



**भारतीय प्रबंध संस्थान रायपुर**  
**Indian Institute of Management Raipur**

**Tender No: IIMR/SP/Tender/2023-24/05 dt.25.05.2023**

भारतीय प्रबंध संस्थान रायपुर में कक्षा फर्नीचर और अन्य बुनियादी ढांचे की आपूर्ति और स्थापना के लिए ई-निविदा के लिए पात्र बोलीदाताओं से बोलियां आमंत्रित करता है।

The Indian Institute of Management Raipur invites bids from eligible bidders for the e-tender for the supply and installation of classroom furniture & other infrastructure.

(सी.पी.पी.पी (<https://eprocure.gov.in/cppp/>) के माध्यम से ऑनलाइन निविदा  
Online tendering through CPPP (<https://eprocure.gov.in/cppp/>)

**भारतीय प्रबंधन संस्थान रायपुर**  
अटलनगर, पीओ - कुरु (अभनपुर),  
रायपुर – 493 661, छत्तीसगढ़  
वेबसाइट: <http://www.iimraipur.ac.in/>

**Indian Institute of Management Raipur**  
Atal Nagar, P. O. - Kurru (Abhanpur),  
Raipur – 493 661, Chhattisgarh  
Website: <http://www.iimraipur.ac.in/>

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## निविदा आमंत्रित सूचना NOTICE INVITING TENDER

भारतीय प्रबंध संस्थान रायपुर में कक्षा के फर्नीचर और अन्य बुनियादी ढांचे की आपूर्ति और स्थापना के लिए योग्य बोलीदाताओं से बोली आमंत्रित करता है।

The Indian Institute of Management Raipur invites bids from eligible bidders the supply and installation of classroom furniture & other infrastructure.

The schedule and other details of the Tender are as under:

Tender Name	Supply and installation of classroom furniture & other infrastructure at the IIM Raipur
Tender No.	IIMR/SP/Tender/2023-24/05 dt.25.05.2023
Estimated cost	Rs.2.07 Crs.
Publish Date	25.05.2023
Bid Opening Date	16.06.2023 @ 03:30 PM
Bid Document Download Start Date	25.05.2023 @ 03:30 PM
Bid Document Download End Date	15.06.2023 @ 03:30 PM
Bid Submission Start Date	25.05.2023 @ 03:30 PM
Bid Submission End Date	15.06.2023 @ 03:30 PM
Date for opening of Financial Bid	Will be intimated to technically qualified bidders only
Tender Fee	Rs.1180.00 (Rs.1000.00 + 18 % GST) (Rupees One Thousand One Hundred Eighty only) in the form of DD.
	Demand Draft in favor of "IIM Raipur" payable at Raipur from any Scheduled Commercial Bank except Co-operative & Gramin bank. Tender Fee should reach physically through speed post/registered post/courier in an envelope & superscribed with subject, "Tender Number" addressed to The CAO, IIM Raipur, Atal Nagar, Kurru, Abhanpur, Raipur, Chhattisgarh, INDIA 493661; on or before the Bid Submission End Date.
EMD (Earnest Money Deposit)	Rs.6 Lakhs (Rupees Six Lakhs Only)
	EMD in the form of DD only in favor of IIM Raipur, payable at Raipur (in original) in the Office of the CAO on or before the last date and time of bid submission; failing which the tender shall be summarily rejected (No other document has to be submitted separately).
Location of the service /Address	IIM Raipur, Atal Nagar, P. O. – Kurru (Abhanpur), Raipur – 493 661, Chhattisgarh
Commencement of service	Within 60 days from the work order / LOA
Contact Person for tender	Sr. Store and Purchase Officer
	0771-2474-705 / 0771-2474-714

Contact person for site visit/technical query	Sr. Junior engineer- 96441 64555
Pre bid queries	Bidders are requested to send their pre-bid queries on or before <b>05.06.2023</b> through email in given email ids <a href="mailto:abhardwaj@iimraipur.ac.in">abhardwaj@iimraipur.ac.in</a> , <a href="mailto:caooffice@iimraipur.ac.in">caooffice@iimraipur.ac.in</a> , <a href="mailto:dksinha@iimraipur.ac.in">dksinha@iimraipur.ac.in</a> mentioning the subject name pre-bid query & tender no. <b>IIMR/SP/Tender/2023-24/05 dt.25.05.2023</b> After due date no queries will be entertained further. Replies to the queries will be made and to be uploaded in <b><u>Tender Section of IIM Raipur website and CPP portal</u></b> on or before 08.06.2023

**The bidder seeking EMD exemption must submit the valid supporting document for the relevant category as per GeM GTC with the bid. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy.**

This tender document containing eligibility criteria, scope of work, terms and conditions, specification and other documents, can be seen/downloaded at/from the Central Public Procurement (CPP) Portal <https://eprocure.gov.in> or Indian Institute of Management Raipur website: [www.iimraipur.ac.in](http://www.iimraipur.ac.in).

This tender is required to be uploaded on the website <https://eprocure.gov.in> and nowhere else as it will be opened online at this site only.

The tenderer shall sign and stamp each page of this tender document as taken of having read, understood and comply with tender, the terms and conditions contained herein.

**Manual bid/tender will not be accepted under any circumstances. Incomplete bid/documents shall be rejected without giving any reason.**

### **Special Note for Site Visit**

Bidders in their own interest at their cost are advised to visit, inspect and examine the site / campus and its surroundings and satisfy themselves including prevailing rules, regulations/ directions of the local authorities/ State Government, that may be necessary for preparing the bid and execution of the contract, before submitting their Bids in respect of the Site Conditions including access to the site, availability of land, water, power and other facilities, Source and extent of availability of suitable materials including water etc. and labour, including but not restricted to any other conditions which may influence or affect the work or cost thereof under the contract. No extra charges consequent upon lack of any information/ knowledge and understanding shall be payable by the Institute.

The bidders should note that information, if any, with regard to the site and local conditions, as contained in this Bid document has been given merely to assist the bidders and is not warranted complete in all respects. The bidder should ascertain all other information pertaining to and needed for the work including information regarding the risks, contingencies and other circumstances which may influence or affect the work or the cost thereof under this contract.

All the temporary services/arrangements shall be made by Contractor at no extra cost to Institute.

**Sd/-  
Chief Administrative Officer**

## **INSTRUCTIONS OF ONLINE BID SUBMISSION**

Instructions to the Bidders to submit the bids online through the Central Public Procurement Portal for e Procurement at <http://eprocure.gov.in/eprocure/app>.

1. Possession of valid Digital Signature Certificate (DSC) and enrollment/registration of the contractors/bidders on the e-Procurement/e-tender portal is a prerequisite for e-tendering.
2. Bidder should do the enrollment in the e-Procurement site using the "Online Bidder Enrollment" option available on the home page. Portal enrollment is generally free of charge. During enrollment/registration, the bidders should provide the correct/true information including valid email id. All the correspondence shall be made directly with the contractor/bidders through email id provided.
3. Bidder need to login to the site through their user ID/ password chosen during enrollment/registration.
4. Then the Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by SIFY/TCS/nCode/eMudra or any Certifying Authority recognized by CCA India on eToken/SmartCard, should be registered.
5. The DSC that is registered only should be used by the bidder and should ensure safety of the same.
6. Contractor/Bidder may go through the tenders published on the site and download the required tender documents/schedules for the tenders he/she is interested.
7. After downloading / getting the tender document/schedules, the Bidder should go through them carefully and then submit the documents as asked, otherwise bid will be rejected.
8. If there are any clarifications, this may be obtained online through the tender site, or through the contact details. Bidder should take into account the corrigendum published before submitting the bids online.
9. Bidder then logs in to the site through the secured log in by giving the user id/ password chosen during enrolment/registration and then by giving the password of e-Token/Smartcard to access DSC.
10. Bidder selects the tender which he/she is interested in by using the search option & then moves it to the 'my tenders' folder.
11. From my tender folder, he selects the tender to view all the details indicated.
12. It is construed that the bidder has read all the terms and conditions before submitting their offer. Bidder should go through the tender schedules carefully and upload the documents as asked; otherwise, the bid will be rejected.
13. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender documents/schedule and generally, they can be in PDF/xls/rar/jpg/dwf formats. If there is more than one document, they can be clubbed together and can be provided in the requested format. Bidders Bid documents may be scanned with 100 dpi with black and white option. It is advisable that each document to be uploaded through online for the tenders should be less than 2 MB. If any document is more than 2MB, it can be reduced through rar and the same can be uploaded, if permitted. However, if the file size is less than 1 MB the transaction uploading time will be very fast.

14. If there are any clarifications, this may be obtained through the site. Bidder should take into account the corrigendum published from time to time before submitting the online bids.
15. The Bidders can update well in advance, the documents such as certificates, annual report details etc., under My Space option and these can be selected as per tender requirements and then send along with bid documents during bid submission. This will facilitate the bid submission process faster by reducing upload time of bids.
16. Bidder should submit the Tender Fee/EMD as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the bid submission due date & time for the tender or as indicated in the tender. Scanned copy of the instrument should be uploaded as part of the offer.
17. While submitting the bids online, the bidder reads the terms & conditions and accepts the same to proceed further to submit the bid packets.
18. The bidder has to select the payment option as offline to pay the Tender Fee/EMD as applicable and enter details of the instruments.
19. The details of the DD/ any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise submitted bid will not be acceptable or liable for rejection.
20. The bidder has to digitally sign and upload the required bid documents one by one as indicated. Bidders to note that the very act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation that they have read all sections and pages of the bid document including General conditions of contract without any exception and have understood the entire document and are clear about the requirements of the tender requirements.
21. The bidder has to upload the relevant files required as indicated in the cover content. In case of any irrelevant files, the bid will be rejected.
22. If the price bid format is provided in a spread sheet file like BoQ\_xxxx.xls, the rates offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Price-bid BOQ template must not be modified/replaced by the bidder; else the bid submitted is liable to be rejected for this tender.
23. The bidders are requested to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bid online by the bidders at the eleventh hour.
24. After the bid submission (i.e. after Clicking "Freeze Bid Submission" in the portal), the acknowledgement number, given by the system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender and will also act as an entry pass to participate in the bid opening date.
25. The time settings fixed in the server side & displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.

26. All the data being entered by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered will not be viewable by unauthorized persons during bid submission & not be viewable by any one until the time of bid opening.
27. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers' public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
28. The confidentiality of the bids is maintained since the secured Socket Layer 128 bit encryption technology is used. Data storage encryption of sensitive fields is done.
29. The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) exit option in the browser.
30. For any queries regarding e-tendering process, the bidders are requested to contact as provided in the tender document. Parallely for any further queries, the bidders are asked to contact over phone: 0120-4001 002 or send a mail over to [cppp-nic@nic.in](mailto:cppp-nic@nic.in).



## **Terms and Conditions of the Contract**

1. **Earnest Money Deposit (EMD):** The tenderer shall deposit Earnest Money of Rs.6 lakhs/- (Rupees Six Lakhs Only) through Demand Draft drawn in favour of “Indian Institute of Management Raipur” payable at Raipur”. The Earnest money deposit will be refunded to the tenderers whose offers have not been accepted. Earnest Money Deposit of the tenderer whose offer is accepted will be kept uptill the time, the Bank Guarantee is not received.
2. **Security Deposit:** The successful tenderer will have to deposit DD of 3 % of the total order value in favour of “Indian Institute of Management Raipur” payable at Raipur drawn on any Nationalized Bank/Scheduled Bank and valid for 60 days beyond the expiry period of **onsite warranty (03 years)**.
3. In the event of bidder backing out before actual award or execution of agreement, IIMR will have right to forfeit the EMD. In case the successful tenderer declines the offer of contract, for whatsoever reason(s) his EMD will be forfeited.
8. Intending tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders to the nature of the site / location before submitting bid. The nature of the site / location, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstance which may influence or effect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. Submission of tender by a tenderer implies that he has read this notice and all other contract documents has made himself aware of the scope and specifications of the work to be done.
9. The IIMR will not provide any residential space for accommodation to the Agency. The agency has to make its own arrangement for the residential accommodation to the deployed staff.
10. The IIMR is not bound to award contract at the lowest price received in the Tender and reserves the right to decide on fair and reasonable price of the services tendered for any counter offer the same to the bidders. All other terms and conditions of the tender shall remain operative even if a counteroffer rate is offered to the bidders. IIMR reserves the right to negotiate with first lowest bidder to arrive at the fair and reasonable price. In case of first lowest is more than one, then it would be at the discretion of the IIMR.
11. **Sub-Contracting:** The contractor shall not assign, sub-contract or sub-let the whole or any part of the contract in any manner. In case of an unavoidable circumstance, the contractor shall be able to do it with the approval of the Institute. However, the job shall be sublet only to the party approved by the Institute.
12. The contractor and his employees shall comply with all norms stipulated by the Institute such as Gate Passes, Checking, Maintenance of Cleanliness, Discipline & Decency at and around the work site, Safety Precautions and Safety Regulations.
13. **Misconduct:** The conduct/characters/antecedents and proper bonafide of the workers shall be the sole responsibility of the contractor. However, the contractor should provide the necessary details of all its employees to the Institute. All the employees should be police verified.
14. The persons employed by the contractor will be the employees of the contractor and the IIMR shall have nothing to do with their employment or non-employment. Under no circumstances any liability in respect of matters connected with their employment shall be held against the IIMR and the personnel employed by the contractor shall have no right whatsoever to claim employment or other rights from the IIMR.

15. There should be no case pending with the police against the Proprietor/Firm/Partner or the Company (Agency) and the firm should not be blacklisted. An undertaking to this effect on firm letterhead should be attached.
16. None of the employees of the contractor shall enter into any kind of private work within the campus of the IIMR Non-compliance with this provision will be deemed to be violative of the contract inviting penal action/cancellation of contract.
17. The contractor shall ensure that the personnel deployed by it are disciplined and do not participate in any activity prejudicial to the interest of the IIMR / Govt. of India / any State or any Union Territory.
18. The staff (not below the age of 18 years) employed by the contractor shall have to be medically fit and kept neat and clean. The contractor shall not employ young children as prohibited under the law/rules/regulations. A record of this will be maintained by the Contractor.
24. **Interpretation:** All the terms and conditions of contract shall be read in conjunction with all other documents forming part of this contract. Notwithstanding the subdivisions of the documents into these separate sections, every part of which shall be deemed to be supplementary to and complimentary of every part and shall be read with and into the contract.
25. **Validity:** The quoted rates must be valid for a period for 365 days from the date of closing of the tender. The overall offer for the assignment and bidder(s) quoted price shall remain unchanged during the period of validity. If the bidder quoted the validity shorter than the required period, the same will be treated as unresponsive and it may be rejected.
26. In case the tenderer withdraws, modifies or change his offer during the validity period, bid is liable to be rejected and the earnest money deposit shall be forfeited without assigning any reason thereof. The tenderer should also be ready to extend the validity, if required, without changing any terms, conditions etc. of their original tender.
27. Anyone or more the following action / commission / omission are likely to cause summary rejection of tender: Any BID/EMD received late without conclusive proof that it was delivered before the specified closing time. Any conditional bid or bid offering rebate. Any bid in which rates have not been quoted in accordance with specified formats / details as specified in the Bid Documents. Any effort by a bidder to influence the IIMR in the bid evaluation, bid comparison or contract award decision.
28. Authority of person signing document: A person signing the tender form or any documents forming part of the contract on behalf of another shall be deemed to warranty, that he has authority to bind such other and if, on enquiry, it appears that the person so, signing had no authority to do so, IIMR may without prejudice to other civil and criminal remedies cancel contract and held the signatory liable for all cost and damages.
31. **Access to SITE:** The contractor shall allow unhindered access to the Institute and/or any other party or person, engaged by the Institute to work at the same site and/or to check/regulate/watch/guard/measure/inspect, solely or jointly with the contractor.
32. **Safety and Security:** Contractor shall abide by the safety code provisions as per safety code framed from time to time by the government.
33. **Work at Risk and Cost:** The institute reserves the right to get the whole or part of the work executed by some other agency at the risk and cost of the contractor if it is found that the quality and/or the progress in respect of whole or part of the work is not satisfactory.
34. **Payment of Bills:** The payment for services under this agreement/PO/WO shall be made on satisfactory completion of job contract services, through NEFT/RTGS/IMPS (online transfer). The final payment shall, however, be made only after adjusting all the dues / claims of the IIMR. All the applicable statutory deduction as applicable at current prevailing rate will be deducted at source.

