NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI – 620 015

14.06.10

Tender No: NITT/ CSE / Microprocessor Lab / 1 / 2010

Sealed Tenders are invited from reputed manufactures/ Stockists/ Firms for the item listed in the Annexure. Annexure contains detailed specifications.

The cover should be addressed to **The Registrar, National Institute of Technology, Tiruchirappalli-620 015** with super script on cover quoting our Tender Notification No…   / Department.

The terms and conditions must be clear. Necessary user list, brochure of product and all supporting documents to be attached with tenders.

This Institution avails excise duty exemption & customs duty exemption as per Government of India Notification.

Forms "C" & "D" for sales tax concession cannot be issued.

Price must be for F.O.R. Trichy. Validity period, Warranty clause etc are to be mentioned clearly.

The Director reserves the right to reject any or all the offers without assigning any reasons thereto.

Last Date for Receipt of Tender: **July 7, 2010   3.00 P.M.**

Tender Opening on: **July 7, 2010   3.30 P.M.**

<u>Annexure</u>

Tender specifications for 8085 Microprocessor trainer kits and Interface cards are enclosed.

It is proposed to purchase 8085/8086 Microprocessor trainer kits and Interface cards for Computer Science and Engineering department. Quotations are invited for the following items:

1. 8085 MICROPROCESSOR TRAINER KIT [MICROPOWER-i LCD]

Quantity – 40 Nos

- With in built Power supply.
- With port for connecting keyboard.

PROCESSOR:
- Intel 8085A CPU on board @ 6.144 MHz Clock speed.

MEMORY:

- 8 KB EPROM.
- 8 KB Static RAM.
- Provision to upgrade RAM/EPROM upto 64 KB.

PERIPHERALS:
KEYBOARD AND DISPLAY:

- 16x2 Alphanumeric LCD Display.
- Standard keyboards.

2. 8086/8088 MICROPROCESSOR TRAINER [MICRO-86/88 EB LCD]

Quantity – 10 Nos

- Intel 8086/8088 CPU at 4.77 MHz clock speed.
- 16 KB for monitor EPROM upgradable to 64 KB.
- 16 KB RAM expandable to 64 KB.
- 3 Channel 16 bit counter/timer using 8253 terminated in a 10 pin connector
- Fully buffered address data and control signals terminated at a 50 pin header for interfacing.
- Datacom communication package for standard PC and the Kit.

3. STEPPER MOTOR CONTROLLER WITH MOTOR :

Quantity – 5 Nos

- Can control Stepper motors ranging from 2Kg to 5Kg.
- Both clockwise /anticlockwise rotation
- Driver should be provided for controlling one stepper motor.

- Provision for connecting external power supply of 6V, 12V or 24V, selectable by jumpers.
- One 2Kg/12V Stepper Motor.

4. ELEVATOR SIMULATOR INTERFACE:

Quantity – 3 Nos
- 8 floors and 2 lifts.
- Each Lift should be represented by a column of 8 LED's.
- Preset thumb wheel switch should be provided for the user to select the floor number.
- One Momentary switch is required for the user to confirm their request input.
- Provision for interrupt driven request service should be available.

5. 8251 & 8253 INTERFACE BOARD:

Quantity – 3 Nos
- Provision is needed to give External/Internal/ Manual input clock to 8253.
- Baud rate generation for 8251 using 8253.
- Loop back provision to check the serial port.
- Output of channel 2 should be connected to CPUs interrupt.
- Should contain standard RS232C serial port in a 9 Pin 'D' Male Connector.

6. 8259 INTERFACE BOARD:

Quantity – 3 Nos
- 8 switches for giving interrupts.
- 8 IRQ lines should be terminated at a 10 Pin Header.

7. 8279 KEYBOARD/DISPLAY INTERFACE BOARD:

Quantity – 3 Nos
- INTEL 8279. Keyboard/Display Interface.
- 6 Digit Display and 18 keys keyboard.
- Provision for Control and Shift Keys.
- Facility for Interrupt I/O Transfer.
- Provision to connect IRQ, output line of 8279 to any one of Interrupts RST 5.5, 6.5 or 7.5.

8. TRAFFIC LIGHT CONTROL SYSTEM:

Quantity – 3 Nos
- Should connect to parallel port of all the kits.

- 32 LEDs used to Simulate Traffic Control System.
- Buffers for individual LEDs (minimum 24)

9. 20 MHz DUAL CHANNEL CATHODE RAY OSCILLOSCOPE

Quantity – 2 Nos

Vertical Deflection:

Bandwidth: DC – 20MHz(-3dB).
Rise Time: 17.5nS
Deflection Coefficients: 12 calibrated steps 2mV/cm-10V/cm.
Accuracy: +/- 3%.
Variable Hold-off: For stable Triggering.
Input Impedance: 1M Ohm +/-3% shunted by 25pF +/- 5pF (direct).
10M Ohm +/-5% shunted by 16pF +/-2pF (10:1 probe).
Input coupling: DC- AC- GND.
Max Input Voltage: 400V (DC +AC peak).

Trigger System:

Sensitivity: Int 0.5mm., Ext 0.8v.
Slope: Positive or Negative.
Trigger Sources: Int CH1, CH2, line, ALT-CH I/CH II,Ext.
Trigger Modes: Norm, auto or variable Trigger level.

Operation Mode:

CH1, CH2, ALT, CHOP, ADD/SUB CH1+ CHII ,Invert CH II,X-Y operation
ratio 1:1

Horizontal Defection:

Bandwidth: DC-2.3 Mhz(-3dB).
X-Y Mode : Phase shift $<3^0$ at 60KHZ.
Input Impedance: 1M ohm || pF.
Deflection coefficients: 12 calibrated steps 2 mV/cm - 10 V/cm(1-2-5
sequence).

Timebase:
Time coefficient : 18 calibrated steps, 0.5 μs/cm - 0.2 s/cm(1-2-5 sequence)
with magnifier x 5 to 100 ns/cm, with variable control to 40ns/cm.
Accuracy: +/- 3 %
Ramp Output: 5 V_{pp}