राष्ट्रीय फैशन प्रौद्योगिकी संस्थान, जोधपुर, राजस्थान

(NATIONAL INSTITUTE OF FASHION TECHNOLOGY, JODHPUR, RAJASTHAN)

निफ्ट,जोधपुर में बीएफटी विभाग हेतु मेकाट्रोनिक्स एवं आईओटी लैब मशीनरी एवं उपकरणों की सप्लाई एवं संस्थापन हेतु ई-निविदा आमंत्रित की गई है।

(NOTICE INVITING E-TENDER FOR "SUPPLY AND INSTALLATION OF MACHINERY & EQUIPMENT FOR BFT DEPARTMENT MECHATRONICS & IOT LAB" AT NIFT CAMPUS KARWAR, JODHPUR)

अनुमानित लागत राशि/Estimate Cost/value of Tender:- Rs 14,00,000/- approximately.

निविदा नम्बर / Tender No: NJ NIT/No.15471/Supply and Installation of machinery & equipment for BFT department mechatronics & IoT lab/73/2020

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

निविदा अधिसूचना के वैबसाईट पर प्रकाशन की तिथि/ **Date of publication of tender notification on official web site**	22/10/2020
निविदा दस्तावेज की बिक्री से शुरू/**Sale of tender document commences from**	22/10/2020
पूर्व बोली बैठक/Pre-bid meeting	Any query may be asked on email ID only: **purchase.jodhpur@nift.ac.in** 30/10/2020(11:00 AM)
निविदा प्राप्त करने की अंतिम तिथि / **Last date for receipt of duly filled in tenders**	13/11/2020 (02:00 PM)
निविदाओं के तकनीकी बिड खोलने की तारीख और समय /Date and time of the opening of Technical bid of tenders	13/11/2020 (3:00 PM)
निविदाओं के वित्तिय बिड खोलने की तारीख और समय / Date and time of the opening of Financial bid of tenders	Will be notified to the technically qualified tenders

नोट:- इस निविदा में 67 पृष्ठ शामिल हैं। निविदाकारों से अनुरोध हैं कि वे सभी पृष्ठों पर साइन करें।

Note: This tender document contains 67 pages (total no. of pages including Annexures)and tenderers are requested to sign on all the pages.

सूचकांक

INDEX

परिचय:

राष्ट्रीय फैशन प्रौद्योगिकी संस्थान(एनआईएफटी) की स्थापना 1986 में भारत सरकार के वस्त्र मंत्रालय ने की थी, जिसे 2006 में संसद अधिनियम (एनआईएफटी अधिनियम 2006) के तहत् सांविधिक अधिनियम के तहत वैधानिक दर्जा दिया गया था, जिसमें फैशन प्रौद्योगिकी के क्षेत्र में शिक्षा और अनुसंधानका प्रचार और विकास किया जाता है। एनआईएफटी 16 केन्द्रों के अपने नेटवर्क के माध्यम से पूरे देश में फैशन व्यवसाय शिक्षा प्रदान करता है। यह डिजाइन और प्रौद्योगिकी में चार साल के तहत स्नातक(यूजी) कार्यक्रम डिजाइन में दो साल के स्नातकोत्तर कार्यक्रम(पीजी) अथवा फैशन के क्षेत्र में पेशेवर और लघु अवधि शिक्षा कार्यक्रम प्रदान करता है। एनआईएफटी का बैंगलुरू, भोपाल, भुवनेश्वर, चेन्नई, गांधीनगर, हैदराबाद, जोधपुर, कंागडा, कन्नूर, कोलकाता, मुंबई, नई दिल्ली, पटना, रायबरेली, शिलांग और श्रीनगर में स्थित कैंपस के साथ नई दिल्ली में अपना प्रधान कार्यालय है।

राष्ट्रीय फैशन प्रौद्योगिकी संस्थान, जोधपुर केंद्र की स्थापना कपड़ा मंत्रालय, भारत सरकार ने 2010 द्वारा की गई थी, जो कि करवड़, जोधपुर- 342037, राजस्थान में स्थित है।

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 16 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, Patna, Raibareli, Shillong and Srinagar.

National Institute of Fashion Technology, Jodhpur Center was set up by the Ministry of Textiles, Government of India in 2010 is situated at Karwar, Jodhpur- 342037, Rajasthan.