35. **FORCE MAJURE:** If at any time, during the continuance of this contract, the performance in whole or in part by either party, of any obligation under this contract, shall be prevented or delayed by reason of any floods, explosions, epidemics, quarantine restriction or act of God (hereinafter referred to as events), provided notice of happenings of any such eventuality is given by either party to the other within 7 days from the date of occurrence thereof, neither party shall be due to reason of such event be entitled to terminate this contract nor shall either party have any such claim for damages against the other in respect of such non-performance or delay in performance. The operation of contract shall be resumed as soon as practicable after such event may come to an end or cease to exist and the decision of the IIMR as to whether the operation have been so resumed or not shall be final and conclusive, provided further that if the performance in whole or in part of any obligation under his contract is prevented or delayed by reason of any such event for a period exceeding 90 days either party may at his option terminate the contract. Provided, also that if the contract is terminated under this clause, the IIMR shall be at liberty to take over from the Security Agency, the security personnel, vehicles & equipment deployed in the campus until a new security agency is appointed and commences the operation.
36. IIMR reserves the right to reject all or any tender in whole, or in part, without assigning any reasons thereof.
37. IIMR reserves the right to withdraw/relax/modify any of the terms and conditions mentioned in the tender document if it felt necessary in the benefit of the Institute.
38. The decision of the Director of IIMR will be final in all respect and will be acceptable to all the tenderers.
39. **DISPUTE SETTLEMENT & APPOINTMENT OF ARBITRATOR:**
- “All disputes or differences whatsoever arising between the parties out of or relating to the construction, meaning and operation or effect of the Tender and the resulting agreement or the breach thereof that cannot be settled by good faith and negotiations between the parties within 60 days of the commencement of negotiations shall be settled by referring the dispute at the Director, IIM Raipur, who may either himself decide the dispute as Arbitrator or appoint some other person as Arbitrator to adjudicate the same, who shall be unconnected with IIM Raipur. The proceedings will be governed by the provisions of the Arbitration & Conciliation Act 1996. By consent of parties the jurisdiction of all other courts are excluded and the courts at Raipur alone shall have jurisdiction. The language of the Arbitration shall be English. The venue of Arbitration proceedings shall be Raipur.”
40. Procurement Rights: IIMR Reserves the right to conclude the purchase with entire or partial bill of material as mentioned in the price schedule.
41. IIM Raipur may issue corrigendum to tender documents before due date of Submission of bid. The bidder is required to read the tender documents in conjunction with the corrigendum, if any, issued by IIM Raipur. The bidder is not supposed to modify the tender document.
42. Finished sample must be reached to IIM Raipur on or before the date of sample check / Presentation date of sample by bidder.
43. **Other Important Conditions: -**
- a) The bidder has to upload the relevant & readable files only as indicated in the tender documents. In case of any irrelevant or non-readable files, the bid may be rejected.
  - b) IIM Raipur reserves the right to accept or reject any or all the tenders in part or in full or may cancel the tender, without assigning any reason thereof.

- c) IIM Raipur reserves the right to relax / amend / withdraw any of the terms and conditions contained in the Tender Document without assigning any reason thereof. Any inquiry after submission of the quotation will not be entertained.
- d) IIM Raipur reserves the right to modify/change/delete/add any further terms and conditions prior to issue of purchase order.
- e) IIM Raipur reserves the right to place repeat order upto 100% of the quantities within a period of 12 months from the date of successful completion of purchase order at the same rates and terms & conditions of work order/purchase order.
- f) In case the bidders/successful bidder(s) are found in breach of any condition(s) at any stage of the tender, Earnest Money/Performance Security shall be forfeited.
- g) Conditional tenders will not be considered in any case.
- h) In case of doubt in material, the expenditure on testing of equipment will be borne by the tenderer.
- i) IIM Raipur shall not be responsible for any postal delay, non-receipt or non-delivery of the EMD & Tender Fee.
- j) IIM Raipur may issue corrigendum to tender documents before due date of Submission of bid. The bidder is required to read the tender documents in conjunction with the corrigendum, if any, issued by IIM Raipur. The bidder is not supposed to modify the tender document.

**Sd/-**  
**Chief Administrative Officer**

## Eligibility Criteria

### Only those agencies which meet the following minimum criteria will be considered for the sample presentation round: -

1. The agency / firm shall submit the original EMD and tender fee in a sealed envelope super scribe this tender name & the name of the agency and must reach at IIMR before the last date & time for opening of Technical bid. A duly completed certificate to this effect is to be submitted as per the **Annexure-II**. DD will be made in favor of “Indian Institute of Management Raipur” payable at Raipur.
2. The agency/ firm should give self-declaration certificate for acceptance of all terms & conditions of tender documents. A duly completed certificate to this effect is to be submitted as per the **Annexure-III**.
3. The agency / firm / bidder must be OEM or Authorized representative of the concern in India. If an agent / dealer submit bid on behalf of the principal manufacturer / OEM in the same tender for the same item / product. There must be OEM authorization letter for this tender reference number issued by principal manufacturer / OEM must upload in the technical bid (OEM Authorization letter must enclose online in technical bid part to support on this).
4. Supplier Authorization Certificate- The agency/ firm/ bidder should be an authorized sales and service representative of the principle manufacturer / OEM. There must be OEM authorization letter for this tender reference issued by principal manufacturer / OEM upload in the technical bid (**Wherever Authorized Distributors/service providers are submitting the bid, Authorization Form /Certificate with OEM/Original Service Provider details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid, in absence of required details the OEM certificate will be considered invalid**).
5. OEM / Manufacturer should have a valid factory license, EPF, ESIC for manufacturing, assembling and supply of furniture (License, EPF, ESIC number must enclose online in technical bid part to support on this).
6. The agency / firm / bidder must have a valid GST registration Certificate, AIOTA certificate, BIFMA Membership Certificate (Member of BIFMA), Green Guard / any Green Certification, ISO 9001, ISO 14001 and ISO- 45001 certificates (All certificate must enclose online in technical bid part to support on this).
7. The agency/ firm / bidder should be neither blacklisted by any Government Dept., nor is any criminal case registered / pending against the firm or its owner / partners anywhere in India. A duly completed certificate to this effect is to be submitted as per **Annexure-IV**.
8. The Annual Turnover of the bidder should be at least Rs.8 Cr (Rupees eight crore only) per annum during last three financial years ending March'2022. Copies of audited profit & loss accounts statement are to be submitted as per the **Annexure-V**.
9. Work Experience: - The Bidder Should have satisfactorily completed following works during the last seven years ending previous day of last date of submission of tenders. For this purpose, cost of work shall mean gross value the completed work including cost of material supplied by the Government/Client but excluding those supplied free of cost. This should be certified by an officer not below the rank of **Executive Engineer/Project Manager** or equivalent.

Three Similar works (30 % of estimated cost) costing not less than ₹ 62,10,000/- each.  
OR.

Two Similar works (50 % of estimated cost) costing not less than ₹ 82,80,000/- each.

OR.

One Similar work (80 % of estimated cost) costing not less than ₹ 1,65,00,000/-

- Similar work means: Supply and Installation of Furniture and Furnishing Works (experience certificate for the supply of almirah, bookcase or similar product and supply of chair / table without fitting & installation will not be considered, experiences for the supply, fitting or installation of furniture & fixture will be considered).
- Work satisfactory report or client report **of the above work orders** will be mandatory to be submitted in the technical bid part, in absence of work satisfactory report or client report, the above work will be considered invalid.

The details of the same along with supporting document are to be submitted as per the **Annexure-VI** along with Experience cum performance certificate of work as per **Annexure-VII**.

Certified that all above information's are correct to the best of my/our information, knowledge and belief.  
All the attached relevant documents are duly signed, sealed and serially numbered

Place :

Date :

**(Signature of the bidder with seal)**

**ANNEXURE –I**

## **COMPANY DETAILS**

<b>Name of the Party</b>	
<b>Number and Date of Incorporation / Establishment</b>	
<b>PAN Number</b>	
<b>Sales / Service Tax/ GST Registration Number</b>	
<b>Office Address for Postal Communication</b>	
<b>Authorized Signatory Details</b>	<b>Name</b>
	<b>Designation</b>
	<b>Email</b>
	<b>Phone</b>
<b>Details of Contact other than Authorized Signatory</b>	<b>Name</b>
	<b>Designation</b>
	<b>Email</b>
	<b>Phone</b>
<b>Authorized Vendor / Dealer or OEM of</b>	<b>For authorized vendor/Dealer of OEM.....</b>
	<b>For OEM of brand .....</b>

**Signature and Seal of the Tenderer:**

**Name in Block Letter:**

**Designation:**

**Contact no.**

**Date :**

To  
Chief Administrative Officer,  
Indian Institute of Management Raipur  
Atal Nagar, Kurru (Abhanpur),  
Raipur -493661

**Sub: - Tender Fee & EMD Details.**

Ref : - Tender No. IIMR/Tender/2021/16 Dated\_\_\_\_\_

(Notice Inviting Tender for Supply and Installation of Classroom Furniture Items at IIM Raipur)

Dear Sir,

The following DD in favour of IIM Raipur are enclosed herewith towards Tender Fee & EMD Detail of DD

Detail of DD	Amount	DD No. & Date	Bank Name
Tender Fee plus GST	Rs. 1180/-		
EMD	Rs. 6,00,000/-		
MSME / NSIC Certificate for Exemption	Manufacturer of _____(brand) please specify brand		

**Thanking you  
Yours faithfully,**

**(Authorized Signatory with Seal)**

**ANNEXURE – III**



To ,

Chief Administrative Officer,  
Indian Institute of Management Raipur  
Atal Nagar,Kurru (Abhanpur),  
Raipur -493661

**Sub: - Self Declaration Certificate**

Ref : - Tender No. \_\_\_\_\_

(Notice Inviting Tender for Supply and Installation of Classroom Furniture Items at IIM Raipur)

Dear Sir,

With reference to the above, I am/ We are offering our competitive bids for Notice Inviting Tender for Supply and Installation of Furniture Items, I / We hereby reconfirm and declare that I / We have carefully read, understood & complying the above referred tender document including instructions, terms & conditions, specifications, schedule of quantities and all the contents stated therein.

I / We also confirm that the rates quoted by me / us are inclusive of all i.e. FOR IIM Raipur, free delivery, loading, unloading, labour, fixing, installation etc. except GST.GST will be paid extra as actual at the time of billing.

Authorized Signatory with Seal

Name:

Designation:

Contact No.:

Email ID:

Mobile Number:

Date :

Place:

**CERTIFICATE**

**(to be provided on letter head of the firm)**

I hereby certify that the above firm neither blacklisted by any Central/State Government/Public Undertaking/Institute nor is any criminal case registered / pending against the firm or its owner / partners anywhere in India.

I also certify that the above information is true and correct in any every respect and in any case at a later date it is found that any details provided above are incorrect, any contract given to the above firm may be summarily terminated and the firm blacklisted.

Authorized Signatory with Seal

Name:

Designation:

Contact No.:

Email ID:

Mobile Number:

Date :

Place:

**Annual Turnover Details**

<b>Evaluation Criteria</b>			<b>Remark</b>
Bidder's Annual Turnover for last three financial years (As per the audited profit & loss account statement)	Financial Year	Turnover in Rs.	
	2021-22		Audited profit & loss account statement are to be attached along with the Annexure-V
	2020-21		
	2019-20		

Authorized Signatory with Seal

Name:

Designation:

Contact No.:

Email ID:

Mobile Number:

Date :

Place:

**Work Order Details: -**

S. No.	Evaluation Criteria	Name of the Client	Order No. & Date /Ref. No	Amount	Remark
1. 2.	List of Purchase Order / Work Order where the similar type of Work executed by you during the last 7 years as per eligibility criteria	Three Similar works costing not less than ₹ 62.10 lakhs each  1. 2. 3.			Supporting documents are to be attached along with the Annexure-VI
		Two Similar works costing not less than ₹ 82.80 lakhs each  1. 2.			
		One Similar works costing not less than ₹ 1.65 crs  1.			

Authorized Signatory with Seal

Name:

Designation:

Contact No.:

Email ID:

Mobile Number:

Date :

Place:

**EXPERIENCE CUM PERFORMANCE REPORT OF WORKS**

1	Name of work / Project & Location	
2	Name of Agency	
3	Agreement no.	
4	Estimated Cost	
5	Tendered Cost	
6	Total value of work done	
7	Date of Start	
8	Date of completion	
	i) Stipulated Date of Completion (as mentioned in work order)	
	ii) Actual Date of Completion	
9	i) Status of Compensation/ Penalty (Not Levied / Levied / Not Decided)	
	ii) Amount of compensation levied for delayed completion, if any	
10	Amount of reduced rate items, if any.	
10	Whether any litigation / arbitration case pending in progress in respect of this work.	
11	Performance Report	
	1) Quality of Work	Very Good/Good/Fair/Poor
	2) Financial Soundness	Very Good/Good/Fair/Poor
	3) Technical Proficiency	Very Good/Good/Fair/Poor
	4) Resourcefulness	Very Good/Good/Fair/Poor
	5) General Behavior	Very Good/Good/Fair/Poor

Dated.

Executive Engineer  
equivalent with stamp

## **TECHNICAL SPECIFICATIONS**

(Please contact or email our technical user Sr.JE contact no.09644164555 or [dksinha@iimraipur.ac](mailto:dksinha@iimraipur.ac) regarding technical query related to specifications )

### **A. LIST OF SPECIFICATIONS & I.S. CODES**

Materials used shall conform to appropriate standards specified by the Indian Standards Institution and unless otherwise specified these standards shall form a part of these specifications. In particular, the following or latest standards shall be referred to:

#### **WOOD WORK:**

- 1 IS: 287-1973 Recommendations for maximum permissible moisture content of timber used for different purposes
- 2 IS: 303-1989 Specifications for plywood for general purposes
- 3 IS: 401-1982 Code of Practice for preservation of timber
- 4 IS: 451-1973 Technical supply condition for wood screws
- 5 IS: 729-1979 Specifications for drawer locks, cupboard locks and box locks
- 6 IS: 848-1974 Specification for synthetic resin adhesives for plywood
- 7 IS: 851-1978 Specification for synthetic resin for construction work in wood
- 8 IS: 852-1994 Specification for animal glue for general woodworking purposes
- 9 IS: 1200 (Part XII)-1973 Woodwork and joinery
- 10 IS: 1328-1982 Specification for veneered decorative plywood
- 11 IS: 1658-1990 Specification for Fibre Hard boards
- 12 IS: 1659-1990 Specifications for block boards
- 13 IS: 1734-1983 (pt.1 to 20) methods of test for plywood
- 14 IS: 2380-1981 Method of test for wood particle boards from other lignocellulosic material
- 15 IS: 3087-1985 Specification for wood particle boards (Medium Density) for general purposes
- 16 IS: 3097-1980 Specifications for veneered particle boards
- 17 IS: 3618-1966 Photosphere treatment of iron and steel for protection against
- 19 IS: 6760-1972 Slotted countersunk head wood screws
- 20 IS: 12406-1988 Specification for medium density fibreboards for general purposes
- 21 IS: 710 -1976 Specifications for Marine Plywood
- 22 IS: 2046-1995 Decorative thermosetting synthetic resin bonded laminated sheet
- 24 IS: 63 -1978 Whiting for paints and putty
- 25 IS: 198-1968 Varnish gold size
- 26 IS: 806-1968 Code of practice for use of steel tubes in general building construction Covered electrodes for manual metal arc welding of carbon and carbon
- 27 IS: 814-1991 Manganese steel
- 28 IS: 816-1969 Construction in mild steel
- 29 IS: 822-1970 Code of procedure for inspection of welds
- 30 IS: 1363-1992 Hexagon head bolts, screws, and nuts of product grade C
- 31 IS: 1608-1972 Method for testing of steel products
- 32 IS: 1821-1987 Dimensions for clearance holes for bolts and screws
- 33 IS: 2074-1992 Ready mixed paint, air drying red oxide -zinc chrome, priming

## **B. GENERAL SCOPE OF WORK AND SPECIFICATIONS**

### **General:**

1. The work in general shall be carried out as per ISI / manufacturers specifications / codes and to best trade practices as approved by the Institute/ Committee/In-charge. Where the work/ items are akin to building (civil & electrical) will be carried out as per CPWD specifications same be followed subject to the Institute / Committee/In-charge approval.
2. Terms "approved " "directed" " required" or the like shall mean approved direct / required by the Institute/ Committee/n-charge as the context may demand.
3. The contractor shall provide shop drawings where specified and / or directed and carry out the works as per approved.
4. **Before ordering any material, the Contractor shall submit samples for approval. Similarly, samples of workmanship shall also be made available for approval before execution.** These samples are deemed to be as per parameters of the contract unless otherwise instructed or intimated. All trials / workmanship shall be as per approved samples. Tests on materials & workmanship shall be performed when & as required by the Institute/ Committee/In-charge

### **1. STONE WORK**

a. **Granite / Marble Stone:** Stone shall be hard, sound homogenous in texture with crystalline texture and shall be uniform in colour free stains, cracks, decay and weathering. The quality of the marble shall be as specified and approved by the Institute/ Committee/In-charge. The slab shall be cut to the required shape and size, fine, chisel dressed on all sides to the full depth. The surfaces shall be machine rubbed or table rubbed and all edges and angles shall be true, square and free from chipping. The laying, curing polishing and finishing shall be as per relevant IS specifications for colour / texture / finish.

### **2. METAL WORK: STEEL, ALUMINIUM**

• **Extent and intent:** The contractor shall furnish all materials labour operations equipment tools and plant and indicants necessary and required for the completion of all metal work in connection with metal work as called for in the drawing and/or other documents. The drawings and specifications cover the major requirements only. Anything called for in one document shall be considered as applicable to the items of work concerned. The supply and installation of additional fastening assessorry features and other items not specifically mentioned but which are necessary to make a complete functioning installation shall form part of this contract.

• **GENERAL:** All metal work shall be free defects impairing strength, durability and appearance and shall be of the best commercial quality for purpose specified made with structural properties to withstand strains, stresses to which the metal shall normally be subjected.

• **Shop Drawing:** The contractor shall submit shop drawings and /or samples of each type of items of metal work called for the Institute / Committee/In-charge for his approval at least 15 days ahead of their use at site. The shop drawing shall show full size sections of the components,

thickness of metals, details of construction, hardware etc. Samples of all joints and method of fastening and joining shall be submitted to the Institute / Committee/In-charge for approval well in advance at least 7 days of commencing the work.

- **Samples:** Sample of all typical metal work as called for shall be fabricated, assembled and erected or submitted to the Institute / Committee/In-charge as directed by him for his approval at least 7 days in advance of their use at site.

- **Unloading and stacking:** The fabricated frames shall be transported, bundled, unloaded and stacked in a careful manner; they shall be stacked on edge on level bearers and supported evenly. All precautions shall be taken to ensure that the frames are not damaged or distorted in any manner.

### 3. WELDING

Welding shall be done in accordance with IS -816

a) Welding procedure shall be based on the specific analysis of any given heat of steel (based on the certified mill reports) and shall be subject to the review of the Institute/ Institute/ Committee/n-charge s.

These procedures shall call for one or all of the following:

- i. Proper bead shape.
  - ii. Minimized penetration to prevent dilution of the weld material with the alloy elements.
  - iii. Pre-heating controlled inter-pass temperature and controlled heat input.
- b) Welding will be done, only by qualified and tested welders specifically trained and experienced for the type of job to execute, to the complete satisfaction of the Institute/ Institute/ Committee/n-charge .
- c) Weld symbols to be adopted shall be as indicated on the drawings.
- d) Structural welding shall not commence until to be joined elements are bolted or tacked in intimate contact and adjusted to dimensions shown with allowance for any weld shrinkage that is expected. Welding sequence shall be planned and controlled to minimize undue stress increase or undue distortions in restrained members.
- e) If copper wire spacers are used between two surfaces to be welded to reduce transverse stress in the weld, care shall be taken that it does not mix with the weld metal.
- f) Conclave bead shapes shall be avoided. Ratio of weld width to weld depth shall preferably vary from a maximum of 1 to 1 a maximum of 1.4 to 1.  
Width of weld=1 to 1.4  
Depth of fusion
- g) Field welding shall not be permitted unless shown on the drawings or directed.
- h) Subsequent to fabrication, the overlapping or containing surfaces or other closed sections (such as tubular sections) which are inaccessible to painting shall be seal welded. When the end of the tube is not automatically sealed by virtue of its connection by welding to another member, the end shall be properly and completely sealed. Before sealing, the inside of the tube shall be made dry and free from loose scale.
- i) All welded connections shall be inspected as per IS -822. Any type of crack or zone of incomplete fusion or penetrations revealed by the test shall not be acceptable
- j) Defective welds shall be replaced or repaired as decided by the Institute/ Committee/n-charge s, project manager. The repaired or replaced welds shall be tested using the same method as above. Additionally, when defective welds are found, the cause of the defective welding shall



be determined and the contractor shall Institute immediate corrective action.

#### 4. WOOD WORK (CARPENTRY AND JOINTING):

- **Extent and Intent:** It is the intent of the specification to include all carpentry and joinery work in connection with all interior wood finish, cabinet work and other items of wood work called for in the drawings.
- **General:** The carpentry and joinery work shall include the furnishing of all labour , materials, equipment , incidentals and appliances required to complete the work including provision and installation of fastening devices and hardware in accordance with the drawings and the schedule of hardware.
- **Samples and Shop Drawings:** The contractor shall before proceeding with the work , submit to the Institute / Committee/In-charge for his approval complete samples of various materials including hardware and fastening devices and shop drawing and large details covering all joinery work.
- Timber shall be properly & well seasoned, sawn in the direction of grains, planed square, straight and true. It shall be uniform in texture, closed grained having not less than 2 growth rings per cm. width in cross section. It shall be free from all evidence of fungus attack, insect attack, abnormal drying defects, twist , warp, indication of shrinkage, waness , large loose, dead ore cluster knot etc. no individual hard and sound knot shall be more than 6sq. Cm in size and their aggregate area shall not be more than 1 % of the area of the piece. Type of wood to be used shall be described or in bill of quantities.
- In general all wood and wood products shall be treated to combat & prevent spread of insect pests. Wood products shall be Phenol formaldehyde bonded BWR grade. All wood work shall include the provision and installation of fastening devices and hardware in accordance with drawings and or/ attached hardware schedule. Quality shall to approval of the Institute/ Committee/n-charge . Material-wood or hardware, confirming to approve sample shall only be incorporated in work.
- **Workmanship:** The work shall be done by skilled carpenters as per details show on drawings/ instructions of In-charge. Framing timber and other work shall be close fitting with proper wood joinery, accurately set to required lines, levels and rigidly secured in place. Special care shall be taken to match the grain of timber or plywood, which shall be subsequently polished. Screwing or nailing with not be permitted to the edge of plywood or chip board sheets. All joinery work shall be glued with best quality synthetic waterproof, equivalent of Fevicol.
- **Surface treatment:** When show and drawings or called for in BOQ, decorative ply or laminate shall be bonded under pressure to the surface to be finished. The adhesive used shall be of good quality & brought to site in sealed container. The rate of application and the length of time for which the pressure is to be applied shall be as per manufacturer's specifications. The edges of sheets shall be protected by teak (or as specified) lapping /edges or bevelled
- **Joinery:**
  - i. Material: Finished wood work and joinery shall be of straight grained selected quality wood free from knots and other blemishes imperfections. All finished woodwork and joinery shall be seasoned to not less than 10% or more than 12-1/2% moisture content.
  - ii. All carpentry works shall be done by workmen skilled in this trade and the work shall be carried

out with the use of proper tools. Joinery work shall be securely mortised and tensioned and glued with best quality waterproof glue. All sections and dimensions to be as shown on drawings. For all joinery work, use of nails shall be permitted, and wood screws shall be nettle fold brand and of appropriate size and of practicable means of fastening the various parts together shall be concealed. The frames shall be fixed to supports with threaded expansion bolts.

- iii. All work (both carpentry and joinery) shall be to the dimensions shown on drawings. All interior wood finish and cabinet work shall be smoothly treated and sanded at the building and paper or other defacing marks or other defects shall be rejected. All exposed wood and plywood shall be straight grained, of matched grain and colour and shall be subject to approval by the Institute/ Committee/n-charge before being fabricated.

- **Finish:** All carpentry work after finishing shall be sand papered smooth. Prime coat paint shall be given after inspection of the Institute / Committee/In-charge to all surfaces other than those which shall be subsequently polished or covered with laminate. All exposed plywood edges shall be finished with 2nd class teak wood lipping / edging (or with wood as specified in drawings) glued and nailed in approved manner.

- **Painting and polishing:** All exposed wood / veneer (type of wood/ veneer as specified in drawings) faces of frames , glazing , doors , skirting cabinet work etc. shall be melamine (three coat, mat finish) polished to approved finish. Internal faces of cupboards and cabinets etc., shall be varnished and polished as per approved finish. Drawer bottoms sides of drawings etc. shall be varnished & polished upto satisfaction, final coat of melamine finish shall be buffed upto satisfaction.

- **Built -in joinery:** Where joinery work is specified it be built -in , it shall be responsibility of the contractor to ensure that the joinery work are set plump and true and shall not be damaged or displaced by subsequent operations. The contractor shall also provide and secure suitable anchors or other fixings all as per drawings and details.

- **Hardware Fitting:** Hinges, handles, knobs, locks all catches stoppers, stays sliding gear and other hardware fitting for furniture work shall be of the best quality.

- **Preservative Treatment:** All woodwork in contact with masonry shall be painted with approved wood preservative and primer before placing. Care shall be taken to keep exposed surfaces clear from tar etc. All concealed wood members in furniture; cabinetwork etc. shall be treated before placing in positions.

- **Protection of Work:** The contractor shall be responsible for providing and maintaining temporary covering required for the protection of finished woodwork that may be damaged during the progress of the work left unprotected.

- **Made Good Defective Work:** The contractor shall be all be responsible for any shrinkage or warping or any other defects which may appear in any joinery work. All defective or damaged work shall be taken down and renewed or repaired to the entire satisfaction of the Institute/ Committee/n-charge .

- **Block Boards:** Block boards and ply for various items of work called for shall be of approved make. Unless otherwise shown all block boards and ply shall be commercial ply veneered on the both faces.

### **Cabinet Work:**

- **General:** Cupboards, wardrobes and all cabinet work shall be fabricated and assembled in the workshop as far as practicable then brought inside the building ready to set in place. The various members shall be worked in the best manner known to the trade, mortised and tenoned dowelled and glued together so as to avoid the use of nails as much as possible. The details shall be clearly followed, moulding, clearly cut and mitres accurately made.
- Free edges of shutters, shelves, partitions etc. , shall be provided with 2nd class teak wood edging glued and nailed in approved manner.
- Shelves where shown fixed, shall be supported on aluminium or other cleats or in other manner as approved by the Institute/ Committee/in-charge . Adjustable shelves shall have brass sockets and pins as detailed on the drawings.
- Drawer bottoms shall be of 12 mm commercial, ply unless otherwise shown. Drawer front sides and back shall be of 2nd class teakwood. The drawers shall slide on metal bears as shown on drawing or as specified.
- Cuts -outs, operating etc. shall be provided in the counters and cabinets to accommodate items as shown on drawings as required at site.
- **Hardware fitting:** Hinges, handles, knobs, locks all catches stoppers, stays sliding gear and other hardware fitting for all furniture and cabinet work shall be of the best quality approved by the Institute / Committee/in-charge.
- **Preservation Treatment:** All woodwork in contact with masonry shall be painted with approved wood preservative before placing. Care shall be taken to keep exposed surfaces clear from tar etc. Tar felt shall be used to isolate wood from masonry wherever practicable all concealed wood members in ceiling partitions, cabinetwork etc. shall be treated before placing in positions.
- **Built - in joinery:** Where joinery work is specified it be built - in it shall be responsibility of the contractor to ensure that the joinery works are set plump and true and shall not be damaged or displaced by subsequent operations. The contractor shall also provide and secure suitable anchors or other fixing all as per drawings and details.
- **Protection of Work:** The contractor shall be responsible for the temporary doors and closing in openings necessary for the protection of the work during progress. He shall also provide and maintain any other temporary covering required for the protection of finished woodwork that may be damaged during the progress of the work left unprotected.
- **Make Good Defective Work:** The contractor shall be responsible for any shrinkage or warping or any other defects which may appear in any joinery work. All defective or damaged work shall be taken down and renewed or repaired to the entire satisfaction of the Institute.

### **5. FINISHES:**

- **Extent and intent:** The contractor shall furnish all material, labour, scaffoldings, equipment, tools plant and incidentals necessary and required for the completion of all finishing subject to approval by the Institute/ Committee/in-charge .

## PAINTING WORK:

- **Extent and intent:** The contractor shall supply all materials labour tools ladders scaffolding and other equipment necessary and required for the completion and protection of all painting work. Painting as herein specified shall be applied to all surfaces requiring painting throughout the interior as given in the schedule of finishes. References shall be made to schedule of finishes for the various types of finishes.
- **Storage:** Storage of material to be used on the job shall be only in a single place approved by the Institute/ Committee/in-charge . Such storage place shall not be located within the building included in the contract.
- **Colour:** All colours as approved in the colour schedule shall be as approved by the Institute/ Committee/in-charge. The contractor shall as far as possible use pre mixed manufactures colour and shall prepare paired samples of the colours selected and submit name for approval of the Institute / Committee/in-charge no work is to proceed until the Institute / Committee/in-charge has given his approval preferably in writing of the colour samples.
- **Commencement of Work:** Painting shall not be started until the surfaces to be painted are in a condition fit to receive painting and so certified by the Institute/ Committee/in-charge . Painting work shall be taken in hand only after all other builders work is completed.
- **Workmanship:**
  - i. The workmanship shall be the very best; all material evenly spread and smoothly flowed on without runs or sags using good quality tools brushes etc. as required only skilled painters shall be employed. A properly qualified foreman shall be constantly on the job whilst the work is proceeding. All surfaces to be painted shall be cleared free of all loose dirt and dust before painting is started. All work a coat of materials has been applied must be inspected and approved before application of the succeeding specified coat. Each undercoat shall be a distinct shade of the approval colour.
  - ii. Before painting hardware accessories plates and similar items shall be removed or samples protection provided to all such items upon completion of each space, above fixtures shall be replaced. Use only skilled machines or carpenters for the removal and replacement of the above items.
- **Concealed Surface:** All interior work, shelving cabinet work shall be thoroughly and carefully back painted on all surfaces shall be cleared and the original finish restored. He shall remove from the premises all rubbish and accumulated material and shall leave the work in clear, orderly and acceptable condition.
- **Preparation of Surface:** Wood sandpaper to a smooth even surface and then dust- off and wipe clean. Touch up all knots and pith pockets with shellac on interior wood. After priming coat has been applied thoroughly fill all nail holes, irregularities and cracks use plaster wood filler for stained or natural finish and putty for painted work.
- **Application:**
  - i. The paint shall be continuously stirred in the container so that it constantly is kept uniform throughout. The painting shall be laid on evenly & smoothly by means of crossing and lying off, the latter in the direction of grain of the wood. The crossing and lying off consists covering the area with paint brushing the surface hard for the first time and then brushing alternately in the opposite directions two or times and then finally brushing lightly direction at right angles to the same. In this process no brush marks will be left after the laying off is finished. The pull

process of crossing and lying off constitute one coat.

- ii. Where so stipulated the painting shall be carried out using spray machines suited for the nature and location of the work to be carried out. Only skilled and experienced workmen shall be employed for this class of work. Paints used shall be brought to the requisite consistency by adding suitable thinner. Spraying shall be carried out only in dry conditions. No exterior painting shall be done in damp foggy or rainy weather. Surface to be painted shall be clean dry and adequately protected from dampness. Each coat shall be applied in sufficient quantity to obtain sufficient coverage shall be well brushed and evenly worked out over the entire surface and into all corner angles and crevices allowed to thoroughly dry. Second coat shall be of suitable shade to hours drying time match final colour and shall be approved by the Institute/Committee/in-charge before final coat is started. Allow at least 48 hours drying time between coats for interior and 7 days for exterior work, and if in the judgement of the Institute/Committee/in-charge more time is required it shall be allowed.
- iii. Paste wood filler when set shall be wiped across the grain of the wood and then with grain to secure a clean surface. Surface to be stained shall be covered with a uniform coat of stain wiped if required.

- **Finish:** the painted surfaces shall be finished to required texture. Mat finish shall be achieved by use of sponge roller stippling brushes as called for

- **Types of Paint Finish:**

The various paint finishes consist of the operation briefly mentioned below:

**i) DUCO PAINT:**

Pigmented priming coat followed by one undercoat and two or more coats of DUCO paint or equivalent as approved by the Institute / Committee/in-charge. Paste filler to be applied after every coat except the final coat and sanded smooth. The primer undercoat and paste filler shall be of ICI make suitable for DUCO painting. The under coat and the finishing coats shall be sprayed.

**ii) Enamel paint:**

i. Wood or plastered surface: Pigmented priming coat followed by one undercoat and two or more paint. Paste filler to be applied every coat accepting the final finishing coat and sanded.

ii. Non - galvanized Steel Surface: Coat of zinc chromate primer after phosphating followed by three or more coats of enamel paint. Paste filler to be applied after every coat excepting final finishing coat and sanded.

iii) Galvanized Steel Surface: Priming coat of galvanized metal primer after washing with galvanized metal cleaner metal, followed by three or more coats of synthetic enamel paint. Paste filler to be applied after every coat excepting final finishing coat and sanded.

iii) **Plastic emulsion paint:** Pigment priming coat (emulsion thinned with water) followed by three or more finishing coats of plastic emulsion paint. Paste filler to be applied after every coat excepting the final finishing coat and sanded.

iv) **Oiling:** Three coats of linseed oil (conforming to IS: 75-1950) applied with brushes. Each coat to be applied after the previous coat is thoroughly dried surface to be rubbed smooth before oiling.

- **Cleaning:**

- i) All rubbish waste or surplus material shall be removed from time and all woodwork hardware floors or the adjacent work shall be cleaned upto the satisfaction of the Institute/ Committee/n-charge .
- ii) All glass throughout shall have all paint or varnish spots and brush mark removed and upon completion of painting work shall be washed and polished on both sides. All glass that is scratched or damaged by contractors work or while cleaning off paint from the glass shall be replaced by the contractor at his down cost. Hardware and other unpainted surface shall be cleaned using lacquer thinner or paint remover.

## **6. HARDWARE:**

- **EXTENT AND INTENT:**

- I) The intention of the contract is that the furniture as shown shall be completely equipped with required hardware. Any required item not noted or listed shall be finished a grade equal to and in harmony with similar item listed.
- II) The contractor shall furnish or labour, material, tools, appliances and incident required to complete the hardware work specified herein or listed in the schedule of hardware or as may be required by the actual condition at the building.
- III) Include the necessary screws, special screw, bolts, expansion bolts and other devices necessary for a neat and secure hardware application. All bolts and screws shall be of sufficient size to securely and permanently fix the hardware in place. No steel or iron screws shall be used. Screws shall match material and finish of article being fastened.

- **General:** All hardware shall be of the best quality of its type and strictly in conformity with the materials and finish described in schedule of hardware, if called upon to do so the contractor shall arrange to get hardware specially manufactured to the design, requirement and standard laid down by it. All hardware shall be of perfect fit, uniform in finish and free from imperfection that affects serviceability or the Institute/ Committee/n-charge for approval.

- **Quality:** All hardware shall be of perfect fit, uniform in finish and free from imperfection that affects serviceability or the appearance.

- **Samples:** Samples of each different item of hardware including screws or any particular item of hardware shall be submitted to the Institute/ Committee/n-charge for approved **Installation:** All hardware shall be installed by skilled workmen, equipped with proper and adequate tools the hardware shall be installed true plumb and square in accordance with the hardware schedule and the manufacture schedule.

- **Protection:** hardware shall not be installed earlier than necessary and it shall be the responsibility of the contractor to protect other and unblemished any defective or marred item shall be made good to the satisfaction of the Institute/ Committee/n-charge of hardware , removing some when necessary for protection and delivered all in good working without additional cost to the owner.

- **Guarantee:** the contractor shall be responsible for the proper working of all hardware for a period of one year from the date of the completion and acceptance of the building.

## **7. Powder Coating:**

All CRC members shall be powder coated after fabrication in a manner to conform to relevant BIS standard for obtaining an approved finish. Powder coating shall be of a minimum thickness of 60 microns.

Prior to powder coating all members shall be rendered uniform in appearance free from disfiguring scratches, stains or other blemishes and etched in a caustic soda solution.

i) Colour shall be as per specification and approval of the Institute/ Institute/ Committee/n-charge .

ii) Powder used shall be pure polyester based on unmodified polyester resins. The powder shall provide semi -glossy to glossy finishes.

iii) Coated film thickness shall be 55- 70 microns ( average 60 microns)

iv) Gloss level of the glossy coated film shall be checked on a gloss meter and its maximum value shall be 85% and minimum 80%

**v) *Physical Examination of the Powder***

Following testing shall be done on the powder to check the damage that may have been caused by temperature/moisture etc.

**a. Blocking Powder :** 10 grams of powder shall be sieved through a 100 micron sieve. The residue is to be checked for large lumps resulting from blocking under temperature and pressure.

**b. Visual Inspection :** A visual inspection of the powder after opening some containers at random can be done to ensure that there are no foreign matters or a mix of different colours.

**c. Curing precautions:** Curing shall be done for 10 minutes at 200 deg object temperature. To standardize the conditions of curing oven, a travelling temperature record is essential equipment. This record must be run with full oven load of the heaviest article to know the capacity of the oven in terms of sustaining the required temperature with.

**vi) Touching up:**

Powder coating shall not be allowed to be touched up. Therefore it must be protected against scratches. However in a special; case, if Institute/ Institute/ Committee/n-charge allow touching up, the same would be carried out with acrylic base touch up.

**vii) Protection of finish:**

All CRC members shall be wrapped with approved self adhesive non -staining PVC tapes.

**viii) Handling and stacking**

Fabricated material shall be kept in an approved manner to protect the material against any damage during transportation. The loading and unloading shall be carefully examined to detect any damage pieces. Arrangement shall be made for expeditious replacement of damaged pieces / parts. Material found to be acceptable on inspection shall be repacked in crates and stored safely.

**8. Laminate:** Laminate shall be as per IS: 2046-1995

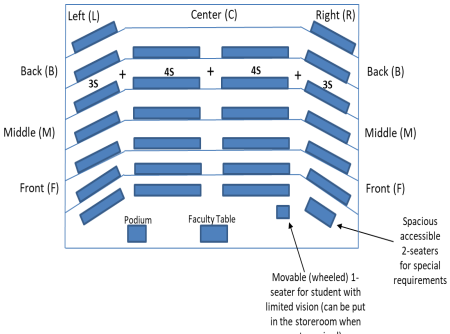

**9. Veneer:** Veneer shall be as per IS: 1328-1982

**10. Plywood:** Plywood shall be as per IS: 303-1989 & IS: 710-1976


**11. Resin Based Adhesive:** Resin Based Adhesive shall be as per IS: 848-1974



## Technical Bid and Schedule of the Quantity

Sl.	Item Name	Minimum Specification of items	Picture (Image) and layout plan	Quantity
1.	<p><b>Class-Table</b>  <b>Location: Gyanshila ,</b>  <b>classroom ( 102,</b>  <b>103,104,105)</b>  <b>Each classroom</b>  <b>seating capacity 91</b>  <b>Total Number of</b>  <b>Classrooms 04</b></p>	<p>Providing, joining, fixing and placing in series, desk ISI mark.</p> <p><b>A)Legs :</b>  Legs are made of MS ERW oblong tube (IS7138) of size 75x25x2 min thick with 5mm thk HR brackets as per IS:2062 and 2mm thk CRCA brackets as per 15-513 welded onto the jibes. Assembly is epoxy polyester powder coated (Min 40 micron).  Sturdy grouting to floor through 8mm tick HR steel (IS 2062) base plate using anchor bolts. Shoe made of ultramid -nylon are provided at the bottom for covering the base plate.</p> <p><b>B) Table Top :</b>  Work tops are made of 25 mm thick Pre-Laminated Board of E1-P2 Grade and approved shade conforming to IS:12523:1990. All the edge of worktops are provided with machine pressed 2mm thick pvc edge band glued with hot melt glue.</p> <p><b>c) Modesty:</b>  Modesty to be made of 25mm thick pre-laminated tv in board of E1-P2 Grade conforming to IS:12823: 1990 of approved shade . All the edge of modesty to be provided with machine pressed 2 mm thick pvc edge band glue with hot melt glue.</p> <p><b>f) Electrical and Lan point :</b> for each table one ISI marked 06 A outlet with switch and one LAN outlet</p> <p><b>g) Dimensions :</b>  g.1) <b>4 Seater</b> : Tabletop (Width X Depth )2700mm X 470 mm, Height: 735 mm or standard , Modesty: width X height 2700 mm X 600 mm)  g.2) <b>3 Seater</b> Tabletop: Width X Depth 2100mm X 470 mm ,Height: 735 mm or standard, Modesty: width X height 2100 mm X 600 mm  g.3 ) <b>2Seater(Type A)</b> Tabletop: Width X Depth, 1300mm X 470 mm, Height: 735 mm or standard, Modesty: width X height 1300 mm X 600 mm  D) <b>1Seater (Movable)</b> : Tabletop: Width X Depth, 650 mm X 470 mm Height: 735 mm (standard adjustable), Modesty: width X height 650 mm X 600 mm</p> <p><b>h) Colors per buyer's choice</b></p>	 	<p><b>Total 364 seating</b>  (91 seating capacity x 04 classrooms=Total 364</p> <p>A) <b><u>4 Seater - 48nos</u></b>  B) <b><u>3 Seater- 52nos</u></b>  C) <b><u>2Seater(Type A)- 4nos</u></b>  D) <b><u>1Seater (Movable) - 4nos</u></b></p>

