Bundelkhand Institute of Engineering & Technology, Jhansi

Short Term Tender Notice No. BIET- 1/2017

The tender documents for the **Purchase of Equipment / Computer / Software of Mechanical Engg. Deptt.** Tender can be downloaded from the website, www.bietjhs.ac.in or can be obtained from the store & purchase section. A separate demand draft for the cost of tender documents is required along with tender documents.

Tender opening and submission details are given below-

1. Name of firm with contact number & Email Address
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2. Tender cost (Non refundable) is **Rs. 4600/-**
3. Tender submission is up to **28.03.2017 at 2:00 PM**
4. Tender opening on **28.03.2017 at 2:30 P.M.**
5. Opening place of tender is conference room, administrative block BIET Jhansi.

Signature & Seal of Tenderer

Bundelkhand Institute of Engineering & Technology, Jhansi (U.P)

Department: Mechanical Engineering

Particular of EMD

LAB No.	Laboratory	EMD (In Rupees)
ME -1	Engineering Mechanics Lab	1,000/-
ME -2	Material Science & Testing Lab	40,000/-
ME -3	Machine Drawing lab	300/-
ME -4	Thermodynamics lab	200/-
ME -5	Manufacturing Science lab-I	4,000/-
ME -6	Measurement and Metrology lab	10,000/-
ME -7	Machine Design lab-I	400/-
ME -8	Heat and Mass Transfer lab	2,000/-
ME -9	Theory of Machines lab	6,000/-
ME -10	IC Engine lab and Auto mobile lab	30,000/-
ME -11	CAD lab	50,000/-
ME -12	Central Workshop	5,000/-
ME -13	Repair and Maintenance for Central Workshop	4,000/-

Bundelkhand Institute of Engineering & Technology, Jhansi

Department: Mechanical Engineering

Tender Proforma

LAB No.	Particular	Cost of Lab (In Rupees)	VAT/CST	Total cost of LAB with Tax (In Rs.)	Total cost of LAB with TAX in words
ME -1	Engineering Mechanics Lab				
ME -2	Material Science & Testing Lab				
ME -3	Machine Drawing lab				
ME -4	Thermodynamics lab				
ME -5	Manufacturing Science lab-I				
ME -6	Measurement and Metrology lab				
ME -7	Machine Design lab-I				
ME -8	Heat and Mass Transfer lab				
ME -9	Theory of Machines lab				
ME -10	IC Engine lab and Auto mobile lab				
ME -11	CAD lab				
ME -12	Central Workshop				
ME -13	Repair and Maintenance for Central Workshop				

