



**I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY JALANDHAR,
JALANDHAR-KAPURTHALA HIGHWAY,
KAPURTHALA, PUNJAB- 144603**

BIDDOCUMENT

NATIONALCOMPETITIVEBIDDING

FOR

**SUPPLY,INSTALLATION,COMMISSIONING&MAINTENANCEOFLABORATORYEQUIPM
ENTOFMECHANICALENGINEERING**

FOR

**I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY MAIN CAMPUS,
KAPURTHALA,PUNJAB**

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CHAPTER-I

I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY JALANDHAR, JALANDHAR-KAPURTHALA HIGHWAY, KAPURTHALA, PUNJAB

NOTICE INVITING TENDER

(e-Tendering mode)

I.K. Gujral Punjab Technical University, Kapurthala (Punjab) intend to float open tender for the supply of following item(s), as per the details given below:

Name of work	Supply, Installation, Commissioning & Maintenance of Laboratory Equipment for Heat Transfer Laboratory, Fluid Machinery Laboratory, Industrial Automation and Robotics Laboratory, Mechanical Measurement and Metrology Laboratory, Mechanical Vibration Laboratory, Automobile Engineering Laboratory, CAD/CAM Laboratory, Refrigeration and Air Conditioning Laboratory for Department of Mechanical Engineering, I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)
The Currency in which payments shall be made	Indian Rupees (INR)
Date of Publishing	01/09/2018 at 09.00 AM
Document Download Start Date	01/09/2018 at 09.00 AM
Pre Bid Meeting Date	06/09/2018 at 10.00 AM Venue: Seminar Room, Department of Mechanical Engineering, Ground Floor, CB-1, IKGPTU Main Campus, Kapurthala
Start Date for uploading of Bids	11/09/2018 at 9.00 AM
Last Date for uploading of Bids	25/09/2018 at 11.00 AM

Date of Opening of Technical Bids	28/09/2018 at 2.00 PM
Date of Opening of Financial Bids	08/10/2018 at 2.00 PM
Processing Fee	Processing Fee (as mentioned on the web portal) shall be paid through online mode only.
Bid Document Fee	Rs 1180/- (inclusive of GST) Mode of payment: online (https://eproc.punjab.gov.in)
Earnest Money Deposit	As mentioned in Annexure XIII. Mode of payment: online (https://eproc.punjab.gov.in)
Bid Validity days	120 days (From last date of opening of tender)
Period of Supply	45 days (From date of issuance of Purchase Order)
On-site Warranty (including annual maintenance)	One year Comprehensive warranty followed by two years comprehensive annual maintenance from the date of successful Commissioning & Handing over of Laboratory
Performance Security	10% of the total work order value of the successful bidder. Performance security is required to be submitted within 15 days from the date of issue of LOA.
Purchaser	I.K. Gujral Punjab Technical University (IKGPTU) Jalandhar-Kapurthala Highway, Kapurthala, Punjab-144603
Place of delivery	Department of Mechanical Engineering, I.K. Gujral Punjab Technical University (IKGPTU) Main Campus, Jalandhar-Kapurthala Highway, Kapurthala, Punjab-144603
Email Address	registrar@ptu.ac.in Cc to: vikas.chawla@ptu.ac.in

1. For participating in the above e-tendering process, the bidder shall have to get them registered in <https://eproc.punjab.gov.in> and get User ID and Password. Class 3 digital signature is mandatory to participate in the e-tendering process. For any clarification difficulty regarding e-tendering process, please contact **Help Desk Number** 0172-2970263, 0172-2970284 (on Government working days from 09.00AM

to 05.00 PM) or call at 24 x 7 Help Desk Number 0120-4200462, 0120-4001002, 0120-4001005,0120-6277787. International Bidders are requested to prefix 91 as country code. The blank tender documents can be obtained from Punjab Government e-procurement website:-<https://eproc.punjab.gov.in>

2. All bids (both Technical and Financial) should be uploaded in the **E-procurement portal** (<https://eproc.punjab.gov.in>). No manual bids will be accepted.
3. Bidders are advised to visit the I.K. Gujral Punjab Technical University Website for getting themselves updated for information on this tender. Corrigendum and addendum (if any) will be uploaded **only on E-procurement portal** (<https://eproc.punjab.gov.in>) **and/or** IKGPTU website (www.ptu.ac.in/Tender.aspx). Bidders are advised to visit webpage and update themselves. Corrigendum/addendum are the part of tender documents and Bidders are supposed to upload the same, duly signed as per the guidelines given in the tender document.

(-----)
Registrar
IKGPTU, Kapurthala

CHAPTER-II
ONLINEBIDSUBMISSIONDOCUMENTS

OnlineSubmissions:

The Onlinebids(completeinallrespect)mustbeuploadedonlineasmentionedbelow: -

TechnicalBid (FollowingdocumentstobeprovidedassinglePDFfile)			
Sl.No.	Documents	Content	FileT ypes
1.	TechnicalBid	TechnicalSpecification ComplianceSheetasperAnnexure-I	.PDF
2.		OrganizationDeclarationSheetasperAnnexure-II	.PDF
3.		Listoforganizations/clientswherethesameproductshavebe ensuppliedalongwiththeircontactnumber(s).(Annexure VI and Annexure-VII)	.PDF
4.		Supportingdocumentsin support ofallclaimsmadeat Annexure-V,VI, VII,IX,XII	.PDF
FinancialBid			
Sl.No.	TYPES	Content	
1.	FinancialBid	Pricebidshouldbesubmitted onlyin standardBill of Quantity (BOQ) file provided in the e-tender.	.xls

CHAPTER-III
TERMOFREFERENCE&DEFINITIONS

Supplier	“Supplier” shall mean the person, firm or corporation whom the Purchase/Supply Order is issued for or Supply, Commissioning, Installation & Maintenance of Laboratory Equipment for Setting of I. K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab).
Authorized Signatory	The bidder's representative (explicitly, implicitly, or through conduct) with the power to commit the authorising organisation to a binding agreement. Also called signing officer/authority having the Power of Attorney from the Competent authority of the respective Bidding firm.
Bid	"Bid" means the response to this document presented in Two Packets, Technical Cum Commercial Bid and Financial Bid, which are supplied with necessary documents and forms as given in Annexure, complete in all respects adhering to the instructions and spirit of this document.
Bidder	“Bidder” means any individual/proprietor/partnership firm/agency/company/responding to Request for Proposal and whom makes a Bid.
Contract	“The Contract” means the agreement entered into between I. K. Gujral Punjab Technical University, Kapurthala (Punjab) and the selected bidder(s) in terms of clauses mentioned
Day	“Day” means a working day as per rules of I. K. Gujral Punjab Technical University, Kapurthala (Punjab).
IKGPTU	I. K. Gujral Punjab Technical University, Kapurthala (Punjab)
EMD	Earnest Money Deposit
D.D	Demand Draft
TC	Tender Committee
PBG	Performance Bank Guarantee
Security Deposit (SD)	Amount of the Order Value deposited by the Bidder and retained till the successful completion of the project (as long as the bidder fulfils the contractual agreement).
Services	“Services” means the services to be delivered by the successful bidder and as required to run the projects successfully as per the Contract.
RFP	“ RFP ” means the Request for Proposals
Goods and Materials	“Goods and Materials” shall mean the articles, materials, equipment, IT Equipment, supplier's/Bidder's drawings, Data/Software and other property and all services-including design, delivery, installation, inspection and maintenance support specified or required to complete the order and incidental thereto.

Order	“Order” shall mean the Purchase/Supply Order and its attachments and exhibits.
Purchaser	“Purchaser” shall mean I.K. Gujral Punjab Technical University, Kapurthala (Punjab)
Consignee	“Consignee” shall mean I.K. Gujral Punjab Technical University Main Campus, Kapurthala, Department of Mechanical Engineering, where the items are to be supplied and commissioned.

**CHAPTER- IV
INSTRUCTIONS FOR E-TENDERING**

1. Instructions for Online Bid Submission:

- a) Bidders are free to bid for any equipment.
- b) Bid for the product to be uploaded in two parts i.e. Technical Bid and Financial Bid.
- c) Technical Bids should not contain any commercial details. Failure would result in rejection of the bid.
- d) Only authorized person should sign the tender/quotation. His name, designation and address should be given in capital letters. University may not consider the tender unless and until all the documents are properly signed by the authorized signatory.
- e) Copy of Power of Attorney for the authorized person shall be uploaded along with the bid.
- f) All the columns of the quotation form shall be duly, properly and exhaustively filled in. Quotations shall be only in figures.
- g) The quotations will be regarded as constituting an offer or offers open to acceptance in whole or in part or parts at the discretion of I.K. Gujral Punjab Technical University, Kapurthala (Punjab).
- h) The scanned copies of all the Annexures and required documents must be uploaded with the bids.

2. Minimum Criteria/ Qualifications for Bidding

Following are the minimum criteria/requirements for the bidders participating in the bidding process (Documents must be provided in support of the following otherwise University may not consider the tender)

	PQ criteria	Supporting Documents required
1	The bidder must be a Company/LLP registered with Statutory Authorities for the last five years	<ul style="list-style-type: none"> • Copy of certificate of registration
	<p>Only Original Equipment Manufacturer (OEM)/ agency of OEM/ authorized dealer having minimum 5 years of experience in execution of Laboratory Equipment/ Instruments supply should apply against this invitation for bid. In the case of the bidder, offering to supply Equipment/ Instrument under the bid, which the bidder does not manufacture or otherwise produce, the bidder has to provide Manufacturer's Authorization Certificate as per format at Annexure XII. Bid submitted without valid authorization certificate will be summarily rejected. Authorization certificate from OEM is essential for all the items of supply under scope of work.</p>	<ul style="list-style-type: none"> • Latest Authorization letter from OEM to the Bidder authorizing him to do business on OEM's Behalf, as associate or authorized business partner, for OEM's Manufactured Items. • In case of OEM participating as a bidder, a power of attorney by the company's Director or the authorized signatory to be submitted along with the technical bid. • Copies of work orders and

<p>An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for spares & maintenance facilities during warranty & AMC. The bid shall not be considered responsive in absence of the certificate from the OEM.</p>	<p>Undertaking by the authorized signatory of OEM in favor of the Bidder agency.</p>
<p>The average annual turnover of the bidder from the Laboratory equipment supply quoting for the bid should be Rs. 80,00,000 (Rs. Eighty Lakhs only) during the last three financial years (2015-2016, 2016-2017 & 2017-2018). In this regard, the bidder should submit copies of audited Balance sheets including profit and loss accounts for the last three financial years as above. The agency should have a profit for all 3 years. A registered CA's certificate indicating Laboratory equipment supply turnover amount for the relevant period also is accompanied.</p>	<p>Certificate from the Chartered Accountant and copy of a audited balance sheets/P&L Accounts</p>
<p>The Bidder must have successfully executed at least one order of supply of Laboratory equipment to Govt./PSU's/Autonomous bodies/Govt. Institutions such as IIT's/NIT's/IIIT's/Central Universities/ State Universities during last three Financial years for which necessary supporting documents have to be enclosed.</p>	<p>Copies of work orders and completion certificates/satisfactory certificate issued by Govt./PSU's/Autonomous bodies/Govt. Institutions such as IIT's/NIT's/IIIT's/Central Universities/ State Universities in last three financial years.</p>
<p>The Bidders should indicate at least Four numbers of technically Qualified professional having experience for not less than three years for installation & Maintenance support.</p>	<p>List of technical qualified Professionals duly self-certified by the bidder along with the professional certificate.</p>

Notwithstanding anything stated above, the Consignee reserves the right to assess bidder's capability and capacity to perform the contract, should circumstances warrant such an assessment in the overall interest of the I.K. Gujral Punjab Technical University, Kapurthala (Punjab).

3. Digital Signature Certificates

For integrity of data and authenticity/non-repudiation of electronic records, and to be compliant with IT Act 2000, it is necessary for each user to have a Digital Signature Certificate (DSC). Also referred to as Digital Signature Certificate (DSC), of Class 3, issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer <http://www.cca.gov.in>].

4. Registration

For participating in the above e-tendering process, the bidder shall have to get them registered on <https://eproc.punjab.gov.in> and get User ID and Password. Class 3 digital signature is mandatory to participate in the e-tendering process

5. Preparation/ Submission of Bids

- a) Bidders should take into account any corrigendum published on the tender document before submitting their bids.
- b) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents shall be submitted, the number of documents including the names and content of each of the documents that need to be submitted. Any deviations from these may lead to rejection of the bid.
- c) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/schedule and generally, they can only be in PDF or xls format as required. Bid documents may be scanned with 100 dpi with black and white option.
- d) Bidders should log into the site well in advance for bid submission and complete all formalities of registration (at least two days in advance) so that they/she upload the bid in time i.e. on or before the bid submission time.
- e) Bidder will be responsible for any delay due to any reason.

6. Instructions for Financial Bid/ BOQ

- a) Price to be quoted in the Bid of Quantity (BOQ) according to the instructions provided.
- b) The Bidder can quote for all or any of the Laboratory items/equipment listed in this document.
- c) The rate shall be inclusive of all taxes, octroi, transportation (as per the location), packing, loading and unloading (as designated location), Insurance etc. and nothing shall be paid extra except GST as mentioned in BOQ.
- d) The prices quoted by the bidders shall be fixed for the quantity mentioned for the duration of the contract and shall not be subject to adjustment on any account. University reserves the right to increase/decrease the quantity.
- e) The changes displayed in the corrigendum/addendum to the bid documents, particularly with the BOQ should be applicable to the bid submission.

7. Evaluation of Bids

- a) A committee of I.K. Gujral Punjab Technical University, Kapurthala (Punjab) will evaluate the bids of all the bidders, both technically and financially.

- b) Conditional bids shall be summarily rejected.
- c) The Technical bids shall be evaluated as per the following:
- i. Compliance to eligibility criteria: Compliance to the eligibility criteria specified in section “Minimum Eligibility Criteria/ Qualification for bidding” of this tender document. Non-compliance of ANY eligibility criteria would result in disqualification of the bid.
 - ii. Compliance to the equipment specifications specified in this tender: The bids found eligible according to the eligibility criteria would then be checked for compliance to the equipment specifications mentioned in tender document. Non-compliance of any required specification would result in disqualification of the bid.
- d) The Financial Bids of only the technically qualified bidders would be opened. The date and time of the opening of the Financial Bids are mentioned in Chapter I and if there is **any change of date and time, the same shall be uploaded on <https://eproc.punjab.gov.in> and/or on the university website www.ptu.ac.in**. No separate advertisement will be given in the newspaper. The bid shall be evaluated on the total value (inclusive of GST and AMC) of independent item/equipment. The bidder of the lowest commercial bid would be awarded the contract.

Note:

The Bid shall be typed in English and signed by the Bidder or a person duly authorized to bind the Bidder to the Contract. The person(s) signing the Bid shall initial all pages of the Bids.

Where ever any document has been issued in vernacular language, its translated copy in English from the competent authority is also required to be uploaded.

