

***INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY, Shibpur***

P.O. Botanic Garden, Howrah – 711 103, INDIA.

(Tel: 91-33-2668 4561 Extn 600)

**TENDER NOTICE INVITING QUOTATIONS**

**Advt.No. DE/D(AA)/16/67dated 02.12.2016**

Sealed quotations are invited from reputed vendors for supply and installation of high quality equipments/ simulation tools e.g. Embedded system/ SOC/HDD/LCD/VLSI System/Lan-T/Robotics Trainer kit, hardware simulation tools, etc for CST Dept. Details are available at [www.iiests.ac.in](http://www.iiests.ac.in). Last date: 20-12-2016.

Dean (Administrative Affairs)  
IEST, Shibpur.

**INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY**

**(Formerly Bengal Engineering and Science University, Howrah)**

P.O. Botanic Garden, Howrah – 711 103, INDIA.

(Tel: 91-33-2668 4561 Extn. 600)

**TENDER NOTICE INVITING QUOTATIONS**

For

**Supply & Installation of Various Equipment for CST Department**

**Advt.No. DE/D(AA)/16/67 dated 02.12.2016**

You are invited to submit your most competitive quotations for supply and installation of high quality equipments/simulation tools e.g. Embedded system/ SOC/HDD/LCD/VLSI System/Lan-T/Robotics Trainer kit, hardware simulation tools, etc. for CST Department, Indian Institute of Engineering Science and Technology, Shibpur. Howrah.

**List of Equipments/Simulation tools**

SI No	Item	Quantity
A1	FPGA Kit	15
A2	Micro-controller Kit	15
A3	Micro-processor Kit	5
A4	Digital trainer kits	13
A5	All Programmable SoC evaluation kit	2
A6	VLSI System Trainer Equipment	5
A7	Web-enabled TINI-board	5
A8	Lan-T Trainer	2
A9	Robotics kits	5
A10	Add on Card to study speed control of stepper motor including stepper motor	15
B1	Trainer kit to study Motherboard with chipset and processor	5
B2	Hard disk Trainer kit (SATA and IDE)	5
B3	Trainer kit to study working of LCD Monitor	5
B4	Trainer kit to study working of UPS	2
C1	Labview/ Multisim/ Simulation tools	5 user
C2	Mentor Graphics design, verification and test bundle	30 user

Note:-

1. Please submit separate quotation for each series (A/B/C) shown in the column `SI No'.
2. Specify Make and Model No. of quoted items.
3. In a bid, for any item, a single product from a particular OEM has to be quoted. That is, not more than one product can be quoted against any particular item.
4. All the items of series B must be from a single OEM.
5. Quantities are approximate. It may be lesser or more.
6. All the items (except of `C') require 3-year comprehensive on-site warranty. If any item (or part of it) is not covered under the warranty or related clause, it must be clearly indicated in the bid/ offer/ quotation.
7. For `C' quote for 1, 2, and 3-yr licence.
8. Details specifications of relevant items are given in annexure.
9. Submission of quotations closes at 3-00 pm, 20-12-2016.

**Computer Science and Technology Department**  
**INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY, Shibpur**  
Terms, Conditions and Important Instructions for Vendors Quoting against  
**Advt.No. DE/D(AA)/16/67 Dated 02.12.2016**