Signature & Seal of Tenderer

Detail of Specification of Mechanical Engineering Equipment

CENTRAL WORKSHOP

Welding Shop

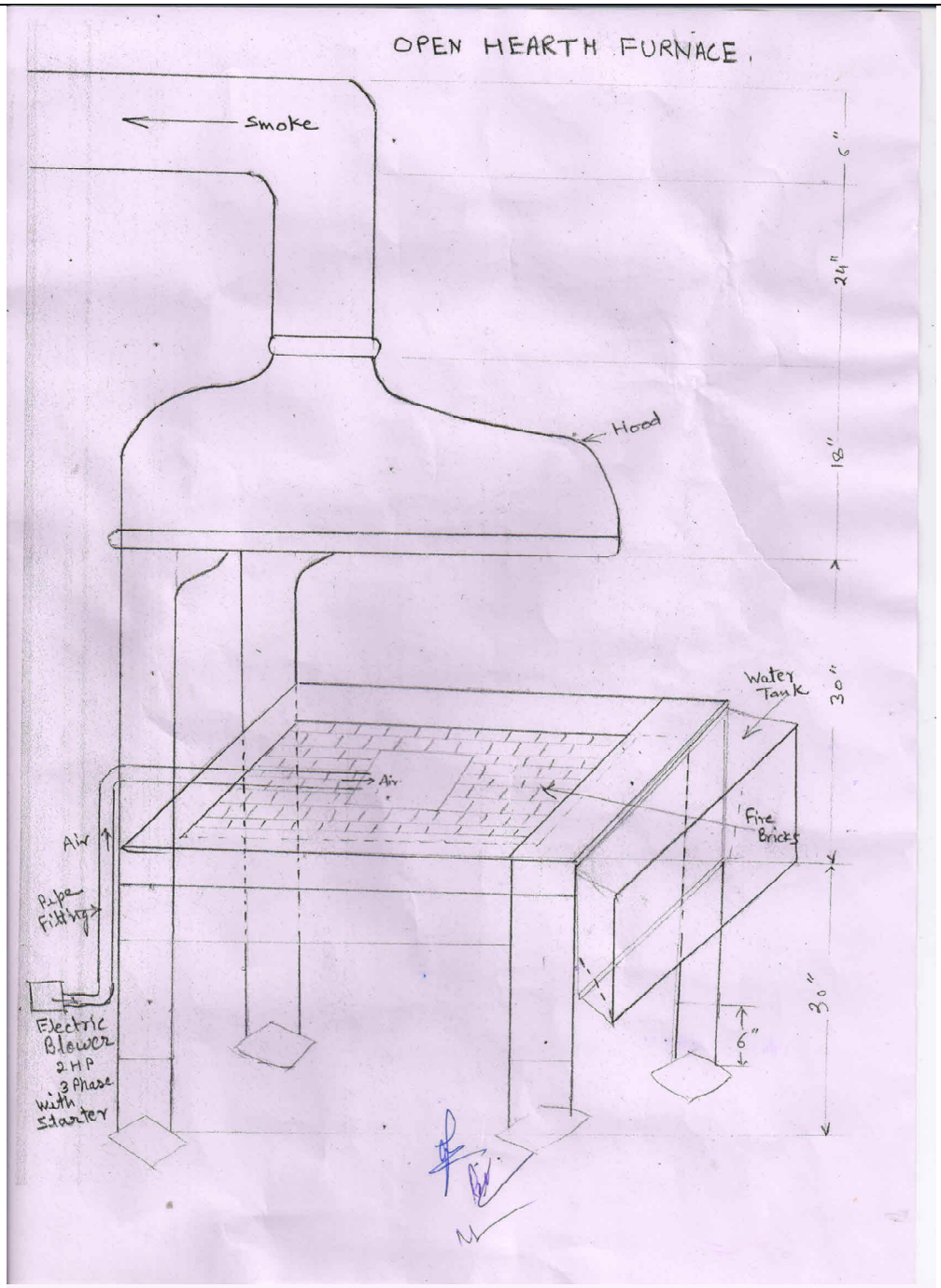
Sr No	Item Name	Specification	Quantity	Rates in Rs.	Cost in Rs.
1.	Hand Welding screen	Std size	06 Nos.		
2.	Leather Apron	Std. size	06 Nos.		
3.	Goggles for gas welding	Std size	06 Nos.		
4.	Working Table Metal	3′ ×2 ′× 3′(angle size 35 mmX35 mmX5 mm) Top MS Sheet 8mm thick.	02 Nos.		
5.	Welding booths	6`X6`X6` (frame angle iron 35mmx35mmx5 mm MS Sheet 1mm thick.	03Nos		
6.	Partition of working table	Angle iron 35mm X35mmX5mm Size 2`6" for existing table with tree guard mesh ½ "sq.	01		
				Total	

SHEET METAL SHOP

1.	Anvil with Stand (25Kg)	03		
2.	Bick iron	03		
3.	Funnel stake	03		
			Total	

BLACK SMITHY SHOP

1.	Gloves (leather)	10		
2.	Leather Apron Std. size	06 Nos.		
3.	Open hearth furnace with electric blower and fittings (Drawing is attached)	02		
			Total	



