

INVITATION FOR QUOTATION

TEQIP-III/2018/geca/Shopping/37

20-Dec-2018

To,

M/S

Sub: Invitation for Quotations for supply of Goods

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Brief Description	Quantity	Delivery Period (In days)	Place of Delivery	Installation Requirement (if any)
1	Base module for experiments in fluid mechanics	1	45	Govt. Engg. College, Ajmer N.H. 8, Barliya Circle, Near Nareli Temple, Ajmer	On-site installation and testing & commissioning required. Price must be included in quotation
2	Bernoulli's principle	1	45		
3	centrifugal	1	45		
4	determine viscosity of a given fluid	1	45		
5	Digital Hydraulic Bench	1	45		
6	Flow Channel	1	45		
7	Francis turbine	1	45		
8	Measurement of jet forces	1	45		
9	Methods of flow measurement	1	45		
10	Orifice And Mouth Piece Apparatus	1	45		
11	Pelton turbine	1	45		
12	Pipe friction for laminar / turbulent flow	1	45		
13	Stability of floating bodies	1	45		

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

3. Quotation,

3.1 The contract shall be for the full quantity as described above.

3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.

3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.

3.4 Applicable taxes shall be quoted separately for all items.

3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.

5. Quotation shall remain valid for a period not less than **55** days after the last date of quotation submission.

6. Evaluation of Quotations,

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

6.1 are properly signed ; and

6.2 confirm to the terms and conditions, and specifications.

7. The Quotations would be evaluated for all items together.

8. Award of contract:

The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

9. Payment shall be made in Indian Rupees as follows:

Delivery and Installation - 90% of total cost

Satisfactory Acceptance - 10% of total cost

10. All supplied items are under warranty of **60** months from the date of successful acceptance of items.
11. You are requested to provide your offer latest by **12:30** hours on **18-Jan-2019** .
12. Detailed specifications of the items are at Annexure I.
13. Training Clause (if any)
14. Testing/Installation Clause (if any) **On-site installation and testing & commissioning required. Price must be included in quotation**
15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,
N.H.8 , BARLIYA CIRCLE, NEAR NARELI TEMPLE, AJMER
17. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

Name & Designation

Annexure I

S. N.	Item Name	Specifications
1	Bernoulli's principle	<p>Venturi nozzle with transparent front panel and measuring points for measuring the static pressures, axially movable Pitot tube for determining the total pressure at various points within the Venturi nozzle, 6 tube manometers for displaying the static pressures, single tube manometer for displaying the total pressure</p> <p>Technical data Venturi nozzle</p> <ul style="list-style-type: none"> • A: 84 to 38mm² • angle at the inlet: 10,5° angle at the outlet: 4° <p>Pitot tube</p> <ul style="list-style-type: none"> • movable range: 0...200mm • diameter: 4mm <p>Pipes and pipe connectors: PVC</p> <p>Measuring ranges</p> <ul style="list-style-type: none"> • pressure: <ul style="list-style-type: none"> · 0...290mmWC (static pressure) · 0...300mmWC (total pressure) <p>LxWxH: 1100x680x900mm Weight: approx. 28kg</p>
2	Methods of flow measurement	<p>measuring instruments: orifice plate flowmeter/measuring nozzle, Venturi nozzle and rotameter, 6 tube manometers to determine the pressure distribution in Venturi nozzle, orifice plate flow meter and measuring nozzle, measurement of the total pressure with Pitot tube</p> <p>Technical specification Venturi nozzle: A=84...338mm²</p> <ul style="list-style-type: none"> • angle at the inlet: 10,5° • angle at the outlet: 4° <p>Orifice plate flow meter: diameter=14mm Measuring nozzle: diameter=18,5mm Rotameter: max. 1700L/h 6 tube manometers: 390mmWC LxWxH: 1100x672x900mm Weight: approx. 30kg</p>
3	Base module for experiments in fluid mechanics	<p>closed water circuit with storage tank, submersible pump and measuring tank rate measurements, measuring beaker with scale for very small volumetric flow rates, measurement of volumetric flow rates by using a stopwatch work surface with integrated flume for experiments with weirs, work surface with inside edge for safe placement of the accessory and for collecting the dripping water, storage tank, measuring tank and work surface made of GRP</p> <p>Technical data :</p> <ul style="list-style-type: none"> • power consumption: 250W • max. flow rate: 150L/min

		<ul style="list-style-type: none"> • max. head: 7,6m <p>Storage tank, capacity: 180L</p> <p>Measuring tank</p> <ul style="list-style-type: none"> • at large volumetric flow rates: 40L • at small volumetric flow rates: 10L <p>Flume</p> <ul style="list-style-type: none"> • LxWxH: 530x150x180mm <p>Measuring beaker with scale for very small volumetric flow rates</p> <ul style="list-style-type: none"> • capacity: 2L <p>Stopwatch</p> <ul style="list-style-type: none"> • measuring range: 0...9h 59min 59sec <p>230V, 50Hz, 1 phase 230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase</p> <p>UL/CSA optional</p> <p>LxWxH: 1230x770x1070mm</p> <p>Weight: approx. 85kg</p>
4	Stability of floating bodies	<p>A tank With a transparent body with a rectangular frame cross-section to be is used as the floating body. Clamped weights that can be moved horizontally and vertically make it possible to adjust the centre of gravity and the heel. The position of the clamped weights can be read on scales. A clinometer indicates the heel. Floating body</p> <p>LxWxH: 300x130x190mm</p> <p>Mast height: 400mm</p> <p>Horizontal scale: 180mm</p> <p>Vertical scale: 400mm</p> <p>Height scale of the floating body: 120mm</p> <p>Clinometer scale: $\pm 35^\circ$</p> <p>Weights</p> <p>floating body without clamped weights: approx. 2,7kg</p> <p>Vertical clamped weight: 575g</p> <p>Horizontal clamped weight: 196g</p> <p>Tank for water: 50L</p> <p>LxWxH: 660x450x220mm (tank)</p> <p>Weight: approx. -6kg</p>
5	Pipe friction for laminar / turbulent flow	<p>transparent tank with overflow ensures constant water inlet pressure in the pipe section for experiments with laminar flow, flow rate adjustment via valves, twin tube manometers for measurements in laminar flow, dial-gauge manometer for measurements in turbulent flow</p> <p>Pipe section</p>

		<ul style="list-style-type: none"> • length: 400mm • inside diameter: 3mm Tank: approx. 2L Measuring ranges <ul style="list-style-type: none"> • differential pressure: <ul style="list-style-type: none"> · 2x 370mmWC · 1x 0...0,4bar LxWxH: 850x680x930mm
6	Measurement of jet forces	tank made of transparent material for observing the experiments nozzle for generating the water jet jet force can be adjusted via flow rate four different shaped deflectors: flat surface, oblique surface, semi-circular surface, conical surface, measurement of the jet forces via the weight loaded scale Tank <ul style="list-style-type: none"> • inner diameter: 200mm • height: 340mm Nozzle diameter: 10mm Deflector flat surface: 90° oblique surface: 45°/135° semi-circular surface: 180° conical surface: 135° Size LxWxH: 400x400x880mm
7	Pelton turbine	transparent front panel for observing the operating area, loading the turbine by use of the band brake, adjustable nozzle needle for setting different nozzle cross-sections, marking on brake drum for non-contact speed measurement, instruments: spring balances for determining the torque, manometer shows pressure at turbine inlet Technical Specification <ul style="list-style-type: none"> • output: 5W at 500min⁻¹, approx. 30L/min, H=2m • Pelton wheel <ul style="list-style-type: none"> 14 blades blade width: 33,5mm external diameter: 132mm Needle nozzle <ul style="list-style-type: none"> • jet diameter: 10mm Measuring ranges <ul style="list-style-type: none"> • force: 2x 0...10N • pressure: 0...1bar LxWxH: 400x400x620mm Weight: approx. 15kg
8	centrifugal pump	The experimental unit should include a self priming centrifugal pump drive with variable speed via frequency converter , a ball valve on the outlet side to adjust head and manometers on the inlet and outlet side. Pump is driven by an

		<p>asynchronous motor. The speed should infinitely adjustable by using a frequency converter. digital display of speed and power Centrifugal pump, self-priming max. flow rate: 3000L/h max. head: 36.9m Asynchronous motor Measuring ranges pressure (outlet side): 1- 5bar pressure (inlet side): -1-5bar speed: 0...2500min-1 power: 0-1000W speed: 0...2500min-1 power: 0...1000W 230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase UL/CSA optional LxWxH: 1100x640x600mm Weight: approx. 46kg</p>
9	determine viscosity of a given fluid	<p>The self-standing unit holds two glass tubes filled with the test fluids, for comparisons and to minimize draining and refilling of the fluids after experimentation. The back plate should have a low-voltage backlight so students can easily see the test spheres through the fluid. Unique valve exit system allows students to recover test spheres with minimal fluid loss Includes stopwatch and timing marks for accurate results Nett dimensions when assembled with collection tray: 1540 mm high x 410 mm wide x 330 mm front to back Nett weight: 18 kg Packed dimensions and weight: 0.47 m3 and 33 kg Tube details: Internal diameter – 51 mm Outside diameter – 50 mm-60 mm Length (test section) –1000 mm-1500 mm Length overall (inc. valve and collection vial) – 1500 mm Fitted with PTFE valve and glass sample collection vial Test spheres (5 off each size):</p> <ul style="list-style-type: none"> • Aluminum 5/32", 5 mm and 6 mm • Nylon 3 mm and 4 mm • Stainless steel 1.587 mm, 2 mm, 3 mm, 3.5 mm, 4 mm,4.5 mm, 5 mm, 6 mm, 7 mm, 7.5 mm and 8 mm
10	Flow Channel	<p>open channel flume, available in 2.5m lengths, with clear acrylic sides to the working section for total visibility of the flow. The channel is fitted with a PVC inlet tank, and is designed for free discharge into the Hydraulics Bench. The flume is mounted on a rigid framework, and can be tilted by use of a calibrated screwjack, which enables accurate slope adjustment of the</p>

		<p>channel.</p> <p>The inlet tank incorporates a stilling arrangement to diffuse the water flow prior to entry into the channel, ensuring smooth uniform flow. The level in the working section of the flume is controlled using an overshoot weir (stop logs) at the discharge end.</p> <p>Bed pressure tappings and fixing points for models are provided. A longitudinal scale positioned at the top of the channel enables depth gauges and Pitot-static tubes to be accurately positioned along the channel length</p> <p>The apparatus consists of a floor-standing 2.5-metre flow channel fabricated from transparent acrylic and anodised aluminum, together with various gates, weirs and blocks, enabling the phenomenon of flow channels to be easily demonstrated and studied. Inclined acrylic channel providing maximum flow visualization,</p> <p>Inlet includes baffle section to provide steady flow conditions Depth gauge includes Pitot tube, Submerged narrow-crested weir, Crump weir, Caliper gauge, Stopwatch, Sluice gate, Drum gate, Venturi, Square jump block, Radius jump block</p>
11	Digital Hydraulic Bench	<p>Electronic flowmeter and digital display for accurate measurements and quicker experiments</p> <ul style="list-style-type: none"> • Made of lightweight fibreglass for strength, easier transport and long life • Lockable wheels for mobility with stability • Flat top to hold experiment modules Mechanics range • Self-contained with recirculating water circuit so needs no external water supply and saves mains water. <p>Technical Specifications:</p> <p>Net dimensions and weight: 1250 mm long x 780 mm wide x 950 mm high and 50 kg</p> <p>Approximate packed dimensions and weight: 1.4 m³ and 120 kg</p> <p>Sump tank capacity: 100 Litres minimum and 160 litres maximum</p> <p>Maximum flow: 55 litres/minute with no experiment module fitted</p> <p>Maximum pressure: 450 mbar at working surface height</p> <p>Flowmeter display: L.s⁻¹ and L.min⁻¹</p> <p>Resolution: 0.001 L.s⁻¹ and 0.1 L.min⁻¹</p> <p>Accessories (included):</p> <ul style="list-style-type: none"> • Water additive and datasheet • All necessary pipes and pipe clips

12	Orifice And Mouth Piece Apparatus	<p>MOUTH PIECES: Brass, Straight, Convergent, Divergent. ORIFICE DIAMETER:6 mm, 8 mm & 10mm. PIEZOMETER:2 no's, 350 mm long, of transparent Acrylic PUMP :0.5 hp, Branded make TANKS (S.S):Sump Tank- 120 liters capacity , Delivery tank - 18 liters capacity, Feed tank - 43 liters capacity with over flow arrangement & Butterfly valve HOOK GAUGE: 150 mm height, X (550 mm) ,Y (150 mm) Coordinate measurement ALL THE ABOVE MOUNTED ON STURDY FRAME OF M.S. ANGLE.</p>
13	Francis turbine	<p>A tapering, spiral-shaped volute convey water to the runner via a ring of guide vanes that are adjustable in angle to vary the flow through the turbine. Water enters the runner tangentially at the periphery, flows radially inward through the blades toward the hub then exits axially via a draft tube. Power generated by the turbine is absorbed by a friction brake consisting of a pair of spring balances attached to a brake belt that is wrapped around a pulley wheel driven by the runner. The load on the turbine is varied by tensioning both spring balances, which increases the friction on the pulley wheel. The volute of the Francis Turbine incorporates a transparent front cover for clear visualisation of the runner and guide Speed range-0-4000 rpm Diameter of Francis runner turbine.:60mm Number of blades on runner :12 Number of guide vanes 6, adjustable from fully open to fully closed. Range of spring balances: 0-50N x 0.5N Range of Bourdon gauge: 0-2 bar</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: _____