

Quotation should be addressed to the **Registrar, HBTU, Kanpur, Uttar Pradesh-208002**. The envelope should be super scribed with **Quotation for TEQIP-III Package Name – “.....”(As Applicable)** . For any query contact to Shri R. P. Singh (9450127292).

Quotation are invited for procurement of the item as per the details given below-

Sr. No	Package Name	Item Name & Package Code	Specifications	Quantity	Last Date & Time of Submission of Quotation	Quotation Opening Date & Time
1	ME 43	Experiment on Cooling tower (TEQIP-III/UP/hbti/63)	Cooling tower set up should be specially designed of Stainless steel vertical tower packed with aluminium mesh packing fitted with front side acrylic window for actual visualization of cooling tower operation. It should have provision for air from blower entering at lower end of tower and after passing through the mesh packing it should leave the column from top outlet to atmosphere. Counter current hot water bath should be evenly distributed over packing by nozzles on top of tower using circulation pump of suitable capacity. There should be arrangement to regulate and measure air flow rate, water flow rate, temperature measurement at different locations in tower. Level gauge be provided in hot water bath to measure the exact evaporation loss. Temperature of hot water bath should be capable of being varied independently to simulate different conditions using digital temperature measurements. Tower size cross section : 0.15 m x 0.15 m x 0.6 m Calibrated water outlet measurement tank of stainless steel. Orifice meter with manometer for measuring air flow Dry bulb, wet bulb temperature measurement at inlet and outlet air Centrifugal bower upto 200 watt Power input measurement system	1	03/12/2018 16:00 Hrs	04/12/2018 13:30 Hrs

			<p>Dry./Wet bulb sensor(s) to measure air condition at various points over the cooling tower</p> <p>Suitable temperature measurement system for inlet/outlet water measurement</p> <p>Electric control switches on panel</p> <p>Capable of finding out mass transfer coefficient, plot pressure drop per unit height with air flow rate.</p> <p>Structure be compact, table mounted, suitably painted , with all measurements on board and measurement systems.</p> <p>Detailed technical manual with standard test results be provided alongwith.</p>			
2	ME 44	<p>Experiment on refrigeration test rig and calculation of various performance parameters.</p> <p>(TEQIP-III/UP/hbti/64)</p>	<p>The refrigeration test rig unit should consist of vapour compression refrigeration cycle provided with components normally used in refrigeration system so that student can become familiar with the components. Various measurement options should be provided so as to estimate the performance of the system.</p> <p>1.Compressor- Hermetically sealed compressor for refrigeration capacity of 0.3 T.</p> <p>2.Expansion Devices</p> <p>a) Thermostatic Expansion Valve</p> <p>b) Capillary tube.</p> <p>3.Evaporator coil.</p> <p>4.Controls:</p> <p>a) Services Valve</p> <p>b) Solenoid Valve</p> <p>c) Filter-Drier for refrigerant</p> <p>d) High/Low pressure cutout</p> <p>e) Thermostat.</p> <p>5.Measurements:</p> <p>a) Digital temperature measurement along with Thermometers (mercury in glass) - 4 Nos.</p> <p>b) Pressure gauges for condensing and evaporating pressure.</p> <p>c) Digital Energy meter for compressor</p> <p>d) Digital Voltmeter and Ammeter for compressor.</p>	1	03/12/2018 16:00 Hrs	04/12/2018 13:30 Hrs

			<p>e) Rotameter for liquid refrigerant flow measurement. MS Stand : Finally all the control, components, of unit should be mounted on heavy duty angle iron base. The whole Set-up should be mounted on a sturdy frame with control panel. Technical manual with standard test results</p>			
3	ME 45	<p>To study different types of expansion devices used in refrigeration system (TEQIP-III/UP/hbti/65)</p>	<p>Different types of expansion devices used in refrigeration system be provided with their both cut and uncut sections. These should be duly mounted on a Table. Technical manual with all details be provided</p>	1	<p>03/12/2018 16:00 Hrs</p>	<p>04/12/2018 13:30 Hrs</p>

FORMAT FOR QUOTATION SUBMISSION

(In letterhead of the supplier with seal)

Date: _____

To:

Sl. No.	Description of goods (with full Specifications)	Qty	Unit	Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (Amount in figures) (Rupees _____ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of _____ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: _____

Address: _____

Contact No: _____