FOUNDRY SHOP

S.No.	Name of Items	Qty.	Rates in Rs.	Cost in Rs.
1.	Shovel	01 No.		
2.	Strike off bar	05 Nos.		
3.	Hand riddle	05 Nos.		
4.	Vent Wire	05 Nos.		
5.	**Trowals**			
	Finishing	05 Nos.		
	Square	05 Nos.		
	Heart Shaped	05 Nos.		
6.	**Slicks**			
	Heart & leaf	05 Nos.		
	Square & Heart	05 Nos.		
	Spoon & bead	05 Nos.		
	Heart & Spoon	05 Nos.		
	Leaf & Spoon	05 Nos.		
7.	Liflers	05 Nos.		
8.	Rammers:			
	Floor	05 Nos.		
	Pein	05 Nos.		
	Hand	05 Nos.		
	Butt	05 Nos.		
9.	Swabs	05 Nos.		
10.	Spure pin	10 Nos.		
11.	Draw Spike	10 Nos.		
12.	Draw Screw	10 Nos.		
13.	Rapping Plate	05 Nos.		
14.	Smoothers & corner slicks			
	Inside Square	02 Nos.		
	Flat	02 Nos.		
	Pipe	02 Nos.		
	Button	02 Nos.		
	Half round corner	02 Nos.		
	Egg, shaped	02 Nos.		
15.	Moulding Boxes or Flasks Cope & Drag	10 Nos.		
16.	Hand Shake ladle	02 Nos.		
17.	Melting Muffle Furnace Furnace Type : Melting Muffle Furnace Type : Vertical, Top Loading, Muffle Size 12x12x12 (LXBXD)	01 No.		

	Your Crucible size 230x360mm Dia x depth This crucible can be kept inside the muffle and some height of around 60-70mm shall be out from Muffle, to enable the operatior to hold the crucible through clamp Crucible covering Door : Constructed with light weight ceramic fiber Board & Blanket INPUT POWER : 230 V 50 H Z, single phase Power Rating: 3-4 KWS. Maximum Temperature: 1200 Deg C (Not below 1100 c and Not above then 1200) Operating temperature: upto 98% of the Maximum Temp. Heating Elements surrounded on muffle : Kanthal Wire Heating elements uniformly Temperature Control : By a Microprocessor based Auto Tuned Dual Digital Display PID Temperature Indicator cum controller, Equipped with SSR Power Supply and backed with "K" Type Thermocouple With Compensating wire. The Furnace is complete with Control Panel Box. The Control Panel consists of Mains MCB Switch, Indicator lights, PID Controller with Mains connecting Cord.			
18	Pit furnace with electric blower and fittings (Drawing is attached)	02		
		Total		

Engineering Mechanics Lab

S. No.	Item Name	Specifications	Qty.	Rates in Rs.	Cost in Rs.
1	Law of Parallelogram of Forces Apparatus	Complete setup for performing law of parallelogram of forces. The apparatus is provided with linkages and connectors having hooks to which pans are hung.	1		
2	Simple Screw Jack Apparatus	Single start complete setup on which experiments are performed.	1		
3	Simply Supported Beam and Cantilever Beams for Deflection	Steel beam of rectangular cross section. Apparatus consists of end support(s) a hanger with knife edge and a pointer moving over a graduated scale.	1		
4	Vernier Calipers	250 mm	2		
				Total	

Material Science &Testing lab.

S No.	Item Name	Specification	Quantity	Rates in Rs	Cost in Rs.
1	Spring testing machine (Tension and Compression)	Proving ring type (Capacity 100 kgf deflection 0.01 mm) Manual operated deflection is digital display	1		
2	Creep testing Machine	Temperature controlled	1		
3	Hydraulic Hot (Specimen) Mounting Press	1000-1200 Watts Mould Heater, Provision to accommodate 1 and 2" dia. quick heating system with temp control and indication with buzzer	1		
4	Horizontal muffle furnace With Programmable microprocessor based PID c ontroller	Chamber Size 6”x6”x12”, Max temp 1200º C Kanthal A1 coil type, Ceramic wool insulation, Double walled, made of Single piece silimanite block, Outer chamber MS powder coated, Front side door insulated & hinged with Locking facility, chromel-alumel Thermocouple With Programmable microprocessor based PID controller: 16 segments, 8 ramp, 8 soak facility	1		
5	Belt Grinder with endless belt for grinding/polishin g small metallic specimen	0.5 HP single phase motor Endless belt with easy belt change mechanism	1		

