TENDER DOCUMENT

FOR

Left over work of Renovation of Scholars' House Jamia Hamdard

J A M I A H A M D A R D

HAMDARD NAGAR

NEW DELHI –110062

I M P O R T A N T

THE CONTRACTOR SHOULD SATISFY HIMSELF THAT NO PAPER OR DOCUMENT FROM THIS SEALED FILE IS MISSING WHILE SUBMITTING THIS TENDER

TENDER ISSUED TO

ISSUING DATE ----------

SIGNATURE OF ISSUING OFFICER: ----------

LAST DATE OF RECEIVING ----------

DATE OF OPENING ----------

SGNATURE OF THE EXECUTIVE ENGINEER…….

INDEX

JAMIA HAMDARD
(DEEMED TO BE UNIVERSITY)
HAMDARD NAGAR, NEW DELHI-110062

SHORT TENDER NOTICE

Ref No. JH/Civil & Elect./Sch. House/40/2021 Date: 07/10/2021

Jamia Hamdard, New Delhi invites sealed items rates Tenders in **two envelope system** (Technical & Financial Bid) from reputed contractors registered with CPWD, MES, Railway, Department of Telecommunication, Universities, Higher Education Institute for the below mentioned work. Tender Documents are attached herewith. Last date of submission of the Tender is 15/10/2021 **up to 3.00 PM.** The bidders also advised to visit the site to satisfy themselves before submitting the Bids. Bidders not fulfilling the Eligibility Criteria will be rejected. Eligibility Criteria is mentioned in Tender clause 2.2.

NAME OF WORK:	**LEFT OVER WORK OF RENOVATION OF SCHOLARS' HOUSE JAMIA HAMDARD**
ESTIMATED COST:	Rs. 1, 33, 41,335.00
EARNEST MONEY:	Rs. 2.67 Lakhs
TENDER COST:	Rs. 3000 only (Non Refundable)
TIME PERIOD:	**03 Months**
PRE-BID MEETING:	11/10/2021 at 3:30 PM

The Tender duly filled should be dropped in the Tender Box kept in Purchase Section, Admin Block on or before 15/10/2021 **up to 3.00 PM** along with demand draft of earnest money & Tender fee in sealed envelope clearly specifying the name of work. The D.Ds shall be in favor of Jamia Hamdard payable at New Delhi. The technical bid shall be opened on 15/10/2021 **at 3.30 PM** by the tender committee in presence of available interested parties. Date & time for opening of Financial bid will be intimated later to the technically qualified bidders. Jamia Hamdard reserves the right to reject any or all tenders or split the tenders without assigning any reason.

Registrar

2. Instructions to Tenderers

2.1 Scope of Work

- Left over work of Renovation of Scholars' House Jamia Hamdard.
- Civil, Plumbing, Fire Fighting, Electrical & Air-Conditioning etc.

2.2 Eligibility Criteria

1. Bidders/reputed contractors must be registered with Govt. Department such as CPWD, Railway, MES and Department of Telecommunication, Universities, Higher Education Institute. Bidders have to submit the up-to-date certified copy of the valid Registration Certificate, organizational setup, credentials, list of plant, machinery & tools in his possession along with tender. The original will have to be produced when demanded for verification.

2. Bidders should have executed similar nature of work of at least one contract of value of 80% of Estimated Cost or two contracts of similar nature of work of 60% of Estimated Cost or three contacts of similar natures of works of 40% of Estimated Cost in last 3 years in prestigious institutional buildings, Universities, Guest Houses, Hotels and produce credentials in support thereof, Certificates of satisfactory completion of works must also be provided. The contractors are also to provide the supporting documents justifying the specialization in Fire Fighting Works with NOC from Govt. Fire Services of their works done.

3. Average annual financial turn over should be at least Rs. 3.0 Crores each during the immediate last 3 consecutive financial year with certification from practicing Chartered Accountant.

4. The firm should have valid EPFO, ESI, and GSTIN registration.

5. Bankers certificate for credit worthiness/Solvency not less than Rs 1.25 Crores.

6. Net Worth of the Company should not be less than Rs. 70 Lakhs

7. The contractor should submit IT Return acknowledgement for last three years ending 31st Mar, 2021.

2.3 Documents to be submitted along with Technical Bids

a. Copies of valid registration Certificate.

b. Complete list of machinery and equipment and details of Technical Manpower along with supporting staff and in house Design capability duly signed and sealed on company's letter head.

c. Copies of completion and Performance Certificates (duly attested) for similar scope of works issued by the officer of the client/Deptt. of the rank of Executive Engineer/equivalent or the Head of the Institution will have to be furnished along with the Technical Bid. The completion certificate must clearly indicate the following:

- The date of completion of work with cost of completed work with letters of successful completion. Nature and scope of work, Time period of completion (attach client's list).
- Similar work means Civil, Plumbing, Fire Fighting, Electrical & Air-Conditioning work.
- The firms are advised to enclose attested copies of valid PAN, EPFO, ESI, and GSTIN.

d. Earnest Money, **Rs. 2.67 Lakhs** to be submitted in the form of DD in favour of Jamia Hamdard. **As per Rule 170 of GFR--- "Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME)" are exempt from submission of EMD.**

e. Tender Cost (Compulsory), Rs. 3000 (non-refundable) in the form of DD in favour of Jamia Hamdard.

f. Certificate for the company in house architect for the Planning, Designing and working drawing as per the site requirement and vetted by the Engineering Department before the start of the work.

g. Company's financial performance documents (Audited balance sheet, and profit and loss statement.

h. Copies of work orders for similar nature of work as specified above in last 3 years.

i. Entire tender document duly signed & stamped by the bidder.

j. Copies of IT return acknowledgement for last three years ending 31st Mar, 2021.

k. All documents submitted by the bidder should be self-attested along with stamp.

