation: PLL Detector- Mark Frequency: 300KHz- Space Frequency: 200KHz- Baud Rate: 56Kbps (max)- Twisted Pair Link: RJ 11 Telephone Connector- Data Indication: 8 bit Received Data Display.* PC to PC communication with IEEE 802.3
* Wireless LAN – IEEE 802.11 b
* Star topology using RJ45 Connector
* Bus topology using RJ45 Connector
* Data transmission speed: 10/100 Mbps
* 4 Nodes
* Fault Switch

- 4 Switch Faults are provided on-board to study different effects on circuit.* Block Description Screen printed on glassy epoxy PCB
* All interconnections are made using 2mm banana Patch cords.
* Test points are provided to analyze signals at various points.
* Bare board Tested Glass Epoxy SMOBC PCB is used.
* In-Built Power Supply with Power ON indication
* Input Supply Requirement: 220 V ±10%, 50 Hz / 60 Hz
* Power Consumption: 1.8 VA (approx.)
* Attractive ABS Plastic enclosures.
* 2mm Banana Socket for interconnection
* Set of 2mm Patch cords for interconnections
* User’s Manual & Software in CD

***Software**** Serial Hardware and Software Protocol like X-Modem & Z-Modem
* Parallel Port Hardware and Software Protocol like Stop & Wait, Go back N, Selective Repeat Protocol
* Bus, Ethernet, Wireless Topology
* Protocols: Stop N Wait, Go back N, Selective repeat
* Packet size: up to 10KB
* Inter Packet delay: 1000 – 5000 ms
* Error generation: Acknowledgment lost, bad packet, auto error generation
* Data encryption & decryption
* Complete analysis of Network & Protocols
* Graphic representation of data on s/w screen with packet details
* Network details indication of computer name, IP address, Port number, status of network, MAC address and OS on computer.
* Indication of packet serial number, file name, file size, file number, receiver name, Workgroup, receiver IP address, total packets, packet length, time out, protocol, topology, receiver, MAC address, port number, file send start time, file sent completion time, transmission time data rate(10/100Mbps).
* System Compatible: Windows7 Operating system of 32 bit
 |

**Note: All the hardware trainer kits must have ISI standard also the brand of machine must be mentioned in the technical bid.**

**After opening of tender documents, the tenderers will be invited (if so desired) through mail to demonstrate their hardware trainer kits in our department based upon eligibility as per technical specification. After successful demonstration, the tenderer will be invited through mail and telephone/mobile to participate in financial bid process.**

**Note:**

* **Suppliers need to provide minimum two days training at the Computer Organization laboratory of Computer Science & Engineering Department, OUTR, Bhubaneswar at their own cost. OUTR, Bhubaneswar will not bear any training or living expenditure in this regard. The supplier should arrange visit to OUTR, Bhubaneswar campus by its technical team and assist in installation and commissioning.**
* **In case of System Failures or hardware replacement vendor should provide license without any charge**

**ODISHA UNIVERSITY OF TECHNOLOGY AND RESEARCH**

(Formerly College of Engineering and Technology, Bhubaneswar)

Techno-Campus, Ghatikia, P.O.-Mahalaxmi Vihar

Bhubaneswar-751029, ODISHA, INDIA[**www.cet.edu.in**](http://www.cet.edu.in)

**Email:** **principalcet@cet.edu.in**

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**TECHNICAL BID**

(To be enclosed in separate sealed cover)

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Name of the Instrument/ Trainer Kit** | **Qty. Required (tentative )** |
|  | **COMPUTER HARDWARE TRAINER KIT** | **01** |
|  | **PRINTER TRAINER KIT** | **01** |
|  | **SMPS TRAINER KIT** | **01** |
|  | **HARDWARE KIT FOR SIMULATION OF HALF ADDER, FULL ADDER, MULTIPLEXER & DEMULTIPLEXER.** | **01** |
|  | **HARD DISK DRIVE TRAINER KIT** | **01** |
|  | **HARDWARE TRAINER KIT FOR REAL TIME CLOCK** | **01** |
|  | **LAN TRAINER KIT** | **01** |

Note: A DD for Rs.10,000/- (EMD) and Rs.1000/- (Tender document fee) should be enclosed with this bid. (***The above number may be changed slightly as per decisions of technical committee).***