1 Invitation for Bids

1.1 Introduction of the Project

a. National Institute of Fashion Technology, Jodhpur Campus has decided to install few sections of Mechtronics&IoTlabintheirDFTDepttof JodhpurCampus,Karwar, Jodhpur –342037

b. The e-Bid document is available on e-tender portal https://nifttenders.eproc.in of Jodhpur Campus. Interested Bidders may download the e-Bid document, corrigendum and clarifications from the e-tender portal.

c. The e-Bids shall be submitted online on e-tender portal, https://nifttenders.eproc.in/http://www.nift.ac.in up to the date and time mentioned in RFP. Bidder is also required to submit hard copy of the complete set of documents required under RFP latest by last date/time for receipt of E-tender.

1.2 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 For applying online, the Firm should get itself registered at https://nifttenders.eproc.in by paying

- Annual Registration Charges of Rs. 2000 + 360 (18% GST) = 2360/- (two thousand three hundred sixty only - non-refundable).
- Bid Processing Fee charges = Rs.1120/-+ 201.6/- GST=1321.60/- non-refundable

The basic System requirements for registration and applying for tender online are as under:

- Operating System should be windows 7 or above
- Java version : Java 8 update 25.
- Use Internet Explorer 11 version.
- All java add-ons must be enabled in the system.
- Always use Class III B Digital Signature Certificates (DSC) having Signing and Encryption both.

In addition to the normal registration, the bidder has to register with his/her Digital Signature Certificate (DSC) in the e-tendering system and subsequently he/she will be allowed to carry out his/her e-Bid submission activities.

4 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	Document 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 TIN number, GST Registration Number and PAN Card.	Copy of GST and Pancard
3	Bidder should have an annual turnover of at least Rs. 50 lakhs in each of the preceding three Financial years.	Certificate from CA is required.
4	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	Self certification is required.
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

5 **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 training on the instruments/equipments for two days to the faculty and staff of concerned department/Institute.
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.

6 **Specific Requirement / Conditions**:

- 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. The room layout is enclosed at end of NIT.
- Equipment mentioned in the Bill of material should be compatible with each other in terms of configuration, specifications and size.
- Any request relating to advance payment of the ordered material will not be entertained. Rates will be accepted on the basis of competency / capacity.
- 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.
- The selected bidder shall perform the services as per the scope of work and period of the agreement.

7 **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.

- Title, Risk and Insurance & Transportation
- 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.
- All the risks of losses and/or damages shall be borne by the successful Bidder during supply of all the items.
- 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.

8. **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.

9. Liquidated Damages(LD):

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. The LD a sum equivalent to 0.5 (Half) per cent of the prices of any portion of stores delivered late, for each week or part thereof of delay. The total damages shall not exceed 10 (Ten) per cent of the value of delayed goods.

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.

10. 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.50 lakh average in last 03 years in equipment supply / lab set up related to mechtronics/robotics/IoT lab.
4. Bidder should have positive net profit in any two financial years during the past three financial years.
5. Having experience of providing training in the field of Mechtronics/Robotics/IoT lab to students / faculty.
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 Bidders should submit their bids online only in the Submission module of e- Procurement website http://etender.up.nic.in.
9. 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.
10. 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
11. The 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.

12. The opening of financial bids shall be intimated later to all the technically qualified bidders.
13. 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:
    Table: Clarification Format

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

14. The queries not adhering to the above-mentioned format shall not be responded
15. 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.

11. **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 Director, NIFT at Jodhpur 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 Johdpur. 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 Jodhpur. Any proceedings interim or interlocutory relief or otherwise arising out of the arbitration proceedings shall be brought in any Court of competent jurisdiction in Jodhpur only.

12. **Jurisdiction:** Notwithstanding any other court or courts having jurisdiction to decide the tender (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 Jodhpur and 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.

13. 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 - Financial Bid - The Financial Bid should be filled in prescribed format.

In addition, hard copy o f the document along with EMD is to be addressed to Purchase Officer, NIFT (Jodhpur Campus), Karwar, Jodhpur and submitted in tender box of NIFT Karwar, Jodhpur Rajasthan-342037.

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.

14. **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).

15. **Bid Security (Earnest Money Deposit):** The tenderer are required to submit Earnest Money Deposit (EMD) of Rs.40,310/-(Rs. Forty thousand three hundred ten only) in the form of Demand Draft favouring National Institute of Fashion Technology, Jodhpur along with their offer. Offers received without earnest money or with earnest money less than the amount specified above shall be summarily rejected.
16. **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.

17. **Opening of Technical Bid**

    The Bid shall be opened in the presence of Bidders" representatives who choose to attend the Bid opening sessions on the specified date, time and address. The Bidders" 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.
    c. Bidders need to fulfill 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 orderordelivery,thenthesamewillbe 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 timeschedule,orboth,and the Agreement shall accordingly be amended.