2.4 Submission of Bids

1. **Submission of Tender**: Tenders should be submitted in two Parts i.e. "Technical bid" (Part-A) and "Price bid" (Part-B) in two separate sealed envelopes. Both the parts should be further put in a single sealed envelope super-scribing NIT No. & name of work, due date for opening, bidder's name & address. The tender duly filled in may be sent to above mentioned address either by post or hand delivered in the tender box kept in the Purchase Section, Admin Block. It should not be handed over to any employee of the Jamia

Hamdard. No tender shall be accepted later than the time schedule specified in NIT.

Any clarifications/amendments/corrigenda etc., to NIT before last date of submission of bid will only be available on our website: www.jamiahamdard.edu. Therefore bidders are advised to keep visiting our website.

a. **Technical Bid (Part-A**) shall contain all documents as stated in clause (2.3)

b. **Price Bid (Part-B)**:

In this bid, the bidder is required to quote his item rates in the BOQ attached in accordance with the scope of work, terms & conditions & technical specifications enclosed. The rates/price quoted by contractor should be all inclusive i.e. should include all material cost, labour, services, plant/machinery/tools & tackles, ladders & scaffolding required for work, freight, Insurance, transport/cartage of materials/labour and all other expenses not specifically mentioned but reasonably implied. Nothing over and above these rates shall be payable to contractor. Further nothing extra in rates will be considered for any variations in tender quantities or due to any site difficulties. It is mandatory for bidder to quote all items rate as asked for in the BOQ/ PRICE schedule. Failure in not filling some item rates will lead to rejection of tender. The bidders should quote unconditional rates, neatly written without any overwriting and all pages should be duly signed & stamped.

Jamia Hamdard reserves the rights to increase or decrease the quantum of work during the execution of work and to accept/reject full/part proposals without assigning any reason thereof.

APPLICATION FROM TENDERER
(Forwarding letter)

From: M/s----------

To
The Executive Engineer
Jamia Hamdard
Hamdard Nagar
New Delhi –110062.

Subject: - Left over work of Renovation Scholars' House Jamia Hamdard

Dear Sir,

With reference to the tenders invited by you for the above work, I / We do hereby offer to perform, provide execute & complete the above work in conformity with the drawings, items & conditions and specifications for the amount as shown in the Schedule attached hereto.

I / We have satisfied myself / ourselves to the location and conditions of the site & read the article of agreement conditions of contract & specification etc.

I / We understand that the works are to be completed within the specified period & fully understood that the time will be the essence of this contract.

I / We enclose herewith the Earnest Money by demand draft of Rs. ……. (Rupees ……) in favour of Jamia Hamdard, Hamdard Nagar, New Delhi-62, which amount is not to bear any interest, even if this tender is accepted in whole or in part thereof.

I / We hereby agree to abide by and fulfill all the terms and conditions of the tender, N.I.T etc. as far as possible, and if found default against the said condition thereof the Registrar Jamia Hamdard have the right to forfeit the sum of money mentioned in the conditions.

I / We agree that the said Executive Engineer Jamia Hamdard or his successors in office shall without prejudice or any other right or remedy be at liberty to forfeit the said Earnest Money absolutely, if we fail to commence the work as specified above. Otherwise he will retain the said earnest money towards security deposit mentioned in general conditions of the contract.

Name of the partner (s)

Yours faithfully,

1.
2
3

Signature of contractor with seal

Dated
Address

Annexure

Questionnaire

PARTICULARS TO BE FURNISHED

1) Name and full address of the of firm or company :-

1) Composition of the firm or company, i.e Whether Public or Private Limited Company or a partnership concern. (A true attested Copy of the partnership deed or affidavit to be needed for contract) :-

2) Whether enlisted with Government Department or Government Undertaking, if so, full details of enlistment. :-

3) Whether any construction work has been done Previous or is being done undertaking from any Private reputed company if so, intimate :-

a) Name of the company or Government Undertaking with full address. :-

b) Value of the work :-

c) Type of services rendered. :-

Signature of Contractor

Dated the ----------2021

APPENDIX

Name of work	**Left over work of Renovation of Scholars' House Jamia Hamdard**
Date of commencement	After 07 days of receiving the award letter from the university
Date of completion	Three months from the date of start
Period of honoring payment certificate	15 days after submitting the bill by site engineer based on joint measurement
Retention Percentage	5% of the gross value of work as per conditions of contract subject to Rs. 10.0 Lac. (maximum)
Final completion certificate	To be issued by the Office of the Executive Engineer on actual completion of the project in all respect and handing over the possession to the satisfaction of the university's engineers & users.
Defect liability period	12 months after completion of entire work during defect liability period of 12 months the contractor will depute his staff for attending to all types of contraction defects included under their scope of contract and rectify the defects free of cost.
Liquidated damages	University will have the full power to impose penalty of Rs. 2000.00 per day of delay but not exceeding to 10% of total contract amount. This will be without reference to any actual loss or damages sustained.
Period of final measurement	Three months after the completion of the building and certified issued by the Engineering Deptt.