1. Name of the bidder
	1. Full postal address
	2. Full address of the premises
	3. Telephone number and Fax Number
	4. E-mail id
2. a) Tender Cost: Rs……………………...D.D. No………..……………date………………

b) EMD: Rs………………………D.D. No………..……………date………………

1. Registration No. of Firm:

(Copy of Document showing Registration of Firm shall be enclosed)

1. Tax Clearance Certificate and GSTIN No:

(Copy of Tax Clearance Certificate and GSTIN No. proof shall be enclosed)

1. Income Tax Clearance Certificate:

(Copy of IT Clearance Certificate and PAN No. proof shall be enclosed)

1. Total annual turn-over (value in Rupees) (Previous year):

(Copy of Balance Sheet / Audit Statement / IT returns, etc. to be attached as proof)

1. Past supply details for 3 years

(**as per PROFORMA I) along with all the supporting documents as desired**. (Copy of proof shall be enclosed)

Copy of proof shall be enclosed)

1. Benk Details in case of return of EMD

(Name of firm, Name of Bankt, Account no, IFSC etc):-------

**Signature with Date and Seal of the Bidder/Tenderer**

**PRE-QUALIFICATION**

**PROFORMA-I**

**PARTICULAR IN RESPECT OF 3 MAJOR SUPPLIES IN LAST 3 YEARS**

**(TO BE FURNISHED IN TECHNICAL BID)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SL.No. | Name of Machine/  | Model | Name, mobile no., mail id and address of owner | Value | Date of Installations. | Stipulated time of completion | Actual time of completion |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**NB: Copies of Work Order / P.O., Completion certificate, Performance certificate must be attached.**

Place:

Date:

 Signature of vendor

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**FINANCIAL BID**

(To be enclosed in separate sealed cover)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl.****No.** | **Item Description** | **Make / Model** | **Unit Cost** | **Unit cost with GST** | **Total cost with GST for unit Item** | **Any****Other cost** | **Total Cost** |
| 1 | COMPUTER HARDWARE TRAINER KIT |  |  |  |  |  |  |
| 2 | PRINTER TRAINER KIT |  |  |  |  |  |  |
| 3 | SMPS TRAINER KIT |  |  |  |  |  |  |
| 4 | HARDWARE KIT FOR SIMULATION OF HALF ADDER, FULL ADDER, MULTIPLEXER & DEMULTIPLEXER. |  |  |  |  |  |  |
| 5 | HARD DISK DRIVE TRAINER KIT |  |  |  |  |  |  |
| 6 | HARDWARE TRAINER KIT FOR REAL TIME CLOCK |  |  |  |  |  |  |
| 7 | LAN TRAINER KIT |  |  |  |  |  |  |
| 8 | COMPUTER HARDWARE TRAINER KIT |  |  |  |  |  |  |

**Signature and seal of the bidder**

# PROFORMA FOR SUBMITTING ELIGIBILITY REQUIREMENT AND UNDERTAKING

To

The OSD,

OUTR

Bhubaneswar-751029

**Sub: Submission of Tender for Supply, Installation & Commissioning of Equipment**

**Hardware Trainer Kits for Computer Organization laboratory.**

Sir / Madam,

Having examined the conditions of contract and specifications including addenda, I/we, the undersigned, offer to undertake Supply, Installation, Testing & Commissioning of above mentioned items at Department of Computer Science & Engineering, OUTR, Bhubaneswar, in conformity with the specifications, terms & conditions of Tender.

1. I/We agree to abide by the terms and provisions of the said conditions of the contract and provisions contained in the notice inviting tender. I/We hereby unconditionally accept(s) the tender conditions.

It is certified that I/we have not stipulated any condition(s) in our tender offer. In case any condition(s) are found in our tender offer violated after opening tender, I/We agree that the tender shall be rejected without prejudice to any other right or remedy be at liberty to forfeit the EMD absolutely.

1. I/We hereby submit the earnest money of [INR…………..……….……] for the Tender for the above mentioned work in the form of demand draft.
2. That, I/We declare that I/We have not paid and shall not pay any bribe to any officer of OUTR for awarding this contract at any stage during its execution or at the time of payment of bills, and further if any officer of OUTR asks for bribe/gratification, I/We shall immediately report it to the OUTR authorities.
3. That, I/We undertake that OUTR’s tender document shall form part of contract agreement.

I/We understand that you are not bound to accept the lowest or any bid, you shall receive.

Thanking you

Yours faithfully

Dated:

Signature of Bidder

Name: ……………………

Telephone:………….

Witness…...................

Signature....................

Address......................

Enclosures