राष्ट्रीयफैशनप्रौद्योगिकीसंस्थान, मुंबई

NATIONAL INSTITUTE OF FASHION TECHNOLOGY

(निफ्ट अधिनियम 2006 द्वारा शासित और वस्त्र मंत्रालय, भारतसरकार द्वारा स्थापितएक वैधानिकसंस्थान)

(A statutory body governed by the NIFT Act 2006 and set up by the Ministry of Textiles, Govt. of India)

ई-निविदा दस्तावेज प्राप्त करने का नोटिस

NOTICE INVITING E- TENDER DOCUMENT

निविदा संख्या :- 11/NIFT/MUM/PO/2021-22

निफ्ट मुंबई परिसर में Mechatronics &IoTप्रयोगशाला को स्थापित करने के लिएनिविदा दस्तावेज़|

For Setting up of Mechatronics and IoT Lab in DFT Department at NIFT Mumbai Campus

निविदा प्रक्रिया के लिए समय सारणी/ Time schedule for tender process:

ई-निविदाजारीकरनेकीतिथि: Date of Issue of e-Tender	16.11.2021
Last Date & Time for receipt of query / clarification on the tender if any. Query / clarification to be sent by e-mail only	30.11.2021 till 15.00 hrs
ई-निविदाकेमाध्यमसेबोलीजमाकरनेकीअंतिमतिथि: Last date of bid submission through e-Tender	06.12.2021till 15.00 hrs
तकनीकीबोलीखोलनेकीतिथिऔरसमय: Date and time of opening of Technical Bid	07.12.2021 at 16.00 hrs
मूल्यबोलीखोलनेकीतिथिऔरसमय Date and time of opening of Financial Bid	Will be communicated separately

Note: This tender document contains 56 pages (total no. of pages including Annexure).

निविदा शुल्क / Tender Fee : NIL ,

EMD: Rs: 31,000/- (Rupees Thirty One Thousand Only) form of Demand Draft in Favour of "National Institute of Fashion Technology, Mumbai" payable at Mumbai.

नोट: इस निविदा दस्तावेज़ में 56 पृष्ठ शामिल हैं। सभी निविदाकारों से अनुरोध है कि वे निविदा दस्तावेज़ के सभी पन्नों पर हस्ताक्षर करें

This tender document contains 56 pages and bidders are requested to sign on all the pages.

निफ्ट कैंपस, प्लाट नं. - 15, सेक्टर - 4, खारघर, नवी मुंबई - 410210

दूरभाष: +91-22-2774 7000, 2774 7011, फैक्स: +91-22-2774 5386

वेबसाइट : www.nift.ac.in/mumbai

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INTRODUCTION:

National Institute of Fashion Technology (NIFT) was set up by the Ministry of Textiles, Government of India in 1986 which has been accorded statutory status under the Act of Parliament in 2006 (NIFT Act 2006) for the promotion and development of education and research in field of Fashion Technology. NIFT provides fashion business education across the country through its network of 17 centers. It provides four years under graduate (UG) program in design and technology, two years post graduate (PG) program in design, fashion management & fashion technology and short duration education program to address the specialized needs of professional and students in the field of fashion. NIFT has its head office at New Delhi with its campuses located at Bengaluru, Bhopal, Bhubaneswar, Chennai, Gandhinagar, Hyderabad, Jodhpur, Kangra, Kannur, Kolkata, Mumbai, New Delhi, Panchkula (Hariyana) , Patna, Raibareli, Shillong and Srinagar. NIFT MumbaiCampus situated on Plot No-15,Sector-4,Kharghar,Navi Mumbai.

Request for Proposal - TENDER DOCUMENT

PREAMBLE / INTRODUCTION

INTRODUCTION:

National Institute of Fashion Technology (NIFT) is a premier educational Institution set up under an Act of Parliament and functioning under the aegis of the Ministry of Textiles, Govt. of India. NIFT, Mumbai centre was established in the year 1995 with undergraduate and post graduate programmes.

Submission of Bids

(a) The interested firms should apply online and submit their tender and the bids along with scanned copies of all the relevant certificates, documents, etc. in support of their technical & price bids – all duly signe on e-procurement-http://eprocure.gov.in/eprocure/app) from 16.11.2021 to 06.12.2021 up to 3.00 P.M. Tender documents is also available for viewing on the "tenders" link of the NIFT website i.e. https://nifttenders.eproc.in

(b) Applications to this tender will be accepted only through the online mode through the website e-procurement-http://eprocure.gov.in/eprocure/app). No other mode of application will be considered & application will not be accepted.

The technical bid will be opened at NIFT, Mumbai, on 07.12.2021 up to 4.00 P.M. The Financial bid will be opened on the date which will be communicated to only those bidders who are found to be technically qualified after evaluation of technical bids.

(c) The interested firms are advised to read carefully the entire tender document before submitting their tender and the tender documents not received online in prescribed format and/or are found incomplete in any respect shall be summarily rejected.

(d) Any further clarifications can be sought from the NIFT office on Telephone No. 022-27747103, NATIONAL INSTITUTE OF FASHION TECHNOLOGY, NIFT Campus, Mumbai- 410210. (for specification)

TENDER NOTICE

NIFT invites E-Tender under Two Bid systems for supply and installation of Machines to NIFT-Mumbai as per the quantity and specification mentioned in Annexure. The tender bids duly filled in all respects enclosing necessary documents to submit in the CPP Portal (Central Public Procurement Portal, Government of India, e-procurement-http://eprocure.gov.in/eprocure/app) on or before 3.00 PM, 02.12.2021.

1.1 About the RFP Document

a) This RFP provides information regarding the Procurement, Scope of Work, Technical requirements and other related information to the Bidder(s).
b) It details the General Terms & Conditions with respect to the Bid process to be adopted for the proposed Project.
c) The RFP contains the agreement template outlining the contractual and legal terms & conditions applicable for the proposed engagement.
d) As should be clear from the Scope of the proposed Project, NIFT seeks a specific proposal responsive to this RFP in every respect and detail, rather than a mere compilation of materials and The Bidders are expected to examine all instructions, forms, terms, Project requirements and other information in the RFP documents. Failure to furnish all information required by the RFP documents or submission of a proposal not substantially responsive to the RFP documents in every respect will be at the Bidder's risk and may result in rejection of the proposal and forfeiture of the Earnest Money Deposit (EMD).

2. Amendment of RFP document:
At any time till one day before the deadline for submission of Bids, NIFT may, for any reason, whether at own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid Document by amendment. All the amendments made in the document would be informed through the e-tender portal http://nifttenders.eproc.in. All such amendments shall be binding on all the Bidders. The Bidders are also advised to visit the aforementioned website on regular basis for checking necessary updates. NIFT also reserves the rights to amend the dates mentioned in Index of this RFP for Bid process.

3. This Invitation to Bid is open to all entities meeting or exceeding all of the following minimum Qualification criteria. Bidders failing to meet any one of the qualification criteria as mentioned below or not submitting requisite supporting documents/ documentary evidence for supporting qualification criteria are liable to be rejected summarily.

Sr No	Clause	Documents required
1	The bidder should be a company registered under the Companies Act, 1956 / Firm registered under the Indian Partnership Act, 1932 or under the Limited Liability Partnership Act or Proprietorship Firm. The Bidder should have been in commercial operations for a period of at least 5 financial years in India. :	Certificate for the same needs to be attached
2	The Bidder should have a valid GST Registration Number and PAN Card.	Copy of GST and Pan card
3	Having total turnover of Rs-10 lakhs average in last 3 years in equipment supply/lab setup related to mechatronics/IOT Lab	Certificate from CA is required.
4	As on date of submission of the proposal, the Bidder is neither blacklisted by Central	Self certification is required.

	Government / State Government or instrumentalities thereof nor any criminal case against the Bidder / Its Partners / Directors / Agents is pending before any court of Law	
5	The Bidder should have submitted EMD and Bid Processing fees of amount as mentioned in the RFP	Date of DD should be after publication of RFP.
6	The Bidder shall comply with all the Technical Specifications as specified in RFP	Self certification is required
7	Certificate/ document details in support of experience of providing training in the field of Mechatronics / IoT lab to students / faculty/ Industry .	Relevant document

4. Scope of Work :

The minimum specified Scope of work to be undertaken by the Bidder is to:

1) Supply of goods (instruments/equipment) with essential accessories, spares, consumables, etc., including site works (related to installation, as required), and installation & commissioning as BoQ at **Annexure I**.
2) Obtaining regulatory/statutory clearances, as necessary.
3) The hands on trainingon the instruments/equipments for two days to the faculty and staff of concerned department/Institute at NIFT Mumbai.
4) Maintenance during warranty period of two years including replacement of faulty parts, supply of spare parts and consumables.
5) Product Support and availability of spares for five years after expiry of warranty period and provide software and hardware upgrades from time to time.

5. Specific Requirement / Conditions:

a. Successful bidder to provide suggestive design / layout including wiring / lighting & furniture for the lab in CAD format for a working capacity of 15 students and 01 faculty and 01 lab engineer sitting arrangement.
b. Equipment mentioned in the Bill of material should be compatible with each other in terms of configuration, specifications and size.
c. Any request relating to advance payment of the ordered material will not be entertained. Rates will be accepted on the basis of competency / capacity.
d. If after receipt of supply, item is found to be defective, then the successful bidder shall replace the same by new once within two weeks. Any expenditure incurred by the successful bidder in replacement of the defective items shall be borne by the successful bidder.
e. The selected bidder shall perform the services as per the scope of work and period of the agreement.
f. "Specific Requirements" that the bidder need to give technical details (Model no. or /and technical specification sheet), wherever applicable, against items they are offering.

6. Packing:

The selected Bidder shall provide such packing as it is required to prevent damage or deterioration of the goods during transit to their final destination as indicated in the RFP. The selected Bidder shall be responsible for any defect in packing.

a. Title, Risk and Insurance & Transportation
b. Title of ownership of the items shall pass onto the NIFT from the date and time of physical delivery of the items at site of delivery/Installation. All risks of losses and/ or damages shall be borne by the successful Bidder till the title passes to the NIFT.
c. All the risks of losses and / or damages shall be borne by the successful Bidder during supply of all the items.
d. If after receipt of supply, item is found to be defective, then the successful Bidder shall replace the same by new ones within 2 weeks. Any expenditure incurred by the successful Bidder in replacement of the defective items shall be borne by the successful Bidder.

7. Delivery Schedule:

Delivery should be executed as per schedule of supply mentioned in purchase order. (appox. 30 days). NIFT may conduct the Post Delivery Inspection & Testing at Location(s). In case, Post Delivery Inspection & Testing will be conducted then the selected Bidder shall depute its technically qualified representative to facilitate in conducting the Post Delivery Inspection (PDI) of the delivered instrument/equipment. The inspection shall be completed within 3 days of the commissioning and complete installation of the equipment/instruments.