Release of security money	As per contract condition.
Deduction of taxes	All prevailing taxes as per government rules shall be deducted on the total gross amount of the bill at source.
Secured advance	65% of the value of non-perishable nature of materials at site, which are to be incorporated in the work, may be included in running bill
Shifting of existing services(Civil & Electrical)	like water supply lines, water storage tanks, manholes, drainage system, cables, DBs etc and other related services will be done by the contractor and the payment will be made as per actual work done at site based on the analysis of prevailing market rates with 15% C.P.+ overheads plus GST.

FORM OF AGREEMENT:

ARTICLES OF AGREEMENT made this ---------- day of ---------- Two Thousand Twenty One Between Jamia Hamdard incorporated under the Act and having its Head office at Hamdard Nagar, New Delhi (hereinafter referred to as the "Employer/Owner" which expression shall, unless excluded by or repugnant to the context, includes its successors and assigns) of the ONE PART and---------- ---------- of hereinafter referred to as the "Contractor", which expression shall, unless excluded by or repugnant to the context, include his successors and assign) of the OTHER PART.

WHEREAS the Employer intends to do the Left over work of Renovation Of Scholars' House Jamia Hamdard at Jamia Hamdard, Hamdard Nagar, New Delhi (hereinafter referred to as the "project").

AND WHEREAS for the purpose of the said project, the Employer invited sealed tenders from experienced, resourceful and bonafide contractors vide his Notice Inviting Tender (No----------date----------)

WHEREAS the contractor submitted his Tender along with the Tender Documents containing General Notes, General condition of Contract, Special conditions, Technical Specifications, Schedule of Quantities etc. for the works, prepared with the assistance of the Consultants, (hereinafter collectively referred to as the "said conditions"), duly signed on each page as a token of his acceptance of the same, along with requisite Earnest Money Deposit of Rs._____(copy enclosed vide Annexure-I)

AND WHEREAS out of the Tenders received, the Tender of the Contractor was found to be most suitable for the project.

AND WHEREAS the Employer has accordingly issued the work order (No._____ dt._____) to the Contractor subject to his furnishing

the requisite Security Deposit (copy enclosed vide Annexure-II).

AND WHEREAS the Contractor has accepted the aforesaid work order vide his letter of acceptance No. _____ dt. _____ (copy enclosed vide Annexure-III) and has also deposited with the Employer as sum of Rs. _____ which with the Earnest Money of Rs. _____ previously deposited, in all Rs. _____, from the requisite Security Deposit @ 2% of the accepted Tender value of Rs. _____ AND WHEREAS the Employer has caused the specifications, schedule of quantities etc. and plans & drawings will be prepared by contractor's in-house Architect relating to the project at the work site at_____ to be vetted & issued to the Contractor by the Employer (Engineer in-charge of the Project).

Now, therefore it is hereby agreed to and between the parties as follows:

1. Contract Documents:

The following documents shall constitute the Contract Documents:

a) This Articles of Agreement

b) Tender submitted by the Contractor including the N.I.T. and the Tender Documents.

c) All correspondence between Jamia Hamdard and the Contractor from the date of issue of N.I.T. and date of _____ issue of work order.

d) Work order no. _____ dt. _____

e) Letter of Acceptance of the work order by the Contractor

2. In consideration of the payments to be made to the contractor as hereinafter provided the contractor shall upon and subject to the said conditions, execute and complete the contracted works shown upon the said Drawings etc. and such further detailed drawing as may be furnished to the contractor by the said Owner Employer described in the said Specifications and the said schedule of Quantities.

3. Notwithstanding what are stated in the N.I.T. conditions of Tendering Conditions of Contract and herein before stated the Employer reserves to itself the right of altering the drawings and nature of the work and of addition to or omitting any items of work or of having portions of the same carried out departmentally of otherwise and such alteration or variations shall be carried out without prejudice to this contract.

4. As mentioned in Article I above, the said conditions shall be read and be treated as forming part of this Agreement and be here to will respectively be bound thereby and to abide by and submit themselves to the conditions and stipulations' and perform the same on their parts to be respectively observed and preferred.

5. Any dispute arising under this Agreement shall be referred to the Arbitration in a manner specified in the General conditions of Contract and all legal disputes shall limited within the territorial jurisdiction of the High Court of New Delhi the district court thereof at New Delhi. The decision of the arbitration shall be final and binding on both the parties.

IT WITNESS WHEREOF THE PARTIES to these present have hereunto set and subscribed their hand the day, month and year first above written.
Signed and delivered for and On behalf of Jamia Hamdard by

Shri_____ _____

Its duly authorized official _____
In the presence of-

1. (Name & Address) _____

2. (Name & Address) _____

Signed and delivered for and
On behalf of the contractor
_____ by
Sri_____
His duly authorized official _____

1. (Name & Address) _____

2. (Name & Address) _____

General Conditions of Contract:

Except where provided for in the description of the individual items in the schedule of quantities and in the specifications and the conditions laid down hereinafter and in the Drawings, the work shall be carried out as per standard specifications and under the direction of University/Employer & Architect.