6	Abrasive cut-off wheel machine	For different metals		1		
Material Science & Testing Lab and Engineering Mechanics						
7	Computerized Bench/Table top Double Column Universal Testing Machine	Capacity	25-30 KN	1		
		Test to be conducted	Tension, Compression, flexure, shear			
		Material to be tested	Metals, composites, polymers and other materials			
		Maximum crosshead Travel	1000 mm-1200 mm			
		Testing speed Range	About 0.5 mm/minute or lower to 500 mm/minute or above			
		Cross head speed accuracy	± 0.2% of set speed			
		Load measurement accuracy	±0.5% of reading down to 1/200 of load cell capacity. ±1% of reading from 1/200 to 1/500 of the load cell capacity			
		Software	Machine must be interfaced with computer having Data acquisition and analysis software for metal, composite , polymer etc and report preparation facility Data for Load vs. displacement must be available in excel file also			
		Frame	Frame flexibility must be provided to adapt future provision with respect to various accessories including various optical and electronic extensometers, compressometers and deflectometers, hot and cold temperature test chambers for sample conditioning and testing, high temperature furnaces (with high temperature capable extensometers), as well as grips, holders, jigs, and platens for holding the test specimens.			
		Loading Standards	Load weighing system meets or exceeds ASTM E4,En-10002-2/ISO7500/1/			
		Strain measurement standard	ASTM E83, En-10002-4/			
		Accessories	Standard accessories and standard grips, holders, jigs, and platens for holding the test specimens. like cylindrical and rectangular cross-sections as per ASTM E-8 and European standards, additional load cell of 2kN, non contacting inertia less extensometer , fixture for 3 point bend test			
8	TorsionTesting Machine	Torque Capacity = 100 kg-m		1		
9	HardnessTesti	Brinell hardness testing machine with capacity		1		

	ng Machine	3000 Kg			
10	Impact Testing Machine	For Izod and Charpy Tests	1		
				Total	

Machine Drawing Lab

S. No.	Item Name	Specifications	Qty.	Rates in Rs.	Cost in Rs.
1	Model for Orthographic Projection	Complete Wooden model and of split type for depicting	20		
2	Model for Cotter Joint	Metallic	1		
3	Model of Knuckle Joint	Metallic	1		
				Total	

Thermodynamics lab.

Sr No	Item Name	Specification	Quantity	Rates in Rs.	Cost in Rs.
1	Charts for Thermodynamics lab e.g. fire tube boiler model, water tube boiler model etc.	Oil paint charts	10		
				Total	

Manufacturing Science I

Sr No	Item Name	Specification	Quantity	Rates in Rs.	Cost in Rs.
1	Power Hammer	Head Weight 50 lbs,Overall Weight 1000 lbs ,Height 5 ft Foot Print 24 in x 30 in, Air Source 10 cfm at 90 psi , strokes Per minute (max) 100, Max, bar size 1.5 in x 1.5 in, Air Pressure 50 to 100 Psi, Die size 2" high x 2" wide x 3.5" long Die Material S7	1		
2	Sieve Shaker	With Different grade Sieve Sheets	1		
3	Press Machine	For Blanking/Piercing /Washer Making -	1		

		1Tonne			
				Total	

Measurement and Metrology Lab

S No.	Item Name	Specification	Quantity	Rates in Rs.	Cost in Rs.
1	Limit Gauges	Go and No Go of different size	10		
2	Bevel protector	Blade size150 mm to 300mm, vernier scale 5' (five minutes) or lower	02		
3	Profile projector	Screen 300 mm dia magnification 10x, 20x, 45x, 200mmx 200 mm stage	1		
4	Surface plate	18 inch X 18 inch	04		
5	Strain gauge indicator	With applicator toolkit and different loadcell	01		
6	Force measurement using strain gauge Load/ force transducer	of range 10 kg and above	01		
7	Optical stroboscope	It can measure the rpm from 100 to 3000 rpm. It have facility to measure the rpm less than 100 and greater than 3000 rpm also.	01		
8	Plug gauge	20 mm dia	5		
9	Measurement of displacement using LVDT	Operating range: ±2 to ±150 mm	01		
				Total	

Machine Design Lab-I

S.	Item Name	Specifications	Qty.	Rates in	Cost in Rs.

No.				Rs.	
1	Model of Coupling (Muff, Flange and Flexible)	Metallic	One each		
2	Model of Helical Spring	25 kN tension and compression	One each		
3	Model of Connecting rod, spur gear, helical gear, bevel gear, safety valve	Wooden model	One each		
				Total	

Heat and Mass Transfer Lab.

Sr No	Item Name	Specification	Quantity	Rates in Rs.	Cost in Rs.
1.	Heat Transfer Through Composite cylinder Apparatus	With Digital Temperature indicator	1		
2.	Heat Transfer Through Composite Wall Apparatus	With Digital Temperature indicator	1		
3.	Heat Pipe Apparatus	With Digital Temperature indicator	1		
4.	Unsteady state Heat transfer Unit	With Digital Temperature indicator	1		
5.	Drop wise and film wise condensation apparatus	With Digital Temperature indicator	1		

Theory of Machines Lab.

Sr No	Item Name	Specification	Quantity	Rates in Rs	Cost in Rs.
1.	Epicyclic Gear Train Apparatus with Digital RPM indicator	To determine the gear ratio for input and output shaft (Actual and theoretical), estimation of torque at input shaft, holding torque, torque at output shaft.	1		
2.	Universal vibration	To study the undamped free	1		

	apparatus (Free, Forced, Torsional, longitudinal and transverse)	vibration of spring mass system, To study the longitudinal vibration of helical coiled spring, To study the forced vibration of simply supported beam for different damping. To study the undamped torsional vibrations of single and double rotor system. Verification of dunkerley's rule			
3.	Static & Dynamic Balancing Demonstrator With accessories	To balance the masses statically and dynamically of a single rotating mass system. To observation the effect of unbalance in a rotating mass system.	1		
4.	Model of inversion of four bar mechanism	Epoxy fiber and metallic linkage Working model	1		
5.	Model of inversion of single slider crank mechanism (Withworth quick return & reciprocating engine)	Metallic Working models	2		
6.	Model of inversion of double slider crank mechanism (Elliptical Trammel & Oldham coupling)	Metallic Working models	2		
7.	Model of internal expanding brake	Metallic Working model	1		
8.	Model of disc brake	Metallic Working model	1		
9.	Model of single plate clutch	Metallic Working model	1		
10.	Model of multiplate clutch	Metallic Working model	1		
11.	Digital Tachometer contact type	Digital contact type(0-10000 rpm)	2		
12.	Vernier caliper	Digital	1		
13.	Technical Charts for Theory of Machine lab	Oil and paint	10		
				Total	

I.C.Engine Lab And Automobile Lab

Sr No	Item Name	Specification	Quantity	Rates in Rs.	Cost in Rs.
1.	Model of the synchronous mess gear box.	Any 4 wheeler working model with 4 or 5 forward and one backward gearing (Preferable of small passenger vehicle) Sectioned (without affecting the rigidity and working of model)at various places for easy viewing and understanding gear changing mechanism.	01		
2.	Differential Gear Mechanism of Rear Axle	Any 4 wheeler working model (Preferable of small passenger vehicle). The model must be sectioned (without affecting the rigidity and working of model)at various places for easy viewing and understanding the power transmission mechanism thoroughly. Differential gear and the concept of turning.	01		
3.	Steering Gear Mechanism (Power steering)	Derive steering gear mechanism working model (Preferable of small passenger vehicle). The model must be sectioned (without affecting the rigidity and working of model)at various places for easy viewing and understanding the steering mechanism of the vehicle.	01		
4.	Section full scale model of chassis along with suspension system (preferable of small passenger car).	Full scale model of chassis preferable of small passenger vehicle with suspension system. The model must be sectioned (without affecting the rigidity and working of model) at various places for easy viewing and understanding the steering mechanism of the vehicle.	01		
5.	Study of Fuel Supply System	For both spark ignition and compression ignition system working model. Preferable of small passenger vehicle. The model must be sectioned (without affecting the rigidity and working of model) at various places for easy viewing and understanding the fuel supply system of the vehicle.	01 each		
6	Study of Ignition system of I.C. engine	Ignition system of IC engine. Preferable of small passenger vehicle. The model must be sectioned (without affecting the rigidity and working of model) at various places for easy viewing and understanding the	01		