FORMAT FOR RESPONSE TO RFP: QUALIFICATION BID

To, Format1–ProposalCoveringLetter

The Director, NIFT
(Jodhpur)

Ref: Request for Proposal (RFP): Qualification Bid for Setting up of Mechtronics and IoT Lab in DFT Deptt at NIFT Campus, Karwar, Jodhpur Rajasthan - 342037

Dear Madam,

Having examined the RFP, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to setup of Mechtronics and IoT Lab in DFT Deptt at NIFT as required in tender. 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 proposalisaccepted,we will submit a Performance Guarantee in the form of DD/ BG in format given by NIFT for a sum equivalent to 10% 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

(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)			
6	Valid GST registration no.			
7	Permanent Account Number (PAN)			
8	Name & Designation of the contact person to whom all references shall be made regardingthis RFP			
9	Telephone No. (with STD Code)			
10	E-Mail of the contact person:			
11	Fax No. (with STD Code)			
12	Website			
13	Financial Details(INR)			
14	Year	2018-2019	2017-2018	2016-2017
	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	Bidder should have an annual turnover of at least Rs. 50 Lakhs in each of the preceding three Financial years		
5	Bidder should have positive net profit in any two Financial years 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		

Format 4 - Financial Information

Annual Turnover/ Net Profit of the Bidder/ Prime Bidder

Turnover of the Bidder:			
Financial Year 2018-2019	Financial Year 2017-2018	Financial Year 2016-2017	Indicate the page number where the details are provided

Net Profit of the Bidder			
Financial Year 2018-2019	Financial Year 2017-2018	Financial Year 2016-2017	Indicate the page number where the details are provided

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.

<table>
<tr><td colspan="5">Project Title:</td></tr>
<tr><td colspan="5">(Attach separate sheet for each Project)</td></tr>
<tr><td colspan="2">Country</td><td colspan="2" rowspan="2">Address</td><td rowspan="2"></td></tr>
<tr><td colspan="2">Name of Client</td></tr>
<tr><td rowspan="3">Type of Client (Govt./PSU/Others)</td><td rowspan="3"></td><td>OrderValueoftheProject/ Revenue Generated (in Lakh)</td><td></td></tr>
<tr><td>Revenue Generated (in Lakh) year-wise (please state the year and therevenuegenerated)</td><td></td></tr>
<tr><td>Current Conversion Rate (if applicable)</td><td></td></tr>
<tr><td rowspan="3">Duration of the Assignment Location of the Assignment</td><td rowspan="3"></td><td>Start Date (month/year):</td><td></td></tr>
<tr><td>Date of successful implementatio /completio n n (month/year):</td><td></td></tr>
<tr><td>End Date (month/year):</td><td></td></tr>
<tr><td rowspan="4">Referrals (Client side): Provide one referral only</td><td>Name</td><td></td><td></td></tr>
<tr><td>Designation</td><td></td><td></td></tr>
<tr><td>Role in the Project:</td><td></td><td></td></tr>
<tr><td>Contact Number</td><td></td><td></td></tr>
<tr><td>Brief Description of Project:</td><td>Email Id</td><td></td><td></td></tr>
</table>

Format 6 - Declaration Regarding Clean Track Record

I have carefully gone through the Terms & Conditions contained in the RFP Document regarding Setting up of Mechtronics and IoT Lab in DFT Deptt at NIFT Campus Karwar, Jodhpur 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 - 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 (pg. 18 to 49 should be submitted in sealed envelope)

Sr. No	Particulars	Unit Price	GST	Total Amount including GST in Rupee s
A	To set up Mechtronics and IoT Lab in DFT Deptt at NIFT Jodhpur Campus (as per attached Annex I – BoQ and as per technical specification)			
B	GST as per applicable			
	Total Cost: A+B			
	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 Mechtronics and IoT LabinDFTDepttatNIFTCampusvideE-TenderNo.
NIFT/DC/PO/611/Mechtronics and IoT Lab/DFT/2019

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

(Electronics Technology Division)

\	Product Name	Specification	Qty	Unit price	GST	Total
A	Soldering Section					
1	Advanced Soldering Station	Soldering Iron 15-30W 220V Digital temperature control with tip set, stand and tip wiper)	2			
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 CurrentRange (Amp): 200µA - 10A, Resistance Range (Ohm): 200 -				

		20Mohm, Continuity, Diode Checking, Data Hold				
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 (RP3B+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	5			

		- Simple Construction - Low Profile - Flat Resistance: 25K Ohms - ResistanceTolerance: ±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	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° - Depth Stream Output Resolution = Up to 1280 x 720 - Depth Stream Output FrameRate=Upto90 fps - Minimum Depth	1			