8. Liquidated Damages:

i. If delivery of the item is not made within the stipulated period of time, the damages will be payable for non-adherence to the committed delivery schedule by the Bidder to the NIFT @ Rs.500/- per day subject to maximum of 5% of total order value.
ii. NIFT reserves the right to cancel the total/ part purchase order, if the delivery gets delayed by more than 4 week. Penalty as mentioned above shall however be applicable even if the order is cancelled in part or full. The NIFT shall have no responsibility what-so-ever for any damages sustained by the bidder due to cancellation of the purchase order. In such case, the earnest money deposited by the bidder shall be forfeited in full and the balance payment, if any, due to the Bidder for the items supplied against the purchase order shall be forfeited.

9. General Terms & Conditions

1. The tender should NOT be SUBLET to any other service provider and must be executed at Bidders unit having all equipments& infrastructure owned by the company.
2. Bidder must have serviced or executed similar jobs for other universities for which the proofs may be required for executing the REFERENCE CHECK & Credibility of the company. All details are required in complete with Name of the university / complete address and the contact details with their official Landline, mobile Numbers and email address. The total worth of such work should not be less than 10 lacs in last 03 years.
3. Having total turnover of Rs.10 lakh average in last 03 years in equipment supply / lab set up related to Mechatronics / IoT lab.

4. Bidder should have positive net profit in any three financial years during the past three financial years.
5. Having experience of providing training in the field of Mechatronics / IoT lab to students / faculty/ Industry .
6. As on date of submission of the proposal, the bidder should be neither blacklisted by Central Govt. / Sate Govt. or instrumentalities there of nor any criminal case against the bidder / its partners / Directors / Agents should be pending before any court of Law
7. Any request relating to advance payment of the ordered material will not be entertained. Rates will be accepted on the basis of competency/capacity
8. The Bids shall be submitted only from the Bid Submission start date till the Bid Submission end date and time given in the e-tender. Therefore, Bidders are advised to submit the Bids well advance in time.
9. Once the e-Bid submission date and time is over, the bidders cannot submit their e-Bid. The bidders shall only be held responsible for any delay and whatsoever reason in submission of e-Bid
10. NIFT is registered with the DSIR for the purpose of availing customs duty exemption in terms of Govt. Notification No. 51/96-Customs and Central Excise duty exemption in terms of Govt. Notification no. 10/97-Central Excise as amended from time to time. The duty charges to be paid accordingly in case of imported items.
11. The opening of financial bids shall be intimated later to all the technically qualified bidders.
12. NIFT may, at its discretion extend this deadline for submission of e-Bid by amending the e-Bid document, in which case all rights and obligations of bidders previously subject to the deadline will thereafter be subject to the deadline as extended.
    A prospective Bidder requiring any clarification on the RFP Document may submit his queries, in writing, at the e-mail address. The queries must be submitted in the following format only to be considered for clarification:
    a. Table: Clarification Format

Sr No	Section No.	Clause No.	Page No.	Reference from RFP	Clarification Sought

13. The queries not adhering to the above-mentioned format shall not be responded
14. NIFT will respond in writing, to any request for clarification to queries on the RFP, received not later than NIFT Dates prescribed in under Index column.

10. Dispute:

If any, arising out of the supply of Items shall be settled by mutual discussion or arbitration by sole Arbitrator to be appointed by the DG, NIFT at New Delhi as per the provisions of the Indian arbitration and Conciliation Act, 1996 (as amended) and the Rules framed there under. Any Arbitrator appointed shall not have the jurisdiction to pass any interim awards, or to grant interest higher than 8% charged simply on the award amounts, or amounts payable to either party. The place of arbitration shall be Mumbai. The Arbitrator shall make a well reasoned award (the "Award"), which shall be final and binding on the parties. The venue of the Arbitration proceedings shall be at Mumbai. Any proceedings interim or interlocutory relief or otherwise arising out of the arbitration proceedings shall be brought in any Court of competent jurisdiction in Mumbaionly.

11. Jurisdiction:

Notwithstanding any other court or courts having jurisdiction to decide the question (s) forming the subject matter of the reference if the same has been the subject matter or suit, any and all actions and proceeding arising out of or relating to the contract (including any arbitration in terms thereof) shall lie only in the court of competent civil jurisdiction at Mumbaiand only said courts shall have jurisdiction to entertain and try such action (s) proceeding to the exclusion of all the other courts. All matters connected with this tender shall be governed by the Indian Law both substantive & procedural for the time being in force.

12. Documents Comprising the Bids: The Proposal shall have Two Cover System for this RFP:

i. TECHNICAL BID.
ii. FINANCIAL BID. (in sealed cover)

The technical Bid submitted by the Bidder shall comprise the following:
a. Format 1 – Proposal Covering Letter
b. Format 2 - General Information about the Bidder
c. Format 3 - Qualification Check List
d. Format 4 – Financial Information
e. Format 5 - Format for Past Experience
f. Format 6 - Declaration Regarding Clean Track Record
g. Format 7 – Declaration by tenderer regarding acceptance of all tender conditions.
h. Format 8 - Financial Bid - The Financial Bid should be filled in prescribed format

In addition, hard copy of the **EMD Cover is to be addressed to Purchase Officer, National Institute of Fashion Technology, NIFT Campus, Mumbai**and submitted at Purchase Department in Admin Area of NIFT MumbaiCampus on or before last date of bid submission
Bidders shall furnish the required information on their Qualification and commercial strengths in the enclosed format's only. Any deviations with respect to this may make the Bid liable for rejection.

13. Bid Prices:

The Bidder shall indicate the price in the prescribed format. The price components furnished by the Bidder in accordance with format provided in the RFP will be solely for the purpose of facilitating the comparison of Bids by NIFT.

The Bidder shall carry out all the tasks in accordance with the requirement of the RFP and due diligence and it shall be the responsibility of the Bidder to fully meet all the requirements of the RFP. If during the course of execution of the Project any revisions to the work are to be made to meet the goals of NIFT, all such changes shall be carried out within the current price.

The Bidder shall quote a fixed price as detailed in the RFP on a single responsibility basis. The prices, once offered, must remain fixed and must not be subject to any escalation for any reason whatsoever within the period of Project. A proposal submitted with an adjustable

price quotation or conditional proposal may be rejected as non-responsive. Prices shall be quoted in Indian Rupees (INR).

14. Bid Security (Earnest Money Deposit):

The tenderer are required to submit **Earnest Money Deposit (EMD) of Rs.31,000/- (RupeesThirty One Thousand Only)** in the form of Demand Draft favouring National Institute of Fashion Technology, Mumbaialongwith their offer. Offers received without earnest money or with earnest money less than the amount specified above shall be summarily rejected.

Exemption of EMD :The Micro and Small scale industrial units registered under small scale industries of Maharashtra state / Appropriate State Govt. and holding subsequent registration with CSPO/NSCI/DGS&D/UDYAM registration certificates for the item under tender will be eligible for exception from payment of EMD on submission of duly attested copies.

15. The Earnest Money deposited shall be forfeited if the tenderer withdraws or amends impairs or derogates from the tender in any respect within the period of validity of his tender. If the successful tenderer fails to furnish the security deposit as required in the contract within the stipulated period, the EMD shall also be liable to be forfeited by the Purchaser i.e. NIFT and NIFT shall be entitled to initiate appropriate legal actions against the tenderer for the losses suffered by it as a result of the same.

16. Performance Security Deposit:-

a) The successful bidder shall deposit an amount of 5% of the value of contract as performance Security Deposit (SD).

b) The EMD of successful bidder shall be converted into security deposit. On award of bid, the successful bidder shall only deposit the difference of EMD and SD to NIFT thorough a Demand Draft in favour of National Institute of Fashion Technology,Mumbai payable at Mumbai, within 14 days after award of bid.

c) No interest will be paid on such deposit. Security Deposit will be refunded on completion of all obligations under the contract including the warranty after adjustingdues, if any.

17. Opening of Technical Bid

Technical Bid shall be opened in the presence of Bidder's representatives who choose to attend the Bid opening sessions on the specified date, time and address. The Bidder's representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for NIFT, the Bids shall be opened at the same time and location on the next working day.

18. Evaluation of Technical Bid.

a. Tender Evaluation Committee (TEC) duly appointed by NIFT shall evaluate the Technical Bids.

b. The evaluation shall be done for only those Bidders, whose Bid Documents & EMD amount is in order as per the RFP and meet the "specific conditions".

c. Bidders need to fulfil all the Qualification conditions mentioned in Qualification Criteria of the RFP. TEC will examine the Bids to determine whether they are complete, whether the Bid format conforms to the RFP requirements, whether documents have been properly signed, and whether the Bids are generally in order.

d. Bids of Bidders whose Qualification proposal does not meet the set criteria shall be rejected forthwith.

e. TEC may seek oral clarifications with the Bidders. The primary function of clarifications in the evaluation process is to clarify ambiguities and uncertainties arising out of the evaluation of the Bid Documents. The Committee may seek inputs from their professional, technical faculties in the evaluation process.

f. Conditional Bids will be rejected.

g. The decisions of the Tender Evaluation Committee on whether the tenders are responsive or non-responsive will be final.

h. A Bidder, at any stage of tender process or thereafter, in the event of being found after verification by the Tender Inviting Authority, to indulge in concealment or misrepresentation of facts, in respect of the claims of the offer, shall be debarred/black listed and agreement / contract / LOI / work order will be cancelled.

i. Bids that are rejected during the Bid opening process due to incomplete documentation or late receipt shall not be considered for further evaluation. The NIFT, in its discretion, reserves the right to reject all or any of the Bids without assigning any reason.

19. Opening of Financial Bids :

Only the Financial Bids of those firms qualified in the detailed scrutiny and evaluation of the Technical bid conducted by the Tender Evaluation Committee / Tender Inviting Authority shall be opened in the second round. The Financial Bid shall be submitted in the format given in this document as Financial Bid Form. The Financial Bids submitted in any other formats will be treated as non-responsive and not considered for tabulation and comparison. The Price offered should be given strictly on the format given in the Financial Bid only. The Bidder must quote all items. The financial bid offer should have detail of all payable taxes and cess. Financials Offered shall be in Indian Rupees.

20. If the contract attracts any statutory deductions, the same will be deducted while settling the payment. There should not be any hidden costs.