		Ignition system of the vehicle.			
7.	Computerized Diesel engine test rig	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 (petrol), 12:1 to 20:1 (diesel) (Extendible up to 22:1 when using bio-diesel blends) Compression Ratio Can be continuously varied without changing the cylinder head •Water Cooled engine. •Fuel Delivery: -Carburettor / Fuel Injection Pump, Direct Injection •Ignition System: - Compression Ignition adjustable •Ignition Coil – Ignition timing - 50º BTDC to 10º ATDC •Starting –Using induction motor with electromagnetic Clutch	01		

	Emission analyzer	Portable gas analyzer to measure complies with international standards and makes analysis easier and accurate. It allows to simultaneously measuring CO, HC, CO, CO_2, fuel air ratio or excess air ratio. It optionally measure O_2, NO, engine speed and oil temperature. Compact with a clear LCD screen. Emissions from vehicle engine fuels of gasoline and LPG can be measured. Main Technical Specification with measure Range:HC: 0ppm vol. to 10000ppm or 0ppmvol to 20000 ppm vol^2;CO: 0.00%vol to 10.00% vol; CO2: 0.00%vol to 20.00% vol; O2 : 0.00%vol to 25.00% vol; NO: 0.00ppm vol to 5000ppm vol. Response speed within 15 second. Digital input/output:RS232C, Printer: RS232C. Calibration with gas. Power supply 100V to 240V. Repeatability: CO within 0.01% vol, HC within 3.3 ppm vol. CO_2 within 0.17% vol. with essential optional accessories			
8.	Pressure sensor in cold /hot flow	A versatile high performance piezoresistive pressure sensors for cold pressure measurement that will operate in harsh test environments where temperature extremes, high vibration and shock levels are present , Pressure range psi 100 (psiG); Proof pressure (psi) >3 x FS pressure ; Burst pressure (psi) >4 x FS pressure; Output mV ; Compensated temperatures °F –40 … 250 (mV or V) with pressure range ≤750 psi °F –40 … 175,	04		

		Accuracy at Tref (non-linearity, hysteresis, repeatability) 1) ± %BFSL 0.2 (≤15 psig) 0.1 (>15 psig); Thermal effects (reference 68 °F); Frequency response, max. 2000 Hz Temperature limits for Operating mV and V in ºF = –65 to 255, Fast response time			
				Total	

CAD LAB

Sr No	Item Name	Specification	Quantity	Rates in Rs.	Cost in Rs.
1	Computer System for CAD Lab	DESKTOP i7 Operating system; Free DOS 2.0 PROCESSOR Chipset Intel H170 Processor; Intel® Core™ i7-6700T (2.8 GHz, up to 3.6 GHz, 8 MB cache, 4 cores), MEMORY, Memory, standard 8 GB DDR4-2133 SDRAM (1 x 8 GB) STORAGE Hard drive description: 2 TB 7200 rpm SATA, Graphics Integrated Graphics Intel® HD Graphics 530, Optical drive Ultra Slim-tray Super Multi DVD burner; Expansion slots 1 PCIe x16; 1 M.2 Wireless 802.11b/g/n (1x1) and Bluetooth® 4.0 combo, Network interface, Integrated 10/100/1000 Gigabit Ethernet LAN, Ports 4 USB 2.0; 2 USB 3.0, input: Pointing device, Wireless optical mouse, Keyboard, Wireless black keyboard, AUDIO: Audio features, DTS Studio Sound™, POWER: Power supply type 180 W active PFC AC power adapter. With 46.99 cms(18.5) TFT monitor, Warranty: 3-year Make: Standard	30		
2	Software	Solid works, Ansys, Latest version, perpetual license			
				Total	

Signature & Seal of Tenderer

Repair and maintenance

S. No.	Name of Equipments	Qty	Rates in Rs.	Cost in Rs.
	Fluid Machine lab			
1	Wind tunnel maintenance and Upgradation of computerized measuring facility like pressure scanner, velocity and all necessary control systems	1		
	Total			

Signature & Seal of Tenderer

Submission of the Tender:

1. Sealed tenders in along with earnest money amounting to the value mentioned with each item in the tender document in form of demand draft only. The tenders should reach to undersigned latest by 28 March up to 2: OO P. M.
2. Tenders should be submitted either in person or by post in sealed envelopes on which the name of department, item quoted; tender number and date along with name and address of the firm will be written.
3. Tender cost (non refundable) (ii) Earnest Money (iii) Proof of PAN and TIN registration document (iv) Standing of the firm (v) Major supplies executed in recent past (vi) Authorized dealer certificate from OEM & Commercial terms and conditions. The rates must be quoted in both figures and words. Any overwriting and/or cutting must be duly attested failing which tenders are likely to be rejected.
4. **Tender Cost and Earnest money** amounting to the **value given in the tender document for each Lab** should also be submitted with the tender in the form of separate Demand Drafts drawn in favour of Director, BIET, Jhansi.
5. Earnest money and Cost of Tender in the form of Bank Drafts must be placed in a separate sealed envelope by writing "**Earnest Money**" on top of the envelope.
6. All the envelopes as above must be kept and sealed in a big envelop. The name of items quoted, enquiry/tender no and the opening date should invariably be mentioned on the top of big envelope.
7. Sealed tenders should be sent to Director, Bundelkhand Institute of Engineering and Technology (BIET) Campus, Kanpur Road, Jhansi -284128 latest by 28 March at 2: 00 P.M. . The sealed tenders may be dropped in the box kept at Store and Purchase section at BIET, Jhansi.

Terms and Conditions for Submission of Tenders

1. Firms will have to attach the list of customers to whom they have supplied similar items in previous year along with performance reports. Total turnover of the firm must be atleast 50 Lacs per year in the last three years consecutive years. A certificate to these effects should be issued from the sales tax department.
2. The descriptive and illustrative literature of the quoted item in original must accompany with the tender.
3. Tenders received after the closing date and stipulated time shall not be considered and the institute shall not be responsible for any postal delay.
4. Tender should be valid atleast for a period of 04 months. (04 Months from opening date of tender).
5. Our terms of payments are strictly after receipt of material and check at our institute regarding the quality and working experience.
6. The rates should be quoted FOR store, Bundelkhand Institute of Engineering and Technology (BIET) Campus, Kanpur Road, Jhansi -284128. Inclusive of all taxes/excise duty/fright/package/forwarding expenses/insurance etc.
7. Firm shall be solely responsible for defective supplies and losses caused to institute on account of defective supply.

8. Tenders brought personally should be dropped into tender box.
9. Suppliers must be registered with sales tax department and they should state registration no.
10. Quantity of items may increase or decrease or may be cancelled upto any extent.
11. No sales tax form “C” or “D” etc for concessional rate shall be provided by the institute.
12. All tender must be accompanied by EMD as mentioned in the tender document in the form of Demand Draft drawn in favour of Director, Bundelkhand Institute of Engineering and Technology (BIET) Jhansi.
13. Tenders deviating from above terms and conditions shall be rejected straight way without assigning any reason thereof.
14. EMD will be forfeited if the equipment’s are not supplied in given time.
15. If required, the firms have to supply the sample of the items.
16. If certain equipment/material needs to be checked/tested at site of the firm, all expenditure (including TA/DA) of our expert members shall be borne by the firm concerned.
17. Penalty : The firm, which is not able to supply the equipment’s/materials mentioned in purchase order by the due date , shall be liable to pay a penalty equal to 0.10 % of the value of purchase order per day. However this can be waived of by the Director under special circumstances.
18. **Payment: -** Ninety percent of contract price shall be paid to the supplier after the delivery / commissioning / testing and completion of the work. The remaining 10% of contract price shall be paid to the supplier within 30 days after satisfactory working.
19. Director has every right to extend the due date if so required but all the tenders will be opened together.
20. Deduction of TDS (Income Tax & VAT) as per Govt. Rules.
21. The firm must provide original Guarantee/Warrantee card as issued by the manufacturer, as the case may be.
22. The Director BIET, Jhansi may reject any or all quotations/tenders without assigning any reasons.
23. All disputes subject to Jhansi Jurisdiction only.

For BIET, Jhansi