		<p><b>I) Civil work : all kind of required civil work to be executed by the contractor in the existing platform for proper placing in series desk, as per approved drawing/Shop drawing. Refer as per attach layout (Annexure-A)</b></p>		
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2.	<p><b>Class-TableLocation:</b>  <b>Gyanshila ,</b>  <b>classroom (</b>  <b>101,106,201,206)Each</b>  <b>classroom seating</b>  <b>capacity 51Total</b>  <b>Number of</b>  <b>Classrooms 04</b></p>	<p><b>Unlearn 2 Seater study table</b>  a) <b>Table Top Size</b> : 1350 Width mm x 600 Depth mm x 680 Height mm . b) <b>Work Top</b> : 25mm thick c) <b>Base material</b> : 25 mm thick pre-laminated particle board plus 2 mm thick PVC edge banding on straight outer edgesd) <b>Modesty</b>: 18 mm thick its base material shall be 16 mm Plain particle board plus post - laminated with 0.6 mm top laminate on either side 2 mm thick and 0.8 mm thick PVC edge banding of matching colour on outer edges of modesty . e) <b>Legs and Legs assembeled</b> : made from 1.6 mm Matt silver anodized aluminium extrusion , Legs assembeled together with 8 mm thick MS Powder coated plate at top . The base support plate is having provision for wire entry and glide fixing . The wire carrying is facilitated through the hollow space between two leg extrusions and the wires are concealed between removable rigid PVC extrusion in the leg . Max . 20 nos. of Dia 6 wires can be passed through the space between two leg extrusions . Table Support brackets shall be powder coated table support brackets made from 2 mm thick MS sheet provided for overall product stability . Stopper shall be powder coated made from 1.5 mm thick aluminium extrusion fixed with work - surface by powder coated stopper bracket made from 3 mm thick MS sheet . Both ends of Aluminium extrusion covered with plastic moulded end cap . The Grommet shall be made from plastic moulded components to facilitate access electrical / data / voice sockets access from top . The Switch Mounting tray shall be powder coated made from 0.8 mm and 2 mm thick MS sheet fitted with modesty through which cables can be passed . with all required civil work in exsiting platform f) <b>Electrical and Lan point</b> : for each table one ISI marked 06 A outlet with switch and one LAN outlet  g) <b>Civil work</b> : <b>all kind of required civil work to be executed by the contractor in the existing platform for proper placing in series desk, as per approved drawing/Shop drawing.</b> Refer as per attach layout in (Annexure A)</p>		<p><b>Total 204 seating</b>(51 seating capacity x 04 classrooms) Seating optionsA) 4 Seater - 32nosB) 2Seater(Type B)- 32nosC) 2Seater(Type A)- 4nosD) 1Seater (Movable) - 4nos</p>
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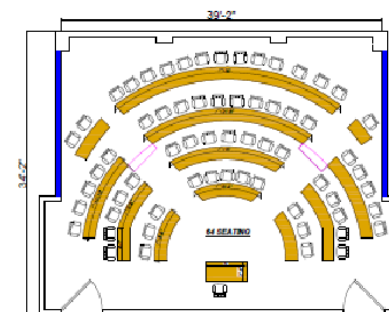
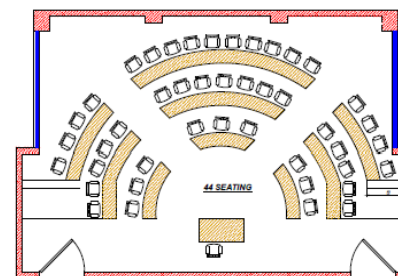
**Class Table Location  
: Tandula Building**

Providing, joining, fixing and placing in series, desk ISI mark.  
A)**Legs** :Legs are made of MS ERW oblong tube (IS7138) of size 75x25x2 min thick with 5mm thk HR brackets as per IS:2062 and 2mm thk CRCA brackets as per 15-5 1 3 welded onto the jibes. Assembly is epoxy polyester powder coated (Min 40 micron).Sturdy grouting to floor through 8mm tick HR steel (IS 2062) base plate using anchor bolts. Shoe made of ultramid -nylon are provided at the bottom for covering the base plate.

B)**Swiveling arms** :Swiveling \* arms are made of MS ERW tube (IS713S) of size 50x30x1.6mm thk. oblong tube with one end welded with Ø 55x4 6mm thk. MS ERW tube (157138) and at other end welded with Ø 48x3.2mm thk MS ERW tube (IS 713S). The Swiveling arms are epoxy polyester powder coated (Min 4t) microns). The Swiveling arm is held with powder coated Aluminium die cast piece with swiveling mechanism consist of Ni-Cr plated Shaft (IS:9550), Torsion spring made of spring steel (IS4454) and Bush made of Nylon (PA6-GF30),

C) **Chair** :a)Chair Back :Back is made of blow molded High-density polyethylene and is fixed on the understructure assembly with the help of Stainless steel pop rivets.b)Chair Seat : Seat is made of blow molded High-density polyethylene and is fixed on the understructure assembly.c)Seat Support Frame :All side metal Harries are made from Mild steel ERW oblong tubes 40x20x2mm thk(approx. 14 SWG) as per IS:7135, seat support bracket made of 3mm th. HR sheet (IS 2062), MS ERW oblong tube 35x15x 1.6mm (157138) which are welded together. Seat support channel made of 1 mm thk Mild steel sheet (as per IS:513) is welded to the understructure for fixing seat. The welded structures are coated with epoxy polyester powder (Min 40 microns).d)Base Plate Mechanism : The base plate mechanism is designed with the following features :>360° revolving type>Provision for Upright height adjustmente)Pneumatic Height adjustment with Auto return feature :The seat is provided with height adjustment using a gas lift with an adjustment stroke of 70.0 + 0.3cm. The gas lift also has a auto return feature to allow the user free movement while being seated and after use guides the upper structure to rotate back to its original position enabling all chairs to align with the work top. Along with all required civil

Annexure -B






**Total 196 Seating**

**Type A Class** : 44 capacity x  
3 classrooms



**Type B Class** = 64 capacity x  
1 classrooms

		<p>works</p> <p><b>D) Table Top :</b>Work tops are made of 25 mm thick Pre-Laminated Board of E1-P2 Grade and approved shade conforming to IS:12523:1990. All the edge of worktops are provided with machine pressed 2mm thick pvc edge band glued with hot melt glue.</p> <p><b>E) Modesty:</b>Modesty to be made of 25mm thick pre-laminated tv in board of E1-P2 Grade conforming to IS:12823: 1990 of approved shade . All the edge of modesty to be provided with machine pressed 2 mm thick pvc edge band glue with hot melt glue.</p> <p><b>F) Electrical and Lan point :</b> for each table one ISI marked 06 A outlet with switch and one LAN outlet</p> <p><b>G) Dimensions :</b> for 01Seater (Movable) : Tabletop: Width X Depth, 650 mm X 470 mm Height: 735 mm (standard adjustable), Modesty: width X height650 mm X 600 mm</p> <p><b>H) Colors per buyer's choice</b></p> <p><b>I) Civil work :</b> all kind of required civil work to be executed by the contractor in the existing platform for proper placing in series desk, as per approved drawing/Shop drawing. Refer as per attach layout (Annexure B)</p>		
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4	<p><b>class chair TYPE -A (for students in class rooms )</b></p>	<p><b>Revolving Chair Type- A</b> ( for Class room students table ) :  Synchronic tilt mechanism designed with 360 degree-revolving type and upright locking, Chair included the pneumatic height adjustments, with Armrest, Fixed Lumbar Support and Upright locking  Height Adjustment <math>\pm 5(\text{mm})</math>: <b>100 mm</b>  Pedestal Base and Twin wheel castor material: <b>Nylon</b>  Armrest Material: <b>Polypropylene</b>  Density of PU foam used in seat and backrest KG per Cu Meter (<math>\pm 3</math>):<b>40</b>  Backrest upholstered with: <b>Mesh Fabrics</b>  Seat upholstered :<b>Mesh Fabrics</b>  GSM/Thickness of fabric <math>\pm 5\%</math> (Gram/Square meter): <b>220 gm</b>  Overall width (<math>\pm 10 \text{ mm}</math>): <b>590 mm</b>  Backrest Height <math>\pm 15 \text{ mm}</math>:<b>550mm</b>  Backrest Width <math>\pm 10 \text{ mm}</math>: <b>550mm</b>  Seat Height <math>\pm 10 \text{ mm}</math>: <b>525mm</b>  Seat width <math>\pm 10 \text{ mm}</math>: <b>590 mm</b>  Seat Depth <math>\pm 10 \text{ mm}</math>: <b>480 mm</b>  Pedestal Size (Diameter in mm) <math>\pm 10 \text{ mm}</math>: <b>620 mm</b>  Thickness of Polyurethane Foam Used in Seat in mm (<math>\pm 2 \text{ mm}</math>): <b>45mm</b></p>		568
5.	<p><b>Revolving Chair Type B ( for faculty )</b></p>	<p><b>Revolving Chair Type B:</b> Multi-function tilt mechanism, designed with 360 degree-revolving type with pneumatic height, adjustments, adjustable Armrest, Tilt limiter locking, with up and down arm movement  Height Adjustment <math>\pm 5(\text{mm})</math>: 90 mm  Pedestal Base: Glass Fiber Nylon  Armrest Material: Polypropylene  Density of PU foam used in seat and backrest KG per Cu Meter (<math>\pm 3</math>):<b>45</b>  Backrest upholstered with: 100% Polyester Fabric  Seat upholstered :100% polyester fabric  GSM/Thickness of fabric <math>\pm 5\%</math> (Gram/Square meter): 220 gm  Overall width (<math>\pm 10 \text{ mm}</math>): 750 mm  Backrest Height <math>\pm 15 \text{ mm}</math>:<b>520 mm</b>  Backrest Width <math>\pm 10 \text{ mm}</math>: 440 mm  Seat Height <math>\pm 10 \text{ mm}</math>: 440 mm  Seat width <math>\pm 10 \text{ mm}</math>: 480 mm  Seat Depth <math>\pm 10 \text{ mm}</math>: 470 mm  Pedestal Size (Diameter in mm) <math>\pm 10 \text{ mm}</math>: 650 mm  Thickness of Polyurethane Foam Used in Seat in mm (<math>\pm 2 \text{ mm}</math>): 40mm</p>		21

6.	<b>Faculty table</b>	<p>Table Top material and thickness <math>\pm 3\text{mm}</math>: 19mm thick Commercial Block Board MR Grade Conforming to IS 1659</p> <p>Gable end and modesty panel material and thickness: 19mm thick Commercial Block Board MR Grade Conforming to IS 1659</p> <p>Length of Table Top <math>\pm 10(\text{mm})</math>: 2000 millimeter</p> <p>Depth of Table Top <math>\pm 10(\text{mm})</math>: 600 millimeter</p> <p>Height of Table Top <math>\pm 10(\text{mm})</math>: 725 millimeter</p> <p>Width of the storage unit <math>\pm 10(\text{mm})</math>: 500 millimeter</p> <p>Depth of storage unit <math>\pm 10(\text{mm})</math>: 600 millimeter</p> <p>Table Top Finish: Laminate In Colour With matt Finish 0.6-0.8 Mm Thickness Of Type S, F Or P Having Index NO.3.2.3. Conforming To IS 2046/1995(Reaffirmed April 2010) With Having Balancing Laminate Of 0.5mm Thick On Other Side</p> <p>Electrical and Lan point : 02 number ISI marked 10 A outelet with switch and one LAN outlet</p> <p>Table Top Shade: As per buyer's choice</p> <p>Frame Type: free standing</p> <p>Table top long sides: Edge banded with PVC tape of 2mm thick with the help of hot melt glue</p> <p>Table Top Plain Sides: edge banded with PVC tape of 2mm thick of reputed make with the help of hot melt glue.</p> <p>Table to fixed with: gable End And Modesty Panel Using Mini Fix And Wooden Dowel By Using (Knock Down) System For Interconnecting</p> <p>For Gap/wrap age: Numbers Of Mini Fix / Dowel Can Be Modified(One In 1000 Mm Length, Two In 1001 To 2000 Mm Length Three In Above 2000 Mm Length) Made Of 1.2 Mm Thick CRC Sheet duly galvanized/powder coated</p> <p>Number of buffers to be provided: 4 numbers at the bottom.</p>		16
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7	<b>Revolving Chair Type C (for syndicate room)</b>	<p><b>Revolving Chair Type C :</b> Ergonomic Seat Design Push Back type , Centre pivot mechanism designed with 360 degree-revolving type and upright locking included the pneumatic height adjustments ,Tilt limiterSeat material:Pressed and moulded with PU foamBackrest is made of One piece injection moulded framePedestal Base: Nylon base Number of twin wheel castor: 05 Thickness of Polyurethane Foam Used in Seat in mm (<math>\pm 2</math> mm): 60 mm Armrest Material: PolypropyleneBackrest upholstered and Seat upholstered with: Mesh FabricsGSM/Thickness of fabric <math>\pm 5\%</math>(Gram/Square meter): 250 gmDensity of PU foam used in seat KG per Cu Meter (<math>\pm 3</math>): 35 Height Adjustment <math>\pm 5</math>(mm): 100 mm Overall width (<math>\pm 10</math> mm): 590 mm Backrest Height <math>\pm 15</math> mm: 600 mm Backrest Width <math>\pm 10</math> mm: 480 mm Seat Height <math>\pm 10</math> mm: 480 mmSeat width <math>\pm 10</math> mm: 440 mm Seat Depth <math>\pm 10</math> mm: 480 mm Pedestal Size (Diameter in mm) <math>\pm 10</math> mm: 650 mm Thickness of MS Plate Joining the under structure with Seat: 2 mm Thickness of Plywood used in Seat <math>\pm 1</math>(mm): 15 mm</p>		84
8.	<b>Revolving Chair Type D (for conference room)</b>	<p><b>Revolving Chair Type D :</b> Arm Synchronic tilt mechanism, Push Back type , designed with 360 degree-revolving type and upright locking and upright locking Chair included the pneumatic height adjustments, Adjustable Lumbar Support,Armrest,Backrest has separate adjustable headrest with three position locking Pedestal Base: Aluminium die cast Armrest Material: Polypropylene Backrest upholstered with: Mesh Fabrics Seat upholstered :100% polyester fabric GSM/Thickness of fabric <math>\pm 5\%</math>(Gram/Square meter): 220 gm Overall width (<math>\pm 10</math> mm): 730 mm Backrest Height <math>\pm 15</math> mm:650 mm Backrest Width <math>\pm 10</math> mm: 500 mm Seat Height <math>\pm 10</math> mm: 440 mm Seat width <math>\pm 10</math> mm: 500 mm Seat Depth <math>\pm 10</math> mm: 480 mm Pedestal Size (Diameter in mm) <math>\pm 10</math> mm: 650 mm Thickness of Polyurethane Foam Used in Seat in mm (<math>\pm 2</math> mm): 45 mm Thickness of Polyurethane Foam Used in Backrest in mm(<math>\pm 2</math></p>		47

		mm):25 mm Thickness of MS Plate Joining the under structure with Seat: 1.2 mm Thickness of Plywood used in Seat ±1(mm):12 mm		
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9.

**Revolving Chair  
Type E (for  
conference room)**


Providing & Installing chairs having green guard Gold and BIFMA Level-2 Certificates. The specifications are as follows: -


1. SEAT/BACK ASSEMBLY: The Cushioned seat assembly construction should be seat outer (material-30% Glass Fiber Nylon) & upholstered Seat inner (material- Poly Propylene) with moulded Polyurethane foam & polyester fabric. The Net Back should be made up of Back outer (material-Glass Fiber Filled Nylon)& Back inner (material- PP) and upholstered using Polyester Mesh fabric with high tenacity yarn.  
Full Back Size: 46.5 cm. (W) x 60.0 cm. (H)  
Seat Size : 51.0 cm. (W) x 49.0 cm. (D)
2. HIGH RESILIENCE (HR) POLYURETHANE FOAM: The HR Polyurethane foam should be moulded with density = 45 +/- 2 kg/m<sup>3</sup> and Hardness load 12 +/- 2 kgf for 25% compression.
3. BACK SPINE: The support spine should be made up of High Pressure Die cast polished hed Aluminum.
4. ARMRESTS : The armrest should be having two adjustment, Height (6.0±0.5cm) and Depth (6.0±0.5cm). Height adjustment should be provided in Aluminum structure of armrest which should be connected to Aluminum Back spine and should be operated by button. The depth adjustment should be provided in pad which should be fixed to armrest structure. Armrest Top should be made up of PU molded over plastic inner.
5. ACTIVE BIO-SYNCHRO mechanism:  
The adjustable tilting mechanism should be designed with the following features:
  - 360° revolving type
  - Front-pivot for tilt with feet resting on ground & continuous lumber support ensuring more comfort
  - Tilt tension adjustment can be operated in seating position
  - 5 position Tilt limiter giving option of variable tilt angle to the chair
  - Seat / back tilting ratio of 1:2
  - The mechanism housing should be made up of HPDC Aluminum & black powder coated (DFT 40 to 60 micron)
6. SEAT DEPTH ADJUSTMENT: Seat depth adjustment should be integrated in the seat through a sliding mechanism.





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		<p>Seat depth adjustment range should be of <math>3.75 \pm 0.1</math> cm</p> <p>7. LUMBAR SUPPORT ASSEMBLY: The Lumbar support assembly should consist of lumbar spine (material-Glass Fiber Filled Nylon) which should be fixed to Aluminum Back spine. The Lumbar pad (material- Poly Propylene) should be fixed to lumbar spine through lumbar Pad support. Lumbar Support Assembly has height adjustment of <math>5.0 \pm 0.5</math>cm Active Bio-Synchro Mech,Bio-Flex Lumber Support, Seat Slide Mech,Die cast polished Aluminum Pedestal, Adj Arms, 5 Position Tilt Limiter</p> <p>9. PNEUMATIC HEIGHT ADJUSTMENT: The pneumatic height adjustment has an adjustment stroke of <math>10.0 \pm 0.3</math>cm.</p> <p>10.PEDESTAL ASSEMBLY WITH CASTORS: The pedestal should be High Pressure Die cast polished Aluminum and fitted with 5 nos. twin wheel castors. The pedestal should be <math>65.0 \pm 0.5</math>cm. pitch-center dia.(<math>75.0 \pm 1.0</math>cm. With castors.)</p> <p>11. TWIN WHEEL CASTORS: The twin wheel castors should be injection moulded in black PP having <math>6.0 \pm 0.1</math>cm wheel Diameter.</p>		
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10.	<b>Movable and foldable table</b>	<p>Seating capacity (number of seating): 04 seater</p> <p>The shape of tabletop: rectangular</p> <p>Type of understructure: Gable end and modesty panel</p> <p>Material of table top: MDF OSR .OSR board (Bottom side in white-collar) as per IS: 12406 which is having two finish options.</p> <p>Material of legs /Gable end: Three layer prelaminated particle boards of grade-II type-II of IS:12823/latest</p> <p>Material of modesty panel : Three-layer prelaminated particle boards of grade-II type-II of IS 12823/latest</p> <p>Width of tabletop: 1200mm</p> <p>Depth of table top : 600 mm</p> <p>Thickness of top <math>\pm 2</math>(mm): 25 mm</p> <p>Table height in mm (<math>\pm 5</math> mm): 750 mm</p> <p>Under structure: -Legs are made by welding the combination of M.S.E.R W. round tube 63.5x2mmTHK of IS: 7138, flanges made of CRCA sheet. Of 1.6mm THK and 1.2mm thk) of IS513. inside plates made of HR 5mm THK sheet (IS:2062).</p> <p>Assembly in epoxy polyester powder coated (Min40micron).</p> <p>Table Top folds upside at offset centre pivot provide on support bracket which is Aluminium alloy (ADC12) pressure die cast coated with epoxy polyester powder coated (min 40 micron)Table top connected with spring loaded mechanism with full handle made of sandwich tubes of M.S.E.R.W. 16*1.2mm THK. And 12.7*1.6mm THK. tube of IS7138.coated with epoxy polyester powder coated (Min40micron). To operate table top.</p> <p>Legs are provided with casters of 65mm lockable type for Ease of movement and can be locked when required at any positions.</p> <p>Color: PU coated on top side with the color as per byers choice</p>		10
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11.	<b>Round Meeting table</b>	<p>Seating capacity (number of seating): 04 seater</p> <p>The shape of tabletop: Round</p> <p>Wire management: with</p> <p>Number of the socket box: 02</p> <p>Type of socket box : Fixed</p> <p>Wire entry system: Through legs</p> <p>Type of understructure: Gable end and modesty panel</p> <p>Material of table top: Three layer prelaminated particle boards of grade II type II of IS:12823/latest</p> <p>Material of legs /Gable end: Three layer prelaminated particle boards of grade-II type-II of IS:12823/latest</p> <p>Material of modesty panel : Three-layer prelaminated particle boards of grade-II type-II of IS 12823/latest</p> <p>Length/Diameter/Major axis of tabletop: 1200mm</p> <p>Thickness of top <math>\pm 2</math>(mm): 25 mm</p> <p>Table height in mm (<math>\pm 5</math> mm): 750 mm</p> <p>Height of modesty panel <math>\pm 5</math>(mm): 700 mm</p> <p>Thickness of modesty panel (in mm) <math>\pm 5\%</math>: 19 mm</p> <p>Type of table top finish: Matt polish</p> <p>Type of Leg(s) /gable end finish: Matt polish</p> <p>Color: as per byers choice</p>		10
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12.	<b>Leatherite Five Seater Sofa : ( 03 +01 +01)</b>	<p>           Leatherite Five Seater Sofa : ( 03 +01 +01 )            Frame Structure Material and size (<math>\pm 1</math> mm): Any other wood of minimum 25 mm thickness with no spring base Type of Sofa and Backrest: Seat and Backrest are permanently fixed with the frame Structure            Number of Single Seater Units (Nos): 02 Number            Three Seater Units (Nos) : 01 Number            Frame Covering : Fully Upholstered            Backrest Cushion Material: Foam            Density of Cushion of Seat Material <math>\pm 3</math> (Kg/Cubic M): 40            Length of Single Seater Units in mm (<math>\pm 5</math> mm) : 970            Length of Three-Seater Units in mm (<math>\pm 10</math> mm): 1900            Depth of Sofa Units in mm (<math>\pm 10</math> mm): 850            Sofa Height (Without Back Cushion) <math>\pm 5</math> (mm): 800            Sofa Height (With Back Cushion) <math>\pm 5</math> mm: 865            Arm Width <math>\pm 5</math> (mm): 150            Arm Height <math>\pm 5</math> (mm): 620            Seat Height (With Seat Cushion) <math>\pm 5</math> (mm): 440            Sofa Leg Height <math>\pm 2</math>(mm): 50            Sofa Leg Width / Diameter <math>\pm 2</math> (mm): 25            Seat Cushion Length <math>\pm 5</math> (mm): 1520            Seat Cushion Width <math>\pm 5</math> (mm): 510            Seat Cushion Thickness <math>\pm 3</math> (mm): 200            Backrest Cushion Thickness <math>\pm 3</math> (mm): 80            Thickness of Foam/Rubber in arms, back, front and side <math>\pm 2</math> (mm): 75 mm            Colour of Covering Material: As per byers choice         </p>		18
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13.	<p><b>Leatherite Five Seater Sofa : ( 03 + 02)</b></p>	<p>Leatherite Five Seater Sofa : ( 03 +02)  Frame Structure Material and size (<math>\pm 1</math> mm): Any other wood of minimum 25 mm thickness with no spring base  Type of Sofa and Backrest: Seat and Backrest are permanently fixed with the frame  Structure  Number of Two Seater Units (Nos): 01 Number  Three Seater Units (Nos) : 01 Number  Frame Covering : Fully Upholstered  Backrest Cushion Material: Foam  Density of Cushion of Seat Material <math>\pm 3</math> (Kg/Cubic M): 40  Length of Two Seater Units in mm (<math>\pm 10</math> mm) : 1400  Length of Three-Seater Units in mm (<math>\pm 10</math> mm): 1900  Depth of Sofa Units in mm (<math>\pm 10</math> mm): 850  Sofa Height (Without Back Cushion) <math>\pm 5</math> (mm): 800  Sofa Height (With Back Cushion) <math>\pm 5</math> mm: 865  Arm Width <math>\pm 5</math> (mm): 150  Arm Height <math>\pm 5</math> (mm): 620  Seat Height (With Seat Cushion) <math>\pm 5</math> (mm): 440  Sofa Leg Height <math>\pm 2</math>(mm): 50  Sofa Leg Width / Diameter <math>\pm 2</math> (mm): 25  Seat Cushion Length <math>\pm 5</math> (mm): 1520  Seat Cushion Width <math>\pm 5</math> (mm): 510  Seat Cushion Thickness <math>\pm 3</math> (mm): 200  Backrest Cushion Thickness <math>\pm 3</math> (mm): 80  Thickness of Foam/Rubber in arms, back, front and side <math>\pm 2</math> (mm): 75 mm  Colour of Covering Material: As per byers choice</p>		06
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14.	<p><b>10 seaters Owel/rectangular Shape Meeting Table/ Conference table</b></p>	<p>Seating capacity (number of seating): 10 seaters  The shape of table top: Rectangular  Wire management: With  Number of the socket box:4  Type of socket box : Fixed with flip cover  Wire entry system: Metal cable riser  Type of understructure: Leg type  Material of table top: Three layer prelaminated particle boards of grade II type II of IS:12823/latest  Material of legs /Gable end: Prelaminated MDF board conforming to grade II and type II of IS: 14587/latest  Material of modesty panel : Seasoned teak wood  Length/Diameter/Major axis of tabletop: 1500 mm  Width/Minor axis of tabletop (select NA in case of the round table) <math>\pm 10(\text{mm})</math> : 1200 mm  Thickness of top <math>\pm 2(\text{mm})</math>: 25 mm  Table height in mm (<math>\pm 5</math> mm): 750 mm  Thickness of Gable end: 19 mm  Thickness of legs material: 1.6 mm  Type of table top finish: PVC Laminate  The thickness of the table top finish: 2.0 mm  Type of Leg(s) /gable end finish: Matt polish  The thickness of the leg(s) /gable end finish: 1.5 mm  Colour : Teak</p>		2
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15.	<b>10 seaters U-Shape Meeting Table/ Conference table</b>	<p>Seating capacity (number of seating): 10 seaters</p> <p>The shape of table top: Rectangular</p> <p>Wire management: With</p> <p>Number of the socket box:4</p> <p>Type of socket box : Fixed with flip cover</p> <p>Wire entry system: Metal cable riser</p> <p>Type of understructure: Leg type</p> <p>Material of table top: Commercial block board BWP grade conforming to IS: 1659/latest</p> <p>Material of legs /Gable end: Commercial block board BWP grade conforming to IS: 1659/latest</p> <p>Material of modesty panel : Commercial block board BWP grade conforming to IS: 1659/latest</p> <p>Length/Diameter/Major axis of tabletop: 700 mm</p> <p>Width/Minor axis of tabletop (select NA in case of the round table) <math>\pm 10(\text{mm})</math> : 700 mm</p> <p>Thickness of top <math>\pm 2(\text{mm})</math>: 25 mm</p> <p>Table height in mm (<math>\pm 5</math> mm): 750 mm</p> <p>Height of modesty panel <math>\pm 5(\text{mm})</math>: 700 mm</p> <p>Thickness of modesty panel (in mm) <math>\pm 5\%</math>:25 mm</p> <p>Thickness of Gable end : 25 mm</p> <p>Size/Diameter of legs (<math>\pm 0[\text{dot}]5</math> mm) : 50 mm x 50 mm</p> <p>Thickness of legs material: 1.5 mm</p> <p>Colour : as byers choice</p>		1
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16.	<p><b>Executive Chairman Table</b></p>	<p>Table Top material and thickness <math>\pm 3</math>mm: 25mm thick Other wood  Gable end and modesty panel material and thickness: 19mm thick Commercial Block Board BWP grade Conforming to IS 1659  Storage Provided : both side  Number of storage unit : four storage  Length of Table Top <math>\pm 10</math>(mm): 2100 mm  Depth of Table Top <math>\pm 10</math>(mm): 900mm  Height of Table Top <math>\pm 10</math>(mm) ): 750mm  Width of the storage unit <math>\pm 10</math>(mm) ): 400mm  Depth of storage unit <math>\pm 10</math>(mm): 485 mm  Height of smallest storage unit <math>\pm 5</math>(mm): 150mm  Height of medium storage unit <math>\pm 5</math>(mm) : Same as Smallest  Height of largest storage unit <math>\pm 5</math>(mm): 305 mm  Table Top Finish: Laminate In Colour With Swede Finish 0.6-0.8 Mm Thickness Of Type S, F Or P Having Index NO.3.2.3.Conforming To IS 2046/1995(Reaffirmed April 2010) With Having Balancing Laminate Of 0.5mm Thick On Other Side.  Table Top Shade: As per buyer's choice  Frame Type: free standing  Table top long sides: Shall Have Post Form Half Round Profile with corner edge bending  Table Top Plain Sides: edge banded with PVC tape of 2mm thick of reputed make with the help of hot melt glue.  Table to fixed with: gable End And Modesty Panel Using Mini Fix And Wooden Dowel By Using (Knock Down) System For Interconnecting  For Gap/wrap age: Numbers Of Mini Fix / Dowel Can Be Modified(One In 1000 Mm Length, Two In 1001 To 2000 Mm Length Three In Above 2000 Mm Length) Made Of 1.2 Mm Thick CRC Sheet duly galvanized/powder coated  Number of buffers to be provided: 4 numbers at the bottom  Foot rest provided: Yes  Lock Provided: Yes  Gable end and modesty panel plain side: To be edge banded with PVC tape of 2mm thick of reputed make with the help of hot melt glue.</p>		1
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17	<b>Executive Office Table</b>	<p>Table Top material and thickness <math>\pm 3\text{mm}</math> : 19mm thick Commercial Block Board MR Grade Conforming to IS 1659</p> <p>Gable end and modesty panel material and thickness: 19mm thick Commercial Block Board MR Grade Conforming to IS 1659</p> <p>Length of Table Top <math>\pm 10(\text{mm})</math> : 2400 mm</p> <p>Depth of Table Top <math>\pm 10(\text{mm})</math>: 750 mm</p> <p>Height of Table Top <math>\pm 10(\text{mm})</math>: 750 mm</p> <p>Width of the storage unit <math>\pm 10(\text{mm})</math>: 450 mm</p> <p>Depth of storage unit <math>\pm 10(\text{mm})</math>: 600 mm</p> <p>Table Top Finish: Laminate In Colour With matt Finish 0.6-0.8 Mm Thickness Of Type S, F Or P Having Index NO.3.2.3.Conforming To IS 2046/1995(Reaffirmed April 2010) With Having Balancing Laminate Of 0.5mm Thick On Other Side</p> <p>Table Top Shade: As per buyer's choice</p> <p>Frame Type: free standing</p> <p>System of Paneling: tile based</p> <p>Table top long sides: Edge banded with PVC tape of 2mm thick with the help of hot melt glue</p> <p>Table Top Plain Sides: edge banded with PVC tape of 2mm thick of reputed make with the help of hot melt glue.</p> <p>Table to fixed with: gable End And Modesty Panel Using Mini Fix And Wooden Dowel By Using (Knock Down) System For Interconnecting</p> <p>For Gap/wrap age: Numbers Of Mini Fix / Dowel Can Be Modified(One In 1000 Mm Length, Two In 1001 To 2000 Mm Length Three In Above 2000 Mm Length) Made Of 1.2 Mm Thick CRC Sheet duly galvanized/powder coated</p> <p>Number of buffers to be provided: 4 numbers at the bottom</p> <p>Lock Provided: Yes</p> <p>Gable end and modesty panel plain side: To be edge banded with PVC tape of 2mm thick of reputed make with the help of hot melt glue.</p>		7
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18	<p><b>Executive Dining Table 06 seater with Dining Chair</b></p>	<p>A) Dining Table :</p> <p>Shape of Table: Rectangular</p> <p>Seating Capacity : 6</p> <p>Material of top: Marble</p> <p>Material of understructure: Other Wood</p> <p>Material of top finish : Top Material's Natural Finish</p> <p>Length of table <math>\pm 10</math>mm Diameter : 1600 mm</p> <p>Depth of table <math>\pm 10</math>mm: 900 mm</p> <p>Height of table <math>\pm 10</math>mm: 750 mm</p> <p>Thickness of top in mm (+/- 5%) : 35 mm</p> <p>Shape and Dimension of Base: Rectangular</p> <p>Number of vertical : 4</p> <p>Under Structure Diameter of Pipes (Width in case of Square sections) in mm: 90</p> <p>Vertical Support Diameter of Pipes (Width in case of Square sections) in mm: 90</p> <p>Colour of top finish: Natural Finish of Top Material</p> <p>B: Dining Chair :</p> <p>Chair Armrest": Without</p> <p>Type of seat : Ply</p> <p>Seat Cushion: With</p> <p>Back Rest Cushion: with</p> <p>Upholstery: Leatherite</p> <p>Shape of Seat : Rectangular</p> <p>Material of frame : MS Powder Coated</p> <p>Thickness of foam: 60 mm</p> <p>Density of foam in Kg per Cubic Meter : 40</p> <p>Chair height (overall) <math>\pm 10</math>mm : 900mm</p> <p>Backrest width <math>\pm 10</math>mm: 425 mm</p> <p>Width of seat <math>\pm 10</math>mm: 425 mm</p> <p>Depth of seat in mm (+/- 10 mm): 475 mm</p> <p>Seat Finish: Cushioned</p> <p>Shade of fabric/leather/leatherite: as per byers choice</p> <p>Exposed Wooden / Metal Parts Finish: Melamine Polish</p>		6
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19	<b>Executive Dining Table 04 seater without chair</b>	Dining Table : Shape of Table: Rectangular Seating Capacity : 4 Material of top: Teak Wood Material of understructure: Teak Wood Material of top finish : Teak laminate/ply with polish Length of table $\pm 10$ mm : 1100 mm Depth of table $\pm 10$ mm: 900 mm Height of table $\pm 10$ mm: 750 mm Thickness of top finish ply in mm (+/- 5%) : 1 mm Shape and Dimension of Base: Rectangular Number of vertical : 4 Under Structure Diameter of Pipes (Width in case of Square sections) in mm: 30 Vertical Support Diameter of Pipes (Width in case of Square sections) in mm: 30 Colour of top finish: As per byers Choice		23
20	<b>Dining Chair</b>	Dining Chair : Chair Armrest: Without Type of seat : Ply Seat Cushion: With Back Rest Cushion: with Upholstery: Leatherite Shape of Seat : Rectangular Material of frame : MS Powder Coated Thickness of foam: 60 mm Density of foam in Kg per Cubic Meter : 40 Chair height (overall) $\pm 10$ mm : 900mm Backrest width $\pm 10$ mm: 425 mm Width of seat $\pm 10$ mm: 425 mm Depth of seat in mm (+/- 10 mm): 475 mm Seat Finish: Cushioned Shade of fabric/leather/leatherite: as per byers choice Exposed Wooden / Metal Parts Finish: Melamine Polish		92

