

Tender No. CCET/DG/SPA/2016/05  
Dated :- 23.12.2016



**CHANDIGARH COLLEGE OF ENGINEERING & TECHNOLOGY (DEGREE WING), SECTOR 26, CHANDIGARH**  
(FAX No. 0172-2750872, Phone No. 0172-2750943)  
**E-TENDER NOTICE**  
**College website: - www.ccet.ac.in**

Chandigarh College of Engineering & Technology (Degree Wing), Sector-26, Chandigarh invites e-tenders for purchase of Machinery/Equipments/Items for Mechanical Engineering Department. The dates for opening and closing of e-tender are as given below:-

Start Date and Time of uploading of e-tender	End Date and Time of uploading of e-tender	Date and Time of opening of Online Bid (Technical Bid)	Earnest Money
24.12.2016 at 9.00 AM	07.01.2017 at 3.00 PM	07.01.2017 at 4.30 PM	Detail of Earnest Money to be deposited is available in the e-tender document.

**Detailed Terms and Conditions including detail of Earnest Money are available in e-tender document.**

The bid document can be downloaded from the website of Chandigarh Administration <http://www.etenders.chd.nic.in> however for general information, guidance and reference; the tenderer can approach to office of Principal, Chd. College of Engg. & Tech. (Degree Wing), Sector-26, Chandigarh ( Phone No. 0172-2750943 )

**Principal**



**CHANDIGARH COLLEGE OF ENGINEERING & TECHNOLOGY,(DEGREE WING),**  
**SECTOR 26, CHANDIGARH**  
**(Phone No. 0172-2750943)**  
**E-TENDER NOTICE**  
**College website: - www.ccet.ac.in**

Chandigarh College of Engineering & Technology (Degree Wing), Sector-26, Chandigarh invites tenders through e-tendering for purchase the Machinery/Equipments/Items for following Department(s):-

MECHANICAL ENGINEERING			
Scheme Name	Item No.	Item	Earnest Money (In Rs.)
Scheme -I MACHINE SHOP	6	Universal Milling Machine	13000
Scheme-II CNC & RP SHOP	2	CNC lathe kit	4700
Scheme-IV PHYSICAL METALLURGY AND HEAT TREATMENT	1	Laboratory Muffle Furnace (Digital)	1000
	2	Digital Double Disc Polishing Machine	1000
	3	Metallurgical Microscope	3000
	4	Specimen set	1000
	5	Jomeny end quench testing apparatus	1000
Scheme-V WELDING SHOP	3	Gas Welding Set	1000
Scheme-VI FITTING SHOP	1	Bench Drilling Machine	1000
Scheme-VIII FOUNDRY SHOP	6	Model of cupola furnace	1000

Start Date and Time of uploading of e-tender : 24.12.2016 at 9.00 AM  
End Date and Time of uploading of e-tender : 07.01.2017 at 3.00 PM  
Date and Time of opening of Online Bid (Technical Bid) : 07.01.2017 at 4.30 PM  
Detailed Terms and Conditions are available in e-tender document.

**NOTE:-**

**Note 1:-**The tenderer will have an option to submit tender for individual item or scheme separately. Tender can be submitted after consolidating the schemes and items, as the case may be. The rates shall be compared item wise and supply order will be issued to the tenderer accordingly. Each item shall be treated as independent from the other under each scheme and the tenderer shall have to submit a consolidated bid for all the components under each scheme separately.

**Note 2:-**The sealed envelope of EMD should bear the Advertisement No. and should be clearly superscribed as "EMD for Purchase of Machinery /Equipment/Items for Mechanical Engineering Department with specific mention of Scheme Code such as "EMD for SCHEME NAME \_\_\_\_\_ SCHEME NO. \_\_\_\_\_ and ITEM No. \_\_\_\_\_".

**NOTE 3.** The bidder may note that no column of the BOQ shall be left blank. In case of items for which no bid is being made by the bidder, numeric value 0 (zero) shall be invariably mentioned for the validation of the BOQ.

The bid document can be downloaded from the website of Chandigarh Administration <http://www.etenders.chd.nic.in> . However for general information, guidance and reference, the tenderer can approach to office of Principal, Chd. College of Engg. & Tech. (Degree Wing), Sector-26, Chandigarh ( Phone No. 0172-2750943 )

**Principal**

### **INSTRUCTIONS TO BIDDERS REGARDING E-TENDERING PROCESS**

- a. Tenders without Digital Signatures will not be accepted by the electronic tendering system. No tender will be accepted in physical form and in case it has been submitted in physical it shall be rejected.
- b. Before submission of on line bids, bidders must ensure that scanned copies of all the necessary documents have been uploaded with the bid.
- c. Principal, Chandigarh College of Engg. & Technology (Degree Wing), Chandigarh will not be responsible for any delay in online submission of bids due to any reason whatsoever.
- d. Bidders should get ready with the scanned copies of EMD as specified in the tender documents. The original instruments in respect of EMD in the shape of FDR or Deposit at Call or Term Deposit Receipt or Demand Draft in favour of the Principal, Chd. College of Engg. & Tech. (Degree Wing), Sector-26, Chandigarh should reach on or before **07.01.2017 at 3.00 PM.**
- e. The details of EMD specified in the tender document should be same as submitted online (scanned copies). Otherwise tender will be rejected summarily.

**TERMS AND CONDITIONS OF THE TENDER**

**CCET STANDS FOR CHD. COLLEGE OF ENGINEERING & TECHNOLOGY, (DEGREE WING),  
CHANDIGARH.**

1. The last date and time for receipt of tenders is **07.01.2017 at 3.00 PM** through e-tendering only.
2. **The Tender will be two Bid Systems i.e. Technical Bid and Financial Bid.**
  - i) **The Technical Bid will contain technical specifications; and**
  - ii) **The Financial Bid will contain rate per equipment/Item.**
    - a) **If rates are quoted along with Technical Bid, it will be rejected straightway.**
    - b) **The Financial Bid(s) of only those firms will be opened who are technically qualified and the date and time for opening of financial bid(s) will be conveyed after opening of the Technical Bid.**
3. Each tender must be accompanied with Earnest Money Deposit as mentioned against each item in the tender document for which bid is being made, in the shape of FDR or Deposit at Call or Term Deposit Receipt or Demand Draft in favour of the Principal, Chandigarh College of Engineering & Technology (Degree Wing), Chandigarh, valid for three months payable at Chandigarh on any Scheduled Bank.

***Note:-The tenderer will have an option to submit tender for individual part, individual item or scheme separately or consolidated tender for all schemes and items, as the case may be. Each Scheme is independent of the other and the tenderer shall have to submit a consolidated bid for all the components under each scheme. Earnest Money has been mentioned / indicated in Col. 4 of the abstract of Machinery/Equipments enumerated in the tender document. In case, the Earnest Money is found to be less than that mentioned in the tender document against the items for which bid has been submitted by the tenderer, the tender shall be straightway rejected.***
4. The sealed envelope of EMD should bear the Advertisement No. and should be clearly **super scribed as "EMD for Purchase of Machinery /Equipment/Items for Mechanical Engineering Department**, with specific mention of **Scheme Name, Scheme Code and Item No.** due on **07.01.2017 at 3.00 p.m.** should be separately submitted in the office of Principal, Chandigarh College of Engineering & Technology (Degree Wing), Sector-26, Chandigarh on or before **07.01.2017 upto 3.00 p.m.**
5. Any attempt direct or indirect, to cast influence, negotiation on the part of the tenderer with the officials/authority to whom he will submit the tender or the tender accepting official/authority before the finalisation of tenders will render the tenderer liable for exclusion from consideration.
6. Tender(s) received without earnest money as specified at Sr. No. 2 above shall be rejected straightway.
7. Earnest Money deposited with the Chandigarh College of Engg. & Technology, (Degree Wing), Chandigarh in connection with any other tender will not be considered against this tender.
8. The Public Sector undertaking of the Central / State Govt. are exempted from furnishing Earnest Money Deposit.
9. This tender is not transferable.
10. The tender i.e. Pre-qualifying-cum-Technical Bid shall be opened **on 07.01.2017 at 4.30 p.m.** at Chandigarh College of Engineering & Technology (Degree Wing), Chandigarh.
11. Conditional offer shall be rejected.
12. The requirements of the Institute in terms of category of machinery/equipment/items, detailed specifications and quantity are given in **SCHEDULE OF TECHNICAL SPECIFICATION/ REQUIREMENT (AS PER ANNEXURE-I)** for Mechanical Engineering Department. Principal, CCET reserves the right to change the quantity for any/all items without assigning any reason.
13. The tenders not accompanied by Earnest Money or incomplete in any respect will be rejected out rightly.
14. No advance payment will be made. Payment will be made after receipt of machinery/equipment/items, its inspection, installation and testing to the satisfaction of the Technical and Purchase Committees.
15. The quoted prices must be mentioned showing Excise Duty and VAT / Sales tax separately.
16. The Principal, CCET reserves all rights to accept or reject any tender without assigning any reason.
17. Rates should be quoted F.O.R. Chandigarh College of Engg. & Technology, Sector-26, (Degree Wing) Chandigarh including packaging, forwarding, postage and freight etc.
18. The Principal, CCET reserves all rights to reject the goods if the same are not found in accordance with the required description / specifications.

19. In case of violation of any term and condition as mentioned, Earnest Money Deposit of the tenderer shall be forfeited in full or part at the entire discretion of the Principal, Chandigarh College of Engg. & Technology, Chandigarh.
20. Training for the operation of equipments, if any, shall be provided by the firm free of cost to the faculty / other staff of the college.
21. The defective machinery/equipment/items from the Store of Chandigarh College of Engg. & Technology, Chandigarh will be lifted at the entire cost & risk of the firm. Chandigarh College of Engg. & Technology, Chandigarh will not bear any expenses on this account and the machinery/equipment/items lying in the CCET premises will be at tenderer's risk and cost.
22. The machinery/equipments/items will be maintained free of charges during the warranty period.
23. **PERFORMANCE SECURITY:-** Performance security @10% of the value of supply order covering the warranty period shall be furnished by the firm in the shape of Bank Guarantee duly pledged in favour of Principal, Chandigarh College of Engg. & Technology, Chandigarh before / along with supply of machinery/equipments/items. **The performance security should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations.**
24. The CCET would return the Earnest Money Deposit to the successful tendering firm on the submission of the Bank Guarantee. EMD of unsuccessful tenderer will also be returned.
25. Rates quoted in Indian Currency only shall be accepted irrespective of foreign make of machinery/equipment/items which should include all kinds of charges, taxes, duties etc. Financial bids showing the rates in other currency shall not be considered and deemed to be rejected automatically.
26. **PERIOD FOR WHICH THE OFFER WILL REMAIN OPEN:-**  
The tendering firms should keep their offers valid for acceptance up to **31-03-2017**. If the firms are unable to keep their offers open for the above said period, they should specifically state the period for which their offers would remain open but such a provision may result in the rejection of their offers.
27. Any conditional tender or any deviation from the terms and conditions of the tender document shall render the tender liable to rejection.
28. The machinery/equipments/items will be installed free of charge by the firm / agent at the designated premises. The cost of material required for installation shall be borne by firm. Material for experimental set up such as Table, Stand etc. should be provided by the firm at its own cost. CCET will not provide any material required for installation. Foundations of equipments wherever necessary shall be provided/constructed by the supplier free of cost.
29. **DELIVERY PERIOD:-** The Delivery period of the machinery/equipment/items shall be strictly 6-8 weeks from the date of supply order. The delivery period will be extended at the sole discretion of the Principal, CCET in special circumstances on written request from the firm. Penalty @ 1.00% per week of the cost / price of machinery/equipment/items for actual period of delay after the due date of supply of machinery/equipments/items will be charged.
30. Installation and demonstration will be done by the supplier to the satisfaction of Head of Department concerned.
31. Warranty period, where applicable, should be clearly specified but not less than 1-year in any case.
32. After the receipt of machinery/equipment/items, any fault or deficiency in the machinery/equipments/items noticed should be rectified by the supplier within two weeks after intimation free of cost.
33. Instructional materials and **e-manuals** will be uploaded by the supplier free of cost.
34. The technical brochure for the equipments shall be uploaded along with Pre-qualifying – cum – Technical Bid.
35. **INSPECTION OF MACHINERY/EQUIPMENT/ITEMS**  
The machinery/equipments/items will be inspected only at CCET premises. However, the inspection of machinery/equipments/items at factory site or any other place, if any, shall be carried out at the risk and cost of the Tenderer / Bidder. The CCET will not bear any expenses on this account.
36. In the cases of failure or default in the performance or responsibilities or breach of terms and conditions of DNIT or MOU or any agreement of contract between the company / firm / agency / person or any legal entity and CCET, as the case may be, the said company / firm / agency / person or any legal entity shall be

black listed in the light of notification issued by Chandigarh Administration vide their letter No. 1927-F&PO(3)-2009/1170 dated 27-02-2009 or any other instructions issued from time to time.

37. **The tenderer has to submit latest affidavit (as per Annexure II) regarding non black listing of individual / firm/ company, as the case may be.**

38. **JURISDICTION**

The courts of Chandigarh alone will have the jurisdiction to try any matter, dispute or reference between the parties arising out of this purchase. It is specifically agreed that no Court outside and other than Chandigarh Court shall have jurisdiction in the matter.

39. **Force majeure**:- Any failure or omission or commission to carry out provision of this tender by tenderer shall not give rise to any claim by one party against the other if such failure or omission or commission arise from an Act of God; which shall include all Acts of natural calamities such as fire, flood, earthquake, hurricane, or any pestilence or from civil strikes, compliance with any status and / or regulation of the Government, lock outs and strikes, riots, curfew, embargoes or from any political or other reason beyond the parties control including war (whether declared or not), civil war or stage of insurrection, provided that notice of the occurrence of any event by either party to the other shall be given within two week from the date of occurrence of such any event which could be attributed to force majeure conditions.

**Note 1**:-*The tenderer will have an option to submit tender for individual part, individual item or scheme separately. Tender can be submitted after consolidating the schemes and items, as the case may be. The rates shall be compared item wise and supply order will be issued to the tenderer accordingly. Each item shall be treated as independent from the other under each scheme and the tenderer shall have to submit a consolidated bid for all the components under each scheme separately.*

**Note 2**:-*The sealed envelope of EMD should bear the Advertisement No. and should be clearly superscribed as “EMD for Purchase of Machinery / Equipment/ Items for Mechanical Engineering Deptt., with specific mention of Scheme Code such as “EMD for SCHEME NAME \_\_\_\_\_ SCHEME NO. \_\_\_\_\_ and ITEM No. \_\_\_\_\_”.*

**NOTE 3**. *The bidder may note that no column of the BOQ shall be left blank. In case of items for which no bid is being made by the bidder, numeric value 0 (zero) shall be invariably mentioned for the validation of the BOQ.*

**Annexure-I**

**Schedule of Technical Specification/Requirement**

**(SPECIFICATIONS AND ALLIED TECHNICAL DETAILS OF MACHINERY/EQUIPMENTS/ITEMS  
AND SCHEDULE OF REQUIREMENT)**

Mechanical Engineering Deptt.

( Scheme I, II, IV, V, VI & VIII )

***Note 1:-** The tenderer will have an option to submit tender for individual part, individual item or scheme separately. Tender can be submitted after consolidating the schemes and items, as the case may be. The rates shall be compared item wise and supply order will be issued to the tenderer accordingly. Each item shall be treated as independent from the other under each scheme and the tenderer shall have to submit a consolidated bid for all the components under each scheme separately.*

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**MECHANICAL ENGG. SCHEME I to SCHEME VIII**

Scheme –I MACHINE SHOP							
Scheme Code	Item No.	Name of Item	Specifications			Qty.	Approx. Cost (Amount in Rs.)
1	2	3	4			5	6
I	6	Universal Milling Machine	<b>Specification</b>			01	
			Table Overall dimensions (Length x Width)	mm	1520 x 310		
			Clamping area (Length x Width)	mm	1350 x 310		
			T slots / size / Spacing	mm	3 x 16 x 65		
			Minimum distance from left hand table end to centre of spindle	mm	250		
			Swivel of table to either side	degrees	45		
			Max. admissible weight on table	Kg	250		
			Power operated Traverses Long x Cross x Vertical	mm	800x265x400		
			Number of Feeds	nos.	18		
			Cutting feed rate Longitudinal & Cross	mm/Min	16-800		
			Cutting feed rate Vertical	mm/Min	4-200		
			Rapid traverse Longitudinal & Cross	mm/Min	3200		
			Rapid traverse Vertical	mm/min	800		
			Type of Feed Motor/ Power/Speed	kw/rpm	AC/1.5/1500		
			Type of Main Motor Power/speed	Kw/rpm	AC/5.5/1500		
			Number of Spindle speeds	nos	18		
			Speed range	rpm	35.5-1800		
			Spindle nose	iso	40		
			Distance from spindle centre to lower face of overarm	mm	160		
			<b>Standard Accessories</b>				
-Long Milling Arbor ISO 40 Dia 27 X 500mm& 22x500 mm – 1 no each, Draw bolt with nut							
-Two arbour supports bearing brackets and one over arm sport							
One set of service tools							
-One set of Operation, Spare Part and Instructional manuals with set of Electrical drawings, Vertical Milling Head							
-Coolant equipment with pump and motor							
-Universal dividing head 135 mm supporting block with suitable dividing plates and centre, Height adjusted tail stock							
-Collet holder ISO 40, Conical type collet dia. (1Nos each) 6, 8,10,12,16 & 20 (1Nos each), ISO 40 End mill holder dia 16, 20 and 25mm - 1no each, Stub Milling Arbor ISO 40 – 16x17/25 and 22x19/25 mm 1 no each							
-Machine lamp for 220 volts							
-Machine vice with Swivel Base200 mm							
The machine should comply with applicable IS 13993 (1994)/ISO 1701 (1974) standard for accuracy and quality.							
Note:							
The machine should have appropriate safety mechanism							
<ul style="list-style-type: none"> <li>• The machine is to be supplied on turnkey basis in the college workshops.</li> <li>• The supplier should be reputed original manufacturer/authorized supplier of the machines.</li> <li>• Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage.</li> <li>• Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</li> <li>• The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected.</li> </ul>							





			<p>quotation will be rejected.</p> <ul style="list-style-type: none"> <li>• The supplier will also provide operational and service manual of the machine at the time of supply.</li> <li>• Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop.</li> <li>• The machine with poor workmanship and low/poor quality parts will be out-rightly rejected.</li> </ul>		
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**Scheme-IV PHYSICAL METALLURGY AND HEAT TREATMENT**

Scheme Code	Item No.	Name of Item	Specifications	Qty.	Approx. Cost (Amount in Rs.)
IV	1	Laboratory Muffle Furnace (Digital)	<p style="text-align: center;"><b><u>Specifications</u></b></p> <p>Technical Specification</p> <ul style="list-style-type: none"> <li>• Max. Temperature: 1200°C</li> <li>• Temperature Accuracy: +/- 1°C</li> <li>• Heating Element: Kanthal wire</li> <li>• Temperature Controller: PID controller.</li> <li>• Display: LED / LCD Display</li> <li>• External Chamber Construction: MS with Powder Coating</li> <li>• Internal Chamber Construction: Ceramic Board &amp; Grooved Refractory Chamber</li> <li>• Alarm: Audible &amp; Visual type</li> <li>• Power Supply: 220 / 440 Volts (3 phase)</li> <li>• Digital temperature indicator</li> <li>• Thermostat</li> <li>• Stabilizer: As standard</li> <li>• Size: Approx 9"x4"x4"</li> <li>• Calibration certificate</li> </ul> <p>Accessories:</p> <ol style="list-style-type: none"> <li>1. Safety switch on door.</li> <li>2. Extra heating element</li> <li>3. Extra thermocouple</li> <li>4. Tongs</li> <li>5. Gloves</li> </ol> <p>Complete with manual. The Installation, Commissioning and Training should be included.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• The machine should have appropriate safety mechanism</li> <li>• The machine is to be supplied on turnkey basis in the college workshops.</li> <li>• The supplier should be reputed original manufacturer/authorized supplier of the machines.</li> <li>• Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</li> <li>• The supplier will also provide operational and service manual of the machine without which the quotation will be rejected at the technical stage</li> <li>• Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop</li> </ul>	01	

			<ul style="list-style-type: none"> <li>• The machine with poor workmanship and poor quality parts will be out-rightly rejected</li> <li>• Machine with low quality parts and poor workmanship will be rejected.</li> </ul>		
IV	2	Digital Double Disc Polishing Machine	<p style="text-align: center;"><b><u>Specifications</u></b></p> <p>Table top polisher with cooling unit, the heat generator from polishing is able to be removed to avoid damaging the specimen.</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> <li>• Two 10" bronze discs</li> <li>• speed from 50-1400 RPM</li> <li>• 1 HP Motor</li> <li>• Electronic speed controller</li> <li>• Digital Speed Indicator</li> <li>• Lapping Wheel dia. 200 MM</li> </ul> <p>Complete with manual. The Installation, Commissioning and Training should be included.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• The machine should have appropriate safety mechanism</li> <li>• The machine is to be supplied on turnkey basis in the college workshops.</li> <li>• The supplier should be reputed original manufacturer/authorized supplier of the machines.</li> <li>• Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</li> <li>• The supplier will also provide operational and service manual of the machine without which the quotation will be rejected at the technical stage</li> <li>• Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop</li> <li>• The machine with poor workmanship and poor quality parts will be out-rightly rejected</li> <li>• Machine with low quality parts and poor workmanship will be rejected.</li> </ul>	01	
IV	3	METALLURGICAL MICROSCOPE	<p style="text-align: center;"><b><u>SPECIFICATION</u></b></p> <p><b>Type:</b> Upright type with Infinity Contrast &amp; Color Corrected optical system.</p> <p><b>Stand:</b> Compact, providing wider work surface. Intensity control, shall be frame mounted. Coaxial coarse and fine focus controls along with one Super fine focus finger touch knob. Both Focus &amp; Intensity control knobs should be positioned on both sides &amp; operated through either both hands and Single hand. Six position Rotatable Reflector turret to hold Prism Mirror cubes for adapting different observation procedures like Bright Field &amp; Dark Field, and reflector cubes should be built in with the turret.</p> <p><b>Illumination:</b> Vertical Reflected light Illuminator with 12V 100W Quartz Halogen bulb having Cooling Filter &amp; Condensing Cone. Bulb Filament should be aligned through External lever.</p> <p><b>Observation:</b> Reflected Bright Field, Dark Field Observation. Future Upgradation facility with Rotatable Polarizer – Analyzer</p>	01	

