



Govt. of Maharashtra

Govt. College of Engineering, Nagpur



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"To be an Institution of National Repute Creating Globally Competent Technocrats to Serve the Society"

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No.: GCOEN/Quot/ ME Deptt./Equip/2022-23/ 1004

Date : 7 FEB 2023

To,

Sub. :- Quotation for supply of equipment.

(Due Date 27/02/2023 To 8/03/2023)

Sealed Quotations are invited from eligible and interested manufacturers /dealers / distributors for the supply of _____ Equipment for Mechanical Engg. deptt/cell, as per the details given in the Table - I & II. The quotations should be submitted in two bid / envelope system. Bid submission procedure is given below.

A. The first envelope shall contain Technical specifications of the product (as per Table - I), technical literature/ leaflet and other firm documents mentioned below.

1. Covering letter of bidder on the company letter head mentioning official address, Contact No, e-Mail address and website (if available) URL.
2. Company registration certificate.
3. GST registration certificate.
4. GST Clearance Certificate/ GST Challan paid up to last quarter of the financial year.
5. OEM /Authorization/ Distributorship certificate from manufacturer.
6. Technical literature / leaflet of the make and model no of equipment quoted additional document may also be asked by undersigned for confirming the details.
7. Undertaking about quality of item and service after supply of items.
8. Warranty of each item in the list is of 2 years (minimum)

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Table – I: Technical bid format (to be submitted by supplier in 1st sealed envelope)

Sr. No.	Name of the item with specification	Quantity required	Departmental Estimated Cost per Unit including GST & All Taxes (In Rs.)	(To be filled by the supplier)	
				Specification of Item offered	Deviation if any. (Yes / No)
01	<p>Toolmaker's Microscope : This Microscope has X-Y movement on ball bearing slides, having micrometer (50mm dia) least Count -0.01 or 0.005mm with goniometer. Fixed magnification 30 x 150 x 150 mm stage and 360 degree rotary head. Having both transmitted & incident light. This comes packed in a wooden box.</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> • Observation Tube- Monocular, inclined at 30 degree • Base – Large and heavy base provides extra overall rigidity to the instruments. • Stage – 150mm x 150mm size assembled on ball bearing guides to provide accurate and smooth stage stroke upto 50mm in each direction. <p>Illumination – Sub stage lamp emits transmitted light from a bottom source equipped with halogen lamp or LED 3W and incident from two lamps Image: Erect image</p> <p>Metz - 1395 AD Brand: Metzger Magnification: 30x, 75x & 150x Eye Piece Protector: Graduated 0 degree to 360 degree With adjustable Vernier of least count 6 minutes Illumination: Built in base transmitted from 6W - 20W Halogen lamp or LED 3W and incident from two lamps Image: Erect image</p> <ul style="list-style-type: none"> • Operational Manual Required 	01	125000		
02	<p>Passive & Active devices Trainer.</p> <p>Solid-state is a common descriptor used to refer to electronic components, devices and systems based entirely on semiconductor materials such as silicon, germanium or gallium</p> <p>Timer Range As per requirement Cut off system Auto Off and Buzzer Display LCD Timer & Temperature Power 230 V, Single, Phase A/C,50Hz Dimension (410 x 290 x 255) mm</p> <ul style="list-style-type: none"> • Operational Manual Required 	01	34000		