21. Comparison of Financial Bids

a. The commercial quote of the Lowest Bidder shall be notified as L1. In case L1 offers to execute the work as per the schedule and location specified in the RFP, the Tender Evaluation Committee (TEC) then shall have the rights to give the order to the L1. NIFT may award the contract to the Bidder whose Bid is found to be most responsive, competitive and technically sound.

b. In case L1 backs out, the RFP shall be cancelled & Bids shall be invited again. L1 shall however be blacklisted from participating in any future bidding of NIFT / and are liable for legal action by NIFT.

c. Arithmetic errors in proposals will be corrected as follows: In case of discrepancy between the amounts mentioned in figures and in words, the amount in words shall govern.

d. No Bidder shall contact the NIFT on any matter relating to its Bid, from time of opening to the time the work is awarded. If the Bidder wishes to bring additional information to the notice of the RFP Issuing Authority, the same should be done in writing to NIFT. The RFP Issuing Authority reserves the right to decide whether such additional information should be considered or otherwise.

22. NIFT right to vary Scope of Work at the time of Award:

NIFT may at any time, by a written order given to the Bidder, make changes to the Scope of the work as specified below:

i. NIFT reserves the right to vary the quantity In case, excise duty and/or trade tax/sales tax are reduced or increased subsequently by the Government at the time of placement of the purchase order or delivery, then the same will be adjusted by the successful Bidder.

ii. If any such change cause an increase or decrease in the cost of or the time required for the Bidder's performance of any part of the work under the Agreement, whether changed or not changed by the order, an equitable adjustment shall be made in the Agreement Value or time schedule, or both, and the Agreement shall accordingly be amended.

iii. Director NIFT-Mumbai reserve the right to cancel the whole tender process at any stage in the interest of NIFT, without assigning any reasons whatsoever and also the rights to waive any minor discrepancy in the tenders received.

iv. Director NIFT-Mumbai also reserves the right to change the quantity/ upgrade the criteria/ drop any item or part thereof/extension of delivery date at any time before placing the purchase order.

v. Items/Machines having out dated designs with similar specification will not be accepted.

vi. The defective machines and accessories shall be replaced by the agency without any additional charge during guarantee period of supplied machines, otherwise Performance Guarantee shall be liable to forfeited and in all the matters the decision of the Director, NIFT Mumbai shall be final. The replacement will have to be carried out within 7 days of the intimation being received from the Institute.

FORMAT FOR RESPONSE TO RFP: QUALIFICATION BID

Format 1 – Proposal Covering Letter

To,
The Director,
NIFT Mumbai

Ref: Request for Proposal (RFP): Qualification Bid for Setting up of Mechatronics and IoT Lab in DFT Department at NIFT MumbaiCampus.

Dear Sir,

Having examined the RFP, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to setup of Mechatronics and IoT Lab in DFT Department at NIFT as required and outlined in the RFP reference No. _____. We attach hereto the qualification response as required by the RFP, which constitutes our proposal. We undertake that, if our proposal is accepted, we shall adhere to the scope of work as mentioned in the above referenced RFP. If our proposal is accepted, we will submit a Performance Guarantee in the form of DD/ BG in format given by NIFT for a sum equivalent to 5% of the total price including GST as quoted in our financial proposal for the due performance of the Agreement. We agree for unconditional acceptance of all the terms and conditions set out in the RFP and also agree to abide by this RFP response for a period of six months from the date fixed for Bid opening. We also agree that you reserve the right in absolute sense to reject all or any of the products/ service specified in the RFP response without assigning any reason whatsoever. It is hereby confirmed that I/We are entitled to act on behalf of our Corporation/Company/ Firm/Organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Dated: this _____Day of _____2021

(Signature)
(In the capacity of)
Duly authorized to sign the RFP Response for and on behalf of:
(Name and Address of Company)

Seal/Stamp of Bidder

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I, certify that I am …… of the ……., and that …… who signed the above Bid is authorized to bind the corporation by authority of its governing body.

Date (Seal here)

Format 2 - General Information about the Bidder

Details of the Bidder/Prime Bidder (Company)				
1	Name of the Bidder/Prime Bidder			
2	Address of the Bidder			
3	Status of the Company (Public Ltd / Pvt. Ltd company registered under the Companies Act, 1956 / Firm registered under the Indian Partnership Act, 1932 or under the Limited Liability Partnership Act)			
4	Valid GST registration no.			
5	Permanent Account Number (PAN)			
6	Name & Designation of the contact person to whom all references shall be made regarding this RFP			
7	Telephone No. (with STD Code)			
8	E-Mail of the contact person			
9	Fax No. (with STD Code)			
10	Website			
11	**Financial Details (INR)**			
	Year	2017-18	2018-19	2019-20
	Turn Over			
	Net Profit			

Format 3 - Qualification Check List

Sr. No	Clause	Compliance (Yes / No)	Page no.
1	The bidder should be a company registered under the Companies Act, 1956 / Firm registered under the Indian Partnership Act, 1932 or under the Limited Liability Partnership Act or Proprietorship Firm. The Bidder should have been in commercial operations for a period of at least 5 financial years in India. The Consortium shall not be entertained		
2	The Authorized Signatory signing the Bid on behalf of the Bidder should be duly authorized by the Managing Director/ Board of Directors / Managing Partner of the Bidding Company to sign the Bid and the Contract on their behalf.		
3	The Bidder should have a valid TIN number, GST Registration Number and PAN Card		
4	Having total turnover of Rs.10 lakh average in last 03 years in equipment supply / lab set up related to Mechatronics / IoT lab.		
5	Bidder should have positive net profit during the past three Financial years		
6	As on date of submission of the proposal, the Bidder is neither blacklisted by Central Government / State Government or instrumentalities thereof nor any criminal case against the Bidder / Its Partners / Directors / Agents is pending before any court of Law		
7	The Bidder should have submitted EMD and Bid Processing fees of amount as mentioned in the RFP		
8	The Bidder shall comply with all the Technical Specifications as specified in RFP(Technical literature pertaining specifications need to be uploaded online for verification)		
7	Certificate/ document details in support of experience of providing training in the field of Mechatronics / IoT lab to students / faculty/ Industry .		

Format 4 - Financial Information

Annual Turnover/ Net Profit of the Bidder/ Prime Bidder

Turnover of the Bidder:

FY 2017-18	FY 2018-19	FY 2019-20

Net Profit of the Bidder:

FY 2017-18	FY 2018-19	FY 2019-20

Note: Certificate for the same certified by CA needs to be attached.

Format 5 - Format for Past Experience

Please provide the relevant documentary proofs for a citation need to be attached just below the details of the citations in this format.

Project Title			
(Attach separate sheet for each Project)			
Country		Address	
Name of Client			
Type of (Govt./PSU/Others)		Order Value of the Project / Revenue Generated (in Lakh)	
		Revenue Generated (in Lakh) year-wise (please state the year and the revenue generated)	
		Current Conversion Rate (if applicable)	
Duration of the Assignment Location of the Assignment		Start Date (month/year):	
		Date of implementation (month/year):	
		End Date (month/year):	
Referrals (Client side): Provide one referral only	Name		
	Designation		
	Role in Project		
	Contact Number		
	Email Id		
Brief Description of Project			

Format 6 - Declaration Regarding Clean Track Record

I have carefully gone through the Terms & Conditions contained in the RFP Document No._____ regarding Setting up of Mechatronics and IoT Lab in DFT Department at NIFT MumbaiCampus. I hereby declare that my Company as on date of submission of the proposal is neither blacklisted by Central Government / State Government or instrumentalities thereof nor any criminal case against the Bidder / Its Partners / Directors / Agents is pending before any court of Law. I further certify that I am competent officer in my Company to make this declaration.

Yours faithfully,
(Signature of the Bidder)

Designation

Seal

Date:

Address:

Format 7 –Declaration by the Tenderer for acceptance of all tender conditions.

This is to certify that I/We, before signing this tender have read and fully understood all the terms and conditions contained herein and undertake myself/ourselves to abide by them.

I/We hereby undertake that the information provided with this tender are true and the tender is liable to rejection if the same is found to be false or the information is found to have been suppressed by me/us.

Yours faithfully,
(Signature of the Bidder)

Designation

Seal

Date:

Address:

Annexure I

Bill of Quantity (BOQ)

Bill of Quantity (BOQ) and Technical specifications for items required for setting up of Mechatronics and IoT Lab in DFT Department NIFT Campus vide E- Tender No. _____

Note:
All the bidders, at the least, should adhere to all Technical Specifications listed for each item provided below. Any non-compliance to the listed technical specification will result in the disqualification of the bid

"Specific Requirements" that the bidder need to give technical details (Model no. or /and technical specification sheet), wherever applicable, against items they are offering.

[I] Electronics Technology Division

Sr	Product Name	Specification	Qty
A	**Soldering Section**		
1	Advanced Soldering Station	Soldering Iron 15-30W 220V Digital temperature control with tip set, stand and tip wiper)	
2	Soldering Wire Reel (0.5 Kg)	60/40, 22 Gauge Soldering Wire with Internal Flux	
3	Wire Stripper	Wire stripper/cutter Awg12-22, Size 6 inch	
4	Wire Nipper		
5	Digital Multimeter	DC Voltage Range (Volts): 200mV - 600V, AC Voltage Range (Volts): 2V - 600V, DC Current Range (Amp): 200µA - 10A, AC Current Range (Amp): 200µA - 10A, Resistance Range (Ohm): 200 - 20Mohm, Continuity, Diode Checking, Data Hold	2
6	3rd Hand with magnifying glass with light		
7	Anti-static Mat	Size: 2 x 4 feet, Thickness: 3mm, 2 grounding chords, 5 wrist strap	
8	Desolder Pump		
9	Cutter Blade with holder		
10	Heat Gun	~230V, 1800 Watts, Variable Temperature range: 500 – 600 °C Pistol Style	1
B	**Controller Section**		

1	Arduino UNO with replaceable IC		15
2	Arduino MEGA, Original Made in Italy		5
3	Raspberry Pi Kit with case and connectors (RP 3 B+ or higher)		10
4	ESP 8266 12E Board (node MCU)		5
C	**Power supply**		
1	Regulated Variable DC Power Supply 0-24 V, Max 240W		2
2	Lipo battery, 11.1V, 2200 mAh		4
3	Balanced Lipo Battery Charger		1
D	**Sensor Section**		
1	Sensor Kit (47 sensor kit) compatible with Arduino	Different types of sensor in the kit. - Compaitble with Arduino and other boards in the lab	06 Set
2	PIR sensor Module	Hc-Sr501 Pyroelectric Infrared Pir Motion Sensor Detector Module	5
3	Force Sensor	Dimensions: - Overall length: 2.375' - Overall width: 0.75' - Sensing diameter: 0.5'	5
4	Flex Sensor	Angle Displacement Measurement - Bends and Flexes physically with motion device - Simple Construction - Low Profile - Flat Resistance: 25K Ohms - Resistance Tolerance: ±30% - Temperature Range: -35°C to +80°C - Bend Resistance Range: 45K to 125K Ohms - Power Rating : 0.50 Watts continuous. 1 Watt Peak	5
5	Depth Sensor (Intel Realsense D400 Series)	Dept sensor specifications: - Use Environment = Indoor/Outdoor - Depth Technology = Active IR stereo - Main Intel® RealSense™ component = Intel® RealSense™ Vision Processor D4 - Intel® RealSense™ = module D410 - Depth Field of View (FOV) (Horizontal × Vertical × Diagonal) = 65°±2° x 40°±1° x 72°±2°	1