		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) - USBSupport=1xUSB 3.0 OTG; 4x USB 2.0; 2x USB 2.0 pin header (10 pins in total) - RTC=Yes - Power=5V DC-in @ 3A 5.5/2.1mmjack - Dimensions=3.37" x 2.22" / 85.60mm×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)=50mm - Width(mm)=54mm - Height(mm)=25 - Front two screw holes	2			

		=19mmapart/0.75" - Backtwoscrewholes =47mmapart/1.85" - Weight (Kg) = 25 gm (Without Cable and Screw) - Processor = NXP LPC4330,204MHz, dual-core - Power Consumption=140 mAtypical - ShipmentWeight= 0.045 kg - Shipment Dimensions = 6 x 6 x 4 cm				
E	Peripheral Boards/ Shields					
1	Distribution board/ Extension Board		12			
2	LCD with Interfacing Board		4			
3	Wi-Fi Shield		5			
4	Display (OLed)		5			
5	SenseHat module		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~	20			

		6.6v, Gear Type: Metal gear				
2	DC motor with Gear22RPM	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 motor60RPM	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 100RPM	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 300RPM	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 600RPM	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 developmentboard	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	5			

		1/16				
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 developmentboards	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		4			

	HC05					
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 bun ch			
8	Digitl Oscilloscope for Signal Visualization) 1 quantity	200Mhz - Dual channel - 2G/ssampling 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		1			

	Generator					
H	Basic Electronicscomponents					
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			
	(Mechanical TechnologyDivision)					
Sr. No.	Product name	Specifications	Qty	Unitprice	GST	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: 5mmx6 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, Yellowincolour	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	5			

		flange type				
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	Aluminum Section Set	To Build mechanisms	1			
2	Acrylic sheet set	To Build mechanisms	1			
E	Gripper Section					
1	ParallellinkGripper	- 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	-Typeofgripper = Angular - Opening = ϕ20mm - Type - Pneumatic	2			
F	Linear Guide ways					
1	Industrial Carriage	Linear motion,	2			

		aluminum block				
2	Industrial Rail (1000 mm)	Linear motion, aluminum rail	2			
G	Actuators					
1	Linear Actuator	Linear motion	4			
(Tools&InstrumentsDivision)			Qty	Unit price	GST	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 userto followthelineof	1			

		cut more easily				
4	Miniature File Set	Metal Needle file set	1			
5	Riveter	Riveter of different diameter	1			
6	Stanely 71996 Ultimate Tool Kit	242 Pics	2			
Lab Accessories						
1	Red permanent marker small tip		5			
2	Blue permanent marker small tip		5			
3	Component Organiser	25 compartment Component Organiser	4			
4	Component Display board	Multi Display Board	4			

(Mechanical Link and Motion models)						
Sr. No.	Product name	Specification	Qty	Unit price	GST	Total
1	Mechanical Link and different Motion type models	Models of differenttype to study the different mechanisms used in	1 Set			

		automation industry including 4 bar, 6bar link mechanism etc.				
Robotic Study platform						
Sr. No.	Product name	Specifications	Qty	Unit price	GST	Total
1	**MIRA-Miniature Industrial Robotic**	Robotic ARM 5 Axis Hardware The kit consists of black anodized aluminium brackets, Aluminiumtubingandhubs, custom injection moulded components, and precision laser-cut Lexan components. IR sensor for the detection of object on the conveyor belt. Camera USB Type, Full HD 1080p, H.264 avc compression, Carl zeiss optics must be supplied for the image processing Applications. Must be supplied with Remote having 5 knobs to control the each servomotor respectively. Mounted Object detection Conveyor Belt for Material	1			

		Pick up and place. On Board Bluetooth tocontrol wirelessly. USB cable for the interfacing to the PC. Power adapter to power the board The Mechanics The arm uses 1 x HS-475HB in thebase, 1 x HS-805BB in the shoulder, 1 x HS-755HB in the elbow, 1 x HS-645MG in the wrist, 1 x HS-422 in the gripper. Wrist Rotate 6th Axis. The Controller Section AVR processors (Atmega328) based Controller, Serial port-based version with powerful PC software with USB interface Reprogrammable Section with PC software using USB IR based object detection. And conveyor belt controllingmechanism. Software Interfaced through				

