



SHIVAJI UNIVERSITY, KOLHAPUR

Department of Technology

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A
Accredited By NAAC

INVITATION FOR QUOTATION

TEQIP-II/2016/MH1G05/Shopping/123

10-May-2016

To,

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	COMPUTERIZED ENGINE TEST SET-UP FOR VARIABLE COMPRESSION RATIO MULTIFUEL ENGINE	1	90	Department of Technology Shivaji University Kolhapur	yes

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 II 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 **45** 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 **12** months from the date of successful acceptance of items.

11. You are requested to provide your offer latest by **18:00** hours on **25-May-2016** .

12. Detailed specifications of the items are at Annexure I.

13. Training Clause (if any) **Yes**

14. Testing/Installation Clause (if any) **Yes**

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,
Department of Technology, Shivaji University Kolhapur Maharashtra

17. We look forward to receiving your quotation and thank you for your interest in this project.

Sd/-

(Authorized Signatory)

Name & Designation

Annexure I

Sr. No	Item Name	Specifications
1	COMPUTERIZED ENGINE TEST SET-UP FOR VARIABLE COMPRESSION RATIO MULTIFUEL ENGINE	COMPUTERIZED ENGINE TEST SET-UP FOR VARIABLE COMPRESSION RATIO MULTIFUEL ENGINE A. ENGINE: Type - Single Cylinder, Four-Stroke, Spark / Compression Ignition Variable Compression Ratio Engine for Carrying out extensive Research work in the field of Engine Technology enhancement & for carrying out Analysis related to native Fuel Development for S.I. & C.I. engines. The compression ratio is to be varied by a mechanism which involves Raising or lowering the total head assembly including the valves, camshaft etc. The linear movement of the head assembly should be measureable Precisely by

a Depth micrometer this reading can be used directly to calculate compression ratio directly by means of Graph & Table provided & also by inputting the value in the software IT SHOULD BE POSSIBLE TO VARY Compression Ratio continuously FROM 5 :1 TO 22:1 Without dismantling or changing the Cylinder Head Technical Specifications: - Bore X Stroke – 87.5 mm X 110 mm, Cubic Displacement – 661 C.C. Rated Capacity – 5 B.H.P. @ 1500 RPM when using High Speed Diesel @ CR 17.5:1 ,Compression Ratio Adjustable from – 5:1 to 11:1 FOR SPARK IGNITION MODE 12:1 to 22:1 FOR COMPRESSION IGNITION MODE Water Cooled engine. Fuel Delivery: - Carburettor for SI Mode & Fuel Injection Pump for CI mode Starting –Using induction motor with electromagnetic Clutch Compression Ration Should be adjustable even when the engine is running. The flywheel MUST BE calibrated in Degrees to allow accurate measurement of ignition timing, using stroboscopic light method. An adjustment is provided so that the ignition timing, can be adjusted while the engine is running. B.

DYNAMOMETER – Water Cooled Eddy Current Dynamometer with Load Cell type Weighing Mechanism & Max Torque above 40 N-m Accuracy is <? 0.25 % of Full Scale Torque of Dyno. Digital RPM indicator is supplied with the dynamometer. C. Common Base Frame: - The engine and dynamometer are mounted on a Common Rigid Channel Frame, which can be directly mounted on the foundation block D. Cardan Shaft: A Suitable Cardan Shaft for connecting Engine to Dynamometer is provided E. Cardan Shaft Guard for protection from rotating shaft. F. Fuel Flow Measurement Gravimetric Fuel Consumption measuring unit a Weighing Balance with PC interface and Various Fuel Tanks. G. Exhaust Gas Calorimeter System with Computerized, Cooling Water Flow-rate and Computerized Temperature Measurement for measuring heat carried away by exhaust gases – consisting of cooling water arrangement for exhaust gases, a Wheel flow transmitter for measuring rate of flow of water. H. Computerized Air Flow Measurement Set-up consisting of calibrated system based on Pressure across Orifice of Orifice meter. An Orifice-meter for measuring rate of flow of intake air, consisting of an air tank and an Orifice suitable for the Engine in accordance with the Cubic Displacement of the Engine to be tested and a Differential Glass 'U' Tube manometer etc. I. Computer – HP / DELL Make with Genuine OS, Genuine Microsoft Office and Anti-virus

		<p>Software J. P-V system Sensor Type : Non Cooled Cylinder Pressure Transducer Kistler or AVL make Crank Angle Sensor – 1 Degree Resolution DAQ Card (USB / PCIe) for Triggered Data Acquisition Cards Driver ENGINE PERFORMANCE ANALYSIS Software Windows based software for P-?, P-V, IHP, and IMEP analysis for Carrying out the analysis of the engine test carried out. The software should work out the following parameters of the engine Full and part load performance ; Volumetric Efficiency; Air / Fuel Ratio at various loads Heat Balance Sheet and Energy studies; Heat release calculation B.H.P. , I.H.P. & Mechanical Efficiency; Brake Thermal Efficiency Indicated thermal efficiency; Specific Fuel Consumption; HIGHLIGHTS OF SOFTWARE – Export of Average Combustion Cycle Data at Each Load to Excel Export of 120 Consecutive Combustion Cycles to EXCEL format for Cycle to Cycle Combustion Pressure Variation Study IT SHOULD BE POSSIBLE TO PERFORM TRAILS MANUALLY IN ABSENSE OF PC AND SOFTWARE Note: 1) Water cooling system with required water tank and its plumbing fitting are necessary. 2) Foundation if required.</p>
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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: _____