		- Depth Stream Output Resolution = Up to 1280 x 720 - Depth Stream Output Frame Rate = Up to 90 fps - Minimum Depth Distance (Min-Z) = 0.3 m - Sensor Shutter Type = Rolling Shutter - Maximum Range = Approx. 10 meters; Varies depending on calibration, scene, and lighting condition - RGB Sensor Resolution and Frame Rate = 1920 x 1080 at 30 fps - RGB Sensor FOV (Horizontal x Vertical x Diagonal) = 69.4° x 42.5° x 77° (+/- 3°) - Camera Dimension (Length x Depth x Height) = 99 mm x 20 mm x 23 mm - Connectors = USB-C* 3.1 Gen 1 - Mounting Mechanism - One 1/4-20 UNC thread mounting point, Two M3 thread mounting points Board specifications: - SoC = Intel® Atom™ x5-Z8350 Processor (2M Cache, 1.44 GHz up to 1.92 GHz) CPU with 64 bit architecture; Quad Core - Graphics = Intel® HD 400 Graphics - Video & Audio = HDMI* 1.4b i2S audio port - Camera Interface = CSI (4 Megapixel) - USB Support = 1x USB 3.0 OTG; 4x USB 2.0; 2x USB 2.0 pin header (10 pins in total) - RTC = Yes - Power = 5V DC-in @ 3A 5.5/2.1mm jack - Dimensions = 3.37" x 2.22" / 85.60 mm × 56.5 mm - Memory = 4GB DDR3L-1600 - Storage Capacity = 32GB eMMC* - Display Interface = DSI/eDP - Ethernet = 1x Gb Ethernet (full speed) RJ-45	

		- Expansion = 40 pin General Purpose bus, supported by Altera Max V. ADC 8-bit@188ksos - Compatible Operating System = Ubuntu* 14.04 or 16.04 - Certificate = CE/FCC Class A, RoHS complaint, Microsoft* Azure* certified	
6	Camera Sensor Shield Module	- Length (mm) = 50 mm - Width (mm) = 54 mm - Height (mm) = 25 - Front two screw holes = 19mm apart / 0.75" - Back two screw holes = 47mm apart / 1.85" - Weight (Kg) = 25 gm (Without Cable and Screw) - Processor = NXP LPC4330, 204 MHz, dual-core - Power Consumption = 140 mA typical - Shipment Weight = 0.045 kg - Shipment Dimensions = 6 x 6 x 4 cm	2
E	**Peripheral Boards/ Shields**		
1	Distribution board/ Extension Board		12
2	LCD with Interfacing Board		4
3	Wi-Fi Shield	Compatible with Raspberry Pi and Arduino	5
4	Display (OLed)	1.3 Inch min. 128*64 OLED min	5
5	SenseHat module	Compatible with Raspberry Pi and can measure temp., humidity, accretion, pressure and 3D orientation etc. with LED matrix to display data	2
F	**Electronic Actuator Control Section**		
1	Servo Motor metal geared	Stall torque: 9.4kg/cm (4.8v); 11kg/cm (6.0v), Operating speed: 0.19sec/60° (4.8v); 0.15sec/60° (6.0v) Operating voltage: 4.8~ 6.6v, Gear Type: Metal gear	20
2	DC motor with Gear 22 RPM	Shaft diameter 6mm with M3 thread hole , Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 45Kg-cm at maximum limited stall current of 4 Amp	4

3	Geared DC motor 60 RPM	Shaft diameter 6mm with M3 thread hole , Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 35Kg-cm at maximum limited stall current of 4 Amp	6
4	DC motor with Gear 100 RPM	100 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12V, Voltage 12v; no load current - 100mA, Full load current - 1.9 A, Stall torque: 22Kg-cm at maximum limited stall current of 4 Amp.	12
5	Geared DC motor 200 RPM	200 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 11Kg-cm at maximum limited stall current of 4 Amp	6
6	DC motor with Gear 300 RPM	300 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 8Kg-cm at maximum limited stall current of 4 Amp.	4
7	DC motor with Gear 600 RPM	600 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12V, Voltage 12V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 4Kg-cm at maximum limited stall current of 4 Amp.	4
8	60 RPM DC geared motor with encoder	Rated Torque(kg-cm) = 6.73 kg-cm, Rated Speed(RPM) = 60 RPM, Gear Ratio = 100:1, Gear Material = Metal, Encoder Output(PPR) = 700 PPR(single channel output), Input Voltage (V) = 12, Rated Current(A) = 0.9, Rated Power = 7 W, Motor Type = Brushed	2

9	DC Motor Drive Board	Input Voltage: 12V DC, can drive 2 DC motors supplying 2A to each motor, Standard FRC, Phoenix and Relimated connectors for reliable connections compatible with the atmega development board	15
10	Relay Motor Driver Board 10 amp (2/4/8) 12 each	Input Voltage: 12V DC, drive 1 DC motor on both directions and can supply up to 10A of current, Standard FRC, Phoenix and Relimated connectors for reliable connections, Reverse polarity protection (Short Circuit Protection)	20
11	Stepper Motor Drive Board	Input voltage: 8V – 36V DC, It can drive one stepper motor with 2A per coil, Maximum output current is 4A, Micro-step resolutions of full,1/2,1/4,1/8 and 1/16	5
12	Stepper Motor, 1.8 degree step angle	Step Angle : 1.8 Degree, 4 wire stepper motor, Holding Torque: ~25Kgcm, Rated Voltage: 2.8VDC, Rated Current: 1.68Amps Moment permissible Toruqe : 50Kgcm Rated Speed: 300RPM	5
13	Servo motor driver board	Input Voltage: 7V – 12V DC, It can drive 4 Servo motors of each 6V, Maximum output current up to 16A, Compatible with all development boards	10
G	**Communication Modules**		
1	Zigbee module	transmitter and receiver module, Easy to mount	3
2	SIM Shield	SIM900A GSM Modem With SMA Antenna (GSM Module)	5
3	GPS Shield	Operating Current = 15mA, Sensitivity = 149dBm @Acquisition & 167dBm @Tracking, Micro-SD Card Slot = Yes	5
4	Bluetooth HC05		4
5	Breadboard	500-700 point	30
6	Switches on/Off and Push		20
7	Jumper wire (M-M, M-F, F-F)	10 Bunch (M-M) (variable length), 1Bunch (M-F), 1 Bunch (F-F))	12 bunch

8	Digitl Oscilloscope for Signal Visualization) 1 quantity	200Mhz - Dual channel - 2G/s sampling rate	1
9	RFID Card Reader Module compatible with Arduino (13.56MHz) with RFID Tags tags/Cards		3
10	RFID Card Reader Module compatible with Arduino (125KHz) with RFID Tags tags/Cards		3
11	Function Generator for Pulse Generator		1
H	**Basic Electronics components**		
1	Transistors (BC547, 2N2222, 2N3904, 2N3906)		200
2	Diado (1N4001, 1N4148)		200
3	Timer IC 555		25
4	Digital Logic (NOR, OR, AND, NOT, 4017 etc.)		100

[II] Mechanical Technology Division

Sr. No.	Product Name	Specifications	Qty
A	**Wheels & accessories Section**		
1	Plastic omniwheel (dia-100 mm)	Wheel Diameter – 100mm, Dual rim	4
2	Coupling for omniwheel	- Total Length: 52mm - Bore diameter: 6mm - Bore depth: 18mm - Coupling weight: 37gms	4
3	Aluminum wheel	Wheel Diameter – 100mm, Wheel Width – 25mm	4
4	Flange for High Torque Motor	Material aluminium, Hole Dia 12mm	2
5	Mecanum wheel set (Dia-100 mm)	Wheel Diameter – 100mm	1
6	Aluminum coupling - Mecanum wheel	- Outside diamete - Inside diameter: 6 mm - Hole PCD: 47.5 mm - Dia of Holes: 5 mm x 6 nos	4

B	**Power transmission Section**		
1	Lead Screw-Length 500 mm with mounted ball bearing and shaft coupling	3 D printer T8 Lead Screw-Length 500 mm with mounted ball bearing and shaft coupling	1
2	Spur gear	material plastic, Module1.5m, Hole dia 6mm, OD 40 mm, Yellow in colour	15
3	Worm gear	material plastic, Hole dia 6mm	5
4	Timing Belt	GT2 Timing Belt for RepRap, 3D Printer, CNC, Robotics and Automations. Belt Type: GT2, Width: 6mm, Color: Black, Pitch: 2mm, Length:1m; Material: Rubber,	5
5	Timing pulley	GT2 Timing Pulley for RepRap, 3D Printer, CNC, Robotics and Automations. Pulley Type: GT2, Pitch 2mm, Bore dia: 5 mm, Belt Width : 6mm	16
6	Rack	material plastic, Module1.5m, length 125mm	10
7	Pinion	material plastic, Module1.5m, Hole dia 6mm, OD 60 mm	5
C	**Bearings Section**		
1	Round linear bearing	Linear motion bearing ID13mm, round flange type	5
2	Collared Ball bearing Set	ID 4mm-10, ID 6mm-10	1
3	Joints (1 inch square Lego)		5
D	**Structural material Section(Aluminum, Acrylic etc.)**		
1	Aluminium Section Set	To Build mechanisms	1
2	Acrylic sheet set	To Build mechanisms	1
E	**Gripper Section**		
1	Parallel link Gripper	- Gripping size: 40mm - Worm gear arrangement to give continuous gripping force - Actuator: High torque center shaft DC motor - Operating voltage: 12V - Material: Acrylic - Weight: 200g	2

2	Angular Gripper	- Type of gripper = Angular - Opening = ϕ20mm - Type - Pneumatic	2
F	**Linear Guideways**		
1	Industrial Carriage	Linear motion, aluminium block	2
2	Industrial Rail (1000 mm)	Linear motion, aluminium rail	2
G	**Actuators**		
1	Linear Actuator	Actuator Travel Length - 400 mm Ball Screw - 16mm Diameter, 5mm Lead Double optical axis linear guide slide stage C7 Horizontal load bearing capacity - upto 50 kg With Dual Photoelectric switch with adjustable position along the slide Can accommodate various size of stepper and servo motors Sliding table bottom plate size (width * height) 89*61mm	2
	Linear Actuator	Actuator Travel Length - 400 mm Ball Screw - 16mm Diameter, 5mm Lead with Square Linear Rail slide with NEMA23 Stepper Motor	2