		<p>&amp; DIC Observation technique.</p> <p><b>Objectives:</b> Universal, Parfocal plan Fluorite objectives 2.5x, 5x, 10x, 20x, 50x, 100x for Reflected Mat. Bright Field &amp; Dark Field Observation.</p> <p><b>Observation Tube:</b> Wide field (Field No. 23 mm) Trinocular tube with tube inclination 30 degrees two position light path selector 100:0 / 0:100. Left eyepiece tube <math>\pm 5</math> diopter control. Right eyepiece tube with rotation stop, with interpupillary distance adjustment from 50 to 76 mm.</p> <p><b>Focus:</b> Focus Knob is Provided With Coarse &amp; Fine Adjustment Lever with a Fine Focus extension lever, which helps to get the Refocusing Facility at the time of replacing the specimen.</p> <p><b>Focusing System:</b> Shall incorporate Infinity Contrast &amp; Color Corrected optical system.</p> <p><b>Mechanical Stage:</b> Universal, COAXIAL Right handle stage, 75(X) x 50(Y) mm (Min.) size with lock mechanism in Y axis, having spring loaded Specimen holder. Ceramic Quoted Top surface.</p> <p><b>Revolving nosepiece:</b> Sextuple revolving nosepiece for attachment of Six Objectives at a time.</p> <p><b>Aperture &amp; Field Adjustment:</b> Both are Individually adjustable for Reflected illumination separately.</p> <p><b>Filters:</b> Three position Filter Holder for Reflected Illuminator along with different filters. Light balancing &amp; Cooling filters should be built in &amp; Inserted with Filter Slider.</p> <p><b>Eyepiece:</b> Wide field Eyepieces 10X (Field No. 23 mm) Focusable and shall accept Eyepiece micrometer.5</p> <p><b><u>Scientific Digital Camera:</u></b>  <b>Resolution:</b> 5 mp or higher  <b>Sensor:</b> CMOS Chip size 1/2.5" or higher  <b>Pixel size:</b> 2.2 X 2.2 <math>\mu\text{m}</math> or higher  <b>Exposure time:</b> 10 micro second  <b>Control:</b> Automatic White Balance Adjustment with Automatic Intelligent Intensity Capacity  <b>Frame:</b> 39 frames / seconds  <b>Adopter:</b> C – mount adaptor with 0.5 X lense  <b>Interface:</b> PC interface through USB to cable</p> <p><b><u>IMAGE ANALYSIS SOFTWARE:</u></b>  Image processing and Analysis Software for quantifying and evaluating the microscope Images. The software must be provided with File handling, Imaging, Image operations, Interactive measurements &amp; Printing Applications: Live image display in PC Monitor along with Auto gain, live histogram and Calibrated Micron bar display. 1 bit (Binary), 8 bit color/monochrome, 16 bit monochrome and 24 bit true color image handling. Display Zoom setting. Microscope &amp; Camera functions should be operated through Image Analysis Software. Display and analysis of colour and monochrome images. Auto Calibration of Images with Live Calibration Micron Scale Bar in PC Monitor for Individual Objective Magnification. Interactive Measurement : Touch count, Horizontal distance, Vertical distance, Arbitrary distance, Polygon Length, Enclosed angle, Area, Perimeter, circle and pixel value, chord length, Sorting Auto filter, statistics, XY diagram. Area fraction analysis. Reporting: Standard Report format for visualizing Analysis data's. Future Up-gradation facility to convert it to Metallurgical Software for Multiphase, Grain analysis.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• The machine should have appropriate safety mechanism</li> <li>• The machine is to be supplied on turnkey basis in the</li> </ul>		
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			<p>college workshops.</p> <ul style="list-style-type: none"> <li>• The supplier should be reputed original manufacturer/authorized supplier of the machines.</li> <li>• Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage.</li> <li>• Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</li> <li>• The machine should comply with applicable standards (BIS) for accuracy and quality.</li> <li>• The supplier will also provide operational and service manual of the machine at the time of supply.</li> <li>• Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop.</li> <li>• The machine with poor workmanship and low/poor quality parts will be out-rightly rejected.</li> </ul>		
<b>IV</b>	<b>4</b>	<b>Jominy End Quench Hardenability Test Apparatus</b>	<p>Should be useful for determining the hardenability of steels by End Quench Test.</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> <li>• Standard test piece dimensions: dia 25mm ± 0.5 x length, 100 ± 0.5mm.</li> <li>• Height of free water jet (without test piece in position): 65 ± 10mm</li> <li>• Distance from tip of nozzle to the bottom of test piece: 12.5 ± 0.5mm approx.</li> <li>• Power supply: Single phase 230 Volts 50 Hz A.C.</li> <li>• The quenching fixture: As per ( ASTM A 255 ) specification like 45 degrees angle of top plate, quenching distance, jet stopper release just before quenching etc.</li> <li>• Water circulation: Motorized water circulation through water pump with storage and test tank.</li> <li>• Special Tong: Quick transfer of specimen to quenching fixture within specific time with special tong.</li> <li>• Jominy test at a Time: One or better.</li> <li>• Hardening the Sample: Bench top laboratory muffle furnace 900 - 950 degrees, Thyristor controlled with safety features.</li> <li>• Certificate: Calibration Certificate and Test Certificate shall be supplied with the equipment.</li> </ul> <p>Complete with manual. The Installation, Commissioning and Training should be included.</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• The machine should have appropriate safety mechanism</li> <li>• The machine is to be supplied on turnkey basis in the college workshops.</li> <li>• The supplier should be reputed original manufacturer/authorized supplier of the machines.</li> <li>• Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage.</li> <li>• Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</li> <li>• The supplier will also provide operational and service manual of the machine at the time of supply.</li> </ul>	<b>01</b>	

			<ul style="list-style-type: none"> <li>• Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop.</li> <li>• The machine with poor workmanship and low/poor quality parts will be out-rightly rejected.</li> </ul>		
<b>IV</b>	<b>5</b>	<b>Microscope specimen Set (23 specimen with booklet)</b>	<p>Standard samples of Metallurgical Microstructure of 23 standard samples which covers the entire ranges</p> <p>Sample Title:- 1. Dead Mild Steel 2. Low Carbon Steel 3. Medium Carbon Steel (Annealing) 4. Medium Carbon Steel (Normalizing) 5. Decarburized High Carbon Steel 6. Inclusion in Steel 7. Hardened Steel 8. Tempered Steel 9. Carburized Steel 10. Tool Steel 11. Gray Cast Iron 12. White Case Iron 13. Mottled Cast Iron 14. Ductile Cast Iron 15. Cartrid Brass 16. Munrz Metal 17. Tin Bronze 18. Electroplated Component 19. Anodized Aluminium 20. Fusion Welded Mild Steel 21. Friction Welded Steel 22. Power Metallurgy Component 23. Deformed Mild Steel ·</p> <p>Complete information including chemical composition, mechanical treatment, detail of heat treatment, type, of Etchant with description of Microstructure along with their colored photographs</p> <p>The machine should comply with applicable IS standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• The supplier should be reputed original manufacturer/authorized supplier of the machines.</li> <li>• Brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</li> <li>• The supplier will also provide operational and service manual.</li> <li>• Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation.</li> </ul>	<b>01</b>	

**Scheme-V WELDING SHOP**

<b>Scheme Code</b>	<b>Item No.</b>	<b>Name of Item</b>	<b>Specifications</b>	<b>Qty.</b>	<b>Approx. Cost (Amount in Rs.)</b>
<b>V</b>	<b>3</b>	<b>Gas Welding Set</b>	<p><b>Gas Welding Set</b></p> <p>Complete set of gas welding equipments including Oxygen and Acetylene Gas cylinders, welding torch, pipe, regulator and other accessories of ISI standard</p> <p><b>1. Cylinder for compressed industrial oxygen gas</b> Maximum working pressure at 15°C: 150 Kgf/ cm<sup>2</sup> Water capacity: 46.7 Lts Gas capacity: 7 Cu-m Outside diameter: 232 mm Length: 1360 mm Colour: Black Fitted with valve.</p> <p><b>2. Cylinder for dissolved acetylene gas</b> Type: Seamless (IS: 7312 – 1993) Water capacity: 41 Lts Hydrostatic stretch test pressure: 250 Kgf/ cm<sup>2</sup> Pneumatic leakage test pressure: 150 Kgf/ cm<sup>2</sup> Max working pressure at 150°C: 16 Kgf/ cm<sup>2</sup> Gas capacity: 7 kg Outer diameter: 232 mm</p>	<b>02</b>	

Inner diameter: 221 mm approx  
 Wall thickness: 5.6 mm  
 Length without valve: 1220 mm approx  
 Colour: Maroon  
 Fitted with valve confirms to IS: 3224

**3. Oxygen and Acetylene pressure regulator**  
 Type: Single stage double metered confirming to IS: 6901  
 Pressure Gauge:  
 i) 0-300 bar  $\pm$  2.5% of F.S.D to indicate cylinder pressure  
 ii) 0-16 bar  $\pm$  2.5% of F.S.D to indicate outlet pressure  
 Maximum flow:  $\geq$  200 Lit/min

**4. Welding blowpipe (High pressure)**  
 Confirms to IS: 7653  
 Welding capacity: 1.25 mm to 12.50 mm thick MS Gas  
 valves: Stainless steel spindles, taper ended Control knob:  
 Maroon/Red for acetylene and Black/Blue for oxygen  
 Tips: Swaged copper (60°)  
 Size of tips to be provided: 2 (1.25 mm), 3 (1.50 mm), 5  
 (2.50 mm), 7 (3.15 mm), 10 (4.00 mm), 13 (5.00 mm), 18  
 (6.30 mm), 25 (8.00 mm), 30 (10 mm) & 35 (12.50 mm)  
 Standard accessories: Nut & Nipple for hose connection- 1  
 each for Oxygen and Fuel gas.

**5. Welding blowpipe (Low pressure)**  
 Confirms to IS: 7653  
 Welding capacity: 1.00 mm to 4.00 mm thick MS Gas  
 valves: Stainless steel spindles, taper ended Control knob:  
 Maroon/Red for acetylene and Black/Blue for oxygen  
 Tips: Swaged copper  
 Size of tips to be provided: 1 (1.00 mm), 3 (1.50 mm), 5  
 (2.50 mm), 7 (3.15 mm)  
 Standard accessories: Nut & Nipple for hose connection- 1  
 each for Oxygen and Fuel gas

**6. Hose**  
 Type: Single ply confirms to IS: 447  
 Nominal inner dia: 3/8 inch  
 Working pressure:  $\geq$  14 Kg/cm<sup>2</sup>  
 Bursting pressure:  $\geq$  56 Kg/cm<sup>2</sup>  
 Colour code: i) Black/Blue for oxygen ii) Maroon/Red for  
 acetylene.

The machine should comply with applicable IS standards for accuracy and quality.

Note:

- The machine should have appropriate safety mechanism
- The machine is to be supplied on turnkey basis in the college workshops.
- Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself
- The machine should comply with applicable standards (BIS) for accuracy and quality.
- The supplier will also provide operational and service manual of the machine at the time of supply.
- Supplier shall provide full and complete Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop.
- The machine with poor workmanship and low/poor quality parts will be out-rightly rejected.

## Scheme-VI

**FITTING SHOP**

Scheme Code	Item No.	Name of Item	Specifications	Qty.	Approx. Cost (Amount in Rs.)																																				
VI	1	Drill Machine	<table border="1"> <tr> <td>Drilling capacity in MS</td> <td>25mm</td> </tr> <tr> <td>Drilling Capacity in C.I</td> <td>32mm</td> </tr> <tr> <td>Tapping in M.S</td> <td>15mm</td> </tr> <tr> <td><b>Drilling Head</b></td> <td></td> </tr> <tr> <td>Spindle Hole taper</td> <td>MT-3</td> </tr> <tr> <td>Spindle speeds</td> <td>160mm</td> </tr> <tr> <td>Spindle Travel</td> <td>100-2650x8 mm</td> </tr> <tr> <td>Diameter of RAM</td> <td>72mm</td> </tr> <tr> <td><b>Working Range</b></td> <td></td> </tr> <tr> <td>Max. Dist. Spindle nose to table</td> <td>560mm</td> </tr> <tr> <td>Spindle centre to column</td> <td>206mm</td> </tr> <tr> <td><b>Table size</b></td> <td>336mm (round)</td> </tr> <tr> <td>Machine Measurements</td> <td>500x304x1600</td> </tr> <tr> <td>Column diameter</td> <td>90mm</td> </tr> <tr> <td>Dist. From spindle nose to Base</td> <td>950mm</td> </tr> <tr> <td>Power</td> <td></td> </tr> <tr> <td>Motors</td> <td>2 HP</td> </tr> <tr> <td>V-Belt</td> <td>B-46</td> </tr> </table>	Drilling capacity in MS	25mm	Drilling Capacity in C.I	32mm	Tapping in M.S	15mm	<b>Drilling Head</b>		Spindle Hole taper	MT-3	Spindle speeds	160mm	Spindle Travel	100-2650x8 mm	Diameter of RAM	72mm	<b>Working Range</b>		Max. Dist. Spindle nose to table	560mm	Spindle centre to column	206mm	<b>Table size</b>	336mm (round)	Machine Measurements	500x304x1600	Column diameter	90mm	Dist. From spindle nose to Base	950mm	Power		Motors	2 HP	V-Belt	B-46	02	
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			<p><b>Standard Accessories per machine</b>  Service tools set  Drill chuck with key  Reduction sleeves MT1, MT2 and MT3 along with drift.  Foundation Bolts with levelling plates  One V Belt extra  Clamping T- bolts for table</p> <p>The machine should comply with applicable IS 2426 (1985)/ISO 2773 -1 (1973) standards for accuracy and quality.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• The machine should have appropriate safety mechanism</li> <li>• The machine is to be supplied on turnkey basis in the college workshops.</li> <li>• The supplier should be reputed original manufacturer/authorized supplier of the machines.</li> <li>• Accuracy chart and schematic drawings shall be submitted by the party along with the technical bid without which the quotation will be rejected at the technical stage.</li> <li>• Machine/equipment brochure/manual should be provided with the technical bid clearly showing the pictures and specifications, without which the bid will be rejected at the technical stage itself</li> <li>• The machine should comply with applicable standards (BIS) for accuracy and quality. Test certificate shall be furnished along with the technical bid without which the quotation will be rejected.</li> <li>• The supplier will also provide operational and service manual of the machine at the time of supply.</li> <li>• Supplier shall provide full and complete</li> </ul>																																						



			<p>Warranty/Guarantee for one year trouble free operation after successful commissioning in the college workshop.</p> <ul style="list-style-type: none"> <li>The machine with poor workmanship and low/poor quality parts will be out-rightly rejected.</li> </ul>		
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**Scheme-VIII FOUNDRY SHOP**

<b>Scheme Code</b>	<b>Item No.</b>	<b>Name of Item</b>	<b>Specifications</b>	<b>Qty.</b>	<b>Approx. Cost (Amount in Rs.)</b>
<b>VIII</b>	<b>1.</b>	<b>Model of Cupola Furnace</b>	<p>Model of cupola furnace</p> <p>Description: Model of cupola furnace for study purpose of 8 feet height The model should showcase different zones of the cupola for study purpose.</p>	<b>01</b>	

**ANNEXURE-II**

I/We (Name)\_\_\_\_\_

Contractor / partner / sole proprietor (strike out word which is not applicable) or (Firm)/Company

\_\_\_\_\_ do hereby solemnly affirm and declare that the individual  
firm / companies are not black-listed by the Union or State Government or any autonomous body.

DEPONENT

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I/We do hereby solemnly affirm and declare that the above declaration is true and correct to the best of my knowledge and beliefs. No part of it is false and nothing has been concealed.

Dated:

DEPONENT

**CHECK LIST DULY FILLED IN TO BE ATTACHED WITH PRE-QUALIFYING-CUM-TECHNICAL  
BID FOR THE EQUIPMENT FOR MECHANICAL / CIVIL ENGINEERING DEPARTMENT**

- |    |  |        |
|----|--|--------|
| 1. | Whether EMD in the shape of FDR or Deposit at Call or Term Deposit Receipt or Demand Draft valid for three months, for the asked-for amount attached?              | Yes/No |
| 2. | Whether tender document duly signed by authorized signatory attached?  | Yes/No |
| 3. | Whether affidavit duly attested by Notary / Executive Magistrate regarding non-black listing of firm Attached?   | Yes/No |
| 4. | Whether a list of institutions / organizations where your firm has supplied this item / equipment / instrument recently, is attached.                              | Yes/No |
| 5. | If you are an authorized agent / dealer / distributor of the firm / company / manufacturer and whether authority letter as issued by them in your favour attached? | Yes/No |
| 6. | Whether Technical broucher of the equipments attached?   | Yes/No |

Signature of authorized signatory  
with seal of the firm