03	Sensor Technology Lab 1] Limit Switches : NC / NO type lever type 2] Proxy Sensor: Inductive. 3] Proxy Sensor : Capacitive 4] Optical Proxy Sensor : Optical Diffusion type 5] Optical Sensor : Through beam type 7] Angular Displacement : Capacitive Sensor 8] Sound Sensor : Capacitance type 9] Displacement Sensor : Resistive type 10] Level Sensor : Capacitive type 250 mm 11] Temperature Sensor : RTD PT-100 / TC 12] Strain gauge / Load Cell : 4 Arm strain gauge 13] Pressure Sensor : Piezo-Resistive type 14] Flow Sensor : For Air Flow Turbine type & • Operational Manual Required	01	12500	
04	Digital to Analog and Analog to Digital Converter kit. Analog to Digital Converter (ADC) basically converts physical variables which are analog in nature to digital signal for processing. They have high conversion efficiency. Technical Specification <ul style="list-style-type: none">• DC Power supply +5V, 150 mA• DC Power supply +2.5V, 150mA• Power supply for reference voltage 0-5 V , 150 mA• Operated on mains power 230V, 50 Hz + 10%• Digital Voltmeter 2V / 20V DC• Operational Manual Required	01	10000	

Thermal Conductivity of Metal Rod

01

89000

The experimental set up consists of metal bar, one end of which is heated by an electric heater while the other end of the bar projects inside the cooling water jacket. A cylindrical shell filled with insulating material surrounds the middle portion of the bar. The temperature of the bar is measured at different sections. Heat Input to the heater is given through variac. By varying the heat input rates, data can be obtained. Water at constant rate is circulated through the jacket and its flow rate and temperature rise Measurement facility & Operational Manual is required

Technical Specification:

- Metal Bar: Material-Copper; Length 400 mm (approx.); Diameter: 25 mm
- Insulating shell: Length 250 mm; Diameter 200 mm
- Cooling Water Jacket: Length 75 mm; Diameter 100 mm
- Heater: Nichrome Wire.
- Water Flow measurement: By Measuring flask
- Control panel comprising of Digital Voltmeter: 0-250 Volt.
- Dimmerstat : 0-230 V; 0 - 2 Amp
- Temperature Sensors: RTD PT-100 type.
- Digital Temp. Indicator: 0-199.90C, with multi-channel switch,
- With standard make on/off switch, Mains Indicator etc.
- The whole setup is mounted on a powder coated base plate.
- Control Panel: Standard make on/off switch, Mains Indicator etc.
- Instruction Manual : An ENGLISH instruction manual will be provided along with the Apparatus
- Operational Manual Required

05

Parallel Flow and Counter Flow concentric tube heat exchanger

01

78000

Heat exchanger apparatus consists of a concentric tube heat exchanger. Hot water flows through inner tube in one direction only and cold water flows through the outer tubes. Direction of cold fluid flow can be changed from parallel or counter to hot water so that unit can be operated as parallel or counter flow heat exchanger. Flow rates of hot and cold water are measured using Rota meters. A magnetic drive pump is used to circulate the hot water from a re-cycled type water tank, which is fitted with heaters and Digital Temperature Controller.

Technical Specification:

- System : Water to Water, concentric tube type
- Heat Exchanger: Length 1.6m (approx.). insulated with ceramic wool and clad by aluminum foil.
- Outer Tube: Material Stainless steel. ID 27.5mm, OD 33.8 mm (approx)
- Inner Tube : Material Stainless Steel, OD 12.7mm (appx)
- 06 • Water Flow Measurement: Rotameters (2Nos.) one each for cold & hot fluid.
- Hot Water Tank: Made of Stainless steel. Insulated with ceramic fiber wool.
- Hot Water Circulation : Magnetic Pump
- Heaters : Nichrome wire heater (2Nos)
- Control panel comprising of
- Digital Temp. Controller: 0-199.90C (For Hot Water Tank)
- Digital Temp. Indicator: 0-199.90C, with multi-channel switch
- Temperature Sensors: RTD PT-100 type.
- With Standard make On/Off switch, Mains Indicator etc.
- Instruction Manual : An ENGLISH instruction manual will be provided along with the Apparatus
- A good quality painted rigid MS Structure is provided to support all the parts.
- Control Panel: Standard make on/off switch, Mains Indicator etc.
- Instruction Manual consisting of experimental procedures, block diagram etc.
- Operational Manual Required