[III] Tools & Instruments Division

Sr. No.	Product Name	Specifications	Qty
A	**Tools and Instruments**		
1	Mechanical Tool Kit	- No-load speed : 0 to 2600 rpm - Drilling diameter: 10 millimeters for concrete and masonry; 8 millimeters for steel; 20 millimeters for wood - Material: MS and Plastic - Chuck capacity : 1 to 10 millimeters - Impact rate : 0 to 41600 bpm - 1/2 inch drill spindle connecting thread - Power: 500 watts (Input) and 250 watts (Output)	2

2	Cordless Drill Machine	- 24 torque clutch for perfect screw driving into a variety of materials with different screws sizes - Spring loaded slide pack battery system for quick and easy battery change and a more secure fit - Reverse switch for added versatility - Variable speed for ultimate finger tip control for all drilling applications - Voltage: 220 volts, Capacity: Wood-25mm, steel-10mm	1
3	Jigsaw cutter	- Pendulum action for a faster cutting action - Variable speed for better control in different materials - Sightline channel allows the user to follow the line of cut more easily	1
4	Miniature File Set	Metal Needle file set	1
5	Riveter	Riveter of different diameter	1
6	Tool Kit (Stanely Ultimate Tool Kit or similar)	~242 pcs tool kit	2
B	**Lab Accessories**		
1	Component Organizer	25 compartment Component organizer Organizer cabinet frame material - Rolled Steel Small part organizer drawer Should be transparent plastic (HDPS) and must have 3-4 compartments/drawer Minimum individual Drawer size: L24*W12*H7	4

[IV] Mechanical Link and Motion models

Sr. No.	Product Name	Specification	Qty
1	Mechanical Link and different Motion type models	Models of different type to study the different mechanisms used in automation industry including 4 bar, 6bar link mechanism etc.	1 Set

[V] Motion Control System

Sr. No.	Name of the equipment	Technical Specifications	Qty
1	Servo Drive and Motor	Power Supply 220 V AC / Single Phase Power Rating 440 Watts Rated Motor Torque (N-m) ~ 1.25 Maximum Torque (N-m) ~ 3.75 Brake holding torque [N-m] ~1.3 Continuous Output Current (ARMS) ~ 2.5 Encoder Type Absolute encoder Encoder Resolution 16 bit or more Braking Build-in Dynamic brake Tuning Auto/Manual Integrated control modes Pulse train positioning, internal positioning, speed and torque control modes Speed Control Range 1-3000 Communication Interface EtherCAT IP Rating IP20 for Drive; IP65 for Motor Accessories Servo Motor Power cable and encoder cable, Brake cable connector included	2
2	**EtherCATcoupler**		1
	TaskwithinEtherCATsystem	couplingofEtherCATTerminals (ELxxxx)to100BASE-TXEtherCATnetworks	
	Datatransfermedium	Ethernet/EtherCATcable(min.Cat.5),shielded	
	Distancebetweenstations	max.100m(100BASE-TX)	
	NumberofEtherCATTerminals	upto65,534	
	Protocol	EtherCAT	
	Delay	approx.1µs	
	Datatransferrates	100Mbit/s	
	Businterface	2xRJ45	
	Powersupply	24VDC(-15%/+20%)	
	CurrentconsumptionfromUS	70mA+(∑E-bus current/4)	

	CurrentconsumptionfromUP	load	
	CurrentsupplyE-bus	2000mA	
	Powercontacts	max.24VDC/max.10A	
	Electricalisolation	500V(powercontact/supply voltage/Ethernet)	
	Operating/storagetemperature	-25…+60°C/-40…+85°C	
	EMCimmunity/emission	conformstoEN61000-6-2/EN61000-6-4	
	Relativehumidity	95%,nocondensation	
	Vibration/shockresistance	conformstoEN60068-2-6/EN60068-2-27	
	Protect.class/installationpos.	IP20/variable	
	Approvals/markings	CE,UL,ATEX,GL,IECEx,cFMus	
	Exmarking	ATEX: II3GExnAIIC T4Gc IECEx: ExnAIIC T4Gc ExtcIIICT135°CDc cFMus: ClassI,Division2,GroupsA,B,C,D ClassI,Zone2,AExecIICT4G	

[VI] Miscellaneous

Sr. No.	Product name	Specifications	Qty
1	Tweezer Set	Pack of 5 tweezers	2
2	3mm LEDs red	Transparent red	50
3	3mm LEDs blue	Transparent blue	50
4	5mm LEDs RED	Transparent red	50
5	5mm LEDs blue	Transparent blue	50
6	IR LED 5mm	white or transparent white	10
7	IR photodiodes	5 mm Round Head Infrared Receiver Photodiodes IR Diode	20
8	0.1uF 40V electrolytic	Electrolytic Capacitor	30

	capacitor		
9	1uF 40V electrolytic capacitor	1uF 40V electrolytic capacitor	50
10	10uF 40V electrolytic capacitor	10uF 40V electrolytic capacitor	50
11	3.3nF ceramic capacitor	Ceramic Capacitor	50
12	0.1uF ceramic capacitor	Ceramic Capacitor	50
13	1uF ceramic capacitor	Ceramic Capacitor	50
14	Resistor 68 ohm	1/4 watt Carbon Film Resistor CFR	100
15	Resistor 100 ohm	1/4 watt Carbon Film Resistor CFR	100
16	Resistor 220 ohm	1/4 watt Carbon Film Resistor CFR	200
17	Resistor 270	1/4 watt Carbon Film Resistor CFR	100
18	Resistor 1k	1/4 watt Carbon Film Resistor CFR	200
19	Resistor 2.2k	Resistor 2.2k ohm CFR	100
20	Resistor 3.3k	1/4 watt Carbon Film Resistor CFR	200
21	Resistor 4.7k	1/4 watt Carbon Film Resistor CFR	100
22	Resistor 10k	1/4 watt Carbon Film Resistor CFR	200
23	Resistor 22k	1/4 watt Carbon Film Resistor CFR	100
24	Resistor 33k	1/4 watt Carbon Film Resistor CFR	100
25	Resistor 1M	1/4 watt Carbon Film Resistor CFR	100
26	smd Resistor 68 ohm	SMD 1206 package	100
27	smd Resistor 100 ohm	SMD 1206 package	100
28	smd Resistor 220 ohm	SMD 1206 package	200
29	smd Resistor 270	SMD 1206 package	100
30	smd Resistor 1k	SMD 1206 package	200
31	smd Resistor 2.2k	SMD 1206 package	100
32	smd Resistor 3.3k	SMD 1206 package	200
33	smd Resistor 4.7k	SMD 1206 package	100
34	smd Resistor 10k	SMD 1206 package	200
35	smd Resistor 22k	SMD 1206 package	100
36	smd Resistor 33k	SMD 1206 package	100

37	smd Resistor 1M	SMD 1206 package	100
38	Joystick Pots 1k ohm + cap	1k ohm Potentiometer + Cap	10
39	Power Resistor 6E8, 5 WATT	Power rating: 5W ; Resistance range: 0.1E to 22M (E12-series) ; Operating temperature range: -55°C to +155°C ; Tolerance: 5% ; Max. operating voltage: 250V	20
40	Power Resistor 2E2, 5 WATT		20
41	Variable Potentiometer 10k POT PACKAGE 3386	10K Single-Turn 10mm Square Top Adjust Trimming Potentiometer Power Rating: 500mW	15
42	Transistor BC 547	BC547 - NPN Transistor	100
43	Crystal 12MHz (HALF SIZE)	Quartz Crystal for Microcontroller 12 MHz(Half Size)	25
44	Crystal 16Mhz (HALF SIZE)	Quartz Crystal for Microcontroller 16 MHz(Half Size)	20
45	Crystal for DTMF decoder 3.579547 Mhz	Quartz Crystal for Microcontroller 3.57 MHz(Half Size)	10
46	Four leg Reset Switch	Single Pole Single Throw Switch Rated upto 50 mA	50
47	IC 7805 smd "D" pack	smd TO-252	20
48	IC 7805 TO220	TO-220	20
49	IC 7806 TO220	TO-220	20
50	IC 7809 TO220	TO-220	4
51	MOSFET Ics	TO-220 package	10
52	General Purpose Boards	75 x 76 holes (200mm * 200mm)	10
53	Diodes 1N4007	1N4007 - General Purpose Rectifier Diode	100
54	Slider switches R/A	Right Angle Mini Slide Switch (PCB SPDT) - SM1 Type	50
55	Slider switches Normal	Straight Mini Slide Switch (PCB SPDT) - SM1 Type	50
56	Anchor switches	Current - 6A ; Voltage - 240V	10

57	Push switches (astable)	DS-314 Round Button Momentary Switch Normally Open AC 250V 3A (Opening 10mm)	15
58	Push Auto switch (bistable)	Push Auto Switch(Bistable)	4
59	DPDT switches	ON-OFF-ON Switch 6-Pin DPDT 3-Position Snap Boat Rocker 6A/250V 10A/125V	10
60	Limit switches	Current - 5A ; Voltage - 250V AC	10
61	Single pin jumper Male to Female	female to male cable	30
62	Single pin jumper Female to Female	female to female cable	30
63	Relimated Connector Base (white): 2 pin	white relimate base male pcb mount	100
64	Relimated Connector Base (white): 3 pin	white relimate base male pcb mount	100
65	Relimated Connector Base (white):4 pin	white relimate base male pcb mount	100
66	Relimated Connector Base (white):5 pin	white relimate base male pcb mount	100
67	Relimated Connector Base (white):6 pin	white relimate base male pcb mount	50
68	Relimated Connector Base (white):7 pin	white relimate base male pcb mount	50
69	Relimated Connector Base (white):8 pin	white relimate base male pcb mount	50
70	Relimated Connector both sided (white):2 pin	2 pin relimated cable	25
71	Relimated Connector both sided (white):3 pin	3 pin relimated cable	30
72	Relimated Connector both sided (white):4 pin	4 pin relimated cable	30
73	Relimated Connector both sided (white):5 pin	5 pin relimated cable	35
74	Relimated Connector both sided (white):6 pin	6 pin relimated cable	35
75	Relimated Connector both sided (white):7 pin	7 pin relimated cable	25
76	Relimated Connector both sided (white):8 pin	8 pin relimated cable	20
77	Pheonix connector: 2 pin Big	2 pin big Terminal Block Connector	50

78	Pheonix connector: 2 pin Small	2 pin small Terminal Block Connector	50
79	FRC base : 10 pin normal	216 Series Box Header Straight 2.54 mm 10 pin	20
80	FRC base : 10 pin RIGHT ANGLE	216-A Series Box Header Right Angle 2.54 mm 10 pin	20
81	FRC base : 14pin normal	216 Series Box Header Straight 2.54 mm 14 pin	40
82	FRC base : 14pin Right Angle	216-A Series Box Header Right Angle 2.54 mm 14 pin	20
83	FRC cable : 10 pin (in meter)	length= 1m(For Ops: purchase bundle of 100ft)	10
84	14 pin FRC cable (in meter)	length= 1m(For Ops: purchase bundle of 100ft)	20
85	10 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 10 pin	50
86	14 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 14 pin	100
87	Relay : 12 V Coil	JQC-3FC(T73) - 5 pin sugarcube 7 A	10
88	Male burg strip 40 x 1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54 mm	70
89	Male burg strip 40 x 2	Pin Style: Square No. of pins: 80 Pin Spacing: 2.54 mm	20
90	Female Burg Strip 40 x 1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54 mm	60
91	Female burg Strip 40 x 2	Pin Style: Square No. of pins: 80 Pin Spacing: 2.54 mm	20
92	IC base : 6 pin	DIP Package	20
93	IC base : 14 pin	DIP Package	25
94	IC base : 16 pin	DIP Package	20
95	IC base : 20 pin	DIP Package	20
96	IC base : 28 pin	Narrow IC Base For Atmega8	10
97	IC base : 40 pin	IC Base for Atmega16	20
98	Heat Shrinks : 2 mm in meter	Heat shrink 2mm in meter	5
99	Heat Shrinks : 3mm in meter	Heat shrink 3mm in meter	5
100	Heat Shrinks : 5mm in meter	Heat shrink 5mm in meter	5

101	Heat Shrinks : 10mm in meter	Heat shrink 10mm in meter	3
102	T connector for batteries (Male and Female Both)	T connector (Deans) male with blue black wires	10
103	Tie (Small, medium and large 2 packets each)	Tie (Small, medium and large 2 packets each)	1
104	Dual tape	Dual tape 20mm	10
105	Paper Tape	Paper Tape (abro tap) 20mm	5
106	Steel grip Insulation Tape	Steel grip Insulation Tape	5
107	Transparent tapes	Transparent tapes 1inch	6
108	Desolder Wick	D-Sol-Wick 1m long 2.5mm broad	12
109	Soldering Flux	Wembeley's 15g	6
110	Heat Sink Small	PI49 20mm	20
111	Heat Sink Big	PI48 25mm	20
112	Motor Wire blue (Bundle of 90 m)	Wire for motors and connectors	1
113	Motor Wire black (Bundle of 90 m)	Wire for motors and connectors	1
114	Single Stranded wire (Bundle)	Single stranded wire	1

Format 8 - Format for Response to RFP:

Financial Bid

Commercial Terms & Conditions:

a. Bidder should provide all prices as per the prescribed format. Bidder should not leave any field blank. In case the field is not applicable, Bidder must indicate "0" (Zero) in all such fields.
b. All the prices (even for taxes) are to be entered in Indian Rupees only (% values are not allowed)
c. It is mandatory to provide breakup of all Taxes, Duties and Levies wherever applicable and / or payable.
d. NIFT reserves the right to ask the Bidder to submit proof of payment against any of the taxes, duties, levies indicated.
e. NIFT shall take into account all taxes, duties & levies for the purpose of evaluation
f. The Bidder needs to account for all Out of Pocket expenses due to Travel, boarding, lodging and other related items.
g. The costs mentioned shall be inclusive of GST.
h. Delivery Period: 30 days / as per PO.

Financial Bid (To be submitted in Online Mode only)

Sr. No	Particulars	Unit Price	Total Amount in Rupees
1	To set up Mechatronics and IoT Lab in DFT Department at NIFT MumbaiCampus: (as per attached Annex I – BoQ and as per technical specification) **Total of [I] to [VI]**		
2	GST as per applicable		
	Total Cost: 1+2		
	Total Cost in words		

Note:
Rates indicated above are inclusive of transport, packing insurance charges and all other expenses up to the point of delivery, commissioning and sixty months comprehensive onsite warranty as detailed in the RFP

(Performa of FINANCIAL BID)

Bill of Quantity (BOQ)

Bill of Quantity (BOQ) and Technical specifications for items required for setting up of Mechatronics and IoT Lab in DFT Department at NIFT MumbaiCampus vide E- Tender No. _____

Note: All the bidders, at the least, should adhere to all Technical Specifications listed for each item provided below. Any non-compliance to the listed technical specification will result in the disqualification of the bid.

[I] Electronics Technology Division

Sr	Product Name	Specification	Qty	Unit Price	Total
A	**Soldering Section**				
1	Advanced Soldering Station	Soldering Iron 15-30W 220V Digital temperature control with tip set, stand and tip wiper)			
2	Soldering Wire Reel (0.5 Kg)	60/40, 22 Guage Soldering Wire with Internal Flux			
3	Wire Stripper	Wire stripper/cutter Awg12-22, Size 6 inch			
4	Wire Nipper				
5	Digital Multimeter	DC Voltage Range (Volts): 200mV - 600V, AC Voltage Range (Volts): 2V - 600V, DC Current Range (Amp): 200µA - 10A, AC Current Range (Amp): 200µA - 10A, Resistance Range (Ohm): 200O - 20Mohm, Continuity, Diode Checking, Data Hold	2		
6	3rd Hand with magnifying glass with light				
7	Anti-static Mat	Size: 2 x 4 feet, Thickness: 3mm, 2 grounding chords, 5 wrist strap			
8	Desolder Pump				
9	Cutter Blade with holder				
10	Heat Gun	~230V, 1800 Watts, Variable Temperature range: 500 – 600 °C Pistol Style	1		

B	**Controller Section**				
1	Arduino UNO with replaceable IC		15		
2	Arduino MEGA, Original Made in Italy		5		
3	Raspberry Pi Kit with case and connectors (RP 3 B+ or higher)		10		
4	ESP 8266 12E Board (node MCU)		5		
C	**Power supply**				
1	Regulated Variable DC Power Supply 0-24 V, Max 240W		2		
2	Lipo battery, 11.1V, 2200 mAh		4		
3	Balanced Lipo Battery Charger		1		
D	**Sensor Section**				
1	Sensor Kit (47 sensor kit) compatible with Arduino	Different types of sensor in the kit. - Compaitble with Arduino and other boards in the lab	06 Set		
2	PIR sensor Module	Hc-Sr501 Pyroelectric Infrared Pir Motion Sensor Detector Module	5		
3	Force Sensor	Dimensions: - Overall length: 2.375' - Overall width: 0.75' - Sensing diameter: 0.5'	5		
4	Flex Sensor	Angle Displacement Measurement - Bends and Flexes physically with motion device - Simple Construction - Low Profile - Flat Resistance: 25K Ohms - Resistance Tolerance: ±30% - Temperature Range: -35°C to +80°C - Bend Resistance Range: 45K to 125K Ohms - Power Rating : 0.50 Watts continuous. 1 Watt Peak	5		
5	Depth Sensor (Intel Realsense D400 Series)	Dept sensor specifications: - Use Environment = Indoor/Outdoor - Depth Technology = Active IR stereo	1		

		- Main Intel® RealSense™ component = Intel® RealSense™ Vision Processor D4 - Intel® RealSense™ = module D410 - Depth Field of View (FOV) (Horizontal × Vertical × Diagonal) = 65°±2° x 40°±1° x 72°±2° - Depth Stream Output Resolution = Up to 1280 x 720 - Depth Stream Output Frame Rate = Up to 90 fps - Minimum Depth Distance (Min-Z) = 0.3 m - Sensor Shutter Type = Rolling Shutter - Maximum Range = Approx. 10 meters; Varies depending on calibration, scene, and lighting condition - RGB Sensor Resolution and Frame Rate = 1920 x 1080 at 30 fps - RGB Sensor FOV (Horizontal x Vertical x Diagonal) = 69.4° x 42.5° x 77° (+/- 3°) - Camera Dimension (Length x Depth x Height) = 99 mm x 20 mm x 23 mm - Connectors = USB-C* 3.1 Gen 1 - Mounting Mechanism - One 1/4-20 UNC thread mounting point, Two M3 thread mounting points Board specifications: - SoC = Intel® Atom™ x5-Z8350 Processor (2M Cache, 1.44 GHz up to 1.92 GHz) CPU with 64 bit architecture; Quad Core - Graphics = Intel® HD 400 Graphics - Video & Audio = HDMI* 1.4b i2S audio port - Camera Interface = CSI (4 Megapixel) - USB Support = 1x USB 3.0 OTG; 4x USB 2.0; 2x USB 2.0 pin header (10			

		pins in total) - RTC = Yes - Power = 5V DC-in @ 3A 5.5/2.1mm jack - Dimensions = 3.37" x 2.22" / 85.60 mm × 56.5 mm - Memory = 4GB DDR3L-1600 - Storage Capacity = 32GB eMMC* - Display Interface = DSI/eDP - Ethernet = 1x Gb Ethernet (full speed) RJ-45 - Expansion = 40 pin General Purpose bus, supported by Altera Max V. ADC 8-bit@188ksos - Compatible Operating System = Ubuntu* 14.04 or 16.04 - Certificate = CE/FCC Class A, RoHS complaint, Microsoft* Azure* certified			
6	Camera Sensor Shield Module	- Length (mm) = 50 mm - Width (mm) = 54 mm - Height (mm) = 25 - Front two screw holes = 19mm apart / 0.75" - Back two screw holes = 47mm apart / 1.85" - Weight (Kg) = 25 gm (Without Cable and Screw) - Processor = NXP LPC4330, 204 MHz, dual-core - Power Consumption = 140 mA typical - Shipment Weight = 0.045 kg - Shipment Dimensions = 6 x 6 x 4 cm	2		
E	**Peripheral Boards/ Shields**				
1	Distribution board/ Extension Board		12		
2	LCD with Interfacing Board		4		
3	Wi-Fi Shield	Compatible with Raspberry Pi and Arduino	5		
4	Display (OLed)	1.3 Inch min. 128*64 OLED min	5		
5	SenseHat module	Compatible with Raspberry Pi and can measure temp., humidity,	2		

		accretion, pressure and 3D orientation etc. with LED matrix to display data			
F	**Electronic Actuator Control Section**				
1	Servo Motor metal geared	Stall torque: 9.4kg/cm (4.8v); 11kg/cm (6.0v), Operating speed: 0.19sec/60° (4.8v); 0.15sec/60° (6.0v) Operating voltage: 4.8~ 6.6v, Gear Type: Metal gear	20		
2	DC motor with Gear 22 RPM	Shaft diameter 6mm with M3 thread hole , Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 45Kg-cm at maximum limited stall current of 4 Amp	4		
3	Geared DC motor 60 RPM	Shaft diameter 6mm with M3 thread hole , Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 35Kg-cm at maximum limited stall current of 4 Amp	6		
4	DC motor with Gear 100 RPM	100 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12V, Voltage 12v; no load current - 100mA, Full load current - 1.9 A, Stall torque: 22Kg-cm at maximum limited stall current of 4 Amp.	12		
5	Geared DC motor 200 RPM	200 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 11Kg-cm at maximum limited stall current of 4 Amp	6		
6	DC motor with Gear 300 RPM	300 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12 V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 8Kg-cm at maximum limited stall current of 4	4		