1. INTERPRETATION

In construing these conditions, the specifications, the schedule of quantities, tender and Agreement, the following words shall have the meaning herein assigned to them except where the subject or context otherwise requires:

i) University/Employer: The term University/Employer shall denote Jamia Hamdard, Hamdard Nagar, New Delhi and any of its employee (concerned Engineer-In-Charge) representative authorized on their behalf.

ii) Contractor: The terms contractor shall mean_____ and his/their heirs, legal representatives, assigns and successors.

iii) Site: The site shall mean the site where the works are to be executed as shown within boundary in red border on the site plan including any building and erections thereon allotted by the Employer for the contractor's use.

iv) Drawings: The work is to be carried out in accordance with drawings, specifications, the schedule of quantities and any further drawings which may be supplied or any other instruction, which may be given by the Employer during the execution of the work. All drawing relating work with a copy of schedule of quantities are to be kept at site and University/concerned Engineer-In-Charge shall be given access to such drawings or schedule of quantities whenever necessary.

In case of any Detailed Drawings are necessary contractor shall prepare such detailed drawings and /or dimensional sketches there for and have it confirmed by the concerned Engineer-In-Charge prior to taking up such work.

The contractor shall ask in writing for all clarifications on matters occurring anywhere in drawings, specification and schedule of quantities or to additional instructions at least 10 days ahead from the time when it is required for implementation so that the University/Engineer-In-Charge may be able to give decision thereon.

vi) The “Works” shall mean the work or works to be executed or done under this contract.

v) "Act of Insolvency" shall mean any act as such as defined by the presidency Town Insolvency Act ort in Provincial Insolvency Act or any amending status.

vii) "The Schedule of quantities" shall mean the schedule of quantities as specified and forming part of this contract.

viii) "Priced Schedule of Quantities" shall mean the schedule of quantities duly priced with the accepted quoted rates.

ix) "Notice in writing" or "Written notice" shall mean a notice written, typed or in printed character sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office address and shall be deemed to have been received when in the ordinary course of post it would have been delivered.

2. SCOPE

The work consists of Left over work of Renovation of Scholars' House Jamia Hamdard**,** New Delhi-62 in accordance with the "drawings" and "schedule of Quantities". The civil work, Sanitary, Plumbing, Fire Fighting, Electrical & Air-Conditioning work, etc. are within the scope of this tender. It includes furnishing all materials, labour, tools and equipment and management necessary for the incidental to the construction and completion of the work. All work, during its progress and upon completion, shall conform to the lines, elevations and grades as shown on the drawings furnished by the Contractor's in-house Architect. Should any detail essential for efficient completion of the work be omitted from the drawings and specifications it shall be the responsibility of the contractor to inform the University and to furnish and install such detail with University concurrence, so that upon completion of the proposed work the same will be acceptable and ready for use.

University may in their absolute discretion issue further drawing and /or written instructions, details, directions and explanations, which are, hereafter collectively referred to as "The "University's instruction" in regard to:

a) The variation or modification of the design quality or quantity of works or the addition or omission or substitution of any work.

b) Any discrepancy in the drawing or between the schedule of quantities and /or drawings and /or specification.

c) The removal from the site of any defective material brought thereon by the contractor and the substitution of any other material thereof.

d) The demolition removal and/or re-execution of any work executed by the contractor/s

e) The dismissal from the work of any persons employed thereupon.

f) The opening up for inspection of any work covered up.

g) The rectification and making good of any defect under clauses hereinafter mentioned and those rising during the maintenance period (retention period).

The contractor shall forthwith comply with and duly execute any work comprised in such University's instructions, provided always that verbal instructions, direction and explanations given to the contractor or his representative upon the works by the University shall if involving a variation be confirmed in writing to the contractor/s within seven days. No work, for which rates are not specifically mentioned in the priced schedule of quantities, shall be taken up without verifying and vetted by the Engineer in-charge of the Project subsequently approved by the University. Rates of items not mentioned in the priced schedule of quantities shall be fixed by the University as provided in Clause "variation".

The contractor shall set up a field laboratory with necessary equipments for day to day testing of materials like grading of coarse and fine aggregates, silt content and bulkage of sand crushing strength of concrete etc.

Regarding all factory made products for which ISI marked products are available, only products bearing ISI marking with due approval of the concerned Engineer-In-Charge shall be used in the work. Other products should be supplied as per the brand name mentioned in the Technical specifications.

3. DETAILED DRAWING AND INSTRUCTIONS

The Contractor through its in-house Architect shall furnish with reasonable promptness additional instructions by means of drawings or otherwise necessary for the proper execution of the work. All such drawing and instructions shall be consistent with the Contract Documents, true developments thereof and reasonably inferable there from.

The work shall be executed in conformity therewith and the contractor shall not work without proper drawing and instructions.

Immediately after receipt of the work order of the contract the contractor shall prepare a progress schedule (Bar Chart) and submit the same to the University through the Architect for approval which shall indicate the dates for the starting and completion of the various stages of construction.

4. OWNERSHIP OF DRAWING

All drawings, specification and copies thereof furnished by the Contractor through its in-house Architect are the property of the University. They are not to be used on other work and with the exception of the signed contract set, are to be returned to the University at the completion of the work.

5. ROYALTIES & PATENTS

The contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the University harmless from loss on account thereof.

6. INSPECTION OF WORK

The proposed work covered under this, during its progress can also be inspected by the Competent Authority of the University/Executive Engineer.