1. The original tender document with technical specifications is available at [www.iiests.ac.in](http://www.iiests.ac.in).
2. Submission of quotations closes at 3-00 pm, 20-12-2016. The tender opening schedule is 20-12-2016 at 3.15 PM.
3. Quotations, addressed to the Head, Computer Science and Technology, IEST, are to be submitted in sealed cover, noting Advt. No. on the top of the envelope along with vendor's name, address, phone no. etc. in the office of the CST Department.
4. Quotations are to be submitted in original after accepting the terms and conditions.
5. Vendor's Bank account no, with IFSC code, Photo copy of PAN Card & certificate of VAT are to be attached with the quotations.
6. Copy of similar type of order received from any other similar Educational Institute, during the last one year, can be submitted for credential.
7. In a bid, for any item, a single product from a particular OEM has to be quoted. That is, not more than one product can be quoted against any particular item.
8. Vendor should ensure compliance against each technical specification along with proper evidence.
9. Equipment and other items, to be supplied, should be as per the specification and approved by the appropriate authority.
10. The quoted price shall include additional charges, if any, for all comprehensive warranty extended up to the period mentioned.
11. Price should be quoted item-wise in Indian currency and inclusive of all taxes, duties and levies as applicable. Type and amount of these taxes, duties and levies are to be mentioned clearly.
12. Equipment/items are to be delivered within 21 days from the date of issue of the purchase order.
13. The supplier is responsible for any breakage, damage or defect in equipment/items, detected subsequently, prior to final commissioning.
14. Bills and challans in duplicate should be presented for payment within 15 days of supply of equipment or completion of work. All bills are to be accompanied by copy of orders and receipt or challan. Order number no. with date, VAT no. and PAN no. are to be mentioned on both Challan and Bills.
15. Payment will be made by a/c payee cheque or by Account transfer after submission of proper bills and challans. No cash payment will be made under any circumstances. No advance payment can be made.
16. All payments are subjected to statutory deductions as and when applicable.
17. Documents to be submitted with the quotations (put tick marks, in the list of items, against the items quoted).
  - A. Terms and conditions (given below), in original, duly signed by the authorized personnel, on behalf of the vendor, as a token of acceptance of terms and conditions of the Tender.
  - B. Copy of the latest Income Tax, Sales Tax, Professional Tax clearance certificate along with VAT No & Trade License.
  - C. Price quoted in a sealed envelope in separate page(s) and duly signed.

D. Valid authorization certificates of distributorship from Principal Manufacturer whenever applicable.

18. Terms and Conditions

- a. All the Equipment/Items shall carry a guarantee for a minimum period mentioned in the tender document from the date of successful installation (if any item or parts of it is not covered under the warranty or related clause then it must be clearly indicated in the bid /offer/quotation).
- b. Supply of Equipment includes installation, erection, commissioning, demonstration & training whenever applicable.
- c. Indian Institute Of Engineering, Science and Technology, Shibpur, Howrah, reserves the right to reduce or enhance the quantity of item(s) to be procured as mentioned in the tender document. One or more item(s) may be canceled too.
- d. Indian Institute of Engineering, Science and Technology, Shibpur, Howrah, reserves the right to accept/reject all or any of the tender items without assigning any reason whatsoever.

I/we accept the above terms and conditions.

Signature of the Appropriate authority of the Vendor with Seal

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Specifications of Equipments/Simulation tools

**A1. FPGA KIT**

<b>Features</b>	More than 30,000 Logic elements. Embedded memory. Embedded multipliers. General purpose PLL. FPGA I/O pins. Clock oscillator around 50 MHz. Analog/Digital converter. DIP & Toggle switches. Serial Port ,VGA Port and PS/2 mouse/keyboard port. On-board SRAM. On board Platform Flash. High Current voltage regulator. Provide with JTAG Connector and USB Programming. Windows compatible. Power Supply 230 V $\pm$ 10%, 50/60 Hz. Necessary cables, Converters/Connectors compatible with power source. Wooden/High Quality plastic/or equivalent enclosure. A self contained Trainer of less than 4.0 Kg. User manual hard copy.
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**A2. Micro-controller Kit**

<b>Features</b>	8051 CPU (89C51 <b>Series</b> ). On board 24 MHz Clock Frequency. ROM (16K bytes) with Powerful Monitor Program using EPROM. RAM 64K bytes with Battery Backup using NICD Battery. Timer/Counter brought out at 10 Pins FRC Connector. 48 I/O lines provided through 8255. One USB. RS232C Interface Using 8251 brought out at 9 pins D-type connector. Auxiliary RS232C brought out at 4 Pins. Command Modes - Keyboard Mode, Serial Mode. Six Digit Seven Segment Display. Downloading/Uploading Facility for files. All address, data & control lines available on KXT Bus 50 pin FRC. Power Supply 230 V $\pm$ 10%, 50/60 Hz. Necessary cables, Converters/Connectors compatible with power source. Wooden/High Quality plastic/or equivalent enclosure. A self contained Trainer of less than 4.0 Kg. User manual hard copy.
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### A3. Micro-processor Kit