		Amp.			
7	DC motor with Gear 600 RPM	600 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12V, Voltage 12V, No load current - 100mA, Full load current - 1.9 A, Stall torque: 4Kg-cm at maximum limited stall current of 4 Amp.	4		
8	60 RPM DC geared motor with encoder	Rated Torque(kg-cm) = 6.73 kg-cm, Rated Speed(RPM) = 60 RPM, Gear Ratio = 100:1, Gear Material = Metal, Encoder Output(PPR) = 700 PPR(single channel output), Input Voltage (V) = 12, Rated Current(A) = 0.9, Rated Power = 7 W, Motor Type = Brushed	2		
9	DC Motor Drive Board	Input Voltage: 12V DC, can drive 2 DC motors supplying 2A to each motor, Standard FRC, Phoenix and Relimated connectors for reliable connections compatible with the atmega development board	15		
10	Relay Motor Driver Board 10 amp (2/4/8) 12 each	Input Voltage: 12V DC, drive 1 DC motor on both directions and can supply up to 10A of current, Standard FRC, Phoenix and Relimated connectors for reliable connections, Reverse polarity protection (Short Circuit Protection)	20		
11	Stepper Motor Drive Board	Input voltage: 8V – 36V DC, It can drive one stepper motor with 2A per coil, Maximum output current is 4A, Micro-step resolutions of full,1/2,1/4,1/8 and 1/16	5		

12	Stepper Motor, 1.8 degree step angle	Step Angle : 1.8 Degree, 4 wire stepper motor, Holding Torque: ~25Kgcm, Rated Voltage: 2.8VDC, Rated Current: 1.68Amps Moment permissible Toruqe : 50Kgcm Rated Speed: 300RPM	5		
13	Servo motor driver board	Input Voltage: 7V – 12V DC, It can drive 4 Servo motors of each 6V, Maximum output current up to 16A, Compatible with all development boards	10		
G	**Communication Modules**				
1	Zigbee module	transmitter and receiver module, Easy to mount	3		
2	SIM Shield	SIM900A GSM Modem With SMA Antenna (GSM Module)	5		
3	GPS Shield	Operating Current = 15mA, Sensitivity = 149dBm @Acquisition & 167dBm @Tracking, Micro-SD Card Slot = Yes	5		
4	Bluetooth HC05		4		
5	Breadboard	500-700 point	30		
6	Switches on/Off and Push		20		
7	Jumper wire (M-M, M-F, F-F)	10 Bunch (M-M) (variable length), 1Bunch (M-F), 1 Bunch (F-F))	12 bunch		
8	Digitl Oscilloscope for Signal Visualization) 1 quantity	200Mhz - Dual channel - 2G/s sampling rate	1		
9	RFID Card Reader Module compatible with Arduino (13.56MHz) with RFID Tags tags/Cards		3		
10	RFID Card Reader Module compatible with Arduino (125KHz) with RFID Tags tags/Cards		3		
11	Function Generator		1		

	for Pulse Generator				
H	**Basic Electronics components**				
1	Transistors (BC547, 2N2222, 2N3904, 2N3906)		200		
2	Diado (1N4001, 1N4148)		200		
3	Timer IC 555		25		
4	Digital Logic (NOR, OR, AND, NOT, 4017 etc.)		100		
			Total		
			GST		
			Sub Total [I]		

[II] Mechanical Technology Division

Sr. No.	Product Name	Specifications	Qty	Unit Price	Total
A	**Wheels & accessories Section**				
1	Plastic omniwheel (dia-100 mm)	Wheel Diameter – 100mm, Dual rim	4		
2	Coupling for omniwheel	- Total Length: 52mm - Bore diameter: 6mm - Bore depth: 18mm - Coupling weight: 37gms	4		
3	Aluminum wheel	Wheel Diameter – 100mm, Wheel Width – 25mm	4		
4	Flange for High Torque Motor	Material aluminium, Hole Dia 12mm	2		
5	Mecanum wheel set (Dia-100 mm)	Wheel Diameter – 100mm	1		
6	Aluminum coupling - Mecanum wheel	- Outside diamete - Inside diameter: 6 mm - Hole PCD: 47.5 mm - Dia of Holes: 5 mm x 6 nos	4		
B	**Power transmission Section**				
1	Lead Screw-Length 500 mm with mounted ball bearing and shaft coupling	3 D printer T8 Lead Screw-Length 500 mm with mounted ball bearing and shaft coupling	1		

2	Spur gear	material plastic, Module1.5m, Hole dia 6mm, OD 40 mm, Yellow in colour	15		
3	Worm gear	material plastic, Hole dia 6mm	5		
4	Timing Belt	GT2 Timing Belt for RepRap, 3D Printer, CNC, Robotics and Automations. Belt Type: GT2, Width: 6mm, Color: Black, Pitch: 2mm, Length:1m; Material: Rubber,	5		
5	Timing pulley	GT2 Timing Pulley for RepRap, 3D Printer, CNC, Robotics and Automations. Pulley Type: GT2, Pitch 2mm, Bore dia: 5 mm, Belt Width : 6mm	16		
6	Rack	material plastic, Module1.5m, length 125mm	10		
7	Pinion	material plastic, Module1.5m, Hole dia 6mm, OD 60 mm	5		
C	**Bearings Section**				
1	Round linear bearing	Linear motion bearing ID13mm, round flange type	5		
2	Collared Ball bearing Set	ID 4mm-10, ID 6mm-10	1		
3	Joints (1 inch square Lego)		5		
D	**Structural material Section(Aluminum, Acrylic etc.)**				
1	Aluminium Section Set	To Build mechanisms	1		
2	Acrylic sheet set	To Build mechanisms	1		
E	**Gripper Section**				
1	Parallel link Gripper	- Gripping size: 40mm - Worm gear arrangement to give continuous gripping force - Actuator: High torque center shaft DC motor - Operating voltage: 12V - Material: Acrylic - Weight: 200g	2		
2	Angular Gripper	- Type of gripper = Angular - Opening = ϕ20mm - Type - Pneumatic	2		

F	**Linear Guideways**				
1	Industrial Carriage	Linear motion, aluminium block	2		
2	Industrial Rail (1000 mm)	Linear motion, aluminium rail	2		
G	**Actuators**				
1	Linear Actuator	Linear Motion Actuator-Travel lengh-400mm Ball screw-16mm diameter,5mm lead Double optical axis linear guide slide stage C7 Horizontal load bearing capacity up to 50kg With dual photoelectric switch with adjustable position along the slide Can accommodate various size of stepper and servo motors Sliding table bottom plat size (Width *Height)89*61mm	2		
2	Linear Actuator	Actuator Travel Length - 400mm Ball screw-16mm Diameter,5mm Lead with square Linear Rail Slide with NEMA23 Stepper Motor	2		
			Total		
			GST		
			Sub Total [II]		

[III] Tools & Instruments Division

Sr. No.	Product Name	Specifications	Qty	Unit Price	Total
A	**Tools and Instruments**				
1	Mechanical Tool Kit	- No-load speed : 0 to 2600 rpm - Drilling diameter: 10 millimeters for concrete and masonry; 8 millimeters for steel; 20 millimeters for wood - Material: MS and Plastic - Chuck capacity : 1 to 10 millimeters - Impact rate : 0 to 41600 bpm - 1/2 inch drill spindle connecting thread - Power: 500 watts (Input) and 250 watts (Output)	2		
2	Cordless Drill Machine	- 24 torque clutch for perfect screw driving into a variety of materials with different screws sizes - Spring loaded slide pack battery system for quick and easy battery change and a more secure fit - Reverse switch for added versatility - Variable speed for ultimate finger tip control for all drilling applications - Voltage: 220 volts, Capacity: Wood-25mm, steel-10mm	1		
3	Jigsaw cutter	- Pendulum action for a faster cutting action - Variable speed for better control in different materials - Sightline channel allows the user to follow the line of cut more easily	1		
4	Miniature File Set	Metal Needle file set	1		
5	Riveter	Riveter of different diameter	1		
6	Stanely Ultimate Tool Kit or similar	242 Pcs tool kit	2		
B	**Lab Accessories**				

1	Component Organizer	25 compartment Component organizer Organizer cabinet frame material - Rolled Steel Small part organizer drawer Should be transparent plastic (HDPS) and must have 3-4 compartments/drawer Minimum individual Drawer size: L24*W12*H7 cm	4		
			Total		
			GST		
			Sub Total [III]		

[IV] Mechanical Link and Motion models

Sr. No.	Product Name	Specification	Qty	Unit Price	Total
1	Mechanical Link and different Motion type models	Models of different type to study the different mechanisms used in automation industry including 4 bar, 6bar link mechanism etc.	1 Set		
			Total		
			GST		
			Sub Total [IV]		

[V] Motion Control System

Sr. No.	Name of the equipment	Technical Specifications	Qty	Unit Price	Total
1	Servo Drive and Motor	Power Supply 220 V AC / Single Phase Power Rating 440 Watts Rated Motor Torque (N-m) ~	2		

		1.25 Maximum Torque (N-m) ~ 3.75 Brake holding torque [N-m] ~1.3 Continuous Output Current (ARMS) ~ 2.5 Encoder Type Absolute encoder Encoder Resolution 16 bit or more Braking Build-in Dynamic brake Tuning Auto/Manual Integrated control modes Pulse train positioning, internal positioning, speed and torque control modes Speed Control Range 1-3000 Communication Interface EtherCAT IP Rating IP20 for Drive; IP65 for Motor Accessories Servo Motor Power cable and encoder cable, Brake cable connector included			
2	**EtherCATcoupler**		1		
	TaskwithinEtherCATsystem	couplingofEtherCATTerminals (ELxxxx)to100BASE-TXEtherCATnetworks			
	Datatransfermedium	Ethernet/EtherCATcable(min.Cat.5),shielded			
	Distancebetweenstations	max.100m(100BASE-TX)			
	NumberofEtherCATTerminals	upto65,534			
	Protocol	EtherCAT			
	Delay	approx.1µs			
	Datatransferrates	100Mbit/s			
	Businterface	2xRJ45			
	Powersupply	24VDC(-15%/+20%)			
	CurrentconsumptionfromUS	70mA+(∑E-bus current/4)			
	CurrentconsumptionfromU	load			

