

**Enquiry No.: AP/1/ENQ/SP/17-18 Date: 30/10/2017**

**Tender Notice**

All the Authorized Suppliers are invited to submit sealed quotation at the office of the Department of Applied Physics for the items mentioned overleaf. Please enclose the copy of the following papers along with the quotation- Trade License, PAN Card, GST Registration wherever necessary. The last date of submission of quotation is 15.11.2017.

Dr. Saurabh Pal  
Assoc. Prof.,  
Dept. of Applied Physics  
University of Calcutta

Dr. Ujjwal Mondal  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Chanchal Dey  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Priyaranjan Mandal  
Head of the Department  
Assoc. Prof., Dept. of Applied Physics  
University of Calcutta



DEPARTMENT OF APPLIED PHYSICS  
UNIVERSITY OF CALCUTTA  
92, APC Road, Kolkata- 700009

**Notice for Inviting Tender / Quotation**

Enquiry No: AP/1/ENQ/SP/17-18

Date: 30/10/2017

I shall be thankful if you quote your price items as below according to the CU rules and following terms & conditions.

- 1) The quotation/tender must be submitted by 15.11.2017 along with your Ref. NUMBER, DATE, SEAL & SIGNED BY appropriate authority. (Party must provide hard copy and also SOFT COPY by CD doc file).
- 2) Our enquiry. no. & date and also its items no. must be mentioned in your quotation.
- 3) Price for which you are quoting must be mentioned with all applicable taxes and others incidental charges as well as premiums for insurance against all kinds of risks before executing delivery to our Department, if applicable.
- 4) Party is to submit copy of their current valid TRADE LICENCE, GST, PAN CARD.
- 5) Manufacturer or sole distributor should also submit their valid copy of certificates/ sole authorized distributor certificates with seal & signed by appropriate authority along with quotation.
- 6) For any queries on related enquires/tender, you may also visit CU website [www.caluniv.ac.in](http://www.caluniv.ac.in) or mentioned Department.

**1. STRAIN GAUGE TRAINER (STRAIN / FORCE MEASUREMENT)**

SENSOR : 4 arm bridge with strain gauge mounted on cantilever 2kg. (10 kg. optional)

Signal Conditioning : Four arm Bridge, Voltage amplifier for span adjustment, buffer amplifier & zero adjustment Facility

DISPLAY : 3 1/2 digit Digital display

ACCESSORY : Sensor assembly with set of dead weights

POWER SUPPLY : Built-in IC regulated.

Necessary patch chords & Instruction manual are to be provided with unit.

**Quantity : 01 no**

**2. DISPLACEMENT MEASUREMENT USING LVDT**

SENSOR : + / - 10mm LVDT

DISPLAY : 3 1/2 digit Digital display.

CIRCUITRY : Phase detection circuit

EXCITATION : AC source 1KHz

ACCESSORY : Micrometer screw gauge assembly for displacement measurement

POWER SUPPLY : Built-in IC regulated.  
Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **3. DISPLACEMENT MEASUREMENT USING INDUCTIVE TRANSDUCER**

SENSOR : Inductive (non linear) solenoid type  
EXCITATION : A C source 1KHz  
DISPLAY : 3 ½ Digit Digital display  
ACCESSORY : Micrometer screw gauge assembly for displacement  
POWER SUPPLY : Built-in IC regulated.  
CIRCUITRY : suitable circuitry to convert inductive variations to displacement  
Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **4. ANGULAR DISPLACEMENT USING CAPACITANCE TRANSDUCER**

SENSOR : Capacitive on board  
DISPLAY : 3 1/2 digit Digital display.  
ACCESSORY : Not required  
POWER SUPPLY : Built-in IC regulated.  
Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **5. MEASUREMENT OF SPEED USING OPTICAL & INDUCTIVE (MAG.) TRANSDUCER.**

SENSOR : Inductive (Magnetic) & Optical (Photo-Electric) to be provided.  
DISPLAY : 3 1/2 digit Digital display.  
ACCESSORY : Sensor assembly with variable speed motor. Standard calibration source  
Should be internally provided.  
POWER SUPPLY : Built-in IC regulated.  
Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **6. MEASUREMENT OF SPEED USING STROBOSCOPE.**

SENSOR : Variable freq flasher with display.  
DISPLAY : 3 1/2 digit Digital display.  
ACCESSORY : Sensor assembly with variable speed motor. Standard calibration source  
Are to be provided.  
POWER SUPPLY : Built-in IC regulated.  
Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **7. VIBRATION MEASUREMENT TRAINER**

(with velocity / displacement measurement feature feature)

SENSOR : Mechanized Molecular capacitance  
DISPLAY : 4 digit L C D display to read Acceleration, Velocity & Displacement  
ACCESSORY : Variable freq. Variable Amplitude Vibrating table, Necessary cables  
& connectivity.  
Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

**Enquiry No.: AP/2/ENQ/SP/17-18 Date: 30/10/2017**

**Tender Notice**

All the Authorized Suppliers are invited to submit sealed quotation at the office of the Department of Applied Physics for the items mentioned overleaf. Please enclose the copy of the following papers along with the quotation- Trade License, PAN Card, GST Registration wherever necessary. The last date of submission of quotation is 15.11.2017.

Dr. Saurabh Pal  
Assoc. Prof.,  
Dept. of Applied Physics  
University of Calcutta

Dr. Ujjwal Mondal  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Chanchal Dey  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Priyaranjan Mandal  
Head of the Department  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta



DEPARTMENT OF APPLIED PHYSICS  
UNIVERSITY OF CALCUTTA  
92, APC Road, Kolkata- 700009

**Notice for Inviting Tender / Quotation**

Enquiry No: AP/2/ENQ/SP/17-18

Date: 30/10/2017

I shall be thankful if you quote your price items as below according to the CU rules and following terms & conditions.

- 1) The quotation/tender must be submitted by 15.11.2017 along with your Ref. NUMBER, DATE, SEAL & SIGNED BY appropriate authority. (Party must provide hard copy and also SOFT COPY by CD doc file).
- 2) Our enquiry. no. & date and also its items no. must be mentioned in your quotation.
- 3) Price for which you are quoting must be mentioned with all applicable taxes and others incidental charges as well as premiums for insurance against all kinds of risks before executing delivery to our Department, if applicable.
- 4) Party is to submit copy of their current valid TRADE LICENCE, GST, PAN CARD.
- 5) Manufacturer or sole distributor should also submit their valid copy of certificates/ sole authorized distributor certificates with seal & signed by appropriate authority along with quotation.
- 6) For any queries on related enquires/tender, you may also visit CU website [www.caluniv.ac.in](http://www.caluniv.ac.in) or mentioned Department.

**1. MEASUREMENT OF PRESSURE USING SILICON Pr. TRANSDUCER**

SENSOR : Piezo-Resistive Pr. Sensor / Strain gauge type

DISPLAY : 3 1/2 digit Digital display pressure gauge (dial type)

Signal Conditioning: Voltage amplifier for span adjustment, buffer amplifier & zero adjustment Facility

ACCESSORY : Sensor assembly with Mechanical Pressure development & release facility & Pressure tank

POWER SUPPLY : Built-in regulated

Necessary patch chords & Instruction manual are to be provided with unit.

**Quantity : 01 no**

**2. TEMP. MEASUREMENT & CONTROL USING THERMOCOUPLE**

SENSOR : Type K (Cr-AI) Thermocouple

DISPLAY : 3 1/2 digit Digital display.

CIRCUITRY : Bridge Amplifier with Gain & Span (zero) adjustment.

ACCESSORY : Sensor assembly & water bath with heating arrangement

POWER SUPPLY : Built-in IC regulated.

Necessary patch chords & Instruction manual is provided with unit

**Quantity : 01 no**

### **3. TEMP. MEASUREMENT & CONTROL USING THERMISTER**

SENSOR : PTC Thermister

DISPLAY : 3 1/2 digit Digital display.

