

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

BID DOCUMENT

NATIONAL COMPETITIVE BIDDING

FOR

SUPPLY, INSTALLATION, COMMISSIONING & MAINTENANCE OF LABORATORY EQUIPMENT OF ELECTRICAL ENGINEERING DEPARTMENT

FOR

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

HoD (EE) Dy. Registrar (Audit) Asst. Registrar (MC-S&P) Cor

21/08/2018

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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) intends to float open e-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 Electrical Machines-II Laboratory and Power Electronics and Drives Laboratory for Department of Electrical Engineering, I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)
The Currency in which payment shall be made	Indian Rupees (INR)
Date of Publishing	15/02/2019 at 02.00.PM
Document Download Start Date	15/02/2019 at 02.00.PM
Pre Bid Meeting Date	20/02/2019 at 11.30 AM Venue: Meeting Room, Department of Electrical Engineering, Second Floor, CB-2, IKGPTU Main Campus, Kapurthala
Start Date for uploading of Bids	25/02/2019 at 9.00 AM
Last Date for uploading of Bids	18/03/2019 at 05.00 PM
Date of Opening of Technical Bids	20/03/2019 at 2.00 PM
Date of Opening of Financial Bids	To be intimated later to the bidders, who have qualified technical bid.

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 Section/ 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 Electrical Engineering, I.K. Gujral Punjab Technical University (IKGPTU) Main Campus, Jalandhar-Kapurthala Highway, Kapurthala, Punjab-144603	
Email Address	registrar@ptu.ac.in Cc to: gaganee@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 0172-2791326, 0172-2791226 (on Government working days from 09.00 AM 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 Web site for getting

themselves updated for information on this tender. Corrigendum and addendum (if any) will be uploaded on IKGPTU website only (www.ptu.ac.in/Tender.aspx) and/or E-procurement portal (https://eproc.punjab.gov.in). Bidders are advised to visit web page 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 ONLINE BID SUBMISSION DOCUMENTS

Online Submissions:

The Online bids (complete in all respect) must be uploaded online as mentioned below: -

	Technical Bid (Following documents to be provided as single PDF file)				
SI. No.	SI. No. Documents Content				
1.		Technical Specification Compliance Sheet as per Annexure-I	.PDF		
2.	Technical Bid	Organization Declaration Sheet as per Annexure-II	.PDF		
3.	Tooliiileal Bia	List of organizations/clients where the same products have been supplied (in last three financial years) along with their contact number(s). (Annexure-VII)	.PDF		
4.	Supporting documents in support of all claims made at Annexure-III, IV, V, VI, IX, XII, XIII		.PDF		
		Financial Bid			
SI. No.	SI. No. TYPES Content				
1. Financial Bid Price bid should be submitted only in standard Bill of Quantity (BOQ) file provided in the e-tender.		.xls			

CHAPTER-III TERM OF REFERENCE & DEFINITIONS

Kapurthala (Punjab).
The bidder's representative (explicitly, implicitly, or through conduct) with the powers 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" means the response to this document presented in Two Packets, Technical Bid and Financial Bid, which are supplied with necessary documents and forms as given in Annexure, complete in all respect adhering to the instructions and spirit of this document.
"Bidder" means any individual/proprietor/ partnership firm/ agency/ company/ responding to Request for Proposal and who makes a Bid.
"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" means a working day as per rules of I.K. Gujral Punjab Technical University, Kapurthala (Punjab).
I.K. Gujral Punjab Technical University, Kapurthala (Punjab)
Earnest Money Deposit
Demand Draft
Tender Committee
Performance Bank Guarantee
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" means the services to be delivered by the successful bidder and as required to run the project successfully as per the Contract.
"RFP" means the Request for Proposals
"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" 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 Electrical Engineering, where the items are to be supplied and commissioned.
AMC	Annual Maintenance Contract

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)

S.	PQ criteria	Supporting Documents required
No.		
1	The bidder must be a Company/LLP registered with Statutory Authorities for the last five years.	Copy of certificate of registration
2.a	Only Original Equipment Manufacturer (OEM)/ agency of OEM/authorized dealer having minimum 5 years of experience in execution of Laboratory Equipment/ Instrument supplies 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. Bids 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.	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 to the authorized signatory to be submitted along with the technical bid. Copies of work orders and completion certificates/ satisfactory

2.b	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.	Undertaking by the authorized signatory of OEM in favour of the Bidder agency.
3	The average annual turnover of the bidder from the Laboratory equipment supply quoting for the bid should be Rs. 22,00,000 (Rs. Twenty Two Lakh 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 profit for all 3 years. A registered CA's certificate indicating Laboratory equipment supply turnover amount for the relevant period also is accompanied.	Certificate from the Chartered Accountant and copy of audited balance sheets/P&L Accounts
4	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.	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.
5	The Bidder should indicate at least Four numbers of technically Qualified professionals having experience for not less than three years for installation & Maintenance support.	List of technical qualified Professionals duly self certificated by the bidder along with the professional certificate.

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 2, 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) Bidder should take into account any corrigendum published on the tender document before submitting their bids. Please go through the tender advertisement and the tender document carefully to understand the d
- b) ocuments required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents-including the names and content of each of the document 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) Bidder should log in to the site well in advance for bid submission and complete all formalities of registration (at least two days in advance) so that he/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 bidder 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.

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 Bids 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 INSTRUCTIONS TO BIDDERS

1. Due date

The e-tender bids has to be uploaded by the due date. The offers received after the due date and time will not be considered.

2. EMD

Details in Annexure XIII.

3. Fee

The tenderer should submit the cost of tender document, processing fee and EMD through online mode of payment (https://eproc.punjab.gov.in).

4. Refund of EMD

- a) No interest will be paid on EMD amount.
- b) The EMD will be returned to unsuccessful Tenderer only after the Tender is finalized.
- c) Earnest money will be forfeited if the bidder unilaterally withdraws the offer, or unilaterally amends, impairs or rescinds the offer within the period of its validity.
- d) In Case of Successful Bidder, the EMD shall be refunded after submission of 10% Performance Security from a scheduled bank operating in India.

5. Acceptance/ Rejection of bids

I.K. Gujral Punjab Technical University, Kapurthala (Punjab) reserves the right to reject any or all offers without assigning any reason.

I.K. Gujral Punjab Technical University, Kapurthala (Punjab) based on the requirement without assigning any reason to the Bidder may split work/Scope/Bid offer in stages or in parts according to the need of work for ease of execution of work.

I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab) reserves right to take decision according to requirement and no claim on whatsoever ground shall be entertained from the bidder.

6. Performance Security

The successful bidder should be required to deposit Performance Security equivalent to 10% of cost of equipment/instrument mentioned in the supply order to I.K. Gujral Punjab Technical University, Kapurthala (Punjab) within 15 days from the date of receipt of Purchase/supply Order. The Performance Security should be issued by a nationalized/scheduled bank in favour of "Registrar, I.K. Gujral Punjab Technical University, Kapurthala (Punjab)" to be valid for a period of 90 days beyond the date of completion of warranty period.

7. Risk Purchase Clause

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. Packing Instructions

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

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- 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 packing 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 number should be indicated.