		MATLAB. And MATLAB based experiments programs must be supplied. For future LABVIEW compatibility Must Be their. Android interface to the Arm through APP and App must be provided. Exercises Camera based color detection on conveyor belt mechanism. Real time controlling of the Robotic Arm through GUI Created in MATLAB. Image processing application through compatibility using MATLAB software MATLAB based Sorting of object on basis of their color using image processing in MATLAB Android based control of robotic ARM learning kinematic and Inverse Kinematics Open platform for Android Application through Bluetooth. All reading of unit be				

		connected to system in excel file. Steps storing In Excel Sheet Software Section				
(Miscellaneous)						
Sr. No.	Product name	Specifications	Qty	Unit price	GST	Total
1	Tweezer Set	Pack of 5 tweezers	2			
2	3mm LEDsred	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 LED5mm	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	smdResistor68ohm	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	JoystickPots1kohm + cap	1k ohm Potentiometer + Cap	10			
39	Power Resistor 6E8, 5 WATT	Power rating: 5W ; Resistance range: 0.1E to22M(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	FourlegResetSwitch	Single Pole Single Throw Switch Rated upto 50mA	50			
47	IC7805smd"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)-SM1Type	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			
61	Limit switches	Current-5A;Voltage - 250V AC	10			
62	Single pin jumper Male to Female	femaletomalecable	30			
63	Single pin jumper Female to Female	female to female cable	30			
64	Relimated Connector Base (white): 2 pin	white relimate base male pcb mount	100			
65	Relimated Connector Base (white): 3 pin	white relimate base male pcb mount	100			
66	Relimated Connector Base (white):4 pin	white relimate base male pcb mount	100			
67	Relimated Connector Base (white):5 pin	white relimate base male pcb mount	100			
68	Relimated Connector Base (white):6 pin	white relimate base male pcb mount	50			

69	Relimated Connector Base (white):7 pin	white relimate base male pcb mount	50			
70	Relimated Connector Base (white):8 pin	white relimate base male pcb mount	50			
71	Relimated Connector bothsided(white):2 pin	2pinrelimatedcable	25			
72	Relimated Connector bothsided(white):3 pin	3pinrelimatedcable	30			
73	Relimated Connector bothsided(white):4 pin	4pinrelimatedcable	30			
74	Relimated Connector bothsided(white):5 pin	5pinrelimatedcable	35			
75	Relimated Connector bothsided(white):6 pin	6pinrelimatedcable	35			
76	Relimated Connector bothsided(white):7 pin	7pinrelimatedcable	25			
77	Relimated Connector bothsided(white):8 pin	8pinrelimatedcable	20			
78	Pheonix connector: 2 pin Big	2 pin big Terminal BlockConnector	50			
79	Pheonix connector: 2 pin Small	2 pin small Terminal BlockConnector	50			
80	FRC base : 10 pin normal	216 Series Box HeaderStraight2.54	20			

		mm 10 pin				
81	FRC base : 10 pin RIGHTANGLE	216-A Series Box Header Right Angle 2.54 mm 10 pin	20			
82	FRC base : 14pin normal	216 Series Box HeaderStraight2.54 mm 14 pin	40			
83	FRC base : 14pin Right Angle	216-A Series Box Header Right Angle 2.54 mm 14 pin	20			
84	FRC cable : 10 pin (in meter)	length= 1m(For Ops: purchase bundle of 100ft)	10			
85	14 pin FRC cable (in meter)	length= 1m(For Ops: purchase bundle of 100ft)	20			
86	10 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 10 pin	50			
87	14 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 14 pin	100			
88	Relay : 12 V Coil	JQC-3FC(T73) - 5 pin sugarcube 7 A	10			
89	Maleburgstrip40x1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54mm	70			
90	Maleburgstrip40x2	PinStyle:SquareNo. of pins: 80 Pin	20			

		Spacing: 2.54 mm				
91	Female Burg Strip 40 x 1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54mm	60			
92	Female burg Strip 40 x 2	Pin Style: Square No. of pins: 80 Pin Spacing: 2.54mm	20			
93	IC base : 6 pin	DIP Package	20			
94	IC base : 14 pin	DIP Package	25			
95	IC base : 16 pin	DIP Package	20			
96	IC base : 20 pin	DIP Package	20			
97	IC base : 28 pin	Narrow IC Base For Atmega8	10			
98	IC base : 40 pin	ICBaseforAtmega16	20			
99	Heat Shrinks : 2 mm in meter	Heat shrink 2mm in meter	5			
100	Heat Shrinks : 3mm in meter	Heat shrink 3mm in meter	5			
101	Heat Shrinks : 5mm in meter	Heat shrink 5mm in meter	5			
102	Heat Shrinks : 10mm in meter	Heat shrink 10mm in meter	3			
103	T connector for batteries (Male and Female Both)	T connector (Deans) male with blue black wires	10			
104	Tie (Small, medium and large 2 packets each)	Tie (Small, medium and large 2 packets each)	1			