	P				
	CurrentsupplyE-bus	2000mA			
	Powercontacts	max.24VDC/max.10A			
	Electricalisolation	500V(powercontact/supply voltage/Ethernet)			
	Operating/storagetemperature	-25…+60°C/-40…+85°C			
	EMCimmunity/emission	conformstoEN61000-6-2/EN61000-6-4			
	Relativehumidity	95%,nocondensation			
	Vibration/shockresistance	conformstoEN60068-2-6/EN60068-2-27			
	Protect.class/installationpos.	IP20/variable			
	Approvals/markings	CE,UL,ATEX,GL,IECEx,cFMus			
	Exmarking	ATEX: II3GExnAIIC T4Gc IECEx: ExnAIIC T4Gc ExtcIIICT135°CDc cFMus: ClassI,Division2,GroupsA,B,C,D ClassI,Zone2,AExecIICT4G			

[VI] Miscellaneous

Sr. No.	Product name	Specifications	Qty	Unit Price	Total
1	Tweezer Set	Pack of 5 tweezers	2		
2	3mm LEDs red	Transparent red	50		
3	3mm LEDs blue	Transparent blue	50		
4	5mm LEDs RED	Transparent red	50		
5	5mm LEDs blue	Transparent blue	50		

6	IR LED 5mm	white or transparent white	10		
7	IR photodiodes	5 mm Round Head Infrared Receiver Photodiodes IR Diode	20		
8	0.1uF 40V electrolytic capacitor	Electrolytic Capacitor	30		
9	1uF 40V electrolytic capacitor	1uF 40V electrolytic capacitor	50		
10	10uF 40V electrolytic capacitor	10uF 40V electrolytic capacitor	50		
11	3.3nF ceramic capacitor	Ceramic Capacitor	50		
12	0.1uF ceramic capacitor	Ceramic Capacitor	50		
13	1uF ceramic capacitor	Ceramic Capacitor	50		
14	Resistor 68 ohm	1/4 watt Carbon Film Resistor CFR	100		
15	Resistor 100 ohm	1/4 watt Carbon Film Resistor CFR	100		
16	Resistor 220 ohm	1/4 watt Carbon Film Resistor CFR	200		
17	Resistor 270	1/4 watt Carbon Film Resistor CFR	100		
18	Resistor 1k	1/4 watt Carbon Film Resistor CFR	200		
19	Resistor 2.2k	Resistor 2.2k ohm CFR	100		
20	Resistor 3.3k	1/4 watt Carbon Film Resistor CFR	200		
21	Resistor 4.7k	1/4 watt Carbon Film Resistor CFR	100		
22	Resistor 10k	1/4 watt Carbon Film Resistor CFR	200		
23	Resistor 22k	1/4 watt Carbon Film Resistor CFR	100		
24	Resistor 33k	1/4 watt Carbon Film Resistor CFR	100		
25	Resistor 1M	1/4 watt Carbon Film Resistor CFR	100		
26	smd Resistor 68 ohm	SMD 1206 package	100		
27	smd Resistor 100 ohm	SMD 1206 package	100		
28	smd Resistor 220 ohm	SMD 1206 package	200		
29	smd Resistor 270	SMD 1206 package	100		
30	smd Resistor 1k	SMD 1206 package	200		
31	smd Resistor 2.2k	SMD 1206 package	100		
32	smd Resistor 3.3k	SMD 1206 package	200		
33	smd Resistor 4.7k	SMD 1206 package	100		

34	smd Resistor 10k	SMD 1206 package	200		
35	smd Resistor 22k	SMD 1206 package	100		
36	smd Resistor 33k	SMD 1206 package	100		
37	smd Resistor 1M	SMD 1206 package	100		
38	Joystick Pots 1k ohm + cap	1k ohm Potentiometer + Cap	10		
39	Power Resistor 6E8, 5 WATT	Power rating: 5W ; Resistance range: 0.1E to 22M (E12-series) ; Operating temperature range: -55°C to +155°C ; Tolerance: 5% ; Max. operating voltage: 250V	20		
40	Power Resistor 2E2, 5 WATT		20		
41	Variable Potentiometer 10k POT PACKAGE 3386	10K Single-Turn 10mm Square Top Adjust Trimming Potentiometer Power Rating: 500mW	15		
42	Transistor BC 547	BC547 - NPN Transistor	100		
43	Crystal 12MHz (HALF SIZE)	Quartz Crystal for Microcontroller 12 MHz(Half Size)	25		
44	Crystal 16Mhz (HALF SIZE)	Quartz Crystal for Microcontroller 16 MHz(Half Size)	20		
45	Crystal for DTMF decoder 3.579547 Mhz	Quartz Crystal for Microcontroller 3.57 MHz(Half Size)	10		
46	Four leg Reset Switch	Single Pole Single Throw Switch Rated upto 50 mA	50		
47	IC 7805 smd "D" pack	smd TO-252	20		
48	IC 7805 TO220	TO-220	20		
49	IC 7806 TO220	TO-220	20		
50	IC 7809 TO220	TO-220	4		
51	MOSFET Ics	TO-220 package	10		
52	General Purpose Boards	75 x 76 holes (200mm * 200mm)	10		
53	Diodes 1N4007	1N4007 - General Purpose Rectifier Diode	100		
54	Slider switches R/A	Right Angle Mini Slide Switch (PCB SPDT) - SM1 Type	50		

55	Slider switches Normal	Straight Mini Slide Switch (PCB SPDT) - SM1 Type	50		
56	Anchor switches	Current - 6A ; Voltage - 240V	10		
57	Push switches (astable)	DS-314 Round Button Momentary Switch Normally Open AC 250V 3A (Opening 10mm)	15		
58	Push Auto switch (bistable)	Push Auto Switch(Bistable)	4		
59	DPDT switches	ON-OFF-ON Switch 6-Pin DPDT 3-Position Snap Boat Rocker 6A/250V 10A/125V	10		
60	Limit switches	Current - 5A ; Voltage - 250V AC	10		
61	Single pin jumper Male to Female	female to male cable	30		
62	Single pin jumper Female to Female	female to female cable	30		
63	Relimated Connector Base (white): 2 pin	white relimate base male pcb mount	100		
64	Relimated Connector Base (white): 3 pin	white relimate base male pcb mount	100		
65	Relimated Connector Base (white):4 pin	white relimate base male pcb mount	100		
66	Relimated Connector Base (white):5 pin	white relimate base male pcb mount	100		
67	Relimated Connector Base (white):6 pin	white relimate base male pcb mount	50		
68	Relimated Connector Base (white):7 pin	white relimate base male pcb mount	50		
69	Relimated Connector Base (white):8 pin	white relimate base male pcb mount	50		
70	Relimated Connector both sided (white):2 pin	2 pin relimated cable	25		
71	Relimated Connector both sided (white):3 pin	3 pin relimated cable	30		
72	Relimated Connector both sided (white):4 pin	4 pin relimated cable	30		
73	Relimated Connector both sided (white):5 pin	5 pin relimated cable	35		
74	Relimated Connector both sided (white):6 pin	6 pin relimated cable	35		
75	Relimated Connector	7 pin relimated cable	25		

	both sided (white):7 pin				
76	Relimated Connector both sided (white):8 pin	8 pin relimated cable	20		
77	Pheonix connector: 2 pin Big	2 pin big Terminal Block Connector	50		
78	Pheonix connector: 2 pin Small	2 pin small Terminal Block Connector	50		
79	FRC base : 10 pin normal	216 Series Box Header Straight 2.54 mm 10 pin	20		
80	FRC base : 10 pin RIGHT ANGLE	216-A Series Box Header Right Angle 2.54 mm 10 pin	20		
81	FRC base : 14pin normal	216 Series Box Header Straight 2.54 mm 14 pin	40		
82	FRC base : 14pin Right Angle	216-A Series Box Header Right Angle 2.54 mm 14 pin	20		
83	FRC cable : 10 pin (in meter)	length= 1m(For Ops: purchase bundle of 100ft)	10		
84	14 pin FRC cable (in meter)	length= 1m(For Ops: purchase bundle of 100ft)	20		
85	10 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 10 pin	50		
86	14 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 14 pin	100		
87	Relay : 12 V Coil	JQC-3FC(T73) - 5 pin sugarcube 7 A	10		
88	Male burg strip 40 x 1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54 mm	70		
89	Male burg strip 40 x 2	Pin Style: Square No. of pins: 80 Pin Spacing: 2.54 mm	20		
90	Female Burg Strip 40 x 1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54 mm	60		
91	Female burg Strip 40 x 2	Pin Style: Square No. of pins: 80 Pin Spacing: 2.54 mm	20		
92	IC base : 6 pin	DIP Package	20		
93	IC base : 14 pin	DIP Package	25		
94	IC base : 16 pin	DIP Package	20		
95	IC base : 20 pin	DIP Package	20		
96	IC base : 28 pin	Narrow IC Base For Atmega8	10		
97	IC base : 40 pin	IC Base for Atmega16	20		

98	Heat Shrinks : 2 mm in meter	Heat shrink 2mm in meter	5		
99	Heat Shrinks : 3mm in meter	Heat shrink 3mm in meter	5		
100	Heat Shrinks : 5mm in meter	Heat shrink 5mm in meter	5		
101	Heat Shrinks : 10mm in meter	Heat shrink 10mm in meter	3		
102	T connector for batteries (Male and Female Both)	T connector (Deans) male with blue black wires	10		
103	Tie (Small, medium and large 2 packets each)	Tie (Small, medium and large 2 packets each)	1		
104	Dual tape	Dual tape 20mm	10		
105	Paper Tape	Paper Tape (abro tap) 20mm	5		
106	Steel grip Insulation Tape	Steel grip Insulation Tape	5		
107	Transparent tapes	Transparent tapes 1inch	6		
108	De-solder Wick	D-Sol-Wick 1m long 2.5mm broad	12		
109	Soldering Flux	Wembeley's 15g	6		
110	Heat Sink Small	PI49 20mm	20		
111	Heat Sink Big	PI48 25mm	20		
112	Motor Wire blue (Bundle of 90 m)	Wire for motors and connectors	1		
113	Motor Wire black (Bundle of 90 m)	Wire for motors and connectors	1		
114	Single Stranded wire (Bundle)	Single stranded wire	1		
			Total		
			GST		
			Sub Total [VI]		
			TOTAL [I to VI]		
			GST [I to VI]		
			GRAND TOTAL		