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

9. Unloading and Unpacking

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

10. Delivery and Documents

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 supplier should notify the consignee and the insurance company by cable/telex/fax/e mail 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 supplier should be responsible to keep the same in safe custody and the charges (if any) to be borne by the supplier. The supplier should mail the following documents to the consignee with a copy to the insurance company:

- a) 4 Copies of the Supplier invoice 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, supplier 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 payments 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 sheet 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 other 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. No malfunction, 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 weeks will be given to rectify the defects and clear the acceptance test, failing which the Consignee reserve 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/manufacturer 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 equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable 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 equipment should be refunded by the Tenderer with 18% interest if such payments for such equipment 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 in 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 proves to be unsatisfactory, the Consignee should have the right to continue to operate or use such goods until rectifications 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 amount equivalent to the cost of such damaged / broken / short supplied materials and will repay when actual replacement is given.
- c) <u>Substitution and Wrong Supplies</u>: 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, tools etc for installation and commissioning of the goods supplied by the agency.

In case of any mishappening/ 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 supplier 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 supplier 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 up to I.K. Gujral Punjab Technical University (Main campus) accordingly.
- b) The Supplier should make all arrangements towards safe and complete 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 permits etc. as applicable.
- c) The supplier 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 bidder should ensure that no person can engage in the business of a common carrier unless he 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 bidder 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 installation of Goods at the I.K. Gujral Punjab Technical University Main Campus. The Supplier 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 Supplier 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. Supplier 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/s to 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 supplier should within 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Supplier 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/order should be sent to the other party in writing or FAX or e mail 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.

- 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 tenderer 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% payment 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 Guarantee duly acceptable to the Nationalized/Scheduled banks in India. The bidder should account for all such expenditures during offering their price. Nothing extra shall be paid beyond the quoted rates by the Bidder.

c) On shipment

80% of the LC amount should be released on presentation of complete and clear shipping documents.

d) On Installation and commissioning

20% of the LC amount shall be released after the installation and demonstration of the equipment at the 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) Payment of AMC

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

29. User list

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

30. Manuals and Drawings

- a) Before the goods and equipment are taken over by the Consignee, the Supplier 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 goods equipment should not be considered to be completed for the purpose of taking over until such manuals and drawing have been supplied to the Consignee.

31. Application Specialist

The Tenderer should mention in the Technical Bid the availability and names of Application Specialist and Service Engineers in the nearest regional office.

32. Site Preparation:-

a) The supplier 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 supplier 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 Supplier 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:

- 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, in sufficient 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) Supplier should carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts, connectors, terminals, cables, wires, 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 confirm to the specifications given in the product literature and these models 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 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 quote 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 Bidders (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 Supplier should be liable to the Consignee for any excess costs for such similar Goods or Services. However, the Supplier 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:

- 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 difference should be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof should apply to the arbitration proceedings.
- The dispute 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 dispute 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 dispute should be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.
- d) The venue of the arbitration 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 tender should be settled in the court of competent jurisdiction located at Kapurthala.

38. Compliancy certificate:

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

39. **Award of Contract:**

- 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

Convener

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 explanation 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

ANNEXURE-I

CHAPTER VI

TECHNICAL SPECIFICATION/COMPLIANCE SHEET

ELECTRICAL MACHINES-II LAB

Sr. No.	Name of Equipment	Technical Specification(required) Equipment/Item with specifications	Quantity	Spec ificat ions (offe red)	Whether comply (Yes/No)
1.	Three Phase Induction motor, Squirrel Cage Type	Three Phase Induction motor: Squirrel Cage Type, 3HP, 415V, 1440 rpm, Class "B "Insulation Motor winding made of super enameled Copper wire only and required to be tested/operated on full load condition certified by manufacturer. Connections: All terminals of stator brought over to a bakelite sheet, fixed to C.I. terminal box on top of motor. Terminals marked with laser. Electrical loading: Pronney brake arrangement, consisting of a C.I. drum pulley, with water cooling provision, round dial spring balances, canvas belt with hooks, C.P. wheels with threaded studs for tightening the belt, frame. Mounting: On fabricated base plate of M.S. 'C' channel size 75mm x 40mm x 5mm. Control Panel: Made of rust free powder coated made of high grade fibre molded body (FRP) of minimum thickness 4 mm. The enclosure to be open from front side for fitting of Bakelite plate. Back side door is with hinges & lock for open the door from back side. Panel to be fitted with., TPN MCB 10 Amp – 01 No. Indicating Lamps LED type 16 mm dia – 3 Nos., D.O.L Starter – 01 No, Insulating terminals, Patch cords. Manual: To plot torque versus speed characteristics, to perform no-load and blocked-rotor tests on three-phase induction motor to obtain equivalent circuit parameters and draw circle diagram.	2		
2.	Three Phase Induction motor: Phase wound/Slip ring Type	Three Phase Induction motor: Phase wound/Slip ring Type, 3HP, 415V, 1440 rpm, Class "B" Insulation Motor winding made of super enameled Copper wire only and required to be tested/operated on full load condition certified by manufacturer. Connections: all terminals of stator brought over to a bakelite sheet, fixed to C.I. terminal box on top of motor. Terminals marked with laser.	2		

Electrical loading: Pronney brake arrangement, consisting of a C.I. drum pulley, with water cooling provision, round dial spring balances, canvas belt with hooks, C.P. wheels with threaded studs for tightening the belt, frame. Mounting: On fabricated base plate of M.S. C channel size 75mm x 40mm x 5mm. Control Panel: Made of rust free powder coated made of high grade fibre molded body (FRP) of minimum thickness 4 mm. The enclosure to be open from front side for fitting of Bakelite plate. Back side door is with hinges & lock for open the door from back side. Panel to be fitted with: TPN MCB 10 Amp – 01 No. Indicating Lamps LED type 16 mm dia – 3 Nos. Rotor Resistance Starter push button type with interlocking arrangement through three phase contactor; the rotor resistance should be provided simultaneously in steps to all three phases—01 No. Insulating terminals, sufficient patch cords. Manual: to start a three-phase slip-ning induction motor by inserting different levels of resistance in the rotor circuit and to plot torque-speed characteristics Motor Generator: Motor Generator: Set: Motor: 3 Phase, Phase Wound/Slip ring, Hong, Generator: DC Shunt Generator with the set of the control separately excited unit suitable for above (Static type) – 01 No. Both machines windings: made of super enameled copper wire only and required to be tested/operated on full load condition certificate from manufacturer. Control Panel: Made of rust free powder coated made of high grade fibre molded body (FRP) of minimum thickness 4 mm. The enclosure to be open from front side for fitting of Bakelite plate. Back side door is with hinges & lock for open the door from back side. Control panel fitted with the following for Phase wound/ slip ring motor: TPN MCB 10 Amp – 01 No., Indicating Lamps LED type 16 mm dia – 3 Nos. Rotor Resistan	_	T			
No., Indicating Lamps LED type 16 mm dia – 3 Nos. Rotor Resistance Starter push button type	3	Generator Set: Motor: 3 Phase, Phase Wound/Slip ring. Generator: DC Shunt	with water cooling provision, round dial spring balances, canvas belt with hooks, C.P. wheels with threaded studs for tightening the belt, frame. Mounting: On fabricated base plate of M.S. 'C' channel size 75mm x 40mm x 5mm. Control Panel: Made of rust free powder coated made of high grade fibre molded body (FRP) of minimum thickness 4 mm. The enclosure to be open from front side for fitting of Bakelite plate. Back side door is with hinges & lock for open the door from back side. Panel to be fitted with: TPN MCB 10 Amp – 01 No. Indicating Lamps LED type 16 mm dia – 3 Nos., Rotor Resistance Starter push button type with interlocking arrangement through three phase contactor; the rotor resistance should be provided simultaneously in steps to all three phases—01 No, Insulating terminals, sufficient patch cords. Manual: to start a three-phase slip-ring induction motor by inserting different levels of resistance in the rotor circuit and to plot torque-speed characteristics Motor Generator Set: Motor: 3 Phase, Phase Wound/Slip ring, 3 HP, 415 V, 1440 rpm, Class B Insulation. All the terminals of stator and rotor winding brought over to a bakelite sheet fitted d to C.I. terminal box on top of motor. Terminals marked with laser. Generator: DC Shunt Generator, 1.5kW, 220/230V, Class B insulation, fan cooled screen protected horizontal foot mounted. All terminals of armature & field coil brought over to a terminal box fitted on top to a bakelite sheet. Terminals marked with laser. Field control separately excited unit suitable for above (Static type) – 01 No. Both machines windings: made of super enameled copper wire only and required to be tested/operated on full load condition certificate from manufacturer. Control Panel: Made of rust free powder coated made of high grade fibre molded body (FRP) of minimum thickness 4 mm. The enclosure to be open from front side for fitting of Bakelite plate. Back side door is with hinges & lock for open the door from back side. Control panel fitted with the following for Phas	1	
No., Indicating Lamps LED type 16 mm dia – 3 Nos. Rotor Resistance Starter push button type			& lock for open the door from back side. Control panel fitted with the following for Phase		
			No., Indicating Lamps LED type 16 mm dia – 3		