105	Dual tape	Dual tape 20mm	10			
106	Paper Tape	Paper Tape (abro tap) 20mm	5			
107	Steel grip Insulation Tape	Steel grip Insulation Tape	5			
108	Transparent tapes	Transparent tapes 1inch	6			
109	Desolder Wick	D-Sol-Wick 1m long 2.5mm broad	12			
110	Soldering Flux	Wembeley's 15g	6			
111	Heat Sink Small	PI49 20mm	20			
112	Heat Sink Big	PI48 25mm	20			
113	Motor Wire blue (Bundle of 90 m)	Wire for motors and connectors	1			
114	Motor Wire black (Bundle of 90 m)	Wire for motors and connectors	1			
115	Single Stranded wire (Bundle)	Single stranded wire	1			

Annexure I

Bill of Quantity (BOQ)

Bill of Quantity (BOQ) and Technical specifications for items required for setting up of Mechtronics and IoT Lab in DFT Dept t at NIFT Campus vide E-Tender No.
NIFT/DC/PO/610/DFT/2019

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

(Electronics Technology Division)			
\	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
2	SolderingWireReel (0.5Kg)	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	
6	3rd Hand with magnifying glass withlight		
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	1

		Pistol Style	
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 (RP3B+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	Lipobattery,11.1V,2200mAh		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 sensorModule	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	AngleDisplacementMeasurement - Bends and Flexes physically with motion device - SimpleConstruction-LowProfile - FlatResistance:25KOhms - ResistanceTolerance:±30% - TemperatureRange:-35°Cto+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 - MainIntel®RealSense™component = Intel® RealSense™ Vision Processor D4	1

		- Intel®RealSense™=moduleD410 - 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)=99mmx20mmx23mm - Connectors=USB-C*3.1Gen1 - 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;QuadCore - Graphics=Intel®HD400Graphics - Video & Audio = HDMI*1.4b i2S audio port - Camera Interface = CSI (4 Megapixel) - USB Support = 1x USB 3.0 OTG; 4x USB 2.0;2xUSB2.0pinheader(10 pins in total) - RTC=Yes - Power=5VDC-in@3A5.5/2.1mm jack - Dimensions = 3.37" x 2.22" / 85.60 mm × 56.5 mm - Memory=4GB DDR3L-1600	

		- StorageCapacity=32GBeMMC* - DisplayInterface=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/FCCClassA,RoHS complaint, Microsoft* Azure* certified	
6	Camera Sensor Shield Module	- Length (mm) = 50 mm - Width (mm) = 54 mm - Height (mm) = 25 - Fronttwoscrewholes=19mmapart / 0.75" - Backtwoscrewholes=47mmapart / 1.85" - Weight (Kg) = 25 gm (Without Cable and Screw) - Processor = NXP LPC4330, 204 MHz, dual-core - Power Consumption = 140 mA typical - ShipmentWeight=0.045kg - ShipmentDimensions=6x6x4cm	2
E	Peripheral Boards/ Shields		
1	Distribution board/ Extension Board		12
2	LCD with Interfacing Board		4
3	Wi-Fi Shield		5
4	Display (OLed)		5
5	SenseHat module		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	DCmotorwithGear22RPM	Shaft diameter 6mm with M3 thread hole , Operating Voltage - 12 V, No load current - 100mA,Fullloadcurrent- 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,Fullloadcurrent- 1.9 A, Stall torque: 35Kg-cm at maximum limited stall current of 4 Amp	6
4	DCmotorwithGear100RPM	100 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight - 250 gms, Operating Voltage - 12V, Voltage 12v; no load current - 100mA, Fullload 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-250gms, 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	DCmotorwithGear300RPM	300 RPM, Dimensions: Length - 90mm, Motor Diameter - 27.5mm, Shaft diameter - 6mm, Weight-250gms, 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	DCmotorwithGear600RPM	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	60RPMDCgearedmotorwith	RatedTorque(kg-cm)=6.73kg-cm,	2

	encoder	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	
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 MomentpermissibleToruqe: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 (GSMModule)	5
3	GPS Shield	Operating Current = 15mA, Sensitivity = 149dBm @Acquisition & 167dBm	5

		@Tracking,Micro-SDCardSlot=Yes	
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)1quantity	200Mhz - Dual channel - 2G/s samplingrate	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 RFIDTags 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, 4017etc.)		100