<p><b>Features</b></p>	<p><b>Option 1: Standard 8085 microprocess trainer kit</b></p> <p>High performance 8085A CPU.              8K user RAM.              Monitor firmware in ROMs/EPROMs.              Versatile Keyboard/Display controller.              48 parallel I/O lines Using 8255.              All Address/Data/Control Control Lines On 50 Pin Connector.              Serial I/O channel.              Programmable timer.              Powerful 8085 interrupt capabilities (min 8 nos).              LCD Display 20 x 2 LCD (Backlit)              Address, data and control bus and hardware interrupt lines are brought out on a FRC connector for system interfacing and expansion.              Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.              Necessary cables, Converters/Connectors compatible with power source.              Wooden/High Quality plastic/or equivalent enclosure.              A self contained Trainer of less than 4.0 Kg.              User manual hard copy.</p> <p><b>Option 2: Advanced 8085 microprocess trainer kit</b></p> <p>High performance 8085A CPU.              On Board Battery Backup for Ram.              Timer/Counter Using 8253.              48 I/O Lines Using 8255.              On Board EPROM Programmer for 27 Series.              On Board 8 Channel ADC.              On Board DAC.              Facility Of Downloading And Uploading Files From PC.              ASCII Keyboard &amp; Serial Mode.              All Address/Data/Control Control Lines On 50 Pin Connector.              8K ROM and 8K user RAM.              20 x 2 LCD Display.              Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.              Necessary cables, Converters/Connectors compatible with power source.              Wooden/High Quality plastic/or equivalent enclosure.              A self contained Trainer of less than 4.0 Kg.              User manual hard copy.</p>
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### A4. Digital trainer Kit

<p><b>Features</b></p>	<p>Power Supply Input : 230 Volt AC 50HZ.              Output 5 Volt, (ii) -5Volt, +12 Volt , -12Volt .              Output Variable 0 To 30 Volt @ 100 mA.              Logic Data : Number of bits : 10 (Ten).              Logic Probes : Number of bits : 10 (Eight).              Frequency Response : Dc To 50K Hz.</p>
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	<p>Protection : Short circuit to any voltage on board.  Function Generator : Wave forms : Sine, Square &amp; Triangle.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  A self contained Trainer of less than 6.0 Kg.  User manual hard copy.</p>
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#### **A5. All Programmable SoC evaluation Kit**

<b>Features</b>	<p>Includes all basic components of hardware, design tools, IP.  Supports complete embedded processing platform, with Dual ARM Cortex-A9 core processors; networking applications with 10-100-1000 Mbps Ethernet; video display applications.  Transceiver based designs including PCIe.  Industry-standard FPGA Mezzanine Connectors (FMC).  Supports for customization with daughter cards.  Onboard configuration circuitry.  2X16MB Quad SPI Flash, SDIO Card Interface, PC4 and JTAG ports, Expansion Connectors.  1GB DDR3 Component Memory.  1GB DDR3 SODIM Memory.  Serial connectivity with PCIe, USB OTG, UART.  2 User Push Buttons/Dip Switch, 2 User LEDs.  SDIO (SD Card slot).  IIC access to 8 I/O.  Current measurement capability of supplies.  AMS interface System Monitor/HDMI Video output.  Design Suite (IP) for all programmable devices.  Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  A self contained Trainer of less than 5.0 Kg. User manual hard copy.</p>
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#### **A6. VLSI System Trainer Equipment**

<b>Features</b>	<p>Speed 16 MHz crystal operated multi-output clock source to operate resources on Mother Board like CPU, ....  I/O Pins, I/O lines through FRC header.  Parallel Interface for JTAG based programming.  Serial Interface RS-232.  LCD Display.  Keyboard interface to support 101 keys (PS2 keyboard).  Lithium battery back up.  Variable Slow clock for internal timers/counter.  Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  A self contained Trainer of less than 4.0 Kg. User manual hard copy.</p>
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#### **A7. Web-enabled TINI-board**