	1			
		phase contactor The rotor resistance should be		
		provided in steps, simultaneously in all three		
		phases - 01 No., For control of DC shunt		
		generator: DP MCB suitable for DC operation		
		of 220V:1 Nos., Indicating lamp:1 nos,		
		Insulated Terminals, Patch Codes.		
		Coupling and Mounting: Motor and		
		Generator are coupled with a flexible type		
		coupling & mounted on a common M.S. base.		
		Coupling guard to be provided. Mounting on		
		fabricated base plate of M.S. 'C' channel size		
		75mm x 40mm x 5 mm thick.		
		Manual: for Cramer concept of speed control		
_	O'mala Di asa	of Induction motor.		
4	Single-Phase	Single-Phase Induction Motor:	2	
	Induction	Single phase Squirrel Cage, 1 HP, 220V, 1440		
	Motor:	rpm, Class "B" Insulation.		
		Connections: Terminals of auxiliary winding &		
		main winding should be brought over to a		
		bakelite sheet, fixed to C.I. terminal on top of		
		motor. Terminals marked with laser.		
		Machine winding of super enameled Copper		
		wire only and required to be tested/operated on		
		full load condition with certificate from		
		manufacturer. Electrical loading : Pronney brake		
		Electrical loading : Pronney brake arrangement, a C.I. drum pulley, suitable for		
		water cooling, round dial spring balances,		
		canvas belt with hooks, C.P. wheels with		
		threaded studs for tightening the belt, frame.		
		Mounting :on fabricated base plate of M.S. 'C'		
		channel size 75mm x 40mm x 5 mm thick.		
		Control Panel: Made of rust free powder		
		coated made of high grade fibre molded body		
		(FRP) of minimum thickness 4 mm. The		
		enclosure to be open from front side for fitting		
		of Bakelite plate. Back side door is with hinges		
		& lock for open the door from back side.		
		Control panel fitted with D.O.L. Starter Single		
		Phase - 1 No., DP MCB 10 Amp - 1 No.,		
		Indicating Lamps LED type 16 mm dia – 1 No,		
		Insulating Terminals, Patch chords.		
		Manual: to perform no-load and blocked-rotor		
		test, to perform load-test and plot torque-speed		
		characteristics.		
		Motor mounting: Fabricated base plate of M.S.		
		'C' channel size 75mm x 40mm x 5 mm thick.		
5	Motor	Motor Generator Set:	1	
	Generator	DC Motor: Shunt wound, 3 HP, 230V, 1500		
	Set:	rpm, Class "B" insulation, Fan cooled, screen		
	DC Motor:	protected. Horizontal foot mounted.		
	Shunt wound,	All the terminals of Armature and field winding		
	Alternator:	brought over to a bakelite sheet fixed to C I		
	Rotating	terminal fix fitted on top of Motor.		
	armature type	Alternator: Rotating armature type,2 kVA,		
		415V, 50 Hz, 0.8 pf lagging, 3 phase 4 wire,		
1	1	Class "B" Insulation, screen protected,		

			1	
	horizontal foot mounted, fan cooled, separately excited with damper winding. All the terminals brought over to a bakelite sheet fixed to C I terminal fix fitted on top of Machine. Terminals marked with laser. Field control separately excited unit suitable for above alternator (Static type) – 01 No. Both machine with winding of super enameled copper wire only and required to be tested/operated on full load condition with certificate from manufacturer. Coupling and Mounting: Motor and Generator are coupled with a flexible type coupling & mounted on a common M.S. base. Coupling guard to be provided. Mounting on fabricated base plate of M.S. 'C' channel size 75mm x 40mm x 5 mm thick. Control Board: Rust free powder coated control board made up of high grade Fibre moulded body (FRP) of minimum thickness 4 mm. The Enclosure is open from front side for fitting of Bakelite plate. Back side door is with hinges & lock for open the door from back side. Fitting on control Board: For DC motor: 3 Point DC Starter for 3 HP, 01 No, DC supply indicating lamp LED type of 16mm dia-01 nos., DP MCB suitable for DC operation on 16 Amp, 220V - 01 nos., For Alternator: Indicating Lamps LED type 16 mm dia – 3 nos., For excitation: Indicating Lamps LED type 16 mm dia – 1 nos. Insulating terminals, Patch cords. Manual for no load and short circuit test on 3 phase alternator, draw open and short circuit characterstics.			
6 Motor Generator Set: DC Motor: Shunt wound, Alternator: Non salient pole (Cylindrical rotor)	Motor Generator Set: DC Motor: Shunt wound, 3 HP, 230V, 1500 rpm, Class "B" insulation, Fan cooled, screen protected. Horizontal foot mounted. All the terminals of Armature and field winding brought over to a bakelite sheet fixed to C I terminal fix fitted on top of motor. Terminals marked with laser. Alternator: Non salient pole (Cylindrical rotor) type,2 kVA, 415V, 50 Hz, 0.8 pf lagging, 3 phase 4 wire, Class "B" Insulation, screen protected, horizontal foot mounted, fan cooled, separately excited. All the terminals brought over to a bakelite sheet fixed to C I terminal fix fitted on top of Machine. Field control separately excited unit suitable for above alternator (Static type) – 01 No. All machines with winding of super enameled copper wire only and required to be tested/operated on full load condition with	1		

7 Motor Generator Set: DC Motor: Shunt wound, Alternator: Salient pole/Rotating field type	Coupling and Mounting: Motor and Generator are coupled with a flexible type coupling & mounted on a common M.S. base. Coupling guard to be provided. Mounting on fabricated base plate of M.S. 'C' channel size 75mm x 40mm x 5 mm thick. Control Panel: Rust free powder coated control board made up of high grade Fibre moulded body (FRP) of minimum thickness 4 mm. The Enclosure is open from front side for fitting of Bakelite plate. Back side door is with hinges & lock for open the door from back side. Panel fitted with: For synchronous motor: Three phase power-factor meter (digital) 96mmX96mm-01 nos., TPN MCB 10 amps-01 nos. Indicating lamp LED type 16mm Dia-03 nos., DOL starter-01 nos., SPST knife switch for DC excitation -01 nos., For DC Generator: DP MCB suitable for DC operations, 220V-01 nos., For DC excitation: Indicating lamp LED type 16mm Dia-01 nos, Insulating Terminals and sufficient patch cords. Motor Generator Set: DC Motor: Shunt wound, 3 HP, 230V, 1500 rpm, Class "B" insulation, Fan cooled, screen protected. Horizontal foot mounted. All the terminals of Armature and field winding brought over to a bakelite sheet fixed to C I terminal fix fitted on top of motor. Terminals marked with laser. Alternator: Salient pole/Rotating field type,2 kVA, 1500 rpm, 415V, 50 Hz, 0.8 pf lagging, 3 phase 4 wire, Class "B" Insulation, screen protected, horizontal foot mounted, fan cooled, separately excited with damper winding. All the terminals brought over to a bakelite sheet fixed to C I terminal box on top of machine. Field control separately excited unit suitable for above (Static type) – 01 No. All machines with winding of super enameled copper wire only and required to be tested/operated on full load condition with certificate from manufacturer. Coupling and Mounting: Motor and Generator are coupled with a flexible type coupling & mounted on a common M.S. base. Coupling guard to be provided. Mounting on fabricated base plate of M.S. 'C' channel size 75mm x 40mm x mm thick. Control Panel: Rust free powder c	2	
	mm. The Enclosure is open from front side for fitting of Bakelite plate. Back side door is with		
	hinges & lock for open the door from back side.		