(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:6mm-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,Acrylicetc.)		
1	Aluminum SectionSet	To Build mechanisms	1
2	Acrylic sheetset	To Build mechanisms	1
E	Gripper Section		
1	Parallel linkGripper	- Grippingsize: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	Linearmotion,aluminumblock	2
2	Industrial Rail (1000 mm)	Linearmotion,aluminum rail	2
G	Actuators		
1	Linear Actuator	Linear motion	4

(Tools & Instruments Division)

Sr. No.	Product name	Specifications	Qty
A	Tools andInstruments		
1	Mechanical ToolKit	- No-loadspeed:0to2600rpm - Drilling diameter: 10 millimeters for concrete and masonry;8millimetersfor steel; 20 millimeters forwood - Material:MSandPlastic - Chuck capacity : 1 to 10 millimeters - Impactrate:0to41600bpm - 1/2 inch drill spindle connectingthread - Power:500watts(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 tofollowthe line of cut more easily	1
4	Miniature File Set	Metal Needle file set	1
5	Riveter	Riveter of different diameter	1
6	Stanely 71996 Ultimate Tool Kit	242 Pics	2
Lab Accessories			
1	Redpermanentmarkersmalltip		5
2	Bluepermanentmarkersmalltip		5
3	Component Organiser	25 compartment Component Organiser	4
4	Component Display board	Multi DisplayBoard	4

(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

Robotic Study platform			
Sr. No.	Product name	Specifications	Qty
1	**MIRA-Miniature Industrial Robotic**	Robotic ARM 5 Axis Hardware The kit consists of black anodized aluminium brackets, Aluminium tubing and hubs, custom injection moulded components, and precision laser-cut Lexan components. IR sensor for the detection of object on the conveyor belt. Camera USB Type, Full HD 1080p, H.264 avc compression, Carl zeiss optics must be supplied for the image processing Applications. Must be supplied with Remote having 5 knobs to control the each servomotor respectively. Mounted Object detection Conveyor Belt for Material Pick up and place. On Board Bluetooth to control wirelessly. USB cable for the interfacing to the PC. Power adapter to power the board The Mechanics The arm uses 1 x HS-475HB in the base, 1 x HS-805BB in the shoulder, 1 x HS-755HB in the elbow, 1 x HS-645MG in the wrist, 1 x HS-422 in the gripper. Wrist Rotate 6th Axis . The Controller Section AVR processors (Atmega328) based Controller, Serial port-based version with powerful PC software with USB interface ReprogrammableSectionwithPCsoftwareusingUSB IR based object detection. And conveyor belt controlling mechanism.	1

		Software Interfaced through MATLAB. And MATLAB based experiments programs must be supplied. For future LABVIEW compatibility Must Be their. Android interface to the Arm through APP and App must be provided. Exercises Camera based color detection on conveyor belt mechanism. Real time controlling of the Robotic Arm through GUI Created inMATLAB. Image processing application through compatibility using MATLAB software MATLAB based Sorting of object on basis of their color using image processing in MATLAB Android based control of robotic ARM learning kinematic and Inverse Kinematics Open platform for Android Application through Bluetooth. All reading of unit be connected to system in excel file. Steps storing In Excel Sheet Software Section	

(Miscellaneous)			
Sr. No.	Product name	Specifications	Qty
1	Tweezer Set	Pack of 5 tweezers	2
2	3mm LEDsred	Transparent red	50
3	3mm LEDsblue	Transparent blue	50
4	5mm LEDsRED	Transparent red	50
5	5mm LEDsblue	Transparent blue	50
6	IR LED 5mm	white or transparent white	10

7	IR photodiodes	5 mm Round Head Infrared Receiver Photodiodes IRDiode	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 68ohm	1/4 watt Carbon Film Resistor CFR	100
15	Resistor 100ohm	1/4 watt Carbon Film Resistor CFR	100
16	Resistor 220ohm	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 Resistor270	SMD 1206 package	100
30	smd Resistor1k	SMD 1206 package	200
31	smdResistor 2.2k	SMD 1206 package	100
32	smdResistor 3.3k	SMD 1206 package	200

33	smdResistor 4.7k	SMD 1206 package	100
34	smd Resistor10k	SMD 1206 package	200
35	smd Resistor22k	SMD 1206 package	100
36	smd Resistor33k	SMD 1206 package	100
37	smd Resistor1M	SMD 1206 package	100
38	JoystickPots1kohm+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 7805TO220	TO-220	20
49	IC 7806TO220	TO-220	20
50	IC 7809TO220	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-GeneralPurposeRectifierDiode	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 NormallyOpenAC250V3A(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 BoatRocker6A/250V10A/125V	10
61	Limit switches	Current - 5A ; Voltage - 250V AC	10
62	Single pin jumper Male to Female	female to male cable	30
63	Single pin jumper Female to Female	female to female cable	30
64	Relimated Connector Base (white): 2 pin	white relimate base male pcb mount	100
65	Relimated Connector Base (white): 3 pin	white relimate base male pcb mount	100
66	Relimated Connector Base (white):4 pin	white relimate base male pcb mount	100
67	Relimated Connector Base (white):5 pin	white relimate base male pcb mount	100
68	Relimated Connector Base (white):6 pin	white relimate base male pcb mount	50
69	Relimated Connector Base (white):7 pin	white relimate base male pcb mount	50
70	RelimatedConnectorBase (white):8 pin	white relimate base male pcb mount	50
71	Relimated Connector both sided (white):2 pin	2 pin relimated cable	25
72	Relimated Connector both sided (white):3 pin	3 pin relimated cable	30
73	Relimated Connector both sided (white):4 pin	4 pin relimated cable	30
74	Relimated Connector both sided (white):5 pin	5 pin relimated cable	35

75	Relimated Connector both sided (white):6 pin	6 pin relimated cable	35
76	Relimated Connector both sided (white):7 pin	7 pin relimated cable	25
77	Relimated Connector both sided (white):8 pin	8 pin relimated cable	20
78	Pheonix connector: 2 pin Big	2 pin big Terminal Block Connector	50
79	Pheonix connector: 2 pin Small	2 pin small Terminal Block Connector	50
80	FRCbase:10pinnormal	216 Series Box Header Straight 2.54 mm 10 pin	20
81	FRC base : 10 pin RIGHT ANGLE	216-A Series Box Header Right Angle 2.54 mm 10 pin	20
82	FRC base : 14pin normal	216 Series Box Header Straight 2.54 mm 14 pin	40
83	FRC base : 14pin Right Angle	216-A Series Box Header Right Angle 2.54 mm 14 pin	20
84	FRC cable : 10 pin (in meter)	length=1m(For Ops: purchase bundle of 100ft)	10
85	14 pin FRC cable (in meter)	length=1m(For Ops: purchase bundle of 100ft)	20
86	10 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 10 pin	50
87	14 pin FRC header	201 Series FRC Female with Strain Relief 2.54 mm 14 pin	100
88	Relay : 12 V Coil	JQC-3FC(T73) - 5 pin sugarcube 7 A	10
89	Male burg strip 40 x 1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54mm	70
90	Male burg strip 40 x 2	Pin Style: Square No. of pins: 80 Pin Spacing: 2.54mm	20
91	FemaleBurgStrip40x1	Pin Style: Square No. of pins: 40 Pin Spacing: 2.54mm	60
92	Female burg Strip 40 x 2	Pin Style: Square No. of pins: 80 Pin Spacing: 2.54mm	20
93	IC base : 6 pin	DIP Package	20
94	IC base : 14 pin	DIP Package	25

95	IC base : 16 pin	DIP Package	20
96	IC base : 20 pin	DIP Package	20
97	IC base : 28 pin	Narrow IC Base For Atmega8	10
98	IC base : 40 pin	IC Base for Atmega16	20
99	Heat Shrinks : 2 mm in meter	Heat shrink 2mm in meter	5
100	Heat Shrinks : 3mm in meter	Heat shrink 3mm in meter	5
101	Heat Shrinks : 5mm in meter	Heat shrink 5mm in meter	5
102	Heat Shrinks : 10mm in meter	Heat shrink 10mm in meter	3
103	T connector for batteries (MaleandFemaleBoth)	T connector (Deans) male with blue black wires	10
104	Tie (Small, medium and large 2 packetseach)	Tie (Small, medium and large 2 packets each)	1
105	Dual tape	Dual tape 20mm	10
106	Paper Tape	Paper Tape (abro tap) 20mm	5
107	Steel grip Insulation Tape	Steel grip Insulation Tape	5
108	Transparent tapes	Transparent tapes1inch	6
109	Desolder Wick	D-Sol-Wick 1m long 2.5mm broad	12
110	Soldering Flux	Wembeley's 15g	6
111	Heat Sink Small	PI49 20mm	20
112	Heat Sink Big	PI48 25mm	20
113	Motor Wire blue (Bundle of 90 m)	Wire for motors and connectors	1
114	Motor Wire black (Bundle of 90 m)	Wire for motors and connectors	1
115	Single Stranded wire (Bundle)	Single stranded wire	1

Layout of Room for Mechtronics and Iot Lab for DFT deptt.