7. SUPERINTENDENCE SUPERVISION

The Contractor shall give all necessary personal Superintendence during the execution of the work and this obligation and liability will continue until expiration of the maintenance period (Retention Period). The contractor shall also during the whole time of work when in progress employ a competent authorized representative who shall be constantly in attention at the site while his competent team is at work. Any directions, explanations, instructions or notices given by the University to such representative shall be deemed to have been given and duly served on the contractor.

8. CHANGES IN THE WORK

No alteration, omission or variation shall vitiate this contract excepting in case the University thinks proper at any time during the progress of the works to make any alteration in the kind or quality of the materials to be used there in and shall give notice thereof in writing under his hand to the contractor, the contractor shall alter, add to or omit from, as the case may require in accordance with such notice but the contractor at his own cost shall not do any work extra to or make any alterations or additions to or omission from the works or any deviations from any of the provisions of the contract, stipulation, specifications or contract drawings without the previous consent in writing of the University and the value of such alterations, additions or omissions shall, in that case be final and binding as

approved by the University

9. SCHEDULE OF QUANTITIES

The schedule of Quantities/Rates unless otherwise stated shall be deemed to have been prepared in accordance with the Method of measurements of work under Clause No. 11. Any error in description or in quantity or in omission of items from the schedule of quantities/rates shall not vitiate this contract but shall be added to or deducted from the contract amount as the case may be. The contractor shall be deemed to have satisfied himself before tendering for the work and of the prices stated in the Schedule of Quantities and /or the Schedule of Rates and prices, which rate and prices shall cover all his obligations under the contract, and all matters and things necessary for the proper completion of the work.

10. MEASUREMENT OF WORKS

The Engineers of the University shall from time to time intimate to the contractor that he requires the works to be measured, and the contractor shall forthwith attend or send a Qualified representative to assist the concerned Engineer-In-Charge of the University in taking such measurement and calculations and to furnish all particulars or to give all assistance required by either of them.

Should the contractor not attend or neglect or omit to send such representative then the joint measurement taken by the concerned Engineers of the University or a representative approved by him shall be "taken to be the correct Measurement of the works, such measurement shall be net quantities for the work produced.

The contractor or his Representatives may at the time of measurement take such notes and measurements as he may require All authorized extra works, omissions and all variations made without the Architect's knowledge, if subsequently sanctioned by him in writing, with the approval of the University shall be included in such measurements. The final measurement should be done within three months from the date of completion of work jointly by the representative of the contractor, concerned Engineers of the University. If the contractor fails to comply, the measurements taken by the concerned Engineers will be final.

11. Nominated sub-Contractor

All specialists, Merchants, Tradesman and others executing any work or supply and fixing any goods for which prime cost prices or provisional sums are

included in the schedule of Quantities/Rates and/or specification who may be nominated or selected by the University are hereby declared to be sub-contractors employed by the Contractor and are herein referred to as nominated sub-contractors.

No nominated sub-contractor shall be employed on or in connection with the works against whom the contractor shall make reasonable objection or save where the University and Contractor shall otherwise agree who will not enter into a contract providing:

a) That the nominated sub-contractor shall indemnify the contractor against the same obligations in respect of the sub-contract as the contractor is under in respect of this contract.

b) That the nominated sub-contractor shall indemnify the contractor against claims in respect of any negligence by the sub-contractor, his servants or representatives or any misuse by him or them of any scaffolding or other plants the property of the contractor or under any workmen's compensation Act in force.

c) Payment shall be made to the nominated sub-contractor by the contractor within seven days of his receipt of the University Engineer certificate provided that before any certificate is issued the contractor shall upon request furnish to the Engineer in-charge proof that all nominated sub-contractor's accounts included in previous certification have been duly discharged, in default where of the owner may pay the same upon certificate of the Engineer in-charge and deduct the' amount thereof from any sums due to the contractor. The exercise of this power shall not create privities of contract between the University and the "sub-contractor.

12. Failure by Contractors to comply with University's Engineer in-charge of the Project Instructions

If the contractor after receipt of written notice from the University and requiring compliance within ten days fails to comply with such further drawings and/or University's instructions, the University or other person, may employ other person to execute and such work whatsoever that may be necessary to give effect thereto and pay all cost incurred in connection herewith and same shall be recoverable from the contractor by the University on the certificate of the Engineer in-charge of the Project as a debt or shall have right to deduct same any moneys due or to become due to the contractor.

13. TENDERER SHALL VISIT THE SITE

Intending tenderer shall visit the site and make himself thoroughly acquainted with the local site condition, nature and requirements of the works, facilities of transport condition, effective labour and materials, access and storage for materials and removal of rubbish. The tenderer shall provide in their tender for cost of carriage, freight and other charges as also for any special difficulties and including police restriction for transport etc. for proper execution of work as indicated in the drawings. The successful tenderer will not be entitled to any claim of compensation for difficulties faced or losses incurred on account of any site condition which existed before the commencement of the work or which in the opinion of the University might be deemed to have reasonably been inferred to be so existing before commencement of work.

14. TENDERS

The entire set of tender paper issued to the tenderer should be submitted fully priced and also signed on the last page together with initials on every page. Initial/signature will indicate the acceptance of the tender paper by the tenderer.

Special care should be taken to write the rates in figures as well as in words and the amounts in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the words 'P' after the decimal figures, e.g. Rs. 2.15 "P" and in case of words the word 'Paise' should be written at the end, unless the rate is in whole rupee and followed by the words only it should invariably be up to two decimal places; while quoting the rate is in schedule of quantities, the word only should be written closely following the amount and it should not be written in the next line. The schedule of quantities shall be filled in as follows:

i) The 'Rate' column to be legibly filled in ink in both English figures and English words.
ii) Amount column to be filled in for each item and the amount for each sub head as detailed in the "Schedule of Quantities".
iii) All corrections are to be initialed.
iv) The 'Rate Column' for alternative items shall be filled up.
v) The 'Amount' column for alternative items of which the quantities are not mentioned shall not be filled up.
vi) In case of any errors/omissions in the quoted rates, the rates quoted in words in the tender marked 'original' shall be taken as correct rates.

No modifications, writings or corrections can be made in the tender papers by the tenderer, but may at his option offer comments or modifications in a separate sheet of paper attached to the original tender papers.

The University reserves the right to accept or reject the lowest or any tender without assigning any reason.

The tenders should note that tender is strictly on the item rate basis and their attention is drawn to the fact that the rates for each and every item should be correct workable and self-supporting. If called upon by the detailed analysis of any or all the rates shall be submitted. The University shall not be bound to recognize the contractor's analysis.

The work will be paid for as "measured work" on the basis of actual work done and not as “lump sum" contract.

All times of work described in the schedule of quantities are to be deemed and paid as complete works in all respects and details including preparatory and finishing works involved, directly, related to and reasonably detectable from the drawings, specifications and schedule of quantities and no further extra charges will be allowed in this connection. In the case of lump sum charges in the tender in respect of any item of works, the payment of such items of work will be made for the actual work done on the basis of lump sum charges as will be assessed to be payable by the University.

The University has power to add or omit from any work as shown in drawings or described in specifications or included in schedule of quantities and intimate the same in writing but no addition, omission or variation shall be made by the contractor without authorizations from the University. No variation shall vitiate the contract.

The tenderer shall note that his tender shall remain open for consideration for a period of four months from the date of opening of the tender.

15. TIME AND PROGRESS CHART

The contractor shall submit a time and progress chart in a form approved by the University within fifteen days from the date of issue of work order. The chart shall conform to the dates of commencement and completion. The actual progress as compared to this chart will be reviewed and scrutinized periodically by the Engineers of the University. The chart shall be updated monthly based on the progress made on the work.

16. PERMITS AND LICENCES

Permits and license for release of materials which are under Government control will be arranged by the Contractor. The University will render necessary assistance, sign any forms or applications that may be necessary.

17. QUANTITY OF WORK TO BE EXECUTED

The quantities shown in the schedule of quantities are intended to cover the entire Renovation & Modification of the existing structure indicate in the drawings but the University reserves the right to execute only a part or the whole or any excess thereof without assigning any reason therefore.

18. OTHER PERSONS ENGAGED BY THE UNIVERSITY

The University reserves the right to execute any part of the work included in this contract or any work which is not included in this contract by other Agency or persons and contractor shall allow all reasonable facilities and use of his scaffolding for the execution of such work. The main contractor shall extend all co-operations in this regard.

19. EARNEST MONEY AND SECURITY DEPOSIT

The tenderer will have to deposit an amount of **Rs. 2.67 Lakhs** in the form of Bank Draft drawn in favour of Jamia Hamdard at the time of submission of tender as an Earnest Money. The Earnest Money of the unsuccessful tenderers will be refunded without any interest soon after the decision to award the work is taken or after the expiry of the validity period of tender.

The selected Tender, to whom the contract will be awarded, will have to deposit a total amount including earnest money calculated @ 2% of the value of accepted tender as initial security deposit. The security deposit will have to be made within seven days after the acceptance of his tender. The security Deposit will be acceptable in the form of Bank Guarantee in favour of Jamia Hamdard in the suitable format which should remain valid up to the completion of the project in all respect.

Failure to deposit the Initial Security Deposit as aforesaid within the specified time, the University at his discretion may revoke the letter of acceptance and forfeit the Earnest Money deposit furnished along with the tender.

Apart from 2% initial security deposit made as above, to constitute 5% (five percent) retention Money on the value of the work, the amount over the above 2% security money already deposited shall be acceptable in the form of Bank

Guarantee in favour of Jamia Hamdard in the suitable format which should remain valid up to the period/s as necessary.

The entire security deposit (including earnest money furnished with the tender), Bank Guarantee at the time of executing agreement and Bank Guarantee subsequently deposited to the constitute 5% security deposit shall be held till the work is completed in all respect to the full satisfaction of the University's Engineer in-charge of the Project: 50% of the above deposit will be released-after virtual completion of work and certification of the final bill and the balance after the expiry of the defect liability period.

The University shall not pay interest on either the Earnest Money or the security Deposit.

All compensation or other sums of money payable by the contractor to Jamia Hamdard under the terms of this contract or arising out of statutory obligation may be deducted from, or paid by the sale of a sufficient part of his security deposit or from any sums which may be due or any become due to the contractor by the Jamia Hamdard of any account whatsoever, and in the event of his security deposit, being deducted by reason of any such deduction or sale as aforesaid the contractor shall within seven days thereafter make good in Bank Draft endorsed as aforesaid any sum or sums which may have been deducted from or raised by sale of his security deposit or any part thereof.

20. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY

The contractor shall provide everything necessary for the proper execution of the work according to the intent and meaning of the drawings, schedule of quantities and specification taken together whether the same may or may not be particularly shown or described therein provided that the same - can reasonably be inferred there from and if the contractor finds and discrepancies therein he shall immediately and in writing, refer the same to the University whose decision shall be final and binding. The contractor shall provide himself for ground and fresh water for carrying out of the works at his own cost. The University shall on no account be responsible for the expense incurred by the contractor for hired ground or fresh water obtained from elsewhere.

The contractor will bring a three phase suitable rated sealed Energy Meter and cable for the connection of power supply to the site/work, before start of work. The cable will be connected through nearby substation/panel. Periodic bills against the actual consumed electrical energy at site will be generated by the Electrical Engineering Deptt. of Jamia Hamdard and the same will either be deducted from

the running bill of the contractor or the contractor may deposit the billed amount in the Finance Section of Jamia Hamdard directly after receive of bill from the department.

The rates quoted against individual items will be inclusive of everything necessary to complete the said items of work within the contemplation of the contact, and beyond the unit price no extra payment will be allowed for incidental or contingent work, labour and/or material inclusive of all taxes and duties whatsoever except for specific items, if any, stipulated in the tender documents.

The contractor shall supply, fix and maintain at his own costs, for the execution of any work, all tools, tackles, machineries and equipments and all the necessary centering, shuttering, scaffolding, staging, planking, timbering, strutting, shoring, pumping, fencing, boarding, watching and lighting by night as well as by day required not only for the proper execution and protection of the public and safety of any adjacent roads, streets, walls, houses, buildings, all other erections, matters and thing and the contractor shall take down the remove any or all such centering, scaffolding, planking, timbering, structuring, shoring, etc. as occasion shall be required or when ordered so to do and shall fully reinstate and make good all matters and things disturbed during the execution of works to the satisfaction of the University.

The contractor shall also provide such temporary road on the site as may be necessary for the proper performance of the contract and for his own convenience but not otherwise. Upon completion, such roads shall be broken up and leveled where so required by the drawings unless the University shall otherwise direct.

The contractor shall at all times give access to workers employed by the University or any men employed on the building and to provide such parties with proper sufficient and if required, special scaffolding, hoists and ladders and provide them with water and lighting and leave or make any holes, grooves etc. in any work, where directed by the University as may be required to enable such workmen to lay or fix pipes, electrical wiring, special fittings etc. The quoted rates of the tenderers shall accordingly include all these above mentioned contingent works.

21. TIME OF COMPLETION/EXTENSION OF TIME & PROGRESS CHART

i) **Time of Completion**: The entire work is to be completed in all respect within the stipulated period. The work shall deem to be commenced within seven days from the date of acceptance letter or date of handing over of site,

whichever is earlier. Time is the essence of the contract and shall be strictly observed by the contractor.

The work shall not be considered as complete until the concerned Engineers of the University have certified in writing that this has been completed and the Defects Liability period shall commence from the date of such certificate.

ii) **Extension of Time**: If in the opinion of the concerned Engineer-In-Charge of the University the works be delayed (a) by reason of any exceptionally inclement weather/calamities, or (b) by reason of instructions from the University in consequence of proceedings taken or threatened by or disputes, with adjoining or neighboring owners or (c) by the works, or delay of other contractors or tradesmen engaged or nominated by the University and not referred to in the specification or (d) by reason of authorized extra and additions or (e) by reason of any combination of workmen or strikes or lock-down affecting any of the building or trades or (f) from other causes which the University may consider are beyond the control of the contractor, the University at the completion of the time allowed for the contract shall make fair and reasonable extension of time for completion in respect therefore. In the event of the University failing to give possession of the site upon the day specified above the time of completion shall be extended suitably.

In case of such strikes or lock-downs, as are referred to above, the contractor shall, immediately give the University, written notice thereof. Nevertheless, the contractor shall use his best endeavors to prevent delay and shall do all that may be reasonably required, to the satisfaction of the University to proceed with the works and on his doing so that it will be ground of consideration by the University for an extension of time as above provided. The decision of the University as to the period to be allowed for an extension of time for completion hereunder (which decision shall be final and binding on the contractor) shall be promulgated at the conclusion of such strike or lock-down and the University shall then, in the event of an extension being granted, determine and declare the final completion date.

iii) Progress of work: During the period of construction the contractor shall maintain proportionate progress on the basis of a program chart submitted by the contractor immediately before commencement of work and agreed to by the University. Contractor should also include planning for procurement of scarce material well in advance and reflect the same in the program chart

so that there is no delay in completion of the project.

22. TOOLS, STORAGE OF MATERIALS, PROTECTIVE WORKS AND SITE OFFICE REQUIREMENTS

The contractor shall provide, fix up and maintain in an approved position proper office accommodation for the contractor's representative and staff which office shall be open at all reasonable hours to receive instruction notices or communications and clear away on completion of the works and make good all work disturbed.

All drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat of approved varnish. They are to be protected from ravages of termites, ants, and other insects. The contractor shall provide at his own cost all artificial light required for the work and to enable other contractors and sub-contractors to complete the work within the specified time.

The contractor shall arrange for temporary latrines for the use of workers and field staff and keep the same in a clean and sanitary condition to the satisfaction of the Public Health Authorities and shall cause such latrines and soil to be cleared away whenever necessary and shall make good all the works disturbed by these conveniences. Every precaution shall be taken by the contractor to prevent the breeding of mosquitoes during the construction in all respect at construction site, cistern, water tanks etc. The contractor shall indemnify the University against any breach of rules in respect of anti-material measures.