CHAPTER-V INSTRUCTIONSTOBIDDERS

- 1. Duedate**
The e-tender bidshavetobeuploadedbytheduedate.Theoffersreceivedaftertheduedateandtimewillnotbeconsidered.
- 2. EMD**
Details in Annexure XIII.
- 3. Fee**
Thetenderersshouldsubmitthecostoftenderdocument,processingfeeandEMDthroughonline mode of payment (<https://eproc.punjab.gov.in>).
- 4. RefundofEMD**
 - a) No interest will be paid on EMD amount.
 - b) TheEMDwillbereturnedtounsuccessfulTendereronlyaftertheTenderisfinalized.
 - c) Earnestmoneywillbeforfeitedifthebidderunilaterallywithdrawstheoffer,orunilaterallyamends,impairsorrescindstheofferwithintheperiodofitsvalidity.
 - d) InCaseofSuccessfulBidder,theEMDshallberefundedaftersubmissionof10%PerformanceSecurityfromascheduledbankoperatinginIndia.
- 5. Acceptance/Rejectionofbids**

I.K. Gujral Punjab Technical University, Kapurthala (Punjab)reservestherighttorejectanyorallofferwithoutassigninganyreason.

I.K. Gujral Punjab Technical University, Kapurthala (Punjab)basedontherequirementwithoutassigninganyreasontotheBiddermaysplitwork/Scope/Bidofferinstagesorinpartsaccordingtotheneedofworkforeaseofexecutionofwork.

I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)reservesrighttotakedecisionaccordingtorequirementandnoclaimonwhatsoevergroundshall beentertainedfromthebidder.
- 6. PerformanceSecurity**
ThesuccessfulbiddersshouldberequiredtodepositPerformanceSecurityequivalentto10%ofcost of equipment/instrument mentioned in the supply orderto I.K. Gujral Punjab Technical University, Kapurthala (Punjab)within15daysfromthedateofreceiptofPurchase/supplyOrder.ThePerformanceSecurityshouldbeissuedbyanationalized/scheduledbankinfavourof"**Registrar, I.K. Gujral Punjab Technical University, Kapurthala (Punjab)**"tobevalidforaperiodof90daysbeyondthedateofcompletionofwarrantyperiod.

7. RiskPurchaseClause

In event of failure of supply of the item/equipment within the stipulated delivery schedule, the consignee has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.

8. PackingInstructions

Each package will be marked on three sides with proper paint/indelible ink, the following:

- a) Item Nomenclature
- b) Supply Order/Contract No
- c) Country of Origin of Goods
- d) Supplier's Name and Address
- e) Consignee/Purchaser details
- f) Packing list reference number

All packings should be strong enough to withstand rough handling during loading, unloading and transporting. Fragile articles should be packed with special precaution and should bear the marking like Fragile, handle with care, This side up etc. All delicate surfaces of equipment/goods should be carefully protected and painted with protective paint/compound and wrapped to prevent rusting and damage.

Attachments and spare parts and all small pieces should be packed with adequate protections and wherever possible should be sent along with the major items. Each item should be tagged so as to identify it with the main equipment and part number and reference numbers should be indicated.

All protection and threaded fittings should be suitably protected and covers should block the openings.

9. UnloadingandUnpacking

Unless specified otherwise in the purchase order, Unloading and storage of the same at the designated places should be undertaken by the supplier. The Unpacking of the materials should also be arranged by Supplier.

10. DeliveryandDocuments

Delivery of the goods should be made within a **maximum of 45 days** from the date of placement of purchase/supply order. The successful bidder to provide absolute supply schedule within 7 days from the receipt of Purchase Order. Within 24 hours of dispatch, the suppliers should notify the consignee and the insurance company by cable/telex/fax/email the full details of the shipment including contract number, railway receipt number etc. and date, description of goods, quantity, name of the consignee, invoice etc. Till the consignee/purchaser takes over/receives the equipment/items, the suppliers should be responsible to keep the same in safe custody and the charges (if any) to be borne by the supplier. The suppliers should mail the following documents to the consignee with a copy to the insurance company:

- a) 4 Copies of the Supplier invoices showing contract number, goods' description, quantity unit price, total amount;
- b) Acknowledgment of receipt of goods from the consignee(s) by the transporter;

- c) Insurance Certificate if applicable;
- d) Manufacturer's/Supplier's warranty certificate;
- e) Inspection Certificate issued by the nominated inspection agency, if any
- f) Supplier's factory inspection report; and
- g) Certificate of Origin (if possible by the beneficiary);
- h) Two copies of the packing list identifying the contents of each package.

The above documents should be received by the Consignee before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

11. Delayed delivery

If the delivery is not made within the due date for any reason, the Consignee will have the right to impose penalty @ 1% per week and the maximum deduction is 10% of the contract value/price. Once the maximum is reached, I.K. Gujral Punjab Technical University, Kapurthala (Punjab) has the right to terminate the contract/ cancellation of purchase order without any liability to cancellation charges and encash the submitted performance security.

12. Prices

- a) Prices should be inclusive of charges for delivery of equipment at the sites specified in the scope of work section of this tender document, and are to be quoted in Indian Rupees only.
- b) The prices should be inclusive of current GST, excise duty, freight, insurance, etc. Further if there is any change in the GST by Govt. of India then the same shall be applicable on presentation of the proof. No change due to devaluation of Rupee, shall be entertained.
- c) The prices must be quoted in the standard Performa
(BOQ) given in Financial Bid failing which the Bid would be treated as unresponsive.

13. Progress of Supply

- a) Wherever applicable, suppliers should regularly intimate progress of supply, in writing, to the consignee as under:
- b) Quantity offered for inspection and date;
- c) Quantity accepted/rejected by inspecting agency and date;
- d) Quantity dispatched/delivered to consignees and date;
- e) Quantity where incidental services have been satisfactorily completed with date;
- f) Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Consignee with date;
- g) Date of completion of entire Contract including incidental services, if any; and
- h) Date of receipt of entire repayments under the Contract (In case of stage-wise inspection, details required should also be specified).

14. Inspection and Tests

Inspection and tests prior to shipment of Goods and at final acceptance are as follows:

- a) After the goods are manufactured and assembled, inspection and testing of the goods should be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer's test certificate with data sheets should be issued to this effect and submitted along with the delivery documents. Officer/faculty from the university may inspect the material and testing if required at vendor's premise. The location where the inspection is required to be conducted should be clearly indicated by the bidder after confirmation of the order.
- b) The acceptance test will be conducted by the Consignee/Purchaser, or others such person nominated by the Consignee/Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble-free operation and ascertaining conformity with the ordered specifications and quality. There should not be any additional charges for carrying out acceptance test. Normal function, partial or complete failure of any part of the equipment is expected to occur. The Supplier should maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Consignee, the successful completion of the test specified.
- c) In the event of the ordered item failing to pass the acceptance test, a period not exceeding one week will be given to rectify the defects and clear the acceptance test, failing which the Consignee reserves the right to get the equipment replaced by the Supplier at no extra cost to the Consignee.
- d) Successful conduct and conclusion of the acceptance test for the installed goods and equipment should also be the responsibility and at the cost of the Supplier.
- e) The time taken for pre-dispatch inspection is inclusive of the scheduled completion time of the delivery & installation of the equipment. Only the equipment certified by the Consignee/Purchaser should be dispatched to the consignee.
- f) The Supplier/manufacturers should display sample item for verification of the equipment by Consignee/purchaser before technical committee (if required)/production of the same in bulk if required.

15. Defective Equipment

- a. If any of the equipments supplied by the Tenderer is found to be substandard, refurbished, unmerchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipments should be refunded by the Tenderer with 18% interest if such payments for such equipments have already been made.
- b. All damaged or unapproved goods should be returned at suppliers cost and risk and the incidental expenses incurred thereon should be recovered from the supplier. Defective part equipment, if found before installation and/or during warranty period, should be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab) should consider "Banning" the supplier.

16. Right to Use Defective Goods

- a) If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proved to be unsatisfactory, the Consignee should have the right to continue to operate or use such goods until rectification of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Consignee's operation.
- b) Replacement of Goods broken, damaged
or short: In the event of any material or part thereof found broken or damaged or received short during transit or during installation or Commissioning or testing at site, before commissioning in service the suppliers should replace the same free of cost. However, I.K. Gujral Punjab Technical University, Kapurthala will recover an amount equivalent to the cost of such damaged/broken/short supplied materials and will repay when a actual replacement is given.
- c) Substitution and Wrong Supplies: Unauthorized substitution or materials delivered in error of wrong description or quality or supplied in excess quantity or rejected goods should be returned to the supplier at their own cost and risk.

17. Supplier Integrity

The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.

18. Installation & Demonstration

The supplier is required to undertake the installation and demonstration of the equipment within 15 days of the arrival of materials at I.K. Gujral Punjab Technical University (Main Campus) and site of installation, otherwise the penalty clause will be the same as per the supply of materials. The successful agency has to arrange for technician, other manpower, tool set for installation and commissioning of the goods supplied by the agency.

In case of any mishap happening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. I.K. Gujral Punjab Technical University Main Campus will not be liable to any type of losses in any form.

19. Training of Personnel:

- a) The Supplier is required to provide training to the designated Consignee's/Purchaser's technical and end user personnel to enable them to effectively operate the total equipment.
- b) The suppliers should be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the I.K. Gujral Punjab Technical University Main campus premises, immediately after completing the installation of the equipment for a

minimum period of one week at the supplier's cost.

- c) In case the cost of equipment is more than Rs. 25 lakh, the suppliers should be required to provide a technical person for assistance for a period of one month for assistance at I.K. Gujral Punjab Technical University Main campus. In case the technical personnel is not provided, an amount of Rs. 50,000/- shall be deducted from the suppliers bill.

20. Insurance

- a) For delivery of goods at the Purchaser/Consignee premises, the insurance should be obtained by the Supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes. The insurance should be valid for a period of not less than 3 months after installation and commissioning. If orders placed on CIF/CIP basis, the insurance should be upto I.K. Gujral Punjab Technical University (Main campus) accordingly.
- b) The Suppliers should make all arrangements towards safe and completed delivery at I.K. Gujral Punjab Technical University (main campus), Kapurthala, Punjab. Such responsibility on part of the supplier will include taking care of insurance, freight, octroi, state level permit etc. as applicable.
- c) The suppliers should also take care of transit insurance, comprehensive insurance or any other insurance which have direct bearing on the delivery of the items/equipment at I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab).
- d) It is the total responsibility of supplier to complete all formalities to transit of goods from the place of dispatch to I.K. Gujral Punjab Technical University main campus, Kapurthala (Punjab).
- e) The bidders should ensure that no person can engage in the business of a common carrier unless she has granted a certificate of registration to do so for supply of items at PTU, Kapurthala (Punjab).
- f) The transportation of goods through unregistered common carrier is illegal. The bidders should ensure to comply the carriage by latest Road Act and any other relevant.
- g) The supplier will keep I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab) informed about various stages of deliveries & installation.

21. Incidental services:

The incidental services also include:

- a) Furnishing of 01 set of detailed operations & maintenance manual.
- b) Arranging the shifting/moving of the item to their location of final installation within I.K. Gujral Punjab Technical University (main campus) premises at the cost of Supplier through their Indian representatives.

22. Warranty and Maintenance:

- a) Comprehensive Warranty should be for a minimum period of one (01) year from date of successful instal

lution of Goods at the I.K. Gujral Punjab Technical University Main Campus. The Suppliers should, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Suppliers should at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as shall be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. The warranty should be comprehensive on site/I.K. Gujral Punjab Technical University Main Campus. Suppliers should give a written information (about the Engineers/technical representative name and cell numbers) before handing over of the Goods to the Consignee and to the end client's nominated representative/sto attend the issues related to the warranty of the goods supplied under the contract.

- b) The Consignee/Purchaser should promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the suppliers should within 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Suppliers should take over the replaced parts/goods at the time of their replacement. No claim whatsoever should lie on the Consignee for the replaced parts/goods thereafter. The period for correction of defects in the warranty period is 02 days. If the supplier having been notified fails to remedy the defects within 02 days, the consignee/purchaser should proceed to take such remedial action as should be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the consignee should have against the supplier under the contract.
- c) The comprehensive annual maintenance charges (AMC) for a period of two years immediate after completion of one year warranty period should also be mentioned.

23. Governing Language

The contract should be written in English language. English language version of the Contract should govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, should be written in the same language.

24. Notices

- a) Any notice given by one party to the other pursuant to this contract/orders should be sent to the other party in writing or FAX or email and confirmed in writing to the other party's address.
- b) A notice should be effective when delivered or on the notice's effective date, whichever is later.
- c) For the purpose of all notices, the following should be the address:

Registrar, I.K. Gujral Punjab Technical University, Kapurthala
Punjab- 144603
Email: registrar@ptu.ac.in

25. Taxes

Suppliers should be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred

until delivery of the contracted Goods to the Consignee.

26. Duties (Custom & Excise)

I.K. Gujral Punjab Technical University is exempted from paying Custom/excise Duty (for research and development purpose only) and necessary "Custom/Excise Duty Exemption Certificate" can be issued after providing following information and Custom Duty Exemption Certificate will be issued to the shipment in the name of the Institute, no certificate will be issued to third party:

- a) Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists)
- b) Forwarder details i.e. Name, Contact No., etc.

The following information is required to be provided.

- a) Quotation with details of Basic Price, Rate, Tax & Amount on which Excise Duty is applicable
- b) Supply Order Copy
- c) Proforma-Invoice Copy.
- d) Any other information as required.

27. Agency Commission (if applicable):

Agency commission if any will be paid to the Indian agent in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in case of Nil commission. The tenderers should indicate the percentage of agency commission to be paid to the Indian agent.

28. Payment:

a) Payment of Laboratory equipment (Indigenous Items)

- i) 80% payments shall be made against delivery of Laboratory equipment in good conditions at consignee/purchaser place and to the entire satisfaction of the consignee.
- ii) 10% on successful installation and commissioning of equipment.
- iii) 10% after one month of successful handing over of Laboratory equipment.

b) Payment for Laboratory equipment supplied from abroad (Imported Items)

For imported items Payment will be made through irrevocable Letter of Credit (LC). Letter of Credit (LC) will be established in favour of foreign Supplier/OEM after the submission of performance security. The letter of credit (LC) will be established on the exchange rates as applicable on the date of establishment. For Imports, LC will be opened for 100% Free on Board (FOB)/ Cost, Insurance and Freight (CIF) value. I.K. Gujral Punjab Technical University may ask for an equivalent value bank Guaranteed duly acceptable to the Nationalized/Scheduled banks in India. The bidders should account for all such expenditures during offering their price. Nothing extra shall be paid beyond the quoted rates by the Bidder.

c) Onshipment

80%oftheLCamountshouldbereleasedonpresentationofcompleteandclearshippingdocuments.

d) OnInstallationandcommissioning

20%oftheLCamountshallbereleasedaftertheinstallationanddemonstrationoftheequipmentatthe I.K. Gujral Punjab Technical University, Kapurthala of installation in faultless working condition for period of 60 days from the date of the satisfactory installation and subject to the production of unconditional performance bank guarantee as specified in tender terms and conditions

e) PaymentofAMC

AMC payments shall be made on quarterly basis after end of the quarter.

29. Userlist

Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items have been supplied must be provided.