<b>Features</b>	<p>The TINI platform's hardware and runtime environment.  TCP/IP networking and dial-up networking using PPP.  Asynchronous serial communication.  TINI's parallel I/O bus, memory access modes, and port-pin control.  1-Wire Net fundamentals, adapters.  Managing system resources, including real-time clock/external interrupts.</p>
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	<p>Application programming with TINI.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.</p>
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#### **A8. Lan-T Trainer**

<b>Features</b>	<p>Allows experiments to observe/measure behavior of LAN protocols.  User configurable data rates 8 to 1Kbps.  Generation of bit errors and Frame errors between nodes.  Emulation of two nodes by each PC.  IEEE802.3 and IEEE802.3x standard compliance.  Menu driven interface.  Equipped with STAR, BUS Topology programme.  Up to 200 Mbps (full duplex) data transfer rates.  Support experiment like Socket programming, Data security, Data Protection, Study of CSMA/CA, CSMA/CD Protocol.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  User manual hard copy.</p>
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#### **A9. Robotics Kit**

<b>Features</b>	<p>Four Duo controllers.  Power supply, USB cable, terminal tool.  Hobby servos and servo extension cables.  Six gear motors with wheels and plastic block adapters.  Six vibration motors.  Four light and temperature sensors.  Two distance, sound, and rotary sensors.  Packaged in tray organizer.  Programming facilities.  Software support.  PC/Microprocessor based control/programming support.  Necessary cables, Converters/Connectors compatible with power source.  User manual hard copy.</p>
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#### **A10. Add on Card to study speed control of stepper motor including stepper motor**

<b>Features</b>	<p>Stepper Motor Interface For 8085/8051 Trainer.  To study the operation of stepper motor clock wise/anti clock wise.  Output digital of 0 to 5V.  Connectors compatible with conventional microprocessors kits.  Stepper motor with not less than 200 steps per rotation.  Necessary cables, Converters/Connectors.  User manual hard copy.</p>
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#### **B1. Trainer kit to study Motherboard with chipset and processor**

<b>Features</b>	<p>Supports study of mother board circuit of Computer.  Supports tracing of the circuit and identification of components.  Understanding the alignment and adjustment procedure.  Measurement of test point voltages.  Observation of test point waveforms.</p>
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	<p>Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  A self contained Trainer of less than 4.0 Kg. User manual hard copy.</p>
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### **B2. Hard disk Trainer kit (SATA and IDE)**

<b>Features</b>	<p>Study of Hard disk drive used in computer on a single PCB.  Input Voltage +5v/200mA, +12v/mA.  Hard disk:40G.  Input Wattage 500mW.  Input Cables: 4pin supply.  Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  A self contained Trainer of less than 4.0 Kg. User manual hard copy.</p>
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### **B3. Trainer kit to study working of LCD Monitor**

<b>Features</b>	<p>Trainer Kit for practical knowledge of LCD on single PCB.  Video Input : RGB VGA (HD-15)  Remote Control : On screen display of Volume/Brightness/Contrast.  Channels : 2 to 70  Audio Amplifier.5W PMPO  Image Brightness : 300 cd/m<sup>2</sup>  Max Resolution : 1280 x 1024  Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  A self contained Trainer. User manual hard copy.</p>
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### **B4. Trainer kit to study working of UPS**

<b>Features</b>	<p>Trainer kit to study of UPS.  To study of battery monitoring circuit.  To test UPS under LOAD condition/Understand the faults.  Power Supply 230 V <math>\pm</math>10%, 50/60 Hz.  Necessary cables, Converters/Connectors compatible with power source.  Wooden/High Quality plastic/or equivalent enclosure.  A self contained Trainer. User manual hard copy.</p>
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### **C1. Labview/ Multisim Simulation tools**

LabVIEW Base Development System.  
Multisim Interactive Circuit Teaching Environment for Education.  
(Including Installation and Training)

### **C2. Mentor Graphics design, verification and test bundle**

Mentor Graphics Design, Verification & Test Bundle Tools (HEP-2):

Includes:- Vista™, Req Tracer™, Questa (including ModelSim®), Precision Synthesis, Leonardo Spectrum™ ASIC, Tessent™ Silicon Test, Questa Codelink.

A complete solutions for HDL design/verification/synthesis and test of ASICs and FPGAs.