The contractor shall not fix or place any placards or advertisement of any description or permit the same to be fixed or placed or upon any boarding gantry, building structures other than those approved by the University.

Protective Measure: The contractor from time to time of being placed in possession of' the site must make suitable arrangements for watching, lighting and protecting the work, the site and surrounding property by day & night, on Sundays and other holidays.

Contractor shall indemnify the University against any possible damage to the building, roads or members of the public in course of execution of the work.

The contractor shall provide necessary temporary enclosures, gates, entrances etc for the protection of the work and materials and for altering and adopting the same as may be required and removing on completion of the works and making good all works disturbed.

Storage of Materials: The contractor shall provide and maintain proper sheds for the proper storage and adequate protection of materials etc and other

work that may be executed on the site including the tools and materials of nominated sub-contractors and remove same on completion, sheds for storage of cement are to have pucca floor raised above the ground.

Tools: Theodolite, levels, prismatic compass, chain, steel and metallic tapes and all other surveying instruments found necessary on the works shall be provided by the contractor for the due performance of this contract as instructed by the Site Engineer/concerned Engineer-In-Charge.

All measuring tapes shall be of steel and suitable scaffolding and ladders that may be required for safely taking measurement and shall be supplied by the contractor.

The masons and the supervisors on the works shall carry with them. always a one meter or two meter steel tape, a measuring tape of 30 meters, a spirit-level, a plump bob, a square and shall check the work to see that the work is being done according to the drawing and specifications. The site engineer will use any or all measurement instruments or tools belonging to the contractors as he chooses for checking the executed or being executed on the contract.

The contractor should cover in his rates for making provisions for all reasonable facilities for the use of his scaffolding, tools and plant etc by nominated sub-contractors for their work.

23. NOTICE AND PATENTS OF APPROPRIATE AUTHORITY AND UNIVERSITY

The contractor shall conform to the provisions of any Acts of the Legislature relating to the work, and to the Regulation and Bye-laws if any authorities, and/or any water, lighting and other companies, and/or authorities with whose systems the structures were proposed to have connection and shall before making any variations from the drawings or specification that may be associated to so conform, give the University written notices specifying the variations proposed to be made and the reasons for making them and apply for instruction thereon. The University on receipt of such intimation shall give a decision within a reasonable time.

The contractor shall arrange to give all notices required for by the said Acts. Regulations or Bye-laws to be given to any authority and to pay to such authority or to any public officer all fees that may be properly chargeable in respect of the work and lodge the receipts with the University.

The contractor shall indemnify the University against all claims in respect of patent rights, royalties, damages to buildings, roads or members of public in course of execution of work and shall defend all actions ~rising from such claims and shall

keep the University saved harmless and indemnified in all respect from such action, costs and expenses.

25. CLEARING SITE AND SETTING OUT WORKS4

The site shown on the plan shall be cleared of all obstructions, loose stone, and materials rubbish of all kinds. All holes or hollows whether originally existing or produced by removal or loose stone or materials shall be carefully filled up with earth well rammed and leveled off as directed at his own cost.

The contractor shall set out the works and shall be responsible for the true and perfect setting out of the work and for the correctness of the positions, levels, dimensions and alignment of all parts thereof. If at any time, any error shall appear during the progress of any part of the work irrespective of the fact that the layout had been approved by the University; the contractor shall at his own expenses rectify such error, if called upon to the satisfaction of the University. The contractor shall further set out the works to the alternative position at the site until one is finally approved and the rates quoted in his tender should include for this and no extra charge on this account will be entertained.

25. CONTRACTOR IMMEDIATELY TO REMOVAL ALL OFFENSIVE MATTERS

All soil, filth or other matters of any offensive nature taken out of any trench, sewer, drain, cesspool or other place shall not be deposited on the surface but shall be at once carted away by the contractor to place provided by him.

The contractor shall keep the works free from water and shall provide and maintain at his own expenses electrically or other power driven pumps and other plants to the satisfaction of the University for the purpose, until the building is handed over to the University. The contractor shall arrange for the disposal of the water so accumulated to the satisfaction of the University and local authority and no claims will be entertained afterwards if he does not include in his rates for the purpose.

26. ACCESS

Any authorized representative of the University shall at all reasonable times have free access to the works and/or to the workshops, factories or other places where materials are being prepared or constructed for the work and also to any place where the materials are lying or from where they are being obtained, and the contractor shall give every facility to the University or their representatives

necessary for inspection and examination and test of the materials and workmanship. Except the representatives of the University, no person shall be allowed at any time without the written permission of the University/authorized representative of the University.

27. MATERIALS, WORKMANSHIP, SAMPLES, TESTING OF MATERIALS

All the works specified and provided in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workmanlike manner with materials of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars and instructions as may from time be given by the University during the execution of the work, and to his entire satisfaction.

If required by the University the contractor shall have to carry out tests on materials and workmanship in approved materials testing laboratories or as prescribed by the University at his own cost to prove that the materials etc. under test conform to the relevant I.S. Standards or as specified in the specifications. The necessary charges for preparation of mould (in case of concrete cube) transporting, testing etc. shall have to be borne by the contractor. No extra payment on this account should in any case be entertained. All the materials (except where otherwise described) stores and equipment required for the full performance of