			Г	
		starter, suitable for 3HP motor-01 nos.,		
		Indicating lamp LED type 16mm Dia-01 nos.,		
		DP MCB suitable for DC operations, 16 A,		
		220V-01 nos., For AC generator: Three Digital		
		phase power-factor meter 96mmX96mm-		
		01nos., Digital frequency meter 72mmX 72		
		mm-01 nos., For DC excitation: Indicating lamp		
		LED type 16mm Dia-01 nos., Insulating		
		Terminals and Patch cords.		
		Manual for negative sequence and zero		
		sequence reactance of synchronous machine.		
8	Induction	Induction Generator:	1	
	Generator:	DC Motor: Shunt wound, 3 HP, 230V, 1500		
	DC Motor:	rpm, Class "B" insulation, Fan cooled, screen		
	Shunt wound,	protected. Horizontal foot mounted.		
	Motor:	All the terminals of Armature and field winding		
	Squirrel Cage	brought over to a bakelite sheet fixed to C I		
	Type	terminal fix fitted on top of motor. Terminals		
	. ,,,,	marked with laser.		
		Motor: Squirrel Cage Type, Three Phase,		
		3HP, 415V, 1440 rpm, Class "B "Insulation		
		Motor winding made of super enameled		
		Copper wire only and required to be		
		tested/operated on full load condition certified		
		by manufacturer.		
		Control Board :- Rust free powder coated		
		control board made up of high grade Fibre		
		moulded body (FRP) of minimum thickness 4		
		mm. The Enclosure is open from front side for		
		fitting of Bakelite plate. Back side door is with		
		hinges & lock for open the door from back side.		
		And fitted with the following:		
		Digital DC Voltmeter Micro-controller		
		based, 72 x 72mm, 0-300V – 01 No.		
		based, 72 x 72mm, 0-15 Amp – 01 No.		
		3) Digital AC Voltmeter Micro-controller		
		based, 72 x 72mm, 0-500V – 01 No.		
		4) Digital AC Ammeter Micro-controller		
		based, 72 x 72mm, 0-10 Amp – 01 No.		
		5) Digital Frequency Meter 72 x 72 mm – 01		
		No.		
		6) 3 Point DC Starter suitable for above		
		motor – 01 No.		
		7) Rotary Switch		
		8) Indicating light		
		9) FP MCB 10 Amp – 01 No.		
		10) DP MCB 10 Amp – 01 No.		
		11) Patch chords.		
		Coupling and Mounting: Motor and		
		Generator are coupled with a flexible type		
		coupling & mounted on a common M.S. base.		
		Coupling guard to be provided. Mounting on		
		fabricated base plate of M.S. 'C' channel size		
		75mm x 40mm x mm thick.		
		Instruction manual for operation as Induction		
		generator.		

0	Donal fa	Denal for navellal anaration of armshare	4	
9	Panel for	Panel for parallel operation of synchronous machines:	1	
	parallel operation of	Control Panel for synchronizing of alternators		
	synchronous	(any two) at sr. no. 5, 6, 7 at a time. With		
	machines:	provision for (i)Dark ;amp method (ii) Two		
	macinics.	bridge and one dark lamp method		
		For DC Motor:		
		Digital DC Voltmeter Micro-controller based, 96		
		x 96mm, 0-300V: 2 nos. Digital DC Ammeter		
		Micro-controller based, 96 x 96mm, 0-20A: 2		
		nos. DP MCB suitable for DC operation 220V:		
		2 nos. D.C. Starter, 3 Point, Face plate type,		
		suitable for above Motor.: 2 nos. Indicating		
		Lamps LED type 16 mm dia.		
		For A.C. Generator:		
		Digital AC Voltmeter Micro-controller based, 96		
		x 96mm, 0-500V: 2 nos. Digital AC Ammeter		
		Micro-controller based, 96 x 96mm, 0-5A: 2		
		nos. Phase Sequence Indicator, 96 x 96 sq		
		mm: 2 nos. Bulb with Holders: 6 nos.		
		Synchroscope, for 440V A.C. Operation, Panel		
		type: 1 set		
		Tripple pole double throw switch: 1 set		
		M.C.B. 6 A, 3 Pole: 2 nos.		
		Static Excitation Controlling Arrangement		
		For DC Exciter:		
		Digital DC Voltmeter Micro-controller based, 96		
		x 96mm, 0-300V: 2 nos		
		MCB Double pole 6 A: 2 nos		
		Insulating Terminals for the machines. Patch cords		
		Common busbar		
		Manual for parallel operation of alternators		
10	Portable UPF	Portable UPF Wattmeter:	9	
	Wattmeter:	Dynamometer type, with anti-parallax mirror	· ·	
		with 150 mm knife edge pointer enclosed in		
		wooden box (300mm(I)X200mm(w) X155-		
		190mm(h) Accuracy: 0.5%, Scale length :150,		
		Division 100-150.		
		Current coil rating 2.5/5A, Potential Coil rating		
		150/300/600V: Qty:6		
		Current coil rating 5/10A, Potential Coil rating		
		75/150/300V: Qty:3	0.000/555	
11	Voltmeter:	Voltmeter:	0-300/600	
		Portable AC/DC Type with anti-parallax mirror	V, Qty :9	
		with 150 mm knife edge pointer enclosed in	0-150/300	
		wooden box (300mm (I)X200mm(w)X155-	V, Qty :3	
		190mm(h) Accuracy: 0.5%, Scale length :150, Division 100-150.		
		ווטופועום.		
12	Ammeter:	Ammeter:	0-5/10 A,	
12	Allinietei.	Portable AC/DC Type with anti-parallax mirror	Qty: 10	
		with 150 mm knife edge pointer enclosed in	0-2A,	
		wooden box (300mm(I)X200mm(w) X155-		
		190mm(h) Accuracy: 0.5%, Scale length :150,	Qty: 2 0/2.5A,	
		Division 100-150.	Qty: 2	
13	Frequency	Frequency meter:	2	
			_	