07	<p>VIBRATION LAB – Equipment can perform following experiment</p> <ol style="list-style-type: none">1. To verify the relation simple pendulum.2. To verify the relation of compound pendulum & to determine the radius of gyration.3. To study radius of gyration of bi-filar suspension.4. To study the undamped free vibration of spring mass system.5. To study the longitudinal vibration of helical coiled spring.6. To study the forced vibration of simply supported beam for different damping.7. Undamped tensional vibrations of single rotor system.8. Undamped torsion vibrations of double rotor system.9. To study the damped torsional vibration of single rotor system and to determine the damping coefficient.10. Verification of Dunker ley's Rule.11. To study the forced damped vibration of spring mass system. <p>TECHNICAL DETAILS: Exciter Unit : With FHP DC Motor with Speed Control Facility. RPM measurement: Digital RPM Indicator with Proximity sensor. Ordinary Chart recorder: For recording Frequency and Amplitude of Vibration. Stop Watch: Electronic Stop Watch. Instruction Manual: An ENGLISH instruction manual will be provided along. With the Apparatus CONTROL PANEL: Standard make on/off switch, Mains Indicator etc.</p> <ul style="list-style-type: none">• Operational Manual Required	01	130000	
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Critical heat flux apparatus:

01

72000

The apparatus consists of a container containing distilled water. The heating surface is in the form of a Nichrome heater wire completely submerged in the water. There is another heater submerged in the water to initially heat the water upto the required temperature to study the critical heat flux phenomenon at various bulk temperatures. The temperature of the water in the container is measured with the help of a temp sensor. Electrical supply to the test heating wire is given through a dimmerstat. And the power input is measured with the help of a voltmeter and an ammeter..

Technical Specification:

- Water Bath: Suitable Capacity made of Stainless steel with 1.5 kW heater.
- Insulated with ceramic wool having front & back window made of glass/acrylic.
- Test Heater: Nichrome Wire.
- Control panel comprising of
- Digital Voltmeter. : 0-300 Volt.
- Digital Ammeter. : 0-2 Amps.
- Dimmerstat : 0 - 8 A
- Digital Temp. Controller: 0- 199.90C (For Water Bath)
- Digital Temp. Indicator: 0-200°C, with multi-channel Switch
- Temperature Sensors: RTD PT-100 type/K-Type. With standard make On/Off switch, Mains Indicator etc.
- Cabinet to accommodate the slab assembly with front window of glass/acrylic.
- The whole set-up is mounted on a powder coated base plate.
- Control Panel: Standard make on/off switch, Mains Indicator etc.
- Instruction Manual consisting of experimental procedures, block diagram etc. □ Instruction Manual
- Hot water Circulation :- Magnetic Pump
- Heater: Nichrome wire heater (2 Nos)
- Control panel comprising of
- Digital Temp. Controller : 0-199.9⁰C (For Hot Water Tank) & Instruction Manual
- Operational Manual Required

08

Desert Air Cooler Test Rig

01

77500

Desert Cooler Trainer works on the principle of evaporative cooling. It consists of a fan which sucks the air from atmosphere through the pads which are used in desert coolers very frequently. The difference in DBT & WBT at inlet and outlet can be measured hence the RH from the charts. Also the amount of water evaporated can be calculated by knowing the water level difference in the reservoir.

Technical Specifications:

- Fan connected to 1/2 HP motor
- Air Cooler Pump to circulate water.
- DBT & WBT
- Measuring Thermometers at inlet and outlet
- Orifice meter with manometer to measure the air flow.
- Overload Protector With Overload circuit With MCB
- Control Panel: Standard make on/off switch, Mains Indicator etc
- For Real Time Data Measurement, analog or digital display of data in computer, store indefinite on of graph for analysis and facility of export data to HTML/EXCEL on software.
- Technical and Instruction Manual consisting of experimental procedures, block diagram accompanies the unit.
- Operational Manual Required

Window air conditioner Test Rig

01

97000

The Air Conditioning Test Rig unit is required to conduct experiments and demonstrate the process of cooling of atmospheric air. The unit will be fitted with all instruments facilities so that temperature, pressure etc. may be measured at different points in the air conditioning system.

Technical Specification:

- Compressor: Hermitically sealed compressor.
- Capacity 1 Ton, Kirlosker make.
- Condenser : Air cooled compatible to 1 Ton compressor
- Condenser Cooling fan: Compatible capacity with permanent lubricated motor.
- Pressure Gauges: 2 Nos.
- Evaporator: Compatible to 1 Ton, made of copper tube and
- Aluminum fins fitted with compatible capacity fan.
- Safety Control: over load and over current protection for
- Compressor with Time delay circuit.
- Expansion Device: Capillary Tube compatible capacity.
- Temperature Sensor: RTD PT-100 Type.
- Temperature Measurement: Digital Temperature Indicator with multi-channel switch.
- All Other accessories like Hand shut off valves, filter drier and Thermostat, Pressure gauges will be provided.
- All the accessories will be mounted as rigid base frame made of M.S. and it will be powder coated.
- Control Panel: Standard make on/off switch, Mains Indicator etc.
- Technical and Instruction Manual consisting of experimental procedures, block diagram etc.
- Operational Manual Required

10

Delivery period required (in weeks)

Also enclose Technical literature / leaflet/ photograph of equipment / Item that contains above details.

(Signature of Supplier)

Office seal of Supplier

Date -

Place -

Table- II: Commercial bid format (to be submitted by supplier in 2nd sealed envelope).

Sr. No.	Name of the item with specification	Quantity required	All inclusive cost per unit	All inclusive cost for quantity mentioned.
1.	Toolmaker's Microscope	01 No.		
2	Passive & Active devices Trainer.	01 No.		
3.	Sensor Technology Lab	01 No.		
4	Digital to Analog and Analog to Digital Converter kit.	01 No.		
5	Thermal Conductivity of Metal Rod	01 No.		
6	Parallel Flow and Counter Flow concentric tube heat exchanger	01 No.		
7	VIBRATION LAB	01 No.		
8	Critical heat flux apparatus:	01 No.		
9	Desert Air Cooler Test Rig	01 No.		
10	Window air conditioner Test Rig	01 No.		
Date - Place -				(Signature of Supplier) Office seal of Supplier

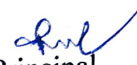
B. The second envelope shall contain the financial bid (as per Table - II), in which the rates of items are quoted.

1. The quoted rates shall be inclusive of all rates (such as taxes, freight, carting charges, insurance, packing and forwarding charges or any other surcharges) with a F.O.R. destination. Financial bid shall be signed with office seal of the supplier.
2. The material will be checked at this institute.
3. No extra charges will be paid for cartage, packing etc. for the material rejected & replaced.
4. Rates should be valid for 6 months from the date of confirmation letter.
5. Materials should be quoted for standard makes. with 2 years minimum warranty.
6. The required quantity may vary.

13

C. Please note following procedures, terms and conditions while submitting the bids.

1. Envelopes should be sealed with a mention of the type of envelope (Technical/ Financial), Reference no., Date of opening the quotation on the front side of the envelope. These two envelopes should be sealed in a third envelope by giving heading "Quotation for supply of Material & Equipment for "MECHANICAL ENGINEERING DEPARTMENT".
2. The quotations should reach the undersigned on or before **date 08/03/2023**
3. Quotations will be opened at 11:00 AM on **date 09/03/2023**.
4. Representative/supplier may attend the office (if desired so) at the time of opening of quotations at their own cost.
5. The undersigned reserves the right to accept or reject any offer or all offers without assigning any reason thereof.
6. After the supply of items and the completion of warranty period (Two years) the supplier should provide maintenance services for at least two years at institute cost.


Principal

Govt. College of Engg. Nagpur.

Copy to: 1) Registrar to display on college Notice Board 

2) Head Computer Engg. Dept to publish on College website 