

GOVT. COLLEGE OF ENGINEERING & TECHNOLOGY, BIKANER

SCHEDULE - G

NIT NO. :-CET/STORE/2014-15/05

Tender for :- Thermal lab for Mech. Engg. Dept.

Sale of Tender :- Up to 12 Noon 15.4.2015

Last date of Tender Submission:-2.00 PM, 15.4.2015

Opening Date of Tender:- 2.00PM, 16.4.2015

Bid Validity: 90 daysfrom bid opening date

Estimated Cost:- Rs. 1100000/-

Earnest Money:-Rs. 22000 /-

Tender Cost:- Rs. 200/- (By Hand)

Tender Cost:- Rs. 240/- (By Post) (D.D.)

Delivery period:- 45 Days from order

S. No.	Name of Equipment	Specifications	Quantity	Rate
1	Biodiesel Engine	Type : Four stroke single cylinder VCR diesel engine Engine power : <u>3.5kw@1500rpm</u> Engine speed : variable Engine cooling : water cooled Eddy current dynamometer ,calorimeter, Piezo sensor, Rotary encoder, RTD type temperature sensor Load sensor with range atleast 50 kg, provided with a software for analysis, preferably-Engine Soft With a computer unit of following specifications: Processor: intel core i3 series Monitor screen: 14” RAM : 2 GB minimum Memory :160 GB atleast The above apparatus is required for analysis of various biodiesels.	1	
2	Separating calorimeter & Throttling calorimeter	Steam Pressure : 10-12 bar Steam temperature : 250-300°C TECHNICAL SPECIFICATION: Pressure Gauge : 2 nos. : Bourdon type, standard Make. Temperature sensor : 3 nos. preferable Make. Temperature Indicator : 01 no with selector switch, standard Make. Temperature indicator cum-controller : 01 no, for Auto-cut out of Boiler. Heater : 02 nos, with Separate on/Off Switch. Heater Power : 2 Kw each. Heat Exchanger : Provided for cooling of throttled steam. Steam Generator : To Generate Steam up-to 2Kg/cm2, provided with Water Level	1	

		<p>indicator</p> <p>Separating Chamber : Compatible capacity made of Stainless Steel Insulated with Ceramic Wool .</p> <p>Throttling Chamber : Compatible capacity provided</p> <p>CONTROL PANEL:- It shell consists of Digital Temperature Indicator with Controller and Digital Indicator Sensor, Heater On/Off Switch, Main Indicator, fuse etc.</p> <p>The above apparatus is required for “Determination of dryness fraction of steam”.</p>		
3	Refrigerator test rig	<p>Compressor :- hermetically sealed,1/3 ton capacity</p> <p>Condenser :- water cooled shell and coil type of suitable capacity</p> <p>Expansion device :-capillary tube</p> <p>Evaporater :-water cooled shell and coil type of suitable capacity</p> <p>Refrigerant :-suitable</p> <p>Filter and dryer :-suitable capacity</p> <p>Water circuit :-for evaporator and condenser,thermometer and controle valve</p> <p>Pressure gauge :-2 Nos.for high and low pressure</p> <p>Energy meter :-for compresseure power measurement</p> <p>Multy channel digital temp.indicator:-7 Nos.</p> <p>Service valve :- 3 Nos.</p> <p>Ammeter:-1 No., Voltmeter :- 1 No., Thermostate:-1 No.</p> <p>The above apparatus is required to find out coefficient of performance and tonnage capacity of the refrigerator.</p>	1	
4	Orset gas analyser	<p>Gases to be measured :CO, O2, CO2, NO, NOx, Sensors :IR or Electro – chemical Sensors with high accuracy</p> <p>Gas Flow : 1 to 2.5 Liter / min.</p> <p>Temperature Measurable :600°C</p> <p>Operating Temperature :0 to 50 °C</p> <p>Flue Gas Probe :Stainless Steel Shaft with rubber handle, length initially 01 meter and expandable up to 2meters. The probe should withstand high temperature of the order of 600°C</p> <p>Software : Easy to handle Key Board operated and user friendly.</p> <p>The above apparatus is required for analysis of engine exhaust gases.</p>	1	

5	<p style="text-align: center;">Steam turbine test rig with boiler</p> <p style="text-align: center;">(Provide Burner Control)</p>	<p><i>Boiler: The steam boiler is vertical</i></p> <p>Steam Output : 400 – 500 kg/hr Working Pressure : 14-15 kg/sq.cm Fuel : Diesel Power supp : 3ph, 415V, 50 Hz AC Fuel Consumption : Approx 15 kg/hr</p> <p><i>ACCESSORIES</i></p> <p>Air blower : 1.5 – 2 HP Water Pump : 1.0 HP Feed water pump Fuel Pump : 0.5 HP Pressure : 6-8 kg/sq.cm</p> <p><i>STEAM TURBINE</i></p> <p>Type : Single stage, horizontal shaft, single nozzle impulse turbine Speed : 2000 - 3000 rpm Operating medium : Steam Power output : 1.0KW@ 3000 rpm Inlet Pressure : 6 to 8 kg/sq.cm. Inlet temperature : 150 to 200 deg.C</p> <p><i>A.C. Generator</i></p> <p>Loading device System : A.C. Generator with Resistance load</p> <p>Capacity : 1.0 KW, 220 V, Single ph, AC. Speed : 3000 rpm Body : Foot mounted Excitation : Shunt / Compound excited</p>	1	
6	<p style="text-align: center;">Steam Engine</p>	<p>Two-cylinder piston steam engine</p> <ul style="list-style-type: none"> - Speed: max. 1000 RPM - Max. continuous power: 500W - 2 cylinders <li style="padding-left: 20px;">bore: 50- 60 mm <li style="padding-left: 20px;">stroke: 40-50 mm <p><i>Pump</i></p> <ul style="list-style-type: none"> - Power consumption: max. 60W - max. flow rate: 2.9 m³/h - max. head: 4m <p><i>Condenser</i></p> <ul style="list-style-type: none"> - transfer surface: 3500 - 4000 cm² 	1	

		<p><i>Measuring ranges</i></p> <ul style="list-style-type: none"> - temperature: up to 400°C - pressure: 0 to 10 bar - speed: 0 to 1200 RPM - cooling water flow rate: 100 to 1000 L/h 		
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Terms and conditions:-

- All page of tender should be signed and stamped.
- STCC is required. Party may be asked for the sample/demo.
- Tenderer must be manufacturer / Authorized Dealer/ Supplier having authorization of quoted item.
- Mention basic rate of items & taxes if any separately for each item..
- Rate includes loading & Unloading at concerned lab./ workshop & FOR College of Engineering & Technology, Bikaner
- Successful firm has to submit agreement on stamp paper of Rs. 500 (Form 17) along with SD money @ 5% of order value before issue of order.
- Committee has right to cancel tender of all or any item.
- Tender will be finalized item wise.
- In case of any clarification same can be clarify from store.
- Without EMD tender will be rejected out rightly.
- EMD and form charges should be in favor of Principal College of Engineering & Technology, Bikaner in shape of DD/Banker Cheque only.
- Order will be given in installment as or when required.
- Conditional Tender will not be accepted.
- SSI unit EMD & Tender cost assumption should be as per Raj. Govt. rule

HOD STORE