CIRCUITRY : Bridge Amplifier with Gain & Span (zero) adjustment.

ACCESSORY : Sensor assembly & water bath with heating arrangement

POWER SUPPLY : Built-in IC regulated.

Necessary patch chords & instruction manual are to be provided with unit.

**Quantity: 01 no**

### **4. TEMP. MEASUREMENT USING RADIATION SENSOR (Optical pyrometer trainer)**

SENSOR : Infra red detector.

DISPLAY : 3 1/2 digit digital.

SOURCE : Radiation hot plate

ACCESSORY : Laser pointer (fitted with sensor), connectivity,

Heat radiating plate with facility vary temp.

POWER SUPPLY : Built in

Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **5. VACUUM MEASUREMENT USING McLeod GAUGE**

Required mercury to be supplied with unit. Vacuum creating facility using oil filled vacuum pump is required.

Range : 10 mm to 4 mm or better

Necessary pneumatic connectivity provided with vacuum tank.

Display: Digital Vacuum display

Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **6. LEVEL MEASUREMENT USING CAPACITIVE TRANSDUCER**

SENSOR : RF Capacitive type Input 0-300 mm / Output 4-20 mA.

DISPLAY : 3 1/2 digit Digital display.

ACCESSORY : Sensor assembly with Sump tank, Process Tank, FHP Motor-pump, All necessary fluid connectivity & bypass valve.

POWER SUPPLY : Built-in IC regulated.

Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

### **7. FLOW MEASUREMENT USING ORIFICE, VENTURI, PITOT TUBE (THREE in ONE)**

SENSOR : 1] Rotameter 2] Orifice assembly & 3] Ventury

DISPLAY : Float position on graduated scale Rotameter & U tube manometer

ACCESSORY : Process tank with motor pump, manual flow control valve.

Suitable pipeline to accommodate above 3 flow sensing elements

Complete system to be mounted as one unit.

POWER SUPPLY : Built-in IC regulated.

Necessary patch chords & instruction manual are to be provided with unit.

**Quantity : 01 no**

## **8. PC BASED DATA ACQUISITION SYSTEM**

### **SPECIFICATION**

I / O s : 8 Nos. of Analog Inputs

8 Nos. of Digital Inputs & 8 Nos. of Digital Outputs.

MODE : Multiplexed Scanning Mode.

PC REQUIREMENT: 01, i5 processor

PC INTERFACE: USB Port

Instrumentation port on 6 channels is required

4-20 mA output should be made available

User defined channel is provided which can be externally used by user. In built D.C. regulated power supply. 8 bit open collector

output (optional coil energized relay are available) 8 bit port toggle

switch input simulator. 3 1/2 digit Digital panel meter

SOFTWARE : Menu based user friendly software for data acquisition &

Storage in files with Graphical & tabular display

**Enquiry No.: AP/3/ENQ/SP/17-18 Date: 30/10/2017**

**Tender Notice**

All the Authorized Suppliers are invited to submit sealed quotation at the office of the Department of Applied Physics for the items mentioned overleaf. Please enclose the copy of the following papers along with the quotation- Trade License, PAN Card, GST Registration wherever necessary. The last date of submission of quotation is 15.11.2017.

Dr. Saurabh Pal  
Assoc. Prof.,  
Dept. of Applied Physics  
University of Calcutta

Dr. Ujjwal Mondal  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Chanchal Dey  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Priyaranjan Mandal  
Head of the Department  
Assoc. Prof., Dept. of Applied Physics  
University of Calcutta





DEPARTMENT OF APPLIED PHYSICS  
UNIVERSITY OF CALCUTTA  
92, APC Road, Kolkata- 700009

**Notice for Inviting Tender / Quotation**

Enquiry No: AP/3/ENQ/SP/17-18

Date: 30/10/2017

I shall be thankful if you quote your price items as below according to the CU rules and following terms & conditions.

- 1) The quotation/tender must be submitted by 15.11.2017 along with your Ref. NUMBER, DATE, SEAL & SIGNED BY appropriate authority. (Party must provide hard copy and also SOFT COPY by CD doc file).
- 2) Our enquiry. no. & date and also its items no. must be mentioned in your quotation.
- 3) Price for which you are quoting must be mentioned with all applicable taxes and others incidental charges as well as premiums for insurance against all kinds of risks before executing delivery to our Department, if applicable.
- 4) Party is to submit copy of their current valid TRADE LICENCE, GST, PAN CARD.
- 5) Manufacturer or sole distributor should also submit their valid copy of certificates/ sole authorized distributor certificates with seal & signed by appropriate authority along with quotation.
- 6) For any queries on related enquires/tender, you may also visit CU website [www.caluniv.ac.in](http://www.caluniv.ac.in) or mentioned Department.

**1. DSO, Quantity: 02**

**Specifications:** Bandwidth: DC - 50MHz Bandwidth Limit: 20MHz Sample Rate: 500MSa/s(RTS), 50GSa/s(ETS), 32K Memory, 7" TFT Screen

**Make and Model:** Any suitable make and model

**2. LCR MULTIMETER, Quantity: 10**

Res range: 200 ohm to 2000Mohm, Acc :  $\pm 0.8\%$  of reading

Cap range: 20nF to 200 micro F Acc:  $\pm 2.5\%$  of reading

Inductance range: 2mH to 20H Acc:  $\pm 2.5\%$  of reading

**Enquiry No.: AP/4/ENQ/SP/17-18 Date: 30/10/2017**

**Tender Notice**

All the Authorized Suppliers are invited to submit sealed quotation at the office of the Department of Applied Physics for the items mentioned overleaf. Please enclose the copy of the following papers along with the quotation- Trade License, PAN Card, GST Registration wherever necessary. The last date of submission of quotation is 15.11.2017.

Dr. Saurabh Pal  
Assoc. Prof.,  
Dept. of Applied Physics  
University of Calcutta

Dr. Ujjwal Mondal  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Chanchal Dey  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Priyaranjan Mandal  
Head of the Department  
Assoc. Prof., Dept. of Applied Physics  
University of Calcutta



DEPARTMENT OF APPLIED PHYSICS  
UNIVERSITY OF CALCUTTA  
92, APC Road, Kolkata- 700009

**Notice for Inviting Tender / Quotation**

Enquiry No: AP/4/ENQ/SP/17-18

Date: 30/10/2017

I shall be thankful if you quote your price items as below according to the CU rules and following terms & conditions.

- 1) The quotation/tender must be submitted by 15.11.2017 along with your Ref. NUMBER, DATE, SEAL & SIGNED BY appropriate authority. (Party must provide hard copy and also SOFT COPY by CD doc file).
- 2) Our enquiry. no. & date and also its items no. must be mentioned in your quotation.
- 3) Price for which you are quoting must be mentioned with all applicable taxes and others incidental charges as well as premiums for insurance against all kinds of risks before executing delivery to our Department, if applicable.
- 4) Party is to submit copy of their current valid TRADE LICENCE, GST, PAN CARD.
- 5) Manufacturer or sole distributor should also submit their valid copy of certificates/ sole authorized distributor certificates with seal & signed by appropriate authority along with quotation.
- 6) For any queries on related enquires/tender, you may also visit CU website [www.caluniv.ac.in](http://www.caluniv.ac.in) or mentioned Department.

**1. PC (DUAL CORE 2.4 GHZ+ i5 SERIES INTEL PROCESSOR, 8GB RAM, 500GB HDD, 23" WIDESCREEN LCD/LED WITH DVI SUPPORT), Quantity: 05**

**2. LASER PRINTER: Quantity : 02**

**Enquiry No.: AP/5/ENQ/SP/17-18 Date: 30/10/2017**

**Tender Notice**

All the Authorized Suppliers are invited to submit sealed quotation at the office of the Department of Applied Physics for the items mentioned overleaf. Please enclose the copy of the following papers along with the quotation- Trade License, PAN Card, GST Registration wherever necessary. The last date of submission of quotation is 15.11.2017.

Dr. Saurabh Pal  
Assoc. Prof.,  
Dept. of Applied Physics  
University of Calcutta

Dr. Ujjwal Mondal  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Chanchal Dey  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Priyaranjan Mandal  
Head of the Department  
Assoc. Prof., Dept. of Applied Physics  
University of Calcutta



DEPARTMENT OF APPLIED PHYSICS  
UNIVERSITY OF CALCUTTA  
92, APC Road, Kolkata- 700009

**Notice for Inviting Tender / Quotation**

Enquiry No: AP/5/ENQ/SP/17-18

Date: 30/10/2017

I shall be thankful if you quote your price items as below according to the CU rules and following terms & conditions.

- 1) The quotation/tender must be submitted by 15.11.2017 along with your Ref. NUMBER, DATE, SEAL & SIGNED BY appropriate authority. (Party must provide hard copy and also SOFT COPY by CD doc file).
- 2) Our enquiry. no. & date and also its items no. must be mentioned in your quotation.
- 3) Price for which you are quoting must be mentioned with all applicable taxes and others incidental charges as well as premiums for insurance against all kinds of risks before executing delivery to our Department, if applicable.
- 4) Party is to submit copy of their current valid TRADE LICENCE, GST, PAN CARD.
- 5) Manufacturer or sole distributor should also submit their valid copy of certificates/ sole authorized distributor certificates with seal & signed by appropriate authority along with quotation.
- 6) For any queries on related enquires/tender, you may also visit CU website [www.caluniv.ac.in](http://www.caluniv.ac.in) or mentioned Department.

**1. SPLIT 2 TON 3 STAR AIR CONDITIONER MACHINE : 2 nos**

**Enquiry No.: AP/6/ENQ/SP/17-18 Date: 25/09/2017**

**Tender Notice**

All the Authorized Suppliers are invited to submit sealed quotation at the office of the Department of Applied Physics for the items mentioned overleaf. Please enclose the copy of the following papers along with the quotation- Trade License, PAN Card, GST Registration wherever necessary. The last date of submission of quotation is 25.10.2017.

Dr. Saurabh Pal  
Assoc. Prof.,  
Dept. of Applied Physics  
University of Calcutta

Dr. Ujjwal Mondal  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Chanchal Dey  
Member of Dept. Purchase  
Committee  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta

Dr. Priyaranjan Mandal  
Head of the Department  
Assoc. Prof., Dept. of Applied  
Physics  
University of Calcutta



DEPARTMENT OF APPLIED PHYSICS  
UNIVERSITY OF CALCUTTA  
92, APC Road, Kolkata- 700009

**Notice for Inviting Tender / Quotation**

Enquiry No: AP/6/ENQ/SP/17-18

Date: 30/10/2017

I shall be thankful if you quote your price items as below according to the CU rules and following terms & conditions.

- 1) The quotation/tender must be submitted by 15.11.2017 along with your Ref. NUMBER, DATE, SEAL & SIGNED BY appropriate authority. (Party must provide hard copy and also SOFT COPY by CD doc file).
- 2) Our enquiry. no. & date and also its items no. must be mentioned in your quotation.
- 3) Price for which you are quoting must be mentioned with all applicable taxes and others incidental charges as well as premiums for insurance against all kinds of risks before executing delivery to our Department, if applicable.
- 4) Party is to submit copy of their current valid TRADE LICENCE, GST, PAN CARD.
- 5) Manufacturer or sole distributor should also submit their valid copy of certificates/ sole authorized distributor certificates with seal & signed by appropriate authority along with quotation.
- 6) For any queries on related enquires/tender, you may also visit CU website [www.caluniv.ac.in](http://www.caluniv.ac.in) or mentioned Department.

1. Wooden Table for Experiment set up : 10 nos Dimension: 4.5(L) x 2.5 (B)x2.5 (H)
---

2. Chair (PVC): 30 nos Dimension: 520(L) x 430(B) x 890(H)
---