21	<b>WorkStation /Work table for 06 users</b>	<p>Type of system: Tile based system (shape fit tiles) Wire Management for electric switch: Skirting race-way  Foot edge of table top: Flat with PVC lipping  Plain edge banded with: 2mm PVC tapeConstruction of drawer unit: All wood pedestalConstruction of pedestal: Free standing full height with castor  Type of pedestal : two drawer and one filer  Locking system of pedestal: Center lockingWork top support: Gable end made of prelaminate particle boardType of Drawer unit: Moveable with castor wheels  Frame material for workstation: Powder coated CRCA hollow system  Material of tabletop: Prelaminated particle board  Material of tiles for top: white board made of decorative laminate with white glossy  Material of intermediate tiles: laminated block - 38mm thick paper honeycomb plus 3mm mdf on each side plus decorative laminateMaterial of bottom tiles: Material tile powder coated  Length of table top (main frame) <math>\pm 10</math> mm(main frame): 1200 mm Length of table top (Return Frame)<math>\pm 10</math>mm: NA FOR RECTANGULAR  Depth of table top <math>\pm 10</math>mm: 610 mm  Height of table top <math>\pm 10</math>mm: 750 mm  Thickness of table top <math>\pm 2</math>mm: 25 mm  Overall height of work station partition <math>\pm 10</math>mm: 1200 mm  Thickness of side partition/panel <math>\pm 2</math>mm: 30 mm  Thickness of main frame <math>\pm 5</math> mm: 70 mmSize of drawer unit (WidthXDepthXHeight) <math>\pm 10</math>mm: 390 X 590 X 147 (mm)  Size of file box (WidthXDepthXHeight) <math>\pm 10</math>mm: 390 X 590 X 296 (mm)  Powder coating thickness of frame: 50 micron</p>		1
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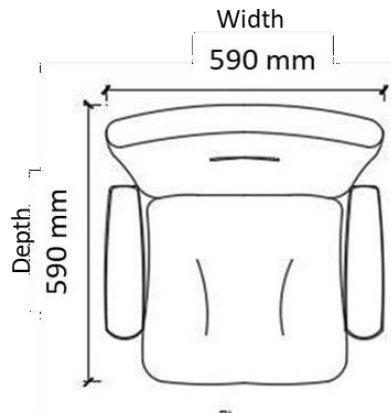
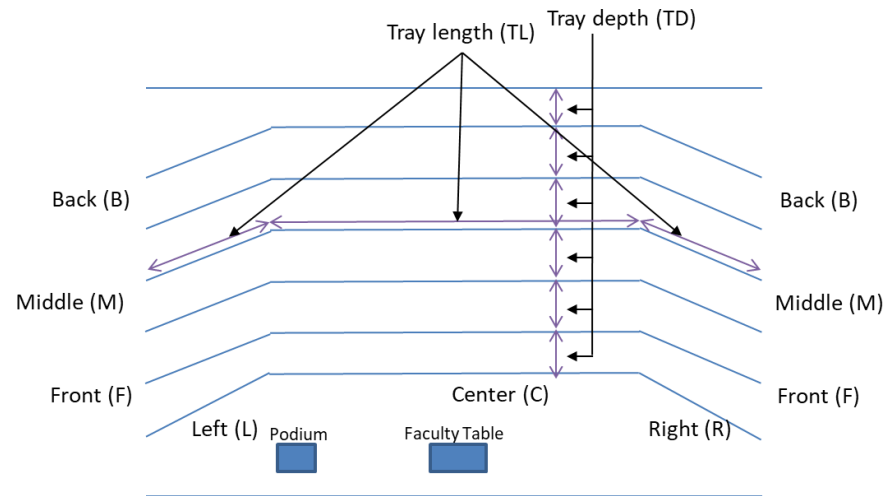
22	<p>IFP PROTECTIVE Horizontal sliding enclosure with lockable ceramic green &amp; white writing board</p>	<p>a) Overall size of white and green board: 1200mm X 3600mm with Aluminum frame material  b) Sliding Whiteboard System to be includes three long lasting white horizontal sliding dry erase boards - 1 rear fixed, 2 front sliders (slider size will be customized as per position and size of the Digital Screen )  c) Full length map rail at the top with spring clips  d) Cork insert rail for thumb-tacking charts, maps, sheets  e) Full length chalktray to hold magnetic accessories, markers and supplies  With including kit:</p> <ul style="list-style-type: none"> <li>• 3/4" Adhesive Letter Set - black</li> <li>• 1/8" Whiteboard Tape roll - black</li> <li>• 7/8" Magnetic Symbols - circles, triangles, squares in 10 each of red and green</li> <li>• 12 Dry Erase Markers - fine point</li> <li>• Magnetic Eraser</li> <li>• Whiteboard Cleaner</li> <li>• Hanging Hardware</li> </ul>		16
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23	Central table (1000 X 650 mm )	<p>Shape of the Centre table: Rectangular  Style of Centre Table: Supported by set of Legs  Design of center table: Cross shaped frame center table  Number of storage under top: No storage  Top material: Flat glass  Frame material: Stainless steel SS 304  Leg material: Steel pipe SS 304  Material of Understructure supporting the top: Steel flat SS 304  Shoes/Buffers Material: Rubber  Dimension of Top (Length X Breadth, or Diameter) <math>\pm 20</math>mm: 1000mmX650mm  Height of centre table <math>\pm 10</math> mm: 380 millimeter  Thickness of top material (+/-2 mm): 10 millimeter  Thickness of frame material (+/- 1 mm): 12 millimeter  Width X Depth, or Diameter of leg material: 35mm X 35mm  Thickness of understructure support material: 12 millimeter  connecting of leg: Cross type  Number of buffers/shoes: Four number at bottom  Table top finish: as per byers choice</p>		24
24.	Central table ( 550 X 450 mm )	<p>Shape of the Centre table: Rectangular  Style of Centre Table: Supported by set of Legs  Design of centre table: Cross shaped frame centre table  Number of storage under top: No storage  Top material: Flat glass  Frame material: Stainless steel SS 304  Leg material: Steel pipe SS 304  Material of Understructure supporting the top: Steel flat SS 304  Shoes/Buffers Material: Rubber  Dimension of Top (Length X Breadth, or Diameter) <math>\pm 20</math>mm: 550mmX450mm  Height of centre table <math>\pm 10</math> mm: 380 millimeter  Thickness of top material (+/-2 mm): 10 millimeter  Thickness of frame material (+/- 1 mm): 12 millimeter  Width X Depth, or Diameter of leg material: 35mm X 35mm  Thickness of understructure support material: 12 millimeters  connecting of leg: Cross type  Number of buffers/shoes: Four number at bottom  Table top finish: as per byers choice</p>		44

## Annexure A

Figure A1 shows a rough layout of the classroom. The Figure A1 includes different parts of the classroom, tray length and tray width in different parts of the classroom. The measurement of tray length and tray width in mm is shown in Table A1.



Chair Dimension



Desk Dimensions

**Figure A1 – Rough sketch of classroom and recommended dimensions of chair and desk**

**Table A1 – First floor classrooms (Gyanshila) tray depth in different parts of the classroom (all measurements are in millimeter (mm))**

	Classroom 101			Classroom 106			Classroom 102			Classroom 103			Classroom 104			Classroom 105		
	L*	C*	R*	L	C	R	L	C	R	L	C	R	L	C	R	L	C	R
Existing tray depth (front)*	1120	1200	1120	1120	1210	1110	1100	1200	1110	1120	1200	1120	1120	1190	1110	1120	1200	1120
Existing tray depth (middle)*	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R
	1120	1190	1110	1120	1200	1110	1110	1200	1110	1120	1200	1120	1120	1190	1110	1120	1200	1120
Existing tray depth (back)*	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R
	1120	1190	1110	1120	1200	1110	1110	1200	1120	1120	1200	1110	1110	1190	1100	1110	1210	1110
Existing no. of tray	4			4			6			6			6			6		
Minimum tray depth	1120	1190	1110	1120	1200	1110	1100	1200	1110	1120	1200	1110	1110	1190	1100	1110	1200	1110
Desk depth (recommended)#	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470
Chair depth (recommended)#	590	590	590	590	590	590	590	590	590	590	590	590	590	590	590	590	590	590
Min space left behind the chair ##	60	130	50	60	140	50	40	140	50	60	140	50	50	130	40	50	140	50
Avg. space left behind the chair ###	355	425	345	355	435	345	335	435	345	355	435	345	345	425	335	345	435	345

\* L, C, R, and tray depth (front, middle, and back) are described in Figure A1.

# Existing chair depth and desk depth of classrooms, 202 and 203 are being recommended as these dimensions of chair and desk are reasonably comfortable from students' point of view

## Minimum space left behind the chair is projected by considering front edge of the chair is aligned with the front edge of the desk (from the side students are supposed to sit). In other words, when chair is completely outside of the desk.

### Average space left behind the chair is projected by considering half of the chair depth (i.e.,  $590/2 = 295$  mm) is inside the desk. In other words, 295 mm of chair depth is inside the desk and 295 mm of chair depth is outside the desk.