30. ManualsandDrawings

- a) Before the goods and equipment are taken over by the Consignee, the Suppliers should supply operation and maintenance manuals. These should be in such details as will enable the Consignee to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- b) The Manuals should be in the ruling language (English) in such form and numbers as stated in the contract.
- c) Unless and otherwise agreed, the good equipments should not be considered to be completed for the purpose of taking over until such manuals and drawings have been supplied to the Consignee.

31. ApplicationSpecialist

The Tenderers should mention in the Techno-Commercial bid the availability and names of Application Specialist and Service Engineers in the nearest regional office.

32. SitePreparation:-

- a) The suppliers should inform to the Consignee about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the I.K. Gujral Punjab Technical University should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.
- b) The suppliers should visit I.K. Gujral Punjab Technical University and see the site where the equipment is to be installed and should offer his advice and render assistance to the I.K. Gujral Punjab Technical University in the preparation of the site and other pre-installation requirements.
- c) I.K. Gujral Punjab Technical University (Main campus) may provide electricity and water for installation of equipment.

33. Spare Parts

The Suppliers should be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

- a) Such spare parts as the Consignee should elect to purchase from the Supplier, providing that this selection should not relieve the Supplier of any warranty obligations under the Contract; and
- b) In the event of termination of production of the spare parts: Advance notification to the Consignee of the pending termination, insufficient time to permit the Consignee to procure needed requirements; and following such termination, furnishing at no cost to the Consignee, the blueprints, drawings and specifications of the spare parts, if requested.
- c) Suppliers should carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belt set etc. Other spare parts and components should be supplied as promptly as possible but in any case within six months of placement of order.

34. Product Life

The supplied _____ model _____ of _____ the equipment offered should strictly conform to the specifications given in the product literature and the model should be supported for a minimum period of 5 years including warranty period. The Models proposed/ marked for withdrawal from the market and the models under quality testing should not be offered. In addition to the above, if any additional/enhanced configuration is suggested in view of technological changes, it may be furnished as an optional feature with/without cost duly explaining the additional utility of the offered model in both the technical offer document as well as Commercial Offer document. However, the basic quotes should be confined only to the configuration/model offered for.

35. Termination for Default

The Consignee should, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Consignee; or
- b) If the Supplier fails to perform any other obligation(s) under the Contract.
- c) If the Supplier, in the judgment of the Consignee has engaged in corrupt or fraudulent practices etc. in competing for or in executing the Contract.
- d) For the purpose of this Clause:
 - **“Corrupt practice”** means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
 - **“Fraudulent practice”** means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among B

idders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;”

- In the event the Consignee terminates the Contract in whole or in part, the Consignee should procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Suppliers should be liable to the Consignee for any excess costs for such similar Goods or Services. However, the Suppliers should continue the performance of the Contract to the extent not terminated.

36. Disputes and Jurisdiction:

Resolution of Disputes: The dispute resolution mechanism to be applied pursuant should be as follows:

- a) In case of Dispute or difference arising between the Consignee/purchaser and a bidder / supplier relating to any matter arising out of or connected with this agreement, such disputes or differences should be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules thereunder and any statutory modifications or re-enactments thereof should apply to the arbitration proceedings.
- b) The disputes should be referred to the Competent Authority, I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab) and if he/she is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed should be final, conclusive and binding on all parties to this order.
- c) In the case of a dispute between the consignee and a Foreign Supplier, the disputes should be settled by arbitration in accordance with provision of sub-clause (i) & (ii) above. But if this is not acceptable to the supplier then the disputes should be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.
- d) The venue of the arbitrations should be the place from where the order is issued.

37. Applicable Law

The Contract should be interpreted in accordance with the laws of the Union of India. Any legal dispute arising out of any breach of contract pertaining to this tenders should be settled in the court of competent jurisdiction located at Kapurthala.

38. Technical Compliance certificate:

This certificate must be provided indicating conformity to the technical specifications. (Annexure I)

39. Award of Contract:

- a) I.K. Gujral Punjab Technical University, Kapurthala, Punjab reserves the right to accept or reject any proposal and to annul the bidding process and reject all proposals at any time prior to award of contract, without thereby incurring any liability to the Bidders. In case of annulment, all proposals submitted and specifically, proposal securities shall be promptly returned to the Bidder.

- b) I.K. Gujral Punjab Technical University, Kapurthala, Punjab has the right to review at any time prior to award of contract that the qualification criteria, as specified in tender document are still being met by the Bidder whose offer has been determined as first rank. A proposal shall be rejected if the qualification criteria, as specified in tender document are no longer met by the Bidder whose offer has been determined as first rank.

40. Negotiations:

Normally Negotiations are not allowed. However, if required, negotiations will be held at IKGPTU, Kapurthala. Representatives conducting negotiations on behalf of the Bidder must have written authority to negotiate technical, financial and other terms and conclude a legally binding agreement.

41. Rates in Figures

a) Rates Quoted by the Bidder in tender in figures shall be accurately filled.

b) In the case of any tender where unit rate of any item/items appear unrealistic, such tender will be considered as unbalanced and in case the tender is unable to provide satisfactory explanations such a tender is liable to be disqualified and rejected.

42. Acknowledgement:

It is hereby acknowledged that we have gone through all the conditions mentioned above and we agree to abide by them.

CHAPTER VI

TECHNICAL SPECIFICATION/COMPLIANCE SHEET**AUTOMOBILE LAB**

S. No.	Name of equipment	Specifications	Quantity	Specifications (offered)	Whether comply (Yes/No)
1	Cut-Section Model of a Sliding Mesh Gear Box	<ul style="list-style-type: none"> • A Motorized sliding mesh gear box suitably Sectioned to visualize the working of gears, their input shaft, and main shaft and lay shaft, 4 Forward & 1 Reverse Mechanism. • An Electric motor (0.5 HP, 440V) should provide power to driving shaft at slow speed and working of gear box can be shown for power transmission. • Internal components i.e. all the Gears should be Hard Chrome Plated. • The whole arrangement is to be mounted on a sturdy Iron Frame with pipe structure 14 GUAGE, duly spray painted. • The robust rubber wheels, ball bearing type, should be fitted on the stand to make it moving and rotating type. • All the parts of the Gear Box and the frame are to be spray painted with attractive colors for better understanding. • The Operating Manual with parts catalogue, the specification board made of Vinyl to be displayed at the front side of the Model and a laminated Chart on wooden frame showing exploded Assembly Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment. 	01		
2	Cut-Section Model of Synchronesh Gear Box	<ul style="list-style-type: none"> • A Motorized Synchronesh Gear box suitably Sectioned to visualize the working of gears and synchronized unit, their main shaft, lay shaft, 5 Forward & 1 Reverse gear mechanism. • An Electric Motor (0.5HP, 440 V) should provide power to driving shaft at slow speed & working of gear box can be shown for power transmission. • Internal components i.e. all the Gears 	01		

		<p>should be Hard Chrome Plated.</p> <ul style="list-style-type: none"> •The whole arrangement is to be mounted on a sturdy Iron Frame with pipe structure 14 GUAGE, duly spray painted. •The robust rubber wheels, ball bearing type, should be fitted on the stand to make it moving and rotating type. •All the parts of the Gear Box and the frame are to be spray painted with attractive colors for better understanding. •The Operating Manual with parts catalogue, the specification board made of Vinyl to be displayed at the front side of the Model and a laminated Chart on wooden frame showing exploded Assembly Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment. 			
3	Cut-Section Model of Differential assembly (LMV)	<ul style="list-style-type: none"> • A Motorized Hypoid drive Differential Assembly suitably Sectioned to visualize the working of Crown Wheel & Pinion Assembly, Sun & Star Gears. • A suitable Electrical Motor should provide power to driving shaft through reduction gearbox to understand working of differential Assembly. • Internal components i.e. all the Gears should be Hard Chrome Plated. • The whole arrangement is to be mounted on a sturdy Iron Frame with pipe structure 14 GUAGE, duly spray painted. • The robust rubber wheels, ball bearing type, should be fitted on the stand to make it moving and rotating type. • All the parts of the differential assembly and the frame are to be spray painted with attractive colors for better understanding. • The Operating Manual with parts catalogue, the specification board made of Vinyl to be displayed at the front side of the Model and a laminated Chart on wooden frame showing exploded Assembly Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment 	01		

4	<p>MODEL OF COOLING SYSTEM OF AN AUTOMOBILE (With Actual Parts)</p>	<ul style="list-style-type: none"> • A non working model of complete cooling system of a car with all actual brand new parts assembled properly for demonstration. • The whole arrangement is to be mounted on a sturdy Iron Frame with pipe structure 14 GUAGE, duly spray painted. • The robust rubber wheels, ball bearing type, should be fitted on the stand to make it moving and rotating type. • All the parts of the differential assembly and the frame are to be spray painted with attractive colors for better understanding. • The specification board made of Vinyl to be displayed at the front side of the Model and a laminated Chart on wooden frame showing exploded Assembly Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment. 	01		
5	<p>CUT SECTION OF HYDRAULIC BRAKE SYSTEM</p>	<ul style="list-style-type: none"> • Hydraulic Brake System with all brand new actual parts of LMV completely assembled. • Drum brake assembly (2 Nos) • Disc brake assembly (2 Nos) • Two master cylinder Assembly (one sectioned and one working) • Wheel cylinder, Brake drum, Brake Shoes, callipers etc., suitably sectioned and sturdy Iron Frame with pipe structure 14 GUAGE, duly spray painted. By operating the lever provided, the working procedure of the model can be demonstrated. • All the parts of the differential assembly and the frame are to be spray painted with attractive colors for better understanding. • the specification board made of Vinyl to be displayed at the front side of the Model and a laminated Chart on wooden frame showing exploded Assembly Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment 	01		
6	<p>Working Model of</p>	<ul style="list-style-type: none"> • Demonstration model consisting of actual components used in 	01		

	<p>Conventional Ignition System</p>	<p>Automobiles petrol engines (4 cylinders).</p> <ul style="list-style-type: none"> • Visualization of Spark & Firing order. • Electric motor for driving the distributor. In order to show the spark generation & firing order, the distributor is driven by a low speed electric motor. • The whole arrangement is to be mounted on a sturdy Iron Frame with pipe structure 14 GAUGE, duly spray painted. • All the parts of the differential assembly and the frame are to be spray painted with attractive colors for better understanding. • The Operating Manual with parts catalogue, the specification board made of Vinyl to be displayed at the front side of the Model and a laminated Chart on wooden frame showing exploded Assembly Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment <p>System Components</p> <ul style="list-style-type: none"> • Ignition coil • Distributor • Set of Spark Plugs • 12 V DC Power Supply • Electric motor 			
7	<p>Cut Section Model Car Steering System</p>	<ul style="list-style-type: none"> • Type - Worm & Roller Type Steering System • The model should be made out of full size original parts, suitably sectioned 	01		

		<p>and to demonstrate the working of Steering wheel worms, Steering arm, with complete suspension system etc.</p> <ul style="list-style-type: none"> • The Arrangement of Wheels And Axle Connecting To steering system should be done so that the movement of the wheels when rotating the steering wheels can be displayed. • The whole arrangement is to be mounted on a sturdy Iron Frame with pipe structure 14 GUAGE, duly spray painted. • All the parts of the assembly and the frame are to be spray painted with attractive colors for better understanding. • The specification board made of Vinyl to be displayed at the front side of the Model. • A laminated Chart on wooden frame showing exploded Assembly Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment. • A laminated Chart on wooden frame showing steering geometry angles along with parts name having size 900 mm x 600 mm are to be provided along with the equipment. 			
8	Spark Cleaner & Tester	<ul style="list-style-type: none"> • Type – table top • Two separate chambers for cleaning & testing • Spark plug range – 12,14,18 mm • Cleaning operation – Air and abrasive sand blast • Electrical test – Visualization of spark 	01		

		<p>produced</p> <ul style="list-style-type: none"> • Pressure Regulator is provided for reducing any excess air and releasing pressure in the chamber. • The Operating Manual with parts catalogue and a laminated Chart on wooden frame showing spark plug Drawing with parts name having size 900 mm x 600 mm are to be provided along with the equipment. 			
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CAD/ CAM MACHINERY LAB

S.NO.	Name of Equipment	Technical Specification(required)	Quantity	Specifications (offered)	Whether comply (Yes/No)
1	CNC Lathe Trainer	<p>Machine: 1Bed Type: Flat/ slant 45 Degree</p> <p>2 Keyboard Type: Standard</p> <p>3 Chuck Size: 100 mm (Dia) or better</p> <p>4 Chuck Type: Manual 3 Jaw or better</p> <p>5 Maximum Turning Diameter: 40 - 80 mm</p> <p>6 Maximum Turning Length: 150 – 190 mm</p> <p>7 Center Height: 90 - 150 mm</p> <p>8 Swing over Cross Slide: 80 mm or better</p> <p>9 Swing Over Bed: 180–300 mm</p> <p>10 Distance between Centre: 200 - 300 mm</p> <p>CNC Controller:</p> <p>11 Controller: Sinummerik 828d/840d OR Cut Viewer</p> <p>12 Control System: Siemens industrial Controller</p> <p>13 Operating Software: Sinummerik OR Cut Viewer.</p> <p>Accuracy:</p> <p>14 Positioning: 0.010 mm or better</p> <p>15 Repeatability: +/- 0.005 mm or better</p> <p>16 Resolution: 0.010 mm or better.</p> <p>Spindle:</p> <p>17 Spindle Motor: AC Servo Motor</p> <p>18 Spindle Motor Capacity: 3.7 KW or better</p> <p>19 Spindle RPM: 150 to 4000 RPM with VFD</p> <p>20 Spindle Nose Taper: MT 3/ A2-3</p> <p>21 Hole through Spindle: 20 mm</p> <p>22 Rapid Travel: 5000 mm/min</p> <p>Axes:</p> <p>23 Axis Motor and Drive: Servo Motor with Drives</p> <p>24 X Axis Travel: 190 mm or better</p> <p>25 Z Axis Travel: 210 mm or better</p> <p>26 Ball Screw X / Z: Ø16 x 5 – C3 Class</p> <p>27 Programmable Feed Rate: 0 to 5000</p>	1		

		<p>mm/min</p> <p>Turret and Tooling:</p> <p>28 Turret Type: 8 Station Automatic or better 29 Number of Stations: 8 or better 30 Tool Cross Section: 12 mm x 12 mm or better 31 Boring Bar Size: 16 mm or better.</p> <p>Tailstock:</p> <p>32 Tailstock Base Stroke : 120 - 170 mm 33 Tailstock Quill Stroke: 25 – 40 mm 34 Tailstock Actuation: Manual</p> <p>Miscellaneous:</p> <p>35 Lubrication: Auto 36 Coolant: Auto 37 FMS/CIM Compatibility: Should be provided 38 Real Time Tool Path Simulation: Should be provided 39 Dimension in mm (LxWxH): 1500 × 1400 × 1000 mm (min.) or better</p> <p>40 Power Supply Should be operatable on 415V, Three Phase, AC Power supply.</p> <p>41 CNC Digital course ware with LMS.</p> <p>42 Simulation software compatible to sinummeric 828d/840d or cut-viewer with CNC Design.</p>			
2	CNC MILL TRAINER	<p>Technical specifications:</p> <p>1 Axis Motor and Drive Servo Motor with Drives 2 X Axis: 225 mm or better. 3 Y Axis: 150 mm or better 4 Z Axis: 200 mm or better 5 Table top to Spindle Nose distance: 90 - 300 mm or better 6 Spindle to column distance: 200 mm or better 7 Feed Rate: 0 to 5000 mm/min 8 Rapid Travel: 5000 mm/min</p> <p>Table</p> <p>9 Table Size: 450 × 180 mm or better 10 T Slot: 3 × 10 × 50 or better 11 Load on Table: 50 Kg or better</p> <p>Spindle</p> <p>12 Spindle Motor Capacity: 1.5 HP or better</p>	1		

		13 Spindle Nose Taper: ISO 30 / BT 30 14 Programmable Spindle RPM: 150 to 4000 RPM CNC Controller 15 Controller: Sinummerik 828d/840d OR Cut Viewer 16 Control System: Siemens industrial Controller 17 Operating Software: Sinummerik OR Cut Viewer Accuracy: 18 Positioning: 0.010 mm or better 19 Repeatability: +/- 0.005 mm or better 20 Resolution: 0.010 mm or better Tool Changer (ATC) 21 Tool Changer: Automatic Tool Changer 22 No. of Tools: 8 or better 23 Maximum Tool Length: 40 mm or better 24 Maximum Tool Dia: 16 mm or better 25 Type of ATC: Hydraulic Machine 26 Interpolation: Linear / Circular / Parabolic 27 Lubrication: Automatic. 28 Coolant: Automatic 29 FMS/CIM Compatibility: Should be provided 30 Real Time tool path simulation : Should be provided 31 Pocket & Helical Milling: Should be provided with standard codes 32 Vice Type: Manual 33 Dimension in mm (LxWxH): 2000 x 1200 x 1000 mm or better 34 Power Supply: Should be operatable on 415V, Three Phase, AC Power supply. 35 CNC Digital course ware with LMS 36 Simulation software compatible to sinummeric 828d/840d or cut-viewer with CNC Design.			
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COMPUTER GRAPHICS (CG) LAB

S.NO.	Name of Equipment	Technical Specification(required)	Quantity	Specifications (offered)	Whether comply (Yes/No)
1	SolidWorks Education Edition 2018-19	<u>SolidWorks 3D CAD (Mechanical Design)</u> <input type="checkbox"/> Part modelling <input type="checkbox"/> Surface modelling <input type="checkbox"/> Assembly modelling <input type="checkbox"/> Sheet metal <input type="checkbox"/> Weldments <input type="checkbox"/> Routing	No. of licenses (30)		

	<input type="checkbox"/> Mold design <input type="checkbox"/> Photoview 360 <input type="checkbox"/> SolidWorks toolbox <input type="checkbox"/> SolidWorks animator <input type="checkbox"/> eDrawings Professional <input type="checkbox"/> FeatureWorks <input type="checkbox"/> PDMWorks <input type="checkbox"/> SolidWorks Utilities <u>SolidWorks Motion Simulation</u> <input type="checkbox"/> Simulates the mechanical operations <input type="checkbox"/> Power consumption <input type="checkbox"/> Interference between moving parts <input type="checkbox"/> <u>SolidWorks Flow Simulation (CFD with HVAC & ECS)</u> <input type="checkbox"/> Laminar and turbulent Flows <input type="checkbox"/> Internal and External flow <input type="checkbox"/> Compressible and incompressible flows <input type="checkbox"/> Heat transfer <input type="checkbox"/> Mixing of fluids <input type="checkbox"/> Surface to Surface and Solar radiation <input type="checkbox"/> Non Newtonian Liquids <u>SolidWorks Simulation Premium (FEA & FEM)</u> <input type="checkbox"/> Includes Linear Stress <input type="checkbox"/> Displacement <input type="checkbox"/> Parts & Assemblies <input type="checkbox"/> Gap/ contact Analysis <input type="checkbox"/> Thermal Analysis <input type="checkbox"/> Fatigue Analysis <input type="checkbox"/> Drop test <input type="checkbox"/> Optimization <input type="checkbox"/> FEA translators <input type="checkbox"/> Advanced dynamics <input type="checkbox"/> Nonlinear <u>SolidWorks Plastics</u> <input type="checkbox"/> Fill, Pack, Cool, Warp Analysis <input type="checkbox"/> Mesh Improvements <input type="checkbox"/> Nominal Wall thickness advisor <input type="checkbox"/> Symmetry Analysis <input type="checkbox"/> Venting Analysis <u>SolidWorks Sustainability (LCA)</u> <input type="checkbox"/> Intuitive LCA tool <input type="checkbox"/> Environmental impact Dashboard <input type="checkbox"/> Baseline Measurement <input type="checkbox"/> Find similar material <u>Research License of SOLIDWORKS Standard Qty. - 01</u> <input type="checkbox"/> Eliminate data translation which wastes time and can introduce design errors.			
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		<ul style="list-style-type: none"> <input type="checkbox"/> Create any design, including the most complex parts and extremely large assemblies. <input type="checkbox"/> Create 2D drawings with automated view creation, BOMs, and all the capabilities needed to fully detail your drawings. <input type="checkbox"/> Automatically check for interferences and misalignments before going to manufacturing. Automate design and drawing creation with built-in configurability tools. <input type="checkbox"/> Render and animation capabilities to create images and videos of the designs in action. <input type="checkbox"/> Work directly with non-SOLIDWORKS CAD data and eliminate the need to translate files using SOLIDWORKS 3D Interconnect. <input type="checkbox"/> Save time and reduce rework by checking the manufacturability of your designs and instantly finding interferences before going to manufacturing. <p><u>Research License of SOLIDWORKS</u> <u>Simulation Standard Qty. - 01</u> Designers and engineers can tackle common structural engineering challenges with the Static Study which assumes a linear elastic static formulation of elastic and linear materials, and that all loads and fixtures are static (no variation in time).</p> <ul style="list-style-type: none"> <input type="checkbox"/> With these parameters, users can calculate component stresses, strains, FOS, and displacements. <input type="checkbox"/> The fatigue study estimates the high cycle fatigue life of components subjected to multiple varying loads where the peak stress is below the material yield stress. <input type="checkbox"/> The Trend Tracker and Design Insight Plot enable designers to highlight optimal design changes while they work. <input type="checkbox"/> Time based motion analysis is a rigid body kinematic and dynamic motion tool used to calculate the velocities, accelerations, and movements of an assembly under operational loads. <input type="checkbox"/> In addition, designers and engineers can determine assembly power requirements together with spring and damper effects. 			
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		<input type="checkbox"/> With the motion analysis complete, the component body and connection loads can be included in a linear analysis for a complete structural investigation.			
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FLUID MACHINERY LAB

S.NO.	Name of Equipment	Technical Specification(required)	Quantity	Specifications (offered)	Whether comply (Yes/No)
1	Hydraulic Ram Test Bench	Hydraulic Ram: Supply Head 1.0 m, Delivery Head 4 m Water Circulation: 1 HP Pump Sump Tank: Capacity 140 Ltrs. Overhead Tank: Capacity 50 Ltrs. Air Vessel: Suitable Capacity Flow Measurement: For waste water: Using measuring Tank, 30 Ltrs.; For useful water: Measuring cylinder, 1Ltr. Stop Watch: Electronic Pressure Gauge: Bourdon Type	1		
2	Francis Turbine Test Bench	Output Power: 1 kW Discharge: 1000LPM Supply Head: 15m Speed: 2200RPM Runner: Curved Vane Type Dynamometer: Rope Brake Drum Type, Drum Diameter 200 mm For Load Measurement: Spring Balance Tabular Type For Pressure Measurement: Pressure and Vacuum Gauges Dead Weight: 1 Set Sump Tank: Capacity 200 Ltrs. Water Circulation: Centrifugal pump, 5HP, 3 Phase Mechanical seal Discharge Measurement: Venturimeter with Differential pressure manometer Tank: Stainless Steel	1		
3	Kaplan Turbine Test Rig	Output Power: 1 kW Discharge: 1000 LPM Supply Head: 5 m Speed: 1500 RPM Dynamometer: Rope Brake Drum Type Sump Tank: Suitable Capacity Water Circulation: Centrifugal pump, 7.5 HP, 3 Phase Discharge Measurement: Veturimeter with Differential pressure manometer Tank: Stainless Steel	1		

4	Reciprocating Pump Test Bench – Variable Speeds	Pump: Double acting, single cylinder, capacity 1 HP, speed 250 RPM, Head 5 m Medium Flow: Clear Water Drive: 1 HP DC Motor Speed Control: Thyristor Controlled Sump Tank: Capacity 50 Ltrs Measurement Tank: Capacity 25 Ltrs Stop Watch: Electronic Pressure Gauge: Bourdon Type Tank: Stainless Steel	1		
5	Pelton Wheel Turbine Test Bench with Data Logging Facility	Output Power: 1 kW Discharge: 350 LPM Supply Head: 30 m Speed: 1000 RPM Impeller: Bucket Type, Material: Nylon-66 Nozzle and Spear: Material Stainless Steel Dynamometer: Rope Brake Drum Type, Drum diameter 200 mm Sump Tank: Capacity 200 Ltrs. Water Circulation: Centrifugal Pump, 5 HP, 3 Phase Discharge Measurement: Venturimeter/Pitot tube with Differential Pressure Transmitter or electro-magnetic flow sensor Pressure Measurement: Pressure Transmitter, Output 4-20 mA Load Measurement: Load cell with Transmitter	1		
6	Centrifugal Pump Test Bench with Variable Speeds	Pump: Capacity 1 HP, speed 2800 RPM, Head 12 m Medium Flow: Clear Water Drive: 1 HP Motor Speed Control: Thyristor Controlled Sump Tank: Capacity 110 Ltrs Measurement Tank: Capacity 70 Ltrs Stop Watch: Electronic Pressure Gauge: Bourdon Type Tank: Stainless Steel	1		
7	Centrifugal Blower Test Bench (Fixed speed with AC Motor)	Drive: AC Motor, 1 HP Blower: Centrifugal, Forced Draft Type Impeller: 3 Nos., Interchangeable (Forward Curved Vane, Backward Curved Vane, Radial Curved Vane) Pitot Tube with Manometer: For Static, Dynamic and Differential Pressure Measurement Control Valve: Iris Valve Stop Watch: Electronic	1		

HEAT TRANSFER LAB

S. No.	Name of equipment	Specifications	Quantity	Specifications (offered)	Whether comply (Yes/No)
1.	Heat Transfer set up to plot the temperature profile and to determine fin effectiveness and fin efficiency for i) A rod fin when its tip surface is superimposed by different boundary condition like. a) Insulated tip b) Cooled tip c) Temperature controlled tip ii) Heat transfer through straight transfer fins iii) Circumferential fins of rectangular/triangular section	<p>Rod Fins: 3 Nos. with different end condition like- insulated tip, cooled tip and temperature tip.</p> <p>Straight Transfers fins: 2 Nos. of different sizes.</p> <p>Circumferential fins: 2 Nos. One each of Rectangular & Triangular section.</p> <p>Control panel comprising of : Dimmerstat: 0-230 V, 2 A Digital Temperature Indicator : 0-300°C, with multi-channel switch Digital temperature controller: for temperature controlled rod fin tip.</p> <p>Temperature Sensors: RTD PT-100 type. With standard make On/Off switch, Mains Indicator etc.</p> <ul style="list-style-type: none"> An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. along with the Apparatus. The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 	1		
2.	Heat Transfer set-up to study the radiation heat transfer in black plate and test plate. <ul style="list-style-type: none"> Determination of the Emissivity of a test plate. To compare the heat input of test plate with black plate. To study the variation of 	<p>Test plate & black plate : Dia. 160 mm</p> <p>Heater : Nichrome Wire. (for test plate & black plate)</p> <p>Temperature Sensors : RTD PT-100 type</p> <ul style="list-style-type: none"> Control panel comprising of Digital Voltmeter 0-300 Volt, Digital , Ammeter 0-2 Amps with DPDT Selector switches, Variac 0-230 V, 2 Amp, (2 Nos.) for test plate and black plate and 	1		

S. No.	Name of equipment	Specifications	Quantity	Specifications (offered)	Whether comply (Yes/No)
	emissivity of test plate with absolute temperature.	<p>Digital Temperature Indicator switch (0-200°C) with multi-channel, with standard make On/off switch, Mains Indicator etc.</p> <ul style="list-style-type: none"> • Cabinet to accommodate the slab assembly with front window of acrylic. • An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. along with the Apparatus. • The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 			
3.	Heat transfer setup to determine overall heat transfer coefficient for Film wise & Drop wise condensation of steam on a vertical surface.	<p>Copper tubes : 2 Nos., One with natural finish and other nickel polished ID- 16 mm, OD- 19 mm, Length- 175 mm.</p> <p>Water measurement : By Rotameter</p> <p>Condensate Measurement : By Measuring cylinder & Stop watch.</p> <p>Steam Generator : Material Stainless steel 304 grade, capacity 8 Ltrs., with 1.5 kW heater Insulated with ceramic wool and cladded by aluminum foil.</p> <p>Control valves : One each for Steam, Cooling water & Drain</p> <p>Pressure Gauge : Bourdon type</p> <p>Temperature Sensors: RTD PT-100 type.</p> <ul style="list-style-type: none"> • Control panel comprising of PID Controller (0-199.9° C) for steam generator and digital Temperature Indicator (0-199.9° C) with multichannel switch, with standard make On/off switch, Mains Indicator etc. • An ENGLISH instruction manual consisting of experimental procedures, block 	1		

S. No.	Name of equipment	Specifications	Quantity	Specifications (offered)	Whether comply (Yes/No)
		<p>diagram etc. along with the Apparatus.</p> <ul style="list-style-type: none"> The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 			
4.	Heat transfer setup to i) To demonstrate pool boiling phenomenon, ii) To determine the critical heat flux of given wire, iii) To study the pool boiling phenomenon up to critical heat flux point.	<p>Test heater : With holding arrangement for quick change of wire, dimensions</p> <p>Water Bath: Rectangular chamber dimensions Material Stainless steel 304 grade with transparent window for observation of test heater.</p> <p>Temperature Sensors : RTD PT-100 type</p> <ul style="list-style-type: none"> Control panel comprising of PID Controller (0-199.9° C) for steam generator and digital Temperature Indicator (0-199.9° C) with multichannel switch, with standard make On/off switch, Mains Indicator etc. An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. along with the Apparatus. The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 	1		
5.	Heat transfer setup i) To determine average heat transfer coefficient for free/forced convection from the surface of a cylinder / plate when kept: a) along the direction of flow b) perpendicular to the direction of flow c) inclined at an angle to the direction	<p>Test Section: Dia.: 38mm(approx). Length : 500mm(approx). Heater : Nichrome Wire.</p> <p>Position of Test Section can be kept:-</p> <ol style="list-style-type: none"> Along the direction of flow. Perpendicular to the direction of flow. Inclined at an angle to the direction of flow. <ul style="list-style-type: none"> Control Panel Comprising of : 	1		

S. No.	Name of equipment	Specifications	Quantity	Specifications (offered)	Whether comply (Yes/No)
	of flow	<p>Digital Voltmeter: 0-300 Volt. Digital Ammeter: 0-2 Amp. Variac : 0-230 V, 2 A, Digital Temperature Indicator: 0-199.90C, with multi-channel switch. Temperature Sensors: RTD PT-100 type with standard make On/Off switch, Mains Indicator etc.</p> <ul style="list-style-type: none"> • Powder coated duct of MS to accommodate the assembly with front window of Acrylic. • An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. along with the Apparatus. • The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 			
6.	Heat transfer setup to determine thermal conductivity of a solid insulating material by slab method and Study of variation of thermal conductivity of the material with temperature.	<p>Specimen : Diameter 180 mm, Thickness- 12 mm Central Heater: Dia. 100 mm, sandwiched between copper plates. Ring Guard Heater : Width 35 mm, sandwiched between copper rings. Cooling chamber : Made of Aluminum for water circulation Insulation : Ceramic wool Temperature Sensors: RTD PT-100 type.</p> <ul style="list-style-type: none"> • Control panel comprising Digital Voltmeter (0-300 Volt), Digital Ammeter (0-2 Amp), Variac (0-230 V, 2 Amp) for central & ring guard heater and Digital Temperature Indicator (0-199.9°C) with multichannel switch, with standard make On/off switch, Mains Indicator etc. • MS Cabinet to accommodate the slab assembly. • An ENGLISH instruction manual consisting of 	1		

S. No.	Name of equipment	Specifications	Quantity	Specifications (offered)	Whether comply (Yes/No)
		<p>experimental procedures, block diagram etc. along with the Apparatus.</p> <ul style="list-style-type: none"> The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 			
7.	Heat transfer setup to determine thermal conductivity of a solid insulating material by of powder materials by concentric spheres method and Study of variation of thermal conductivity of the material with temperature.	<p>Inner Sphere: Material Copper, Dia. - 100 mm. Outer Sphere: Material Copper, Dia. - 200 mm. Heater: Nichrome Wire. Temperature Sensors: RTD PT-100 type.</p> <ul style="list-style-type: none"> Control panel comprising of PID Controller (0-199.9°C) for heater, electronic Energy meter for power measurement and Digital Temperature Indicator (0-199.9°C) with multi-channel switch, with standard make On/off switch, Mains Indicator etc. An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. along with the Apparatus. The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 	1		
8.	Heat transfer setup to determine thermal conductivity of Liquids and to study the effect of temperature on thermal conductivity of liquid.	<p>Liquid Chamber: Dia. 165 mm Heater: Dia. 100 mm sandwiched between copper plates, Power Insulation: Ceramic Wool Cooling plate: Material Aluminium for water circulation. Temperature Sensors: RTD PT-100 type.</p> <ul style="list-style-type: none"> Control panel comprising of PID Controller (0-199.9° C) for heater, electronic energy meter for power measurement and digital temperature Indicator 	1		

S. No.	Name of equipment	Specifications	Quantity	Specifications (offered)	Whether comply (Yes/No)
		<p>(0-199.9° C) with multi-channel switch, with standard make On/off switch, Mains Indicator etc.</p> <ul style="list-style-type: none"> Valves for drain & charging line to make system flexible. MS Cabinet to accommodate the slab assembly. An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. along with the Apparatus. The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 			

INDUSTRIAL AUTOMATION AND ROBOTICS LAB

S. NO.	Name of Equipment	Technical Specification(required)	Quantity	Specifications (offered)	Whether comply (Yes/No)
1	Electro Hydraulic Trainer Set	<p>Sub plate (1station manifold) with 4 ports & 2 gauge ports each equipped with</p> <p>Quick Release Male Adaptors Modular Pressure relief valve (sub plate mounted) with 70 bar Gliserine filled pressure gauges to A&B ports (2x2)</p> <p>Throttle cum check valve sub plate mounted</p> <ul style="list-style-type: none"> 4/2-way single solenoid 24 VDC spring return 4/3-way double solenoid 24VDC spring return Single acting cylinder 40 mm x 100 mm spring return & QR adaptor Double acting cylinder with in line flow control valve 40 mm x 100 mm stroke & QR sockets. PLC (Preferably Siemens/Allen Bradley) Suitable power Pack 	1		

		<ul style="list-style-type: none"> • Aluminum Frame • Flexible hoses, R1type ¼"ID with Quick release sockets (one end 90 & other straight) Length 2000 mm, Length 1200 mm • Quick release plugs (M) • Quick release sockets (F) • Power Pack (50 Bar) consist of 25litre tank, Gear Pump- 3 LPM with ball valve for flow measurement in Beacker, 1 HP motor, 1440 rpm, 230 V AC, oil breather, oil level indicator, sun condition filter/stainer, return line filter, 70 Bar Gauge, relief valve 			
2	Electro Pneumatic Trainer Set	<ul style="list-style-type: none"> • Manifold 4 Port ¼" BSP Female • Silencer 1/8" BSP Female Spares • Mini Lubroet with Pressure Gauge female • Pressure Gauge 40 MM dial Male Connector ¼"X8 mm • 5/2-way internal Pilot operated spool single solenoid valve ¼" BSP Female • 5/2-way internal Pilot operated spool single valve ¼" BSP Female • 5/3-way internal Pilot operated spool type double valve ¼" BSP Female • 5/3-way internal Pilot operated spool type double solenoid valve ¼" BSP Female • 3/2-way internal pilot operated spool type solenoid valve ¼" BSP Female • 5/3-way internal hand lever operated type double valve ¼" BSP Female • Limit switches for operation detection • Dead plug sockets for blocking the air flow when not required • Swivel flow control valve • Single Acting Pneumatic Cylinder • Double Acting Pneumatic Cylinder • Pneumatic Motor 	1		

		<ul style="list-style-type: none"> • PU Tube 6mm ID X 8 mm OD • 1/8" BSP Female Socket • Micrologix PLC with power supply & Relay Card • Suitable Air Compressor to run the basic Experimentation 			
3	Robotic Arm	<ul style="list-style-type: none"> • 5 Axis Robotic arm • Base Rotation, Single plane shoulder, Elbow, Wrist motion, Functional gripper, wrist rotate • Black anodized aluminum brackets • Aluminum tubing and hubs, custom injection molded components, and precision laser-cut Lexan components. • Arm Hardware, Gripper and Gripper Attachment Kit. • AVR (preferably Arduinio) based Servo Controller • Power Supply (5V) • Servo motor which includes Standard Size Servo • Serial port-based version with powerful PC software • Advanced inverse kinematics positioning control using mouse • Reprogramming facility should be available • Supplied with Camera for image processing or colour detection of object • IR sensor for detection of object • Conveyer belt for movement of object 	1		
4	Power Steering	<ul style="list-style-type: none"> • Original automobile parts of a typical small passenger vehicle. • Complete frontend steering • The trainer kit should have functioning components: Steering wheel, Power steering gearbox, Power steering pump with reservoir and hoses, Panel control with pressure gauge • The power steering pump is driven by an electric motor 220 V single phase • The unit should be made of brand new parts 	1		

MECHANICAL MEASUREMENT AND METROLOGY LAB

S.NO.	Name of Equipment	Technical Specification(required)	Quantity	Specifications (offered)	Whether comply (Yes/No)
1.	Sine bar	Centre distance between rollers is within $\pm 0.003\text{mm}$. Length: 150 mm Hardness - $60 \pm 2 \text{ Rc}$ & Tempered	1		
2.	Slip Gauge Set: 83 pcs	0.005mm up to 200mm and 0.010 mm up to 345mm.	1		
3.	Bevel Protector:	300mm	1		
4.	Vernier Calliper	Range: 0-200 mm	3		
5.	Digital Vernier Calliper	Range: 0-200 mm	2		
6.	Micrometer	0-25 mm	2		
7.	Digital Micrometer	0-25 mm	2		
8.	Inside Micrometer	50-200mm	1		
9.	Depth Gauge		1		
10.	Vernier Height Gauge	0-300mm	1		
11.	Surface roughness Tester for flat	Measuring range 50mm (2inch) Z1 axis (detector unit) $800\mu\text{m}$, $80\mu\text{m}$, $8\mu\text{m}$ Detector: Resolution $0.01\mu\text{m}$ ($800\mu\text{m}$ range) /	1		

	<p>and round surfaces</p>	<p>0.001μm (80μm range) / 0.0001μm (8μm range) Stylus tip 90°/5μm (200μinch) Radius of skid curvature R40 mm (R1.57") Measuring method Skidded measurement / skidless measurement Drive unit: X-axis Measuring speed 0.05, 0.1, 0.2, 0.5, 1.0mm/s (0.002, 0.004, 0.02, 0.04 inch/s) Drive speed 0.5, 1, 2, 5mm/s (0.02, 0.04, 0.08, 0.2 inch/s) Straightness 0.3μm / 25mm (12μinch/ 1inch) 0.5μm / 50mm (20μinch/ 2inch) Height-tilt adjustment unit: Height adjustment 10mm (0.39inch) Tilt adjustment \pm1.5° Parameters Ra, Rq, Rz, Ry, Rp, Rv, Rt, R3z, Rsk, Rku, Rc, R_{Pc}, R_{Sm}, R_{max}*1, R_{z1max}*2, S, HSC, R_{ZJIS}*3, R_{ppi}, RΔa, RΔq, R_{lr}, R_{mr}, R_{mr}(c), Rσc, Rk, R_{pk}, R_{vk}, Mr1, Mr2, A1, A2, Vo, λa, λq, Lo, R_{pm}, t_p*4, H_{tp}*, R, Rx, AR, W, AW, W_x, W_{te}, Possible Customize</p> <p>Measured profiles: Primary, Roughness, DF, Filtered waviness curve,</p> <p>Graph analysis: BAC and ADC curves Cut-off length 0.08, 0.25, 0.8, 2.5, 8.0mm 2.5, 8.0, 25mm Sample length 0.08, 0.25, 0.8, 2.5, 8.0, 25.0mm Number of sampling lengths \times1, \times2, \times3, \times4, \times5, \times6, \times7, \times8, \times9, \times10, \times11, \times12, \times13, \times14, \times15, \times16, \times17, \times18, \times19, \times20</p> <p>Storage functions 10 measuring conditions can be stored in internal memory Printing function Measurement conditions / Calculation results / GO / NG judgement result / Calculation results for each sampling length / Measurement curve / BAC / ADC /</p>			
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		<p>Environmental setting information Display language English</p> <p>Storage Internal memory: Measurement condition (10 sets) Memory card (option): 500 measurement condition, 10000 measuring data, 10000 text data, 500 statistic data, 1 backup of machine setting, the last ten traces (Trace 10) External I/O USB I/F, Digimatic output, RS-232C I/F, External SW I/F Power supply Battery Two-way power supply: battery (rechargeable Ni-MH battery) and AC adapter Accessories: Detector, Stylus, Roughness specimen Printing paper, Touch-screen protection sheet, Touch pen, Carrying case, AC adapter, Philips screwdriver, Strap for stylus pen, Operation manual, Quick reference manual, Warranty</p>			
12.	Profile Projector	<p>Screen diameter: 300 mm Cost effective solution for Digital linear & angular Measurements with built-in DRO Specification :- Magnification: 10x ,20x, 50x & 100x Magnification Accuracy: $\pm 0.1\%$ for contour and $\pm 0.15\%$ for surface. Screen Diameter Size: 300mm. fine ground screen with cross line. Rotatable 0 to 360° vernier reading 3 minutes. Work Stage: Table 200x200mm. X & Y axis, Traverse 25mm in each direction having least count .01mm. Contour Illumination: 24V – 250W Halogen Lamp. Telecentric system and sharp twin lens condenser for each magnification bright adjustment. Surface Illumination: 12V – 100W</p>	1		

		<p>Halogen lamp.</p> <p>Cooling System: Built in noiseless and vibration free blower for powerful cooling system.</p> <p>Power Supply: 230V Single Phase AC.</p> <p>Furnished Accessories: Power supply cord-vinyl cover-fuse bulbs; silicon cloth and operating manual.</p>			
13.	Tool maker's microscope	<p>Magnification: 30x, 75x & 150x.</p> <p>Objective: 2x</p> <p>Eye piece: W.F. 15x cross reticle.</p> <p>Field of View: 8mm. Diameter</p> <p>Working Distance: 65mm. (approx)</p> <p>Image: Erect image</p> <p>Observation Tube: Monocular inclined at 30° or 45° with reticle of cross line</p> <p>Stand : Large and heavy base provide extra overall rigidity to the instrument</p> <p>Measuring Stage: 150x150mm. Travel up to 25mm. in each direction having least count 0.001mm</p> <p>Eye piece Protector: Graduated 0° to 360° with adjustable vernier of least count 2 minutes</p> <p>Illumination: Built in base transmitted from 6V – 20W Halogen lamp and incident from two lamps with variable separate control on front panel</p>	1		
14.	Dead Weight Gauge Tester for testing Pressure	<p>Pressure Range: 0.1- 7 Kg/cm²</p> <p>Pressure Step: 0.05 Kg/cm²</p> <p>Working Fluid: Oil/ Water</p>	1		
15.	Stroboscope	<p>For measurement of shaft speed using stroboscope principle in harsh laboratory environment.</p> <p>Electric operated stroboscope, Non contact type, Range: 150-30000 RPM</p>	1		
16.	Pitot static	Pitot tubes Static and Stagnation	1		

	tube apparatus	Pressure tubes Acrylic pipe Section 25 mm ID Material of Construction: Copper/SS/Acrylic of Compatible size with Vernier Scale. Input Tank 150 X 150 X 500 mm Sump tank capacity 75 litres MOC SS-304 with Matt buffing. Measuring tank 35 litres MOC SS-304 with Matt Buffing. Pump Monoblock type, 0-60 litre/min, Motor 0.5 HP Piping with necessary Valves and Fittings Digital Stop Watch with 1/10 second Accuracy. TANKS SHALL BE OF SS 304 MAKE			
17.	Thermocouple its calibration and application for temperature measurement apparatus	Standard equipment for J, K, E and T calibrations Compact rack type light weight setup consisting of temperature pressure vessel with 750watts heater, Bourden type thermometer, provision to mount one thermistor & 1 k type thermocouple or 2 thermocouple (Standard & under calibration). Signal conditioning circuit for RTD & TC. Computer interface, Acrylic Water tank with submersible pump & fish tank compressor for cooling purpose.	1		
18.	Auto Collimator	Clear Aperture: 25 mm Readout: Micrometer Resolution / Micrometer Division: 3 Secs Accuracy over 1 Minute Range: 6 Secs Accuracy over full Range: 30 Secs Measurement Axis: Single / Dual Range of Measurement: ± 30 Minutes Magnification: 16X Field of View: ± 30 Minutes Illumination: LED Power: 220V, 50 Hz Overall Length: 330 mm	1		
19.	Telescopic Gauge	6pcs 8-150mm Telescopic Gauge Set Micrometer Measurement Bore Kit	1		

MECHANICAL VIBRATIONS LABORATORY

S. No.	Name of Equipment	Technical Specification(required)	Quantity	Specifications (offered)	Whether comply (Yes/No)
1	Universal vibration apparatus	<p>Universal vibration apparatus (free, forced, torsional & longitudinal system).</p> <p>a. Exciter unit with single phase D.C drive, 0.15 HP, 1500RPM.</p> <p>b. RPM measurement: Digital RPM Indicator to measure RPM up to 1500 RPM with Proximity sensor.</p> <p>c. Ordinary Chart recorder: For recording Frequency and Amplitude of Vibration.</p> <p>FEATURES:</p> <ol style="list-style-type: none"> 1. Various concepts & phenomenon's are clearly understood by this equipment. 2. Use of digital RPM indicator clearly shows the speed of motor. 3. Special arrangement for plotting amplitudes of vibrations by a strip chart recorder. 4. Special arrangement for changing the damping positions. <p>DESCRIPTION: The apparatus enables a comprehensive range of vibration experiments to be conducted on single basic frame. The experiments are specially designed for quick & easy assembly on to the frame.</p>	1		

		<p>RANGE OF EXPERIMENTS: Total 11 experiments should be conducted on this equipment.</p> <ol style="list-style-type: none"> Expt. No.1 to 3: - Simple Pendulum compound Pendulum & Bifilar suspension. Expt. No. 4: - Spring mass system. Expt. No. 5: - Undamped free Vibrations of Equivalent Spring mass system. Expt. No.6 : - Forced Vibrations of Equivalent Spring mass system Expt. No.7 : - Single Rotor System Expt. No.8 : - Two rotor System. Expt. No.9 : - To Determine Critical Damping Coefficient Ct. Expt. No.10 : - Study of forced natural vibrations of the beam for different damping on Lateral Beam. Expt. No.11 : - Verification of Dunkerley's Rule. <p>Accessories : First fill of oil and other required materials.</p>			
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REFRIGERATION AND AIR CONDITIONING LABORATORY

S.N O.	Name of Equipment	Technical Specification(required)	Quantity	Specifications (offered)	Whether comply (Yes/No)
1	Cutaway model of Actual Reciprocating Refrigerant Compressor	Actual reciprocating refrigerant compressor (Cutaway model)	1		
2	Cutaway model of Actual Rotary Refrigerant Compressor	Actual rotary refrigerant compressor(Cutaway model)	1		
3	Refrigeration	Compressor : Hermitically	1		

	test rig / vapour compression cycle trainer	<p>sealed compressor, Reciprocating type. Capacity 1/3 Ton Refrigerant : R-134-A Agitator: Compatible capacity. Condenser: Air cooled compatible to compressor Condenser Cooling Fan: Compatible capacity with permanent lubricated motor. Evaporator : Made of Stainless Steel, Insulated with ceramic wool/P.U.F. Rotameter: Range (6-60) LPH Expansion Device: Capillary Tube, Compatible Capacity. Pressure Gauges :2 Nos. (For suction & discharge pressure) Safety Control: Overload and over current protectors for compressor and Time delay circuit with Low/high voltage auto-cut. Temperature Sensor : RTD PT-100 Type •Control Panel Digital Voltmeter:0-500 V Digital Ammeter:0-19.99Amp. Temperature Measurement : Digital Temperature Indicator with multi-channel switch. With mains indicator, Standard make On-off switch etc. Other requirements •An instruction manual (English) •The whole set-up should have a rigid structure painted with industrial PU Paint. • It should work on single phase supply, 220 V AC. • Other required accessories such as Hand shut off valves, filter drier, Thermostat</p>			
4	Refrigeration Test Bench (Domestic type)	<p>Refrigerator : Brand New, Domestic type, Compatible capacity Expansion Device: Capillary Tube, Compatible Capacity Pressure Gauges :2 Nos. (For suction & discharge pressure) Safety Control: Overload and over current protectors for compressor and Time delay circuit with</p>	1		

		<p>Low/high voltage auto-cut.</p> <p>Temperature Sensor : RTD PT-100 Type</p> <p>Control panel comprising of Digital Voltmeter 0-500 Volt, Digital Ammeter 0-19.99Amp and Digital Temp. Indicator switch (0-199.9°C) with multi-channel, with standard make On/off switch, Mains Indicator etc.</p> <p>Other requirements</p> <ul style="list-style-type: none"> •An instruction manual (English) •The whole set-up should have a rigid structure painted with industrial PU Paint. • It should work on single phase supply, 220 V AC. • Other required accessories such as Hand shut off valves, filter drier, Thermostat 			
5	Electrolux refrigerator test rig / vapour absorption cycle trainer	<p>Sealed Circuit :The System has no moving parts at all, which makes its silent and very durable.</p> <p>Refrigerant : Mixture of three fluid system Ammonia (NH₃) + Water (H₂O) + Hydrogen (H₂)</p> <p>Gases :Non – CEC, Non – HCFC, Non – FCKW, Non – Freon</p> <p>Mode of System: Externally heated by electric resistance heater</p> <p>Evaporator: Coil Type evaporator</p> <p>Volume of Cabinet: 41 Ltrs., Voltage Input – 65 Watts, Electrical Consumption/ 24 Hrs. – 0.8 kWh, Auto Defrost Fuzzy Logic System</p> <p>Temperature Sensors : RTD PT-100 type</p> <p>Control panel should have Digital Voltmeter 0-500 Volt, Digital Ammeter 0-19.99Amp and Digital Temp. Indicator switch (0-199.9°C) with multi-channel, with standard make On/off switch, Mains Indicator etc.</p> <p>Other requirements</p> <ul style="list-style-type: none"> •An instruction manual (English) •The whole set-up should have a rigid structure painted with industrial PU Paint. 	1		

		<ul style="list-style-type: none"> • It should work on single phase supply, 220 V AC. • Other required accessories such as Hand shut off valves, filter drier, Thermostat 			
6	Ice plant trainer	<p>Compressor : Hermitically sealed compressor, Reciprocating type, Refrigerant: R-134A Agitator: Compatible capacity Condenser: Air cooled compatible to compressor Condenser Cooling Fan: Compatible capacity with permanent lubricated motor Evaporator: Stainless Steel, Insulated with ceramic wool/P.U.F. Rotameter: Range (6-60) LPH Expansion Device : Capillary Tube, Compatible Capacity Pressure Gauges: 2 Nos. (For suction & discharge pressure) Safety Control : Overload and over current protectors for compressor and Time delay circuit with Low/high voltage auto-cut. Temperature Sensors : RTD PT-100 type Control panel should consist of Digital Voltmeter 0-500 Volt, Digital Ammeter 0-19.99Amp and Digital Temp. Indicator switch (0-199.9°C) with multi-channel, with standard make On/off switch, Mains Indicator etc. Other requirements <ul style="list-style-type: none"> • An instruction manual (English) • The whole set-up should have a rigid structure painted with industrial PU Paint. • It should work on single phase supply, 220 V AC. • Other required accessories such as Hand shut off valves, filter drier, Thermostat </p>	1		

7	Window Air Conditioning test bench	<p>Compressor: Hermitically sealed compressor, Reciprocating type, Capacity 1 Ton</p> <p>Condenser: Air cooled compatible to compressor</p> <p>Condenser Cooling Fan: Compatible capacity with permanent lubricated motor</p> <p>Pressure Gauges : 2 Nos. (For suction & discharge pressure)</p> <p>Evaporator: Window type, made of copper tube and aluminum fins fitted with compatible capacity fan</p> <p>Expansion Device : Capillary Tube, Compatible Capacity</p> <p>Safety Control : Overload and over current protectors for compressor and Time delay circuit with Low/high voltage auto-cut.</p> <p>Temperature Sensors : RTD PT-100 type</p> <p>Control panel should consist of Digital Voltmeter 0-500 Volt, Digital Ammeter 0-19.99Amp and Digital Temp. Indicator switch (0-199.9°C) with multi-channel, with standard make On/off switch, Mains Indicator etc.</p> <p>Other requirements</p> <ul style="list-style-type: none"> • An instruction manual (English) • The whole set-up should have a rigid structure painted with industrial PU Paint. • It should work on single phase supply, 220 V AC. • Other required accessories such as Hand shut off valves, filter drier, Thermostat 	1		
8	Water cooler test rig	<p>Compressor : Hermitically sealed compressor, Reciprocating type, Capacity 1/3 Ton,</p> <p>Refrigerant: R-134A</p> <p>Agitator: Compatible capacity</p> <p>Condenser: Air cooled compatible to compressor</p> <p>Condenser Cooling Fan: Compatible capacity with permanent lubricated motor</p> <p>Evaporator: Material Stainless</p>	1		

		<p>Steel, Insulated with ceramic wool/P.U.F.</p> <p>Rotameter: Range (6-60) LPH</p> <p>Expansion Device: Capillary Tube, Compatible Capacity</p> <p>Pressure Gauges: 2 Nos. (For suction & discharge pressure)</p> <p>Safety Control : Overload and over current protectors for compressor and Time delay circuit with Low/high voltage auto-cut.</p> <p>Temperature Sensors : RTD PT-100 type</p> <p>Control panel should consist of Digital Voltmeter 0-500 Volt, Digital Ammeter 0-19.99Amp and Digital Temp. Indicator switch (0-199.9°C) with multi-channel, with standard make On/off switch, Mains Indicator etc.</p> <p>Other requirements</p> <ul style="list-style-type: none"> • An instruction manual (English) • The whole set-up should have a rigid structure painted with industrial PU Paint. • It should work on single phase supply, 220 V AC. • Other required accessories such as Hand shut off valves, filter drier, Thermostat 			
9	Model of cold storage plant	<p>Model of cold storage plant showing its working principle</p> <p>1. COMPRESSOR: - ISI scaled hermetic compressor shall be provided with standard electrical accessories. Technical literature enclosed. To work ON REFRIGERATION-134 a. 5 Ton Capacity</p> <p>2. CONDENSER: - suitable air-cooled condenser shall be provided: 5 Ton Capacity</p> <p>3. FAN MOTOR: - Suitable condenser fan motor shall be provided.: 2 No.</p> <p>4. EVAPORATOR: - Suitable evaporator made out of fins and copper tubes which shall be hanged</p>	1		

	<p>in the cold room cabinet with Blower</p> <p>5. EVAPORATOR FAN MOTOR: - Suitable evaporator motor and fan shall be provided to circulate in the cold room cabinet.</p> <p>6. CABINET: - With double wall insulation of suitable size shall be provided.</p> <p>7. CAPILLERY EXPANSION VALVE: - Shall be provided with control valves.</p> <p>8. Cabinet size shall be 6'x4'x6' made up of 12 gauge GI sheet Duly Powder Coated From Outer With Puff Insulation.</p>			
	<p>Control and standard accessories</p> <p>Energy meter for measure of power in Kw for input to compressor.</p> <ul style="list-style-type: none"> • Rotameter glass tube rotameter to measure flow rate of R 134 a refrigerant in LPH/kg. • Filter cum drier. • Imported gauges gas for R 134 a suction and discharge original. • Digital temperature indicator with probes. • Digital voltmeter. • Digital Amp meter. • 32 Amp D.P. with power switches • Gas changing valve imported. • Starter & switch For Compressor • Indication light. • Inter locking wiring. • Liquid controls valve with capillary expansion valve. • Nameplates. • Operation and maintenance manual shall be provided with the machine 			
	<p>Refrigeration system</p> <ul style="list-style-type: none"> • Capacity: 1/3 TR • Compressor: Hermetically sealed. 			

		<ul style="list-style-type: none"> • Condenser: Forced convection air cooled. • Condenser fan: Axial flow. • Evaporator: Stainless Steel From Inner & Outer Provided. • Expansion device: Capillary Tube. • Accumulator: Forced convection Air cooled. • Insulation: High Density Thermocole 			
		<p>Controls & indications Provided for Temperature and Pressure</p> <ul style="list-style-type: none"> • 6 Channel facility with digital display. • 2 Nos.; Dial type pressure gauges. • Digital Amp. Meter • Digital Volt Meter • Digital Energy Meter • Rotameter Make for Refrigerant. <p>-Main Switch with Power Switches & Indication Lights -Water Cooler Body shall be fabricated out of Stainless Steel From Inner & outer of 50 Litre capacity with Drain.</p>			

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

Signature of Bidder Name: _____

Designation:

_____ **Organi**

zation Name: _____

_____ **Cont**

act No.: _____

ANNEXURE-II

<<Organization Letter Head>>DEC DECLARATIONSHEET

We, _____ hereby certify that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. We have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certify that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology/product updates and extend support for the warranty.

The prices quoted in the financial bids are subsidized due to academic discount given to I.K. Gujral Punjab Technical University, Kapurthala, Punjab.

We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/Govt. Department/ Public Sector Undertaking in the last three years.	NAME & ADDRESS OF THE Vendor/ Manufacturer/ Agent
1 Phone	
2 Fax	
3 E-mail	
4 Contact Person Name	
5 Mobile Number	
6 GST Number	
7 PAN Number	
8 (In case of on-line payment of Tender Fees) UTR No. (For Tender Fee)	
9 (In case of on-line payment of EMD) UTR No. (For EMD)	
10 Kindly provide bank details of the bidder in the following format:	
a) Name of the Bank	
b) Account Number	

c) Kindly attach scanned copy of one Cheque book page to enable us to return the EMD to unsuccessful bidder	
---	--

(Signature of the Tenderer) Name: _____

Seal of the Company

ANNEXURE III

LETTER OF UNDERTAKING
(ON THE LETTER HEAD OF THE BIDDER)

To

Registrar
I.K. Gujral Punjab Technical University,
Kapurthala
Punjab- 144603
India

Sir,

SUBJECT-

Supply, Installation, Commissioning & Maintenance of..... Laboratory Equipment of Mechanical Engineering at I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)

This bears reference to I.K. Gujral Punjab Technical University, Kapurthala (Punjab) Bid No..... Dated DD.MM.YYYY. We, hereby, accept all the terms and conditions for submitting bid as mentioned in this Bid Document.

We hereby certify that no terms and conditions have been stipulated by us in the Financial Bid.

We warrant that the services do not violate or infringe upon any patent, copyright, trade secret or other property right of any other person or other entity. We agree that we shall not prevent I.K. Gujral Punjab Technical University, Kapurthala (Punjab) from any claim or demand, action or proceeding, directly or indirectly resulting from or arising out of any breach or alleged breach of any of the terms & conditions of bid document and contract.

The above document is executed on _____ / _____ / 2018 at (place) _____ and we accept that if anything out of the information provided by us is found wrong/false/incorrect, our bid/work orders shall be liable for rejection.

Thanking you,

Yours faithfully,

Name of the Bidder _____

Authorized Signatory _____

Seal of the Organization _____

Date: Place:

ANNEXURE IV

UNDERTAKING

This is to confirm that we M/s

_____ (give full address) have not been declared neither **failed to perform any Agreement, nor have been expelled from any project or Agreement nor any Agreement terminated** for breach by the us (Agency) in any of the government department and public sector undertaking /enterprise or by any other Client in India, in last five year before release of advertisement.

If the above information found false at any stage after the placement of Work Order/Agreement, I.K. Gujral Punjab Technical University, Kapurthala (Punjab) will have full right to cancel the Contract and forfeit the Performance Guarantee. All the direct and indirect cost related to the cancellation of the order will be borne by us besides any legal action by I.K. Gujral Punjab Technical University, Kapurthala (Punjab) which shall be deemed fit at that point of time.

Authorized Signatory

Note: The undertaking regarding the non-blacklisting of firm is to be submitted on a non-judicial stamp paper of Rs. 100/- (Rupees Hundred only).

ANNEXURE V**Annual Average Turn Over:-**

Sl.No.	Financial Year	Annual Turnover
1.	2015-16	
2.	2016-17	
3.	2017-18	

Note: Certificate from Statutory Auditor/Chartered Accountant certifying balancesheet only for all three years to be attached.

Signature with Seal of the Chartered Accountant

Signature with Seal of the Bidder

ANNEXURE-VI

DetailsofProjectsCompletedDuringLast05 FinancialYears

BidNo.:

DateofOpening:Time:

NameoftheFirm:

S. No.	NameoftheProjects	Order No.& Date	Description &Quantityof orderedEquipment	Value ofOrder	Date ofStart	ScheduledDateofCompletion	ActualDateofCompletion	ReasonforDelay, ifany
1.								
2.								
3.								
4.								
5.								
6.								
7.								

SignaturewithSeal

ANNEXURE-VII

List of Order executed for Govt. Organization/Department/University During Last Three Financial Years

List of Govt./PSU's/Autonomous IIT's/NIT's/IIT's/Central	bodies/ Govt. Universities/	Institutions such as State	
Name of the organization	Year of Procurement	Total Value	Name of Contact Person and other details

Technical Competency Details

Name of applications specialist/Service Engineer who have the technical competency to handle and support the quoted product during the warranty period.		
Name of the organization	Name of Contact Person	Contact No.

Details of Service Supports/Closest Service Station

Sr. No.	Full Address of Service Supports/Closest Service Station along with contact Nos.	Type of Service Supports/Closest Service Station

Signature of Bidder

Name: _____

_____ Designation

:

_____ Organization

nName: _____

_____ Contact No.

:

POWER OF ATTORNEY

Know all men by these presents, we.....(name of firm and address of the registered office) do hereby constitute, nominate, appoint and authorize Mr./Ms.....son/daughter/wife of and presently residing at....., who is presently employed with/retained by us and holding position of.....as our true and lawful attorney (hereinafter referred to as the “Authorized Representative”) to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to our submission of our proposal for and selection as the <project title> for the <name of the client>.....project, proposed to be developed by the(the “client”) including but not limited to signing and submission of all applications, proposals and other documents and writings, participating in pre-bid and other conferences and providing information/responses to the client, representing us in all matters before the Client, signing and execution of all contracts and undertakings consequent to acceptance of our proposal and generally dealing with the client in all matters in connection with or relating to or arising out of our Proposal for the said project/or upon award thereof to us till the entering into of the Agreement with the client.

AND, we do hereby agree to ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Authorized Representative pursuant to and in exercise of the powers conferred by this power and Attorney and that all acts, and things done by our said Authorized Representative in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

[IN WITNESS WHEREOF WE.....THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS.....DAY OF.....2018.

For.....(Name and registered address of client)

(Signature, name, designation, and address)

Witness:

1. (Signature, name and address)
2. (Signature, name and address) Notarized

Accepted

.....(Signature, name,

designation, and address of the attorney) Notes:

1. The mode of the execution of the power of Attorney shall be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants(s) and when it is so required the same should be under seal affixed in accordance with the required procedure.
2. Wherever required, the applicants should submit for verification the extract of the charter documents and other documents such as a resolution/Power of Attorney in favor of the person executing this Power of Attorney for delegation of power hereunder on behalf of the applicant.
3. For a Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power and Attorney is being issued. However, the Power of Attorney provided by the applicants from countries that have signed The Hague Legislation Convention, 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.

LETTER OF BID SUBMISSION

Registrar
 I.K. Gujral Punjab Technical University, Kapurthala
 Punjab,
 India- 144603

SUBJECT-

Supply, Installation, Commissioning & Maintenance of Applied Thermodynamics Laboratory Equipment of Mechanical Engineering at I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)

-Submission of Bid-

Sir,

Having examined the details given in Press Notice, Notice Inviting Bid & Bid Document for the above work, I/we hereby submit the relevant information.

1. I/We hereby certify that all the statements made and information supplied in the enclosed form _____ and accompanying statements are true and correct to the best of my/our knowledge and belief and nothing has been concealed.
2. I/we certify that we have not changed/ altered any word/sentence or any figure in number/s or words appearing in the original tender document uploaded by I.K. Gujral Punjab Technical University, Kapurthala (Punjab) on the designated webpage for e-tendering. In case, if a fraudulent activity is found at any stage between tenders submission to final closure of the tender/contract, my/our candidature/bid/contract shall be immediately cancelled and EM D/Performance security/security deposit along with the due amount towards the work executed or advances shall be forfeited. I.K. Gujral Punjab Technical University, Kapurthala (Punjab) may not entertain any claim or entertain any reason for this act. I.K. Gujral Punjab Technical University, Kapurthala (Punjab) may go for the legal action against the bidder for recovering anyone or all damages caused to I.K. Gujral Punjab Technical University, Kapurthala (Punjab).
3. I/We have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
4. I/We submit the requisite **certified solvency certificate** and authorize the I.K. Gujral Punjab Technical University, Kapurthala (Punjab) to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/We also authorize I.K. Gujral Punjab Technical University, Kapurthala (Punjab) to approach individuals, employers, firms and corporation to verify our competency and general reputation.
5. I/We submit the following **certificates** in support of our suitability, technical knowledge and capability for having successfully completed the following works :

S.No.	Name of Work	Certificate From

6. Earnest Money Deposit amounting to Rs.-----is submitted.

7. Cost of tender document of Rs. 1000/- is submitted. Enclosures:

Thanking you,

Yours faithfully,

Name of the Bidder _____

Authorized Signatory _____

Seal of the Organization _____

Date: Place:

ANNEXURE-X

PERFORMANCEBANKGUARANTEEFORMAT

NameoftheBank:_____

To

Registrar
I.K. Gujral Punjab Technical University, Kapurthala
Punjab
India- 144603

InconsiderationoftheRegistrar,I.K. Gujral Punjab Technical University, Kapurthala (Punjab)(hereinaftercalled“theI.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)havingagreedunderthe termsandconditionsofagreement/ContractAcceptanceletterNo._____
_____Dt:_____Madebetween_
_____(Designation&addressofcontractsigningAuthority)and_
_____(hereinaftercalled“thesaidAgency”forthework_____(hereinafter called“the saidagreement”)havingagreedforsubmissionofanirrevocableBankGuaranteeBondfor _____(_____only)asaperformancesecurityGuaranteefromthe Agencyforcomplianceofhisobligationsinaccordancewiththeterms&conditionsinthesaidagreement.

1. We_
_____(IndicatethenameoftheBank)hereinafterreferredtoastheBank,undertaketopaytot heI.K. Gujral Punjab Technical University, Kapurthalaanamountnotexceeding_____(_____only)ondemandbytheI.K. Gujral Punjab Technical, Kapurthala.

2. We
_____(Indicatethenameofthebank,furtheragreethat(andpromise)topaytheamountsduena ndpayableunderthisguaranteewithoutanydemurmerelyonademandfromtheI.K. Gujral Punjab Technical University, Kapurthala throughtheRegistrar,I.K. Gujral Punjab Technical University, Kapurthala or_____
_____(Designation&Addressofcontractsigningauthority),statingthattheamountclaime disduebywayoflossordamagecausedtoorwouldbecausedorsofferedbytheI.K. Gujral Punjab Technical University, Kapurthala byreasonofanybreachbythesaidAgency ofany ofthetermsandconditionscontainedinthesaidagreementorbyreasonoftheAgencyfailuretoperformthesaid agreement.AnysuchdemandmadeontheBankshallbeconclusiveasregardstheamountdueandpayablebythe Bankunderthisguarantee.However,ourliabilityunderthisguaranteeshallbe restrictedtoanamountnotexceeding _____(_____)

Only).

3. (A) We _____ (indicate the name of Bank) further undertake to pay to the I.K. Gujral Punjab Technical University, Kapurthala any money so demanded notwithstanding any dispute or dispute raised by the Agency in any suit or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.

a. The payments so made by us under this Performance Guarantee shall be a valid discharge of our liability for payment thereunder and the Agency shall have no claim against us for making such payment.

4. We _____ (Indicate the name of bank) to further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the I.K. Gujral Punjab Technical University, Kapurthala under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged by _____

(Designation & Address of contract signing authority) on behalf of the I.K. Gujral Punjab Technical University, Kapurthala, certify that the terms and conditions of the said agreement have been fully and properly carried out by the said Agency and accordingly discharge this guarantee.

5(a) Notwithstanding anything

to the contrary contained herein the liability of the bank under this guarantee will remain in force and effect until such time as this guarantee is discharged in writing by the I.K. Gujral Punjab Technical University, Kapurthala or until (date of validity/extended validity) whichever is earlier and no claim shall be valid under this guarantee unless notice in writing thereof is given by the I.K. Gujral Punjab Technical University, Kapurthala within validity/extended period of validity of guarantee from the date aforesaid.

(b) Provided always that we _____ (indicate the name of the Bank) unconditionally undertake to renew this guarantee or to extend the period of guarantee for my year to year before the expiry of the period or the extended period of the guarantee, as the cases shall be on being called upon to do so by the I.K. Gujral Punjab Technical University, Kapurthala. If the guarantee is not renewed or the period extended on demand, we _____ (indicate the name of the Bank) shall pay the I.K. Gujral Punjab Technical University, Kapurthala the full amount of guarantee on demand and without demur.

6. We _____ (indicatethenameofBank) further agree with the I.K. Gujral Punjab Technical University, Kapurthala that the I.K. Gujral Punjab Technical University, Kapurthala shall have the fullest liberty without our consent and without effecting in any manner out of obligation hereunder to vary any of the terms and conditions of the said contract from time to time or to postpone for any time or from time to time any of the powers exercisable by the I.K. Gujral Punjab Technical University, Kapurthala against the said Agency and to forbear or enforce any of the terms and conditions of the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Agency for any breach or omission on the part of the I.K. Gujral Punjab Technical University, Kapurthala or any indulgence by the I.K. Gujral Punjab Technical University, Kapurthala to the said Agency for any such matter or thing whatsoever under the law relating to sureties for the said reservation would relieve us from the liability.
7. This guarantee will not be discharged by any change in the constitution of the Bank or the Agency.
8. We, _____ (indicatethenameoftheBank) lastly undertaken not to revoke this guarantee except with the previous consent of the I.K. Gujral Punjab Technical University, Kapurthala in writing.
9. This guarantee shall be valid upto (Date of Completion plus Handholding Period). Unless extended on demand by I.K. Gujral Punjab Technical University, Kapurthala. Notwithstanding anything to the contrary contained herein before, our liability under this guarantee is restricted to Rs. (Rs. only) unless a demand under this guarantee is made on us in writing on or before. we shall be discharged from our liabilities under this guarantee thereafter.

Dated: the Day of

for (indicate

the name of bank)

Signature of Banks Authorized official

Witness

(Name) _____

Designation with Code No. -----

1

Full Address -----

2.

PROFORMA PRE CONTRACT INTEGRITY PACT

GENERAL

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on day of the month of 2018, between, on one hand, acting through Shri/Smt.

_____, Designation, I.K. Gujral Punjab Technical University, Kapurthala (Punjab) (hereinafter called the "BUYER"/"I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)") interchangeably, which expressions shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part

AND

M/s _____ represented by Shri _____, Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expressions shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the I.K. Gujral Punjab Technical University, Kapurthala propose to procure services towards "Supply, Installation and Commissioning of LABORATORY Equipment at I.K. Gujral Punjab Technical University, Kapurthala (Punjab)" For its clients and BIDDER/Seller is willing to offer the said services and related items as referred to in the Bid document No. /2018 Dated 2018.

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered expert agency, constituted in accordance with the relevant law in the matter and the I.K. Gujral Punjab Technical University, Kapurthala is an autonomous body of Government of Punjab established by an Act of State Legislature on 16th January, 1997.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudice dealing prior to, during and subsequent to the currency of the contract to be entered into with a view to:

Enabling the I.K. Gujral Punjab Technical University, Kapurthala to obtain the desired services as referred to in the Bid document No. dated 2018 at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement and Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the I.K. Gujral Punjab Technical University, Kapurthala will commit to prevent corruption, in any form, by its officials by following transparent procedures. The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

1. CommitmentsoftheI.K. Gujral Punjab Technical University, Kapurthala

- 1.1 The I.K. Gujral Punjab Technical University, Kapurthala undertakes that no official of the I.K. Gujral Punjab Technical University, Kapurthala, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.
- 1.3 All the officials of the I.K. Gujral Punjab Technical University, Kapurthala will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the I.K. Gujral Punjab Technical University, Kapurthala with full and verifiable facts and the same is prima facie found to be correct by the I.K. Gujral Punjab Technical University, Kapurthala, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings shall be initiated by the I.K. Gujral Punjab Technical University, Kapurthala and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the I.K. Gujral Punjab Technical University, Kapurthala the proceedings under the contract would not be stalled.

3. CommitmentsofBidders

The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contractor or post-contract stage in order to secure the contractor in furtherance to secure it and in particular commit itself to the following:

- 3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the I.K. Gujral Punjab Technical University, Kapurthala, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
- 3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the I.K. Gujral Punjab Technical University, Kapurthala or otherwise in procuring the Contractor for bearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or for bearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.

- 3.3 Bidders shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.
- 3.4 BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.5 The BIDDERS further confirm and declare to the I.K. Gujral Punjab Technical University, Kapurthala that the BIDDERS is the original manufacturer/integrator/authorized government sponsor or export entity and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the I.K. Gujral Punjab Technical University, Kapurthala or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDERS, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation, as the cases shall be for satisfactory performance of the proposed terms of Bidder.
- 3.6 The BIDDERS, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments she has made, is committed to or intend to make to officials of the I.K. Gujral Punjab Technical University, Kapurthala or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 3.7 The BIDDERS will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDERS will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The BIDDERS shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the I.K. Gujral Punjab Technical University, Kapurthala as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDERS also undertake to exercise due and adequate care lest any such information is divulged.
- 3.10 The BIDDERS commit to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDERS shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDERS or any employee of the BIDDERS or any person acting on behalf of the BIDDERS, either directly or indirectly, is a relative of any of the officers of the I.K. Gujral Punjab Technical University, Kapurthala, or alternatively, if any relative of an officer of the I.K. Gujral Punjab Technical University, Kapurthala has financial interest/stake in the BIDDERS' firm, the same shall be disclosed by the BIDDERS at the time of filing of Bid.
- 3.13 The BIDDERS shall not lend to or borrow any money from or enter into any monetary dealings or tran

sactions, directly or indirectly, with any employee of the I.K. Gujral Punjab Technical University, Kapurthala.

4. **PREVIOUS TRANSGRESSION**

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this integrity pact, with any other company in any country in respect of any corrupt practice envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the bid process.

4.2 The BIDDER agrees that if it makes an incorrect statement on this subject, BIDDER can be disqualified from the Bid process or the contract, if already awarded, can be terminated for such reason.

5. **EARNEST MONEY DEPOSIT**

5.1 While submitting Technical bid, the BIDDER shall deposit Earnest Money as mentioned in tender document.

5.2 The instrument for Security Deposit made shall be valid up to the specified period and the bidder shall be liable to keep the said instrument valid for such extended period as the cases shall be for satisfactory performance of the terms of Bidder above referred till the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the I.K. Gujral Punjab Technical University, Kapurthala, including warranty period, whichever is later.

5.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the corresponding Contract governing such agreement that the provisions of Sanctions for Violations shall be applicable for encashment of Performance Bank Guarantee deposited towards forfeiture of said amount in case of a decision by the I.K. Gujral Punjab Technical University, Kapurthala to forfeit the same without assigning any reason for imposing such sanction.

5.4 No interest shall be payable by the I.K. Gujral Punjab Technical University, Kapurthala to the BIDDER on Earnest Money Deposit.

6. **SANCTIONS FOR VIOLATIONS**

7.1 Any breach of the aforesaid provisions by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the I.K. Gujral Punjab Technical University, Kapurthala to take all or any one of the following actions, wherever required:

i. To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

ii. The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (Bank Guarantee) (after the contract is assigned) shall stand forfeited either fully or partially, as decided by the I.K. Gujral Punjab Technical University, Kapurthala and the BUYER (I.K. Gujral Punjab Technical University,

Kapurthala) shall not be required to assign any reason therefore.

- iii. To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
- iv. To recover all sums already paid by the I.K. Gujral Punjab Technical University, Kapurthala, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR as the cases shall be. If any outstanding payment is due to the BIDDER from the I.K. Gujral Punjab Technical University, Kapurthala in connection with any other contract for any other stores or on any account whatsoever and by whatsoever name called, such outstanding payment could also be utilized to recover the amount for said sum and interest thereto.
- v. To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the I.K. Gujral Punjab Technical University, Kapurthala, along with interest.
- vi. To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the I.K. Gujral Punjab Technical University, Kapurthala resulting from such cancellation/rescission and the I.K. Gujral Punjab Technical University, Kapurthala shall be entitled to deduct the amounts so payable from the money(s) due to the BIDDER.
- vii. To debar the BIDDER from participating in future bidding processes of the Government of India/Government of Punjab/PSUs/Autonomous bodies of Government of India/State Government for a minimum period of five years, which shall be further extended at the discretion of the I.K. Gujral Punjab Technical University, Kapurthala.
- viii. To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- ix. In cases where irrevocable Letters of Credit have been received in respect of any contracts signed by the I.K. Gujral Punjab Technical University, Kapurthala with the BIDDER, the same shall not be opened.
- x. Forfeiture by way of encashment of Performance Bond in case of a decision by the I.K. Gujral Punjab Technical University, Kapurthala to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The I.K. Gujral Punjab Technical University, Kapurthala will be entitled to take all or any of the actions mentioned at Para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of any offence as defined in Chapter IX of the Indian Penal Code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the I.K. Gujral Punjab Technical University, Kapurthala to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, an Independent Monitor(s) shall be appointed by I.K. Gujral Punjab Technical University, Kapurthala, in case of breach of the provisions of the pact.

7. INDEPENDENT MONITORS

7.1 An Independent monitor(s) shall be appointed by I.K. Gujral Punjab Technical University, Kapurthala, in case of breach of the provisions of the pact.

7.2 The task of the Monitor(s) shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

7.3 The Monitor(s) shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

7.4 Both the parties accept that the Monitor(s) have the right to access all the documents relating to the project/procurement, including minutes of meetings.

7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the I.K. Gujral Punjab Technical University, Kapurthala.

7.6 The BIDDER(s) accept that the Monitor(s) have the right to access without restriction to all Project documentation of the I.K. Gujral Punjab Technical University, Kapurthala including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Sub-bidders. The Monitor(s) shall be under contractual obligation to treat the information and documents of the BIDDER/Sub-bidder(s) with confidentiality.

7.7 The I.K. Gujral Punjab Technical University, Kapurthala will provide to the Monitor(s) sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor(s) the option to participate in such meetings.

7.8 The Monitor(s) will submit a written report to the designated Authority of BUYER/Secretary in the Department/within 8 to 10 weeks from the date of reference or intimation to him by the I.K. Gujral Punjab Technical University, Kapurthala/BIDDER and, shall the occasion arise, submit proposals for correcting problematic situations.

8. FACILITATION OF INVESTIGATION

In case of any allegation of violation of any provisions of this Pact or payment of commission, the I.K. Gujral Punjab Technical University, Kapurthala or its agencies shall be entitled to examine all the documents including the Books of Accounts of

he BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

9. LAW AND PLACE OF JURISDICTION

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the I.K. Gujral Punjab Technical University, Kapurthala.

10. OTHER LEGAL ACTIONS

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that shall follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

11. VALIDITY

11.1 The validity of this Integrity Pact shall be governed by the terms of the Bid No.
.....
towards complete execution of the contract to the satisfaction of both the I.K. Gujral Punjab Technical University, Kapurthala and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract awarding the Bidder with successful bidder.

11.2 Shall one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

12. The parties hereby sign this Integrity Pact at _____ on _____.

I.K. Gujral Punjab Technical University, Kapurthala

BIDDER

Name of the Officer:

Designation:

Authorised Signatory of IKGPTU,

Kapurthala

Witness:

1. _____

2. _____

Witness

1. _____

2. _____

(The Pre Contract Integrity Pact shall be modified based in line with the conditions of the Bid Documents).

MANUFACTURER AUTHORIZATION FORM

No. _____ dated _____

To

Dear Sir:

Bid No. _____

We _____ who are established and reputed manufacturer of _____
_____ (name and description of goods offered) having factories at
_____ (address of factory) with factory registration no. _____
_____ do hereby authorize M/s _____ (Name and address of Agent) to submit a bid, and sign the contract with you for the goods manufactured by us against the above bid.

We hereby extend our full warranty as per Clause 3 of the Conditions of Contracts, for the goods and service offered for supply by the above firm against this Invitation for Bid. We further certify that we shall support vendor with all related spares and maintenance during the entire contract period including the period of warranty/AMC.

Yours faithfully,

(Name):

(Name of manufacturers): _____

Note: This letter of authority should be on the letterhead of the manufacturer or OEM and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.

ANNEXUREXIII
Earnest Money Details

S. NO.	NAME OF EQUIPMENT	EARNEST MONEY (IN Rs.)
Automobile Engg. Lab.		
1	Cut-Section Model of a Sliding Mesh Gear Box	2500
2	Cut-Section Model of Synchromesh Gear Box	2750
3	Cut-Section Model of Differential assembly (LMV)	2250
4	Model of cooling system of an automobile (With Actual Parts)	2500
5	Cut section of Hydraulic Brake System	1000
6	Working Model of Conventional Ignition System	750
7	Cut Section Model Car Steering System	1000
8	Spark Plug Cleaner & Tester	500
CAD-CAM Lab.		
1	CNC lathe Trainer	45000
2	CNC Mill Trainer	50000
CAD Lab.		
1	SolidWorks Education Edition 2018-19	65000
Fluid Machinery Lab.		
1	Hydraulic Ram Test Bench	8500
2	Francis Turbine Test Bench	16250
3	Kaplan Turbine Test Rig	28000
4	Reciprocating Pump Test Bench – Variable Speeds	7000
5	Pelton Wheel Turbine Test Bench with Data Logging Facility	36500
6	Centrifugal Pump Test Bench with Variable Speeds	6250
7	Centrifugal Blower Test Bench (Fixed speed with AC Motor)	5250

Heat Transfer Lab.		
1.	Heat Transfer set up to plot the temperature profile and to determine fin effectiveness and fin efficiency for i) A rod fin when its tip surface is superimposed by different boundary condition like. a) Insulated tip b) Cooled tip c) Temperature controlled tip ii) Heat transfer through straight transfer fins iii) Circumferential fins of rectangular/triangular section	6000
2.	Heat Transfer set-up to study the radiation heat transfer in black plate and test plate. • Determination of the Emissivity of a test plate. • To compare the heat input of test plate with black plate. • To study the variation of emissivity of test plate with absolute temperature.	5000
3.	Heat transfer setup to determine overall heat transfer co-efficient for Film wise & Drop wise condensation of steam on a vertical surface.	7000
4.	Heat transfer setup to i) To demonstrate pool boiling phenomenon, ii) To determine the critical heat flux of given wire, iii) To study the pool boiling phenomenon up to critical heat flux point.	7000
5.	Heat transfer setup i) To determine average heat transfer coefficient for free/forced convection from the surface of a cylinder / plate when kept: a) along the direction of flow b) perpendicular to the direction of flow c) inclined at an angle to the direction of flow	6000
6.	Heat transfer setup to determine thermal conductivity of a solid insulating material by slab method and Study of variation of thermal conductivity of the material with temperature.	6000
7.	Heat transfer setup to determine thermal conductivity of a solid insulating material by of powder materials by concentric spheres method and Study of variation of thermal conductivity of the material with temperature.	5000
8.	Heat transfer setup to determine thermal conductivity of Liquids and to study the effect of temperature on thermal conductivity of liquid.	6000
Industrial Automation and Robotics Lab.		
1	Electro Hydraulic Trainer Set	9000
2	Electro Pneumatic Trainer Set	7000
3	Robotic Arm	8500
4	Power Steering	3500
Mechanical Measurement and Metrology Lab.		
	Sine bar (Preferably Mitutoyo make or some other international brand)	100

2.	Slip Gauge Set: 83 pcs (Preferably Mitutoyo or some other international brand)	600
3.	Bevel Protector: (Preferably Mitutoyo or some other international brand)	1000
4.	Vernier Calliper (Preferably Mitutoyo or some other international brand)	300
5.	Digital Vernier Calliper (Preferably Mitutoyo or some other international brand)	550
6.	Micrometer (Preferably Mitutoyo or some other international brand)	300
7.	Digital Micrometer (Preferably Mitutoyo or some other international brand)	550
8.	Inside Micrometer (Preferably Mitutoyo or some other international brand)	400
9.	Depth Gauge (Preferably Mitutoyo or some other international brand)	400
10.	Vernier Height Gauge (Preferably Mitutoyo or some other international brand)	650
11.	Surface roughness Tester for flat and round surfaces	6250
12.	Profile Projector	3750
13.	Tool maker's microscope	1900
14.	Dead Weight Gauge Tester for testing Pressure	1250
15.	Stroboscope	650
16.	Pitot static tube apparatus	850
17.	Thermocouple its calibration and application for temperature measurement apparatus	500
18.	Auto Collimator	2500
19.	Telescopic Gauge	100
Mechanical Vibration Lab.		
1	Universal vibration apparatus	6250
Refrigeration and Air Conditioning Lab.		
1	Cutaway model of Actual Reciprocating Refrigerant Compressor	1300
2	Cutaway model of Actual Rotary Refrigerant Compressor	1300
3	Refrigeration test rig / vapour compression cycle trainer	9000

4	Refrigeration Test Bench (Domestic type)	8500
5	Electrolux refrigerator test rig / vapour absorption cycle trainer	7500
6	Ice plant trainer	11000
7	Window Air Conditioning test bench	11000
8	Water cooler test rig	8000
9	Model of cold storage plant	5500

CONTRACTFORM

THIS AGREEMENT made theday of2018 between.....(Name of Procurement Consultant (hereinafter "the Procurement Consultant") on behalf of I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY, Kapurthala, Punjab of the one part and.....(Name & address of Supplier).....
(Hereinafter called "the Supplier") of the other part:

WHEREAS the Purchase is desired that certain Goods and ancillary services viz.
(Brief Description of Goods and Services) and has accepted a bid by the Supplier for the supply of those goods and services in the sum of.....(Contract Price in words and Figures) (Hereinafter called "the Contract Price")

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz.
 ,
 [a] The Price Schedule (BOQ) submitted by the Bidder; [b]
 The Schedule of Requirements;
 [c] The Terms & Conditions
 [d] The Consignee's Notification of Award/Purchase Order
3. In consideration of the payments to be made by the Consignee to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Consignee to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Consignee hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the Contract price or such other sum as shall become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

Brief particulars of the goods and services, which shall be supplied/provided by the Supplier, are as under:

S.No.	Brief Description of Goods & Services	Quantity to be supplied	Unit Price	Total Price	Delivery Terms

TOTAL VALUE:

DELIVERY SCHEDULE:

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the

said.....(For the Consignee) in the presence

of.....

Signed, Sealed and Delivered by the

said.....(For the Supplier) in the presence

of.....

ANNEXURE–XV

FORM-A DELIVERY CERTIFICATE

(to be completed by the Consignee/Purchaser)

1. The items mentioned as per details given below, have been physically verified by way of opening the cartons /packing and verifying the machine/equipments supplied and model of the Equipments/Items. It is certified and acknowledged that the same have been received at this Institution in good condition.

Sl. No.	Sl.No.(As per Work Order)	Description of Equipment	Origin	Model & Make	Quantity

Please make appropriate column, as per requirement.

2. The items as per details given below was/were received in damaged conditions and therefore are not acceptable. These damaged goods/equipments have been returned to the supplier and supplier is required to supply the new equipment in lieu of damaged one.

Details of the Goods/Equipment received in objectionable condition

Sl. No.	Sl.No.(As per Work Order)	Description of Equipment	Origin	Model & Make	Quantity

Date: _____

(Signature of the issuing official) Authorized Official,

I.K. GUJRAL PUNJAB
TECHNICAL UNIVERSITY

Name _____

Designation

Rubber Seal of the Institution

Received the Acknowledgement Certificate

Date: _____

Signature of Supplier or his Authorized Representative

Name: _____

**FORM FOR ACCEPTANCE OF GOODS/EQUIPMENT AT SITE
FORM-B**

INSTALLATION CERTIFICATE
(to be completed and issued by the Consignee/Purchaser)

Note: In case of need, a fresh form on this line shall be prepared & issued by Consignee.
2 copies of this certificate to be provided to Supplier.

1. The following goods/equipment, supplied by the Supplier at this University have been successfully installed by the Supplier.

Sl. No.	Sl.No.(As per Work Order)	Description of Items with specifications	Origin	Model & Make	Quantity

2. The Supplier has fulfilled his contractual obligations related to supply & installation of the items.

or

3. The Supplier has not fulfilled his contractual obligation with regard to following. (Mention here **deviation**, if any, related to successful installation.)
- (a)
(b)
(c)

Date:

(Signature of the issuing official)
I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY
Name: _____
_____ Designation:

Rubber Seal of the Institution Received the Accept

ance Certificate

Date:

Signature of Supplier or his Authorized Representative Name: _____

FINANCIAL BIDS SUBMISSION FORM

To:

Registrar
I.K.Gujral Punjab Technical University, Kapurthala
Punjab -144603

Dear Sir

We, the undersigned, offer to provide "SUPPLY, INSTALLATION, COMMISSIONING & MAINTENANCE OF.....
..... LABORATORY EQUIPMENT OF MECHANICAL ENGINEERING
DEPARTMENT in accordance with your bid document.

Our attached Financial Bid is for the amount of

_____ [Indicate the corresponding to the amount(s), currency(ies) {Insert amount(s) in words and figures}].

Please note that all amounts shall be the same as in Bill of _____ Quantity (BOQ). Our Financial Bid shall be binding upon us subject to the modifications resulting from Contract negotiations, if any, up to expiration of the validity period of the Proposal.

We remain, Yours

Very sincerely,

Authorized Signature {In full
and initials}: Name and Title of Signatory:
In the capacity of: Address:
E-mail: