

RAYAT SHIKSHAN SANSTHA'S

KARMAVEER BHURAO PATIL COLLEGE OF ENGINEERING

SATARA-415001.

Fax-02162-235767, E-Mail- office@kbpcoes.edu.in Phone: 230636/235767

TENDER DOCUMENT FOR

- 1 Bomb calorimeter.
 - 2 Flue gas Analyser for Diesel fired boiler.
 - 3 Heat pump test rig. (water to water heat pump, Air to water heat pump)
 - 4 Universal vibration apparatus.
 - 5 Universal Governor Apparatus.
- For Mechanical Engineering Department.

Last date of submission of Tender document is 26th March. 2018.

Note:- The tender document is available in the Institute's office during working hours on payment of Rs 500/- or it may be downloaded from www.kbpcoes.edu.in and at the time of submission in the institute a DD of Rs. 500/- in favor of ' The Principal, Karmaveer Bhaurao Patil, College of Engineering, Satara should be attached.

MANDATORY TERMS AND CONDITIONS

1. A payable at PAR cheque or DD amounting Rs. 2.5 % of total coated cost. Earnest Money Deposit should be attached with tender document. If cheque/DD worth Earnest Money Deposit is not attached, tender will be liable to be rejected.
2. There should be two separate envelopes.
Envelope A – EMD cheque, copy of tender form receipt or DD of Rs. 1000/-.(Non refundable).
Envelope B- Technical Proposal.
Envelope C- Financial Proposal.
3. Security deposit of 10% of order value or negotiable at the time of negotiation subject to the discretion of management, in cash or in the form of bank guarantee will be retained as security deposit till the expiry of warranty period.
4. Envelope B & C will be opened if and only if all the specified particulars are present in Envelope A.
5. All DD's to be drawn in favor of 'Principal, Karmaveer Bhaurao Patil College of Engineering, Satara.
6. Quoted Rates should be valid for (60) days.

IMPORTANT POINTS

1. Your rates offered should be free delivery at the institution and inclusive of all taxes.
2. Delivery period required for supply from the date of purchase the order shall be clearly mentioned and the same will have to be strictly adhered to.
3. Other important details/conditions, pamphlets if any should be supplied accordingly.
4. Detailed specifications, make/brand etc. should also be furnished.

TERMS AND CONDITIONS

1. Items tendered should confirm to the specifications given, as overleaf/list attached. If incomplete specifications are included against the item in the form, full specifications in accordance with accepted ISI/ISO/IS standards shall be furnished by the tender against each items tendered. When a reference to catalogue is made, the relevant catalogue should accompany the tender.
2. The rates offered shall be for new items only. Validity of the tender should be mentioned clearly. (Rates should be valid for (60) days.)
3. In case some item with alternative specification is available with you, the same may be quoted by you giving complete information.
4. If for any reason conditions such as quality, specification, delivery period etc. of the order are not fulfilled by the supplier then the order will be treated as cancelled & EMD will forfeited.
5. Bills shall be sent only when the order is fully executed, since the bills for part supply, unless or otherwise so directed, will not be accepted.
6. The tenders either incomplete for want of detailed information on the important points or the tenders received after the due date may be rejected.
7. The institute reserves the right to accept or reject any tender or all the tenders and to order any items in any quantity, without assigning any reason.
8. Payment of bidder will not be held beyond twenty-one days from the date of submission of bills for completed work & certified by our competent technical committee. The decision of our competent technical committee will be final & binding.
9. Bidder has to enter into a agreement required as per the existing terms & conditions.
10. For any query or information, please contact Prof. Mrs. M. Y. Shinde. in Mechanical Department (02162-230636/235767) Ext. Mob:-9881200998.

**I/C Principal
Karmaveer Bhaurao Patil College of Engg.Satara.**

Tender Form-01

1. **Name of Company/Industry:**
2. **Name of Owner** :
3. **Address** :
4. **Mobile no:** **Email ID.:**

5. Equipment no. 1: Bomb calorimeter.

Technical Specifications :-

1. With Bomb & digital thermometer apparatus consists of :-
 - a) Bomb vessel of 19 liter. Capacity with stainless steel body.
 - b) High pressure valve – 01 No.
 - c) Electrode Set – 01 No.
 - d) Electric stirrer – 01 No.
 - e) Pellet press – 01 No.
 - f) Ignition Microme wire – 01 mtr.
 - g) Copper pipe fitting – 01 set.
 - h) Pressure Gauge – 01 No.
2. S.S. 3/6 with threaded top & pressure ring.
3. High precision digital thermometer of Bomb calorimeter.

Experimental capabilities:

1. Determination of calorific value by Bomb calorimeter.

Instruction manual: an English instruction manual will be provided along with the apparatus.

6. **Total cost of Equipment** :
7. **Add taxes if any**
8. **Add the levis if any**
9. **Add delivery, transportation, unloading and installation cost**
10. **Total cost including all above**
11. **Delivery period from the date of order**
12. **Installation period from the date of delivery**
13. **Is the tender for fees submitted? YES/NO**
If DD mention DD number.....
If Cash: Mention the receipt number:.....

Name and Sign. of the supplier with Seal

Tender Form-02

1. Name of Company/Industry :
2. Name of Owner :
3. Address :
4. Mobile no Email ID.
5. Equipment no. 2: Flue gas Analyser for Diesel fired boiler

Technical Specifications :-

CO	0 - 10.000% (0.001%)
CO2	0 - 20.00% (0.01%)
HC	HC : 1 - 15,000% (1ppm)
O2	0 - 25.00% (0.01%)
Nox (Optional)	0 - 5000ppm (1ppm)
Lamda	0.500 - 2.000% (0.001)
AFR	7.35 - 29.40(0.01)

Experimental capabilities:

1. Measurements of exhaust emissions of Diesel Fired Boiler
2. Measurements of exhaust emissions of Petrol engine & Diesel engine.

Instruction manual: an English instruction manual will be provided along with the apparatus.

6. Total cost of Equipment :
7. Add taxes if any
8. Add the levis if any
9. Add delivery, transportation, unloading and installation cost
10. Total cost including all above
11. Delivery period from the date of order
12. Installation period from the date of delivery
13. Is the tender for fees submitted? YES/NO
If DD mention DD number.....
If Cash: Mention the receipt number:.....

Name and Sign. of the supplier with Seal

Tender Form-03

1. Name of Company/Industry :
2. Name of Owner :
3. Address :
4. Mobile no Email ID.
5. Equipment no. 3: Heat pump test rig
(Water to Water Heat Pump , Air to Water Heat Pump)

Technical Specifications:- (Water to Water Heat Pump)

1. Compressor: - Hermetically sealed compressors.
 2. Capacity: - 1/3 Ton Kirloskar make.(or Equivalent)
 3. Condenser: - Coiled Tube Heat Exchanger acts as a condenser. Copper coil is merged in water tank to cool down the gas temp. Continuous water flow circulation is required to extract the heat of gases.
 4. Expansion device: - Thermostatic expansion valve.
 5. Evaporator:- Water cooled type
 6. Rota meter: - For measuring liquid flow of Refrigerant/Condenser Water/Evaporator Water (Eureka Make).
 7. Energy Meter:- Digital, one each for power measurement of compressor & heater
 8. Pressure Gauge:- , one each for HP & LP
 9. Digital Temperature Indicator:- Inlet & Outlet of Evaporator, Condenser & Refrigerant (All set of thermocouples)
 10. HP-LP Cutout: - Make Danfoss or Equivalent (Adjustable).
 11. Service Valve :- Needle type for changing gas(Brass Type)
 12. Thermostat :- Provided of reputed make
 13. Voltmeter: - 0 - 250 V.
 14. Ammeter :- 0 - 15 A
 15. Filter/drier: - Provided 1 Nos. Suitable to equipment & refrigerant
 16. Solenoid valve: - Provided 1 Nos. Suitable to equipment & refrigerant
 17. Switches:- Control Panel should consist switches (compressor, condenser fan, solenoid valve, evaporator heater), energy meter, HP/LP cutout, Digital Indicator of Temperature/Voltmeter/Ammeter
 18. Dimensions (Nominal):- 1.5m. (L) X 1.0m. (W). X 1.5m(H), Weight 120 Kg
 19. Service Required:- 230V/440 AC Supply 50Hz
 20. Scope of Delivery:- Experimental Setup, Instruction Manual in English
- The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint.

Technical Specifications:- (Water to Water Heat Pump)

1. Compressor: - Hermetically sealed compressor – 1 ton.
2. Condenser Cooling: - Copper coil is merged in water tank to cool down the gas temp.
Continuous
Water flow circulation is required to extract the heat of gases Coiled Tube Heat Exchanger acts as a condenser
3. Dimmerstat :- 230 V. AC single phase for heating control
4. Evaporator :- 14” x 14” x 4 Air Cooled evaporator made out of copper pipe & Aluminum fins of matching, Capacity with fan.
5. Expansion device: - Thermostatic expansion valve.
6. Energy Meter :- Digital, For power measurement of compressor
7. Filter/Drier :- Provided
8. HP-LP Cutout: - Make Danfoss or Equivalent (Adjustable).
9. Pressure Gauge :- High Pressure and Low Pressure measurement – 2 Nos
10. Rotameter: - for refrigerant (R134a) & Water flow measurement each.
11. Digital Temperature Indicator:- Inlet & Outlet of Evaporator, Condenser & Refrigerant (All Six set of thermocouples)
12. Switches :- For compressor, condenser fan, dehumidifier heater, boiler and blower
13. Thermostat :- Provided of reputed make
14. Voltmeter: - 0 - 250 V.
15. Ammeter :- 0 - 15 A
16. Filter/drier: - Provided 1 Nos. Suitable to equipment & refrigerant
17. Solenoid valve: - Provided 1 Nos. Suitable to equipment & refrigerant
18. Dimensions (Nominal):- 1.5m. (L) X 1.0m. (W). X 1.5m(H), Weight 120 Kg
19. Service Required:- 230V/440 AC Supply 50Hz
20. Scope of Delivery:- Experimental Setup, Instruction Manual in English
The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint

Instruction manual: an English instruction manual will be provided along with the apparatus.

Experimental capabilities:

1. **Trial on Water to Water Heat Pump.**
2. **Trial on Air to Water Heat Pump.**

6. Total cost of Equipment :
7. Add taxes if any
8. Add the levis if any
9. Add delivery, transportation, unloading and installation cost
10. Total cost including all above
11. Delivery period from the date of order
12. Installation period from the date of delivery
13. Is the tender for fees submitted? YES/NO
If DD mention DD number.....
If Cash: Mention the receipt number:.....

Name and Sign. of the supplier with Seal

Tender Form-04

1. Name of Company/Industry :
2. Name of Owner :
3. Address :
4. Mobile no Email ID.
5. Equipment no. 4: Universal vibration apparatus

Technical Specifications:-

Material: GI of 7/25" & 1" diameter
Power supply: 230v ac, 5 amp. With earth.

Utilities required:

Floor space: 2.5 m x 2 m approx.

Technical details:

1. Exciter unit : with FHP dc motor with speed control facility
2. Rpm measurement: digital rpm indicator with proximity sensor.
3. Ordinary chart recorder: for recording frequency and amplitude of vibration.
4. Stop watch: electronic stop watch.

Instruction manual: an English instruction manual will be provided along with the apparatus.

6. Total cost of Equipment:
7. Add taxes if any
8. Add the levis if any
9. Add delivery, transportation, unloading and installation cost
10. Total cost including all above
11. Delivery period from the date of order
12. Installation period from the date of delivery
13. Is the tender for fees submitted? YES/NO
If DD mention DD number.....
If Cash: Mention the receipt number:.....

Name and Sign. of the supplier with Seal

Tender Form-05

1. **Name of Company/Industry** :
2. **Name of Owner** :
3. **Address** :
4. **Mobile no** **Email ID.**
5. **Equipment no. 5: Universal Governor Apparatus**

Technical Specifications:-

Utilities Required
Power Supply: 230 V AC, Single Phase.
Floor Space: 1.5 x 1.5 m
Tachometer to find out RPM

Experimental capabilities:

- Determination of characteristic curve of a sleeve position against speed of rotation for all governors
 - To study the effect of varying the mass of the center sleeve in Porter and Proell Governor
 - To study the effect of varying the initial spring compression in Hartnell Governor
- To study the determination of characteristics curves of radius of rotation against controlling force (Actual & Theoretical) for all governors

Instruction manual: an English instruction manual will be provided along with the apparatus.

6. **Total cost of Equipment:**
7. **Add taxes if any**
8. **Add the levis if any**
9. **Add delivery, transportation, unloading and installation cost**
10. **Total cost including all above**
11. **Delivery period from the date of order**
12. **Installation period from the date of delivery**
13. **Is the tender for fees submitted? YES/NO**
 If DD mention DD number.....
 If Cash: Mention the receipt number:.....

Name and Sign. of the supplier with Seal