**Table A2 – Second floor classrooms (Gyanshila) tray depth in different parts of the classroom (all measurements are in millimeter (mm))**

	Classroom 201			Classroom 206			Classroom 202			Classroom 203			Classroom 204			Classroom 205		
	L*	C*	R*	L	C	R	L	C	R	L	C	R	L	C	R	L	C	R
Existing tray depth (front)*	1120	1210	1080	1090	1190	1110	1120	1190	1130	1190	1190	1130				1120	1200	1120
Existing tray depth (middle)*	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R
	1070	1140	1140	1120	1190	1140	1120	1200	1120	1130	1200	1140				1120	1190	1120
Existing tray depth (back)*	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R	L	M	R
	1130	1100	1140	1120	1000	1140	1120	1110	1100	1130	1200	1140				1120	1190	1110
Existing no. of tray	4			4			6			6			6			6		
Minimum tray depth	1070	1100	1080	1090	1000	1110	1120	1110	1100	1130	1190	1130				1120	1190	1110
Desk depth (recommended)#	470	470	470	470	470	470	470	470	470	470	470	470				470	470	470
Chair depth (recommended)#	590	590	590	590	590	590	590	590	590	590	590	590				590	590	590
Min space left behind the chair ##	10	40	20	30	-60	50	60	50	40	70	130	70				60	130	50
Avg. space left behind the chair ###	305	335	315	325	235	345	355	345	335	365	425	365				355	425	345

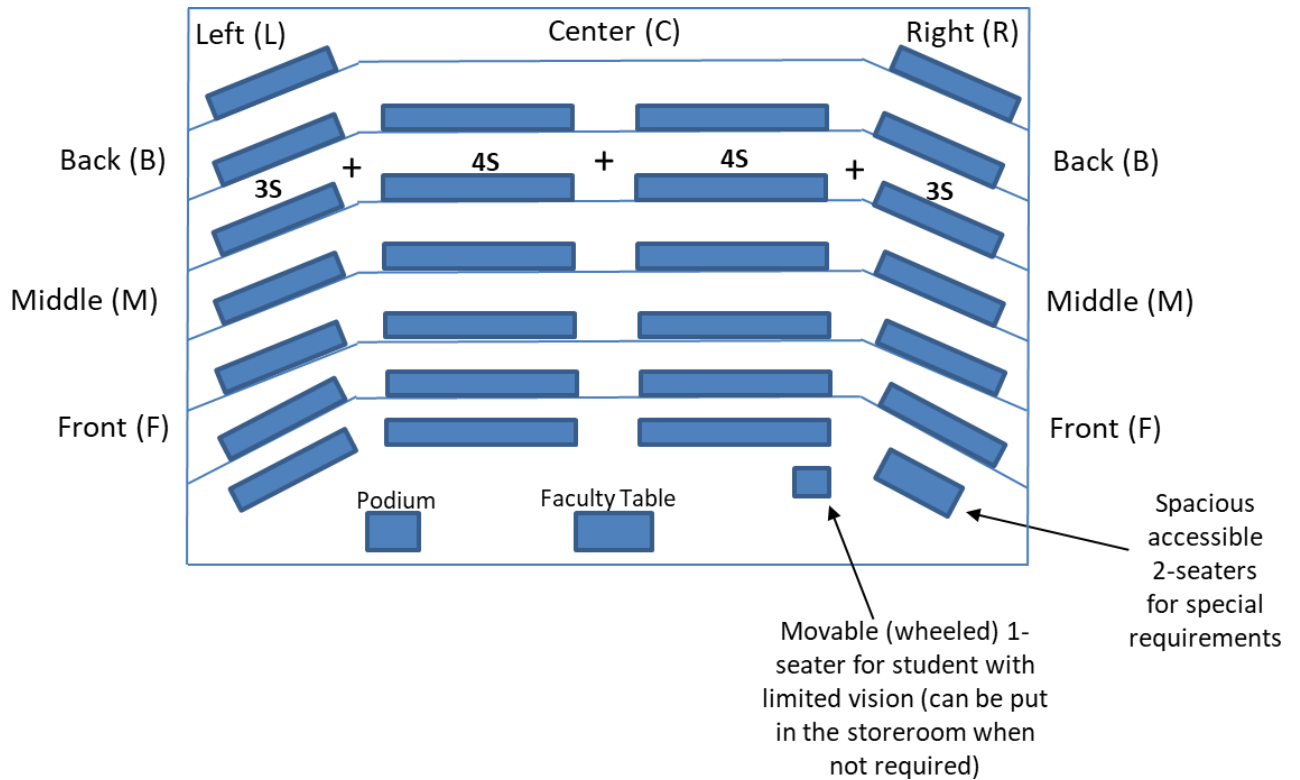
\* L, C, R, and tray depth (front, middle, and back) are described in Figure A1.

# Existing chair depth and desk depth of classrooms, 202 and 203 are being recommended as these dimensions of chair and desk are reasonably comfortable from students' point of view

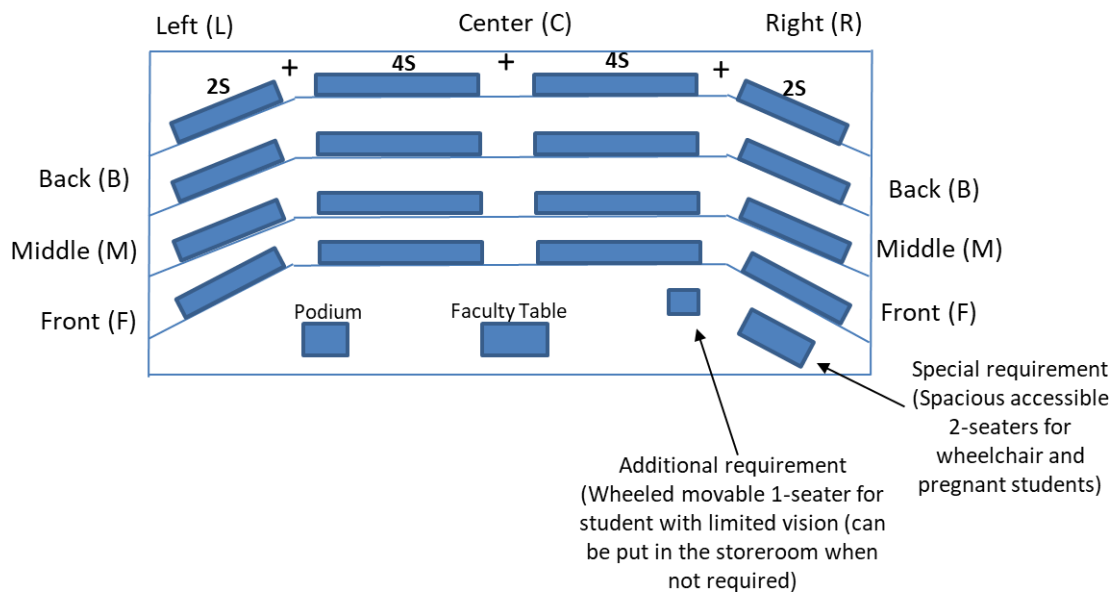
## Minimum space left behind the chair is projected by considering front edge of the chair is aligned with the front edge of the desk (from the side students are supposed to sit). In other words, when chair is completely outside of the desk.

### Average space left behind the chair is projected by considering half of the chair depth (i.e.,  $590/2 = 295$  mm) is inside the desk. In other words, 295 mm of chair depth is inside the desk and 295 mm of chair depth is outside the desk.

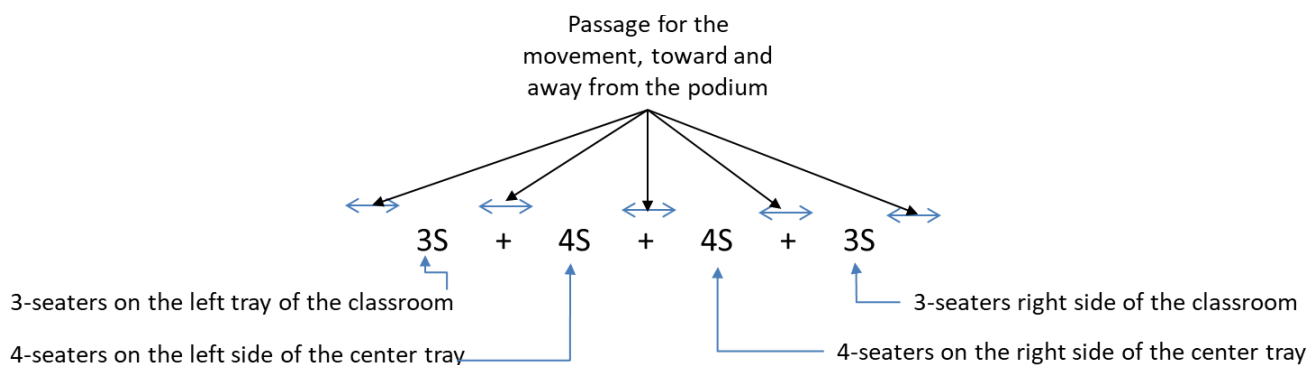
### Requirement projection for number of desks and chairs



**Figure B1 – Layout for classrooms (student desk layout), 102, 103, 104, and 105**



**Figure B1 – Layout for classrooms (student desk layout), 101, 106, 201, and 206**



**Figure B2 – Student desk layout representation (meaning of the desk layout, 3S+4S+4S+3S)**

**Table B1 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 101									
	L*	C*	R*	Total length available	Projected					
					Length occupied by desks	Vertical movement space for each (five) passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*	3280	6510	3330	13120	5120	1024	8	0	8	48
Existing tray length (front)*	3330	6510	3330	13170	5170	1034				
Proposed desk Layout **	2S + 4S + 4S + 2S									
Existing no. of tray	4									
Additional requirement #	1 (1 seat)									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

**Table B2 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 106									
	L*	C*	R*	Total length available	Projected					
					Length occupied by desks	Vertical movement space for each (five) passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*	3330	6970	3280	13580	5580	1116	8	0	8	48
Existing tray length (front)*	3335	6980	3330	13645	5645	1129				
Proposed desk Layout **	2S + 4S + 4S + 2S									
Existing no. of tray	4									
Additional requirement #	1									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

**Table B3 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 102									
	L*	C*	R*	Total length available	Projected					
					Length occupied by desks	Vertical movement space for each (five) passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*						1290	0	13	12	87
Existing tray length (front)*						1290				
Proposed desk Layout **	3S + 4S + 4S + 3S									
Existing no. of tray	6									
Additional requirement #	1									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

**Table B4 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 103									
	L*	C*	R*	Total length available	Projected					
					Length occupied by desks	Movement space for each passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*	4720	6520	4820	16060	6460	1292	0	13	12	87
Existing tray length (front)*	4750	6500	4800	16050	6450	1290				
Proposed desk Layout **	3S + 4S + 4S + 3S									
Existing no. of tray	6									
Additional requirement #	1									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

**Table B5 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 104									
	L*	C*	R*	Total length available	Projected					
					Length occupied by desks	Movement space for each passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*	4810	6510	4730	16050	6450	1290	0	13	12	87
Existing tray length (front)*	4830	6490	4760	16080	6480	1296				
Proposed desk Layout **	3S + 4S + 4S + 3S									
Existing no. of tray	6									
Additional requirement #	1									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.



**Table B6 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 105									
	L*	C*	R*	Total length available	Projected					
					Length occupied by desks	Movement space for each passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*	4790	6500	4800	16090	6490	1298	0	13	12	87
Existing tray length (front)*	4780	6500	4800	16080	6480	1296				
Proposed desk Layout **	3S + 4S + 4S + 3S									
Existing no. of tray	6									
Additional requirement #	1									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

**Table B7 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 201									
	L	M	R	Total length available	Projected					
					Length occupied by desks	Vertical movement space for each (five) passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*	3240	6580	3280	13100	5100	1020	8	0	8	48
Existing tray length (front)*	3380	6320	3440	13140	5140	1028				
Proposed desk Layout **	2S + 4S + 4S + 2S									
Existing no. of tray	4									
Additional requirement #	1 (1 seat)									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.

## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

**Table B8 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 206									
	L	M	R	Total length available	Projected					
					Length occupied by desks	Vertical movement space for each (five) passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*	3310	7080	3250	13640	5640	1128	8	0	8	48
Existing tray length (front)*	3330	6890	3310	13530	5530	1106				
Proposed desk Layout **	2S + 4S + 4S + 2S									
Existing no. of tray	4									
Additional requirement #	1 (1 seat)									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.

## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

**Table B9 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity (all measurements are in millimeter (mm))**

	Classroom 202									
	L	M	R	Total length available	Length occupied by desks	Vertical movement space for each (five) passage	Projected capacity			
							No. of 2S	No. of 3S	No. of 4S	(No. of seats)
Existing tray length (back)*	4780	6500	4840	16120	8120	1624	Installed <sup>§</sup>			
Existing tray length (front)*	4780	6510	4800	16090	8090	1618				
Proposed desk Layout **	Installed <sup>§</sup>									
Existing no. of tray	6									
Additional requirement #	1 (1 seat)									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.

## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

<sup>§</sup> Existing student desks and chairs are reasonably comfortable, so new furniture is not recommended

**Table B10 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity  
(all measurements are in millimeter (mm))**

	Classroom 203									
	L	M	R	Total length available	Length occupied by desks	Movement space for each passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
	Existing tray length (back)*	4670	6550	4800	16020	6420	1284	Installed <sup>\$</sup>		
	Existing tray length (front)*	4720	6560	4800	16080	6480	1296			
	Proposed desk Layout **	Installed <sup>\$</sup>								
	Existing no. of tray	6								
	Additional requirement #	1 (1 seat)								
	Special requirement ##	1 (2 seats)								

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.

## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

§ Existing student desks and chairs are reasonably comfortable, so new furniture is not recommended.

**Table B11 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity  
(all measurements are in millimeter (mm))**

	Classroom 204									
	L	M	R	Total length available	Length occupied by desks	Movement space for each passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)
Existing tray length (back)*							Installed <sup>\$</sup>			
Existing tray length (front)*										
Proposed desk Layout **	Installed <sup>\$</sup>									
Existing no. of tray	6									
Additional requirement #	1 (1 seat)									
Special requirement ##	1 (2 seats)									

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.

## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

§ Existing student desks and chairs are reasonably comfortable, so new furniture is not recommended.

**Table B12 – Requirements of multi-seaters desk for students and corresponding projected classroom capacity  
(all measurements are in millimeter (mm))**

	Classroom 205										
	L	M	R	Total length available	Length occupied by desks	Movement space for each passage	No. of 2S	No. of 3S	No. of 4S	Capacity (No. of seats)	
	Existing tray length (back)*	4820	6520	4800	16140	6540	1308	Installed <sup>\$</sup>			
	Existing tray length (front)*	4900	6400	4850	16150	6550	1310				
	Proposed desk Layout **	Installed <sup>\$</sup>									
Existing no. of tray	6										
Additional requirement #	1 (1 seat)										
Special requirement ##	1 (2 seats)										

\* L, C, R, and tray length (back and front) are described in Figure A1.

\*\* Desk layout is explained in Figure B1 and Figure B2

# Wheeled movable 1-seater for student with limited vision (can be put in the storeroom when not required). See Figure B1 for more clarity.

## Spacious accessible 2-seaters for wheelchair and pregnant students. See Figure B1 for more clarity.

§ Existing student desks and chairs are reasonably comfortable, so new furniture is not recommended.

**Table C4 – Recommended/required quantity of student desk**

	No. of 2-Seaters (2S)	No. of 3-Seaters (3S)	No. of 4-Seaters (4S)
1st floor	16	52	64
2nd floor	16	0	16
Total	32	52	80

**Table C5 – Recommended/required student desk dimension\***

	Work surface length (in mm)	Work surface width (in mm)	Work surface height (in mm)
2-Seaters (2S)	1300	4700	Standard
3-Seaters (3S)	2100	4700	Standard
4-Seaters (4S)	2700	4700	Standard

\* The dimension can be flexible for few mm

Table C6 – Recommended/required quantity of special requirement desk

	No. of 2-Seaters (2S)
Special requirement	12

Table C7 – Recommended/required dimension of special requirement desk \*

	Work surface length (in mm)	Work surface width (in mm)	Work surface height (in mm)
Special requirement 2-Seaters (2S)	1300	4700	Adjustable

\* The dimension can be flexible for few mm

Table C8 – Recommended/required quantity of special requirement movable desk

	No. of 1-Seater
Special requirement movable 1-Seater	12

Table C9 – Recommended/required dimension of special requirement movable desk

	Work surface length (in mm)	Work surface width (in mm)	Work surface height (in mm)
Special requirement movable 1-Seater	650	4700	Standard or adjustable

\* The dimension can be flexible for few mm

Table C10 – Recommended/required quantity of student chair

	Chair quantity
Student chairs	564

Table C11 – Recommended/required dimension of chair (see Figure A1 for chair dimensions)

	Depth (in mm)	Width (in mm)	Height (in mm)
Student chairs	590	590	Adjustable

\* The dimension can be flexible for few mm

**Annexure -B**