meter: Type: Vibrating reed type, Operating	
voltage:220-250 V, 389-440V, Dielectric	
strength: 2kV RMS for 1 minute, Confirms to	
IS 1248/IEC 60051 (Part 4)	
14 Power Power Factor Meter: Single	
Factor Type: Dynamometric, Operating Voltage: phase,	
Meter: 75V to 500V for 1 Ph. 110V / 440V – PT Qty: 2	
secondary for 3Ph. Burden : <1.25VA upto	
75V. Operating Current :0.5A to 10A for 1 Ph. Three	
TA / 5A - CT secondary for 3Ph. Burden :,	
<10VA upto 10A. Frequency: 45 ~ 65Hz.	
Insulation Resistance: Greater than 20M Ω at	
500V DC. Dielectric Test: 2kV RMS for 1	
minute. Conforms To: I.S. 1248 / I.E.C.	
60051(Part 3) for WATT / VAR , (Part 5) for	
PF.	
15 Rheostat Rheostat 5	
1.4 Amp, 260 Ohm: Qty:4	
5 Amp, 45 Ohm: Qty:1	
16 Rectifier Unit Rectifier Unit 1	
Natural air rectifier equipment, having the	
following specification.	
Input: 440 V. 3 ph, 50 Hz, A.C.	
Output Volts: 250 V DC with	
Output Current: 60 Amp DC	
Capacity: 15 KW	
IGBT module (including tra	
matched current sharing wis	
of the equipment.	
Type of control: variac (stepl	
Working guarantee for 5 yea	
17 Stroboscope: Stroboscope: 1	
Measurement Range: A: 50~12000FPM,	
display: 510mmLED	
Accuracy:± (0.05%n+1d), Resolution 0.1	
FPM (Less 1000 FPM), Sampling	
time : 0.3second,	
2 ranges : H, L (High,Low)	
Triggering Mode : Interior/Exterior	
Temperature : 0~40°C	
Humidity : Less than 85%RH	
Flash adjust : Coarse adjustment	
fine adjustment , ×2 and ÷2 for fast check	
18 Digital Digital Multimeter 4	
Multimeter True RMS reading on AC mode, Voltage	
Range: DC 1000 V, AC 750V, Current range	
10A AC/DC, Resistance, Frequency and	
capacitance ranges, with back light display.	
Comply with IEC61010 Cat IV 600V, display of	
6000 counts updates 1.5/Sec, over range	
indicator, DC Accuracy :(±0.5% +2 digits), AC	
Accuracy 50Hz/60 Hz sine wave only for	
Accuracy 50Hz/60 Hz sine wave only for 600.0mV range (±0.9% +5 digits). Test leads and probes with silicon cables.	

POWER ELECTRONICS AND DRIVES LAB

No. Equipment Equipment/Item with specifications inty offered Comply (Yes/No)	Sr.	Name of	S AND DRIVES LAB Technical Specification(required)	0	Specific	Whether
1. Power Electronics Trainer Electronics Trainer Power Supply (Mains): 230V ±10%, 50Hz AC Power Supply: 18V-0V-18V, 0V-15V DC Power Supply: +5 V, -5 V 500 mA, +15 V, 250 mA, +35V, -250 mA, +35V, -35V, 250 mA, +17 V DC Unregulated DC Power Supply: 12V DC Isolated DC Power Supplies TRIAC DC Isolated DC Power Supplies DC Inductor Isolated DC Power Supplies DC Inductor Isolated DC Power Supplies DC Inductor Inductor Isolated DC Power Supplies DC Inductor Inductor Inductor Isolated DC Power Supplies DC Inductor Inductor Inductor Inductor Isolated DC Power Supplies DC Inductor						
1. Power Electronics Trainer Specifications: Trainer Power Supply (Mains): 230V ±10%, 50Hz AC Power Supply: 18V-0V-18V, 0V-15V DC Power Supply: 9V, 5V 50 0m A, +12V, -12 V 500 mA, +15 V, 250 mA, +35V, -35V, 250 mA, 17V DC Unregulated DC Power Supply: 13:5V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 IGBT (G48C20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (B136) Qty: 1 SCR Assembly: SCRS 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1 no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of 'Gate' Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 - 3 nos. Inductor 16mH – 1 no. Variable resistor 1MW -1 no. Load selector: 6 load resistances- 47E/TW, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: RL/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: - board mimic having indication of Functional blocks indicated on - Breadboard provided for own circuit development - In built DC and AC Power Supplies - Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier fining circuit with firing angle control	NO.	Equipment	Equipment/item with specifications			
Electronics Trainer Specifications: Power Supply (Mains): 230V ±10%, 50Hz AC Power Supply: 18V-0V-18V, 0V-15V DC Power Supply: +5 V, -5 V 500 mA, +15 V, -12 V 500 mA, +15 V, 250 mA, +35V, -250 mA, 17V DC Unregulated DC Power Supply, 13:V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 PUT (2N6627) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1 uF, 63V Met. Capacitor 0.3uF, 63V Diode 1N4007 -3 nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Variable resistor 1MW -1no. Variable resistor 1MW -1no. Variable resistor 1MW -1no. Variable resistor 110 nos. Size of Breadboard: 172.5 mm x 128.5mm Other features: Doard mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier fining circuit with firing angle control		Dower	Dever Floatronica Trainer		(onered)	(Tes/NO)
Trainer Power Supply (Mains): 230V ±10%, 50Hz AC Power Supply: 18V-0V-18V, 0V-15V DC Power Supply: 15 V, 5 V 500 mA, +12V, -12 V 500 mA, +15 V, 250 mA, +35V, -35V, 250 mA, 17V DC Unregulated DC Power Supply, 13.5V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N8002T) Qty: 1 DIAC (D83) Qty: 1 TRIAC (B1136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of 'Gate' Signal - 0 -100% (Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.3uF, 63V Diode 1N4007 -3 nos. Inductor 68mH - 2nos. Inductor 68mH - 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 12De/5W, 27C/5FW, 2K2/2W, 1K/1W, 1K/10W Load Assembly: RL/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm x 128.5mm Other features: Load of Pulse Generator with frequency And the Capacitor of the pulse Onboard (i) Pulse Generator with frequency And the Capacitor of the pulse Onboard (i) Pulse Generator with frequency And the pulse Onboard (ii) Pulse Generator with frequency And the pulse Onboard (ii) Pulse Generator with frequency And the pulse And the pulse Onboard (iii) single phase Onboard (iii) fingle phase Continuence And the power And the power	1.			03		
AC Power Supply: 18V-0V-18V, 0V-15V DC Power Supply: 45 V, -5 V 500 mA, +12V, -12 V 500 mA, +15 V, 250 mA, +35V, -35V, 250 mA, 17V DC Unregulated DC Power Supply, 13.8V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRF244N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: RL/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development in bull DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
DC Power Supply: +5 V, -5 V 500 mA, +12V, -12 V 500 mA, 17V DC Unregulated DC Power Supply, 13.5V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) City: 1 MOSFET (IRFZ44M) City: 1 IGBT (G4BC20S) City: 1 UJT (2N2646) City: 1 PUT (2N6027) City: 1 DIAC (DB3) City: 1 TRIAC (BT136) City: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 -3 nos. Inductor 86mH – 2nos. Inductor 86mH – 2nos. Inductor 86mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances-47E/TW, 120E/5W, 270E/5W, 276E/5W, 276E/5W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In bulls DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control		ırainer	, , , ,			
-12 V 500 mÅ, +15 V, 250 mA, +35V, -35V, 250 mA, 17V DC Unregulated DC Power Supply, 13.5V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G48C20S) Qty: 1 UJT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal — 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capa						
250 mA, 17V DC Unregulated DC Power Supply, 13.5V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N6027) Qty: 1 PUT (2N6027) Qty: 1 DIAC (IBS) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1-1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1UF / 63V Met. Capacitor 0.10F, 63V Met. Capacitor 0.10F, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 -3 nos. Inductor 168mH – 2nos. Inductor 168mH – 2nos. Inductor 168mH – 2nos. Inductor 168mH – 2nos. Inductor 170mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 120E/5W, 27OE/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with fring angle control						
Supply, 13.5V DC Regulated Battery Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 - 1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 - 3 nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/TW, 120/E/W, 270E/SW, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with fring angle control						
Charging Supply 12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N8027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1-1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/TW, 120E/SW, 270E/SW, 2K2/2W, 1K/1W, 1K/10W Load Assembly: RIL/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with fring angle control						
12V DC Isolated DC Power Supply Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BB136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 90Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.3uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 68mH – 2nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Load selector: 6 load resistances- 47E/TW, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: RL/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: - board mimic having indication of Functional blocks indicated on - Breadboard provided for own circuit development - In built DC and AC Power Supplies - Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
Power Devices: SCR (TYN616) Qty: 1 MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.3uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase						
MOSFET (IRFZ44N) Qty: 1 IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 - 1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal - 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 -3 nos. Inductor 68mH - 2nos. Inductor 10mH - 1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/TW, 120E/SW, 270E/SW, 2K2/2W, 1K/1W, 1K/10W Load Assembly: Rt/LC Test points: 8-10 nos. Size of Breadboard: 172.5 mm x 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
IGBT (G4BC20S) Qty: 1 UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.1uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/TVI, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
UJT (2N2646) Qty: 1 PUT (2N6027) Qty: 1 DIAC (DB3) Qty: 1 TRIAC (BT136) Qty: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal - 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.1uF, 63V Diode 1N4007 -3 nos. Inductor 68mH - 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/TW, 120E/SW, 270E/SW, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			, ,			
PUT (2N6027) Qfy: 1 DIAC (DB3) Qfy: 1 TRIAC (BT136) Qfy: 1 SCR Assembly: SCRs 2P4M, 400V/2A - 4nos. Pulse transformer: PT4502 1:1-2 nos. and PT4503 1:1:1 -1no. Firing Circuits: Frequency range: 30Hz to 900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.3uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/TW, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
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900Hz variable, Amplitude: 12V PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			PT4503 1:1:1 -1no.			
PWM control of G1, G2, G3 and G4, Duty cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			Firing Circuits: Frequency range: 30Hz to			
cycle control of "Gate" Signal – 0 -100% Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.3uF, 63V Diode 1N4007 -3 nos. Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/TW, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			900Hz variable, Amplitude: 12V			
Circuit Components: Electrolytic Capacitor 1uF / 63V Met. Capacitor 0.1uF, 63V Met. Capacitor 0.33uF, 63V Diode 1N4007 -3 nos. Inductor 68mH - 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm x 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			PWM control of G1, G2, G3 and G4, Duty			
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Inductor 68mH – 2nos. Inductor 10mH -1no. Variable resistor 1MW -1no. Load selector: 6 load resistances- 47E/7W, 120E/5W, 270E/5W, 2K2/2W, 1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: board mimic having indication of Functional blocks indicated on Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
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1K/1W, 1K/10W Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: · board mimic having indication of Functional blocks indicated on · Breadboard provided for own circuit development · In built DC and AC Power Supplies · Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			Load selector: 6 load resistances-			
Load Assembly: R/L/C Test points: 8-10 nos. Size of Breadboard: 172.5 mm × 128.5mm Other features: · board mimic having indication of Functional blocks indicated on · Breadboard provided for own circuit development · In built DC and AC Power Supplies · Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
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Size of Breadboard: 172.5 mm x 128.5mm Other features: • board mimic having indication of Functional blocks indicated on • Breadboard provided for own circuit development • In built DC and AC Power Supplies • Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
Other features: · board mimic having indication of Functional blocks indicated on · Breadboard provided for own circuit development · In built DC and AC Power Supplies · Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			•			
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Breadboard provided for own circuit development In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
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In built DC and AC Power Supplies Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control			·			
Onboard (i) Pulse Generator with frequency and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
and duty cycle control (ii) single phase rectifier firing circuit with firing angle control						
rectifier firing circuit with firing angle control						
(iii) thyristor devices (iv) Pulse Amplifier and						
isolation transformer (v) Variable load and			• •			
circuit components						
Operation manuals			Operation manuals			

2	Miorocontrollor	Migrocontroller based Firing Control Vit	04		1
2.	Microcontroller based Firing	Microcontroller based Firing Control Kit Specifications:	01		
	Control Kit	AC source: 0V-15V, 18V-0V-18V.			
	Some of Kit	Firing circuits: Microcontroller based firing			
		circuit			
		Interconnections: 2mm sockets			
		SCR assembly: 4 SCRs 2P4M, 400V/2A			
		Pulse transformer: PT4503, 1:1:1			
		Mains Supply: 220V/110V, 50 Hz / 60 Hz			
		Test points: 8 nos			
		Load: 270E, 5W, L=120mH, DC motor 12V			
		Dimensions (mm): W 420 x D 255 x H 100			
		Weight: 1-1.5 Kg. (approximately)			
		Operating Conditions: 0-40° C, 85% RH			
		Other features:			
		- On board (i) firing circuit using			
		Microcontroller (ii) AC sources of 0V-15V,			
		18V0-18V, (iii) SCR assembly and load (iv)			
		pulse transformer for isolation			
		Gradual firing angle control up-to 180			
		degree			
		· Test points to observe output of different			
		blocks and sockets for connections			
		· In built AC/DC Power Supply			
		Operation manuals			
3.	Single Phase	Single Phase Full-wave and Fully	02		
	Full-wave and	Controlled Bridge Rectifier			
	Fully Controlled	Specifications:			
	Bridge Rectifier	DC Integrated Motor:			
		Integration: Shunt, Series and Compound			
		Type, 180V ± 10%, 2.5A, 1500 rpm ± 10%,			
		Class "B"			
		Power Supply: 230 V ± 10%, 50 Hz			
		Instrumental Power Supply			
		: ±12V, 500mA, +5V, 300mA, 17Vdc, 750mA			
		(Unregulated) Digital Meters: Voltmeter (DC): 300V,			
		Ammeter (DC): 10A, RPM Meter: RC100			
		Proximity Sensor: PNP Type			
		Firing Circuit: Cosine method, Full wave half			
		controlled			
		Interconnections: 2 mm & 4 mm sockets			
		Protection: Fuse: 2A, MCB: 10A (SPN)			
		Other features:			
		 Built in Instrumental Power Supply. 			
		 Equipped with Proximity sensor to 			
		measure the speed			
		 On board firing circuit. 			
		- Digital Meters are being used			
		 Safety connecting terminal and 			
		stand-alone operation			
		 Test socket provided to check the 			
		outputs at different blocks.			
		- Provided with DC Integrated Motor			
	- D:	Operation manuals	00		
4	Three Phase	Three Phase Fully Controlled Bridge	02	1	
-	Fully Controlled	Converter Kit	\ \-		l

Bridge Specifications: **Converter Kit** Mains Supply: 415V ±10%, 50Hz Diode Rating: 1200V/16A, SCR Rating: SCR 1200V/25A Digital Meter: Multi-function meter: V, I, Hz, Pf, KVA, KW, KWh (0-500V, 5A, 45-65Hz, 0.2 (Lead)-1-0.2(Lag) DC Voltmeter (DC): 600V, Ammeter (DC): 5A Protective Devices: MCB(TPN): 415 V, 4A DOL Starter Contractor: 9A, 230V, 50 Hz, 11VA COIL. Bimetallic thermal O/L relay: 1 A- 2.5A. Lamp load: 100W (3 Nos.) Inductive load: 0.75W/3H/300mA (3Nos.) Motor Load (DC Shunt Motor 1 HP), Armature Voltage: 440V DC, Field Voltage: 200V DC Other features: DOL starter and Built in Field failure protection Phase Sequence Indicator Provided with DC Shunt Motor High quality digital and multi-function meters, suitable for resistive and inductive load Three Phase low voltage Supply for gate circuit Three Phase Firing Circuit provided with pulse isolation, Firing angle control All the safety precautions needed Diagrammatic representation of circuits Operation manuals

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

Signature of Bidder Name:	Designation:
_	

<< Organization Letter Head >>

DECLARATION SHEE	т
We,here data furnished by our organization with regard to this tende the best of our knowledge. We have gone through the in details and agree to comply with the requirements and	specification, conditions and stipulations
This is certified that our organization has been authorized (0 in Tender. We further certify that our organization meets a down in this tender document. Moreover, OEM has a technology / product updates and extend support for the war	all the conditions of eligibility criteria laid agreed to support on regular basis with
The prices quoted in the financial bids are subsidized due to Punjab Technical University, Kapurthala, Punjab.	to academic discount given to I.K. Gujral
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

<u>LETTER OF UNDERTAKING</u> (ON THE LETTER HEAD OF THE BIDDER)

То

I.K. Gujral Punjab Technical University, Kapurthala Punjab- 144603 India
Sir,
SUBJECT- Supply, Installation, Commissioning & Maintenance of Laboratory Equipment of Electrical 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 order 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 on 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 Contact 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:-

SI. No.	Financial Year	Annual Turn over in Lakhs
1.	2015-16	
2.	2016-17	
3.	2017-18	

Note: Certificate from Statutory Auditor/ Charted Accountant certifying balance sheet only for all three years to be attached.

Signature with Seal of the Chartered Accountant

Signature with Seal of the Bidder

ANNEXURE-VI

Details of Projects Completed During Last 03 Financial Years

Bid No.: Date of Opening:

Time:

Name of the Firm:

S. No.	Name of the Projects	Order No. & Date	Description & Quantity of ordered Equipment	Value of Order in Lakhs	Date of Start	Scheduled Date of Completion	Actual Date of Completion	Reason for Delay, if any
1.								
2.								
3.								
4.								
5.								
6.								
7.								

Signature with Seal

ANNEXURE-VII

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

List of Govt./PSU's/Autonomous bodies/ Govt. Institutions such as IIT's/NIT's/IIIT's/Central Universities/ State Universities for whom the Bidder has undertaken such work during last three financial years (must be supported with work orders)						
Name of the organization			Total Value in Lakhs	Na	ame of Contact Person and other details	
		<u>Techni</u>	cal Competency D	eta	<u>iils</u>	
					e the technical competency to he warranty period.	
Name of the organization		Nan	ne of Contact Person		Contact No.	
	<u>Details</u>	of Service	e Supports/Closest	Se	rvice Station	
Sr. No.	Full A Suppo along	ddress o orts/Close with con	f Service est Service Station tact Nos.		Type of Service Supports/Closest Service Station	
				ı		
					Signature of Bidder	
			Nam	e: _		
			Designation:			
Organization Name:						
			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./Msson/daughter/wife of and presently residing
at, who is presently employed with /retained by us and holding position
ofas our true and lawful attorney
(hereinafter referred to as the "Authorized Representative") to do in our name and on our behalf, al
such acts, deeds and things are as necessary or required in connection with or incidental to
submission of our proposal for and selection as the
<pre><project title=""> for the <name client="" of="" the="">project, proposed to be</name></project></pre>
developed by the
(the "client") including but not limited to signing and submission of al
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 matter 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 or
the Agreement with the client.
AND, we do hereby agree to ratify and confirm all acts, deeds and things lawful 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 WETHE ABOVE NAMED PRINCIPAL
HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF 2018.
Cor (Name and registered address of client)
For (Name and registered address of client)
(Signature name designation and address)

Witness:

1.	(Signature, name and address)
2.	(Signature, name and address)
Not	arized

Accepted(Signature, name,

designation, and address of the attorney) Notes:

- 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.
- Wherever required, the applicant should submitted 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 it is carries a conforming Apostle certificate.

ANNEXURE-IX

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 Electrical Engineering at I.K. Gujral Punjab Technical University Main Campus, Kapurthala (Punjab)

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.	

-Submission of Bid -

- 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 the original tender document uploaded by I.K. Gujral Punjab Technical University, Kapurthala (Punjab) on the designated web page for e-tendering. In case, if a fraudulent activity is found at any stage between tender submission to final closure of the tender/contract, my/our candidature/bid/contract shall be immediately cancelled and EMD/Performance security/ security deposit along with the due amount towards the work executed or advance 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 any one 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. 1180/- is submitted. Enclosures:						
Thankii	Thanking you,						
Yours f	aithfully,						
	Name of the Bidder						
	Authorized Signatory						
	Seal of the Organization						
Date:							
Place:							

ANNEXURE - X

PERFORMANCE BANK GUARANTEE FORMAT

	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 suite or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.
	a. The payment so made by us under this Performance Guarantee shall be a valid discharge of our liability for payment there under 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 discharges this guarantee.
5	(a) Not withstanding 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 undertakes to renew this guarantee or to extend the period of guarantee form year to year before the expiry of the period or the extended period of the guarantee, as the case 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.	University, Kapurth the fullest liberty hereunder to vary postpone for any Punjab Technical Lof the terms and liability by reason any bearance at Kapurthala or any	nala that the I. without our co- any of the term time or from to Jniversity, Kapul conditions of to any such to or omission or indulgence by any such many such many such many such many such many our our conditions of the such that the such	K. Gujral Punjab onsent and without and conditions ime to time any touch that against the he said agreement on the part of touch the I.K. Gujral Putatter or thing what	er agree with the I.K. Gujral Punjab Technical University, Kapurthala shat effecting in any manner out of of the said contract from time to to the powers exercisable by the I. said Agency and to forbear or ent and we shall not be relieved sion being granted to the said Agency I.K. Gujral Punjab Technical Unipab Technical Unipab Technical Unipab Technical University, Kapurthal soever under the law relating to su	hall have bligations ime or to K. Gujral force any from our gency for Jniversity, la to the
7.	This guarantee wi	ill not be disch	arged by any cha	nge in the constitution of the Bar	nk or the
8.	We,	with the previ		Bank) lastly undertake not to rev ne I.K. Gujral Punjab Technical L	
9.	extended on demanything to the restricted to Rs	and by I.K. Gu contrary conta (F e on us in writin	ujral Punjab Techr ained hereinbefore Rs ng on or before	mpletion plus Handholding Period nical University, Kapurthala. Notwith e, our liability under this guar only) unless a demand un we shall be discharged	hstanding antee is der this
	Dated:	the	Day of	for	
			(indicate the na	ame of bank)	
			Signature of Ba	nks Authorized official	
	Witness		(Name)		
			Designation wi	th Code No	
	1		Full Address		
	2.				

ANNEXURE-XI

PROFORMA PRE CONTRACT INTEGRITY PACT

GENERAL

day of the month of 2018, between, on one hand, acting through Shri/Smt.
AND
M/s
WHEREAS the I.K. Gujral Punjab Technical University, Kapurthala proposes 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
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 16 th January, 1997.
NOW, THEREFORE,
To avoid all forms of corruption by following a system that is fair, transparent and free from any influence / prejudiced dealings 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
1. <u>Commitments of the I.K. Guiral Puniab Technical University. Kapurthala</u>

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. Commitments of Bidders

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-contract or post-contract stage in order to secure the contract or 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 Contract or forbearing 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 forbearing to show favour or disfavor 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 BIDDER further confirms and declares to the I.K. Gujral Punjab Technical University, Kapurthala that the BIDDER is the original manufacturer/integrator/authorized

government sponsored 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 to the contract to the BIDDER, 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 case shall be for satisfactory performance of the proposed terms of Bidder.

- 3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends 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 BIDDER 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 BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The BIDDER 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 BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, 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 BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of Bid.
- 3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the I.K. Gujral Punjab Technical University, Kapurthala.

4. PREVIOUS TRANGRESSION

- 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 practices 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 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 an amount of Rs. as 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 case 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 of Performance Bond in the corresponding Contract governing such agreement that the provisions of Sanctions for Violation 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 any one 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 signed) 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 case 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 aforesaid 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 amount 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 contract 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. <u>INDEPENDENT MONITORS</u>

- 7.1 An Independent monitor (s) shall be appointed by I.K. Gujral Punjab Technical University, Kapurthala, incase of breach of the provisions of the pact.
- 7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.
- 7.3 The Monitors 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 Monitors 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 has 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 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 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 the option to participate in such meetings.
- 7.8 The Monitor 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 the 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 s	several p	orovisio	ns o	t th	is Pact	turn	out to	be i	nvalid;	the	remaii	ndei	r ot
	this Pact	shall	remain	valid.	ln '	this	case,	the	parties	will	strive	to	come	to	an
	agreemer	nt to th	neir origir	nal inter	ntion	s.									

parties hereby sign this Integrity Pact at	on
Bujral Punjab Technical University, Kap	urthala
ER	
e of the Officer:	Authorised Signatory of IKGPTU,
gnation:	Kapurthala
ess:	Witness
	1
	2
	Gujral Punjab Technical University, Kapo DER e of the Officer: gnation:

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

ANNEXURE XII

MANUFACTURER AUTHORIZATION FORM

	No	dated					
То							
	- - -						
Dear Sir:	Bid No				-		
We manufacturer of			who	are	establishe	ed and	reputed
manufacturer of	submit a bid, and si	do hereby au	thorize	M/s_		(Nan	ne and
We hereby ex goods and services certify that we shall contract period include	support vendor with	the above firm an all related spar	against	this I	nvitation fo	r Bid. W	e further
					,	Yours fait	thfully,
		1)	Name):_				
	(Na	me of manufacture	ers):				

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.

ANNEXURE XIII

Earnest Money Details

ELECTRICAL MACHINES-II LAB

Sr.	Name of Equipment	Earnest Money
No.		(INR)
1	Three Phase Induction motor, Squirrel Cage Type	3000
2	Three Phase Induction motor: Phase wound/Slip ring Type	3500
3	Motor Generator Set: Motor: 3 Phase, Phase Wound/Slip ring. Generator: DC Shunt Generator	3500
4	Single-Phase Induction Motor:	1000
5	Motor Generator Set: DC Motor: Shunt wound, Alternator: Rotating armature type	3500
6	Motor Generator Set: DC Motor: Shunt wound, Alternator: Non salient pole (Cylindrical rotor)	3500
7	Motor Generator Set: DC Motor: Shunt wound, Alternator: Salient pole/Rotating field type	7000
8	Induction Generator: DC Motor: Shunt wound, Motor: Squirrel Cage Type	4250
9	Panel for parallel operation of synchronous machines:	1300
10	Portable UPF Wattmeter:	4500
11	Voltmeter:	4200
12	Ammeter:	4900
13	Frequency meter:	1000
14	Power Factor Meter:	2700
15	Rheostat	1250
16	Rectifier Unit	15000
17	Stroboscope:	600
18	Digital Multimeter	3200
	Total	67900

POWER ELECTRONICS AND DRIVES LAB

Sr. No.	Name of Equipment	Earnest Money (INR)
1.	Power Electronics Trainer	9000
2.	Microcontroller based Firing Control Kit	800
3.	Single Phase Full-wave and Fully Controlled Bridge Rectifier	14800
4	Three Phase Fully Controlled Bridge Converter Kit	14800
	Total	39400

CONTRACT FORM ANNEXURE – XIV

THIS AGREEMENT made the day of 2017 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 desirous that certain Goods and ancillary services viz

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 submitted by the Bidder; [b]

The Schedule of Requirements;

- [c] The Terms & Conditions
- [d] The Consignee's Notification of Award/ Purchase Order
- 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 herein 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 Contact prices 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 where of 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/ equipment supplied and model of the Equipments/Items. It is certified and acknowledged that the same have been received at this Institution in good condition.

SI. No.	SI. 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/equipment 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

SI No (As

SI. No.	per Work Order)	Description of Equipment	Origin	Model & Make	Quantity
Date: _			Authoriz	of the issuing zed Official,	·
			I.K. GUJR. UNIVERS	AL PUNJAB 1 ITY	ECHNICAL

Name _____ Designation _ Rubber Seal of the Institution

Received the Acknowledgement Certificate

Date:	Signature of Supplier or his Authorized Representative	
	Name [.]	

ANNEXURE - XVI

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 these lines 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.

SI. No.	SI. 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 Acceptance Certificate			
Date:	Signature of Supplier or his Authorized Representative Name:			

FINANCIAL BID SUBMISSION FORM

To:	
	Registrar I.K.Gujral Punjab Technical University, Kapurthala Punjab -144603
Dear	Sir
OF	he undersigned, offer to provide "SUPPLY, INSTALLATION, COMMISSIONING & MAINTENANCE LABORATORY EQUIPMENT OF ELECTRICAL NEERING DEPARTMENT in accordance with your bid document.
amou Pleas bindir	attached Financial Bid is for the amount of[Indicate the corresponding to the int(s), currency(ies) {Insert amount(s) in words and figures}]. e note that all amounts shall be the same as in Bill of Quantity (BOQ). Our Financial Bid shall be the group upon by us subject to the modifications resulting from Contract negotiations, if any, up to ation of the validity period of the Proposal.
We re	emain
Yours	s sincerely,
In the	city of: ess:



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

BID DOCUMENT

NATIONAL COMPETITIVE BIDDING

FOR

SUPPLY, INSTALLATION, COMMISSIONING & MAINTENANCE OF LABORATORY EQUIPMENT OF ELECTRICAL ENGINEERING I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY MAIN CAMPUS, KAPURTHALA, PUNJAB

> Bid No.:----**PART-II- FINANCIAL BID**

HoD (EE)

Dy. Registrar (Audit) Asst. Registrar (MC-S&P) Convener

FINANCIAL BID

Instructions to Bidders

- 1. Price to be quoted in the Bid of Quantity (BOQ) according to the instructions provided.
- 2. The Bidder can quote for all or any of the Laboratory items/equipment listed in this document.
- The rate shall be inclusive of all taxes, octroi, transportation (as per the 3. location), packing, loading and unloading (as designated location), Insurance etc. and nothing shall be paid extra except GST as mentioned in BOQ.
- 4. The prices quoted by the bidder 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.
- 5. The changes displayed in the corrigendum/addendum to the bid documents, particularly with the BOQ should be applicable to the bid submission.

FINANCIAL BID SUBMISSION FORM

To:	
Registrar I.K.Gujral Punjab Technical University, Kapurthala Punjab -144603 Date:	
Dear Sir,	
We, the undersigned, offer to provide "SUPPLY, INSTALLATION, COMMISSIONIN MAINTENANCE OF	MENT cument. to the
We remain, Yours sincerely,	
Authorized Signature {In full and initials}: Name and Title of Signatory: In the capacity of: Address: E-mail:	

APPENDIX-I

DETAILED TECHNICAL SPECIFICATIONS

Sr. No.	Name of Equipment/Experiment	Technical Specifications
1.		

TECHNICAL COMPLIANCE REPORT

_LABORATORY

Sr. No.	Name of Equipment/Experiment	Technical Specifications	Numerical values or other specification	Whether comply Yes/No

HoD (EE) Dy. Registrar (Audit) Asst. Registrar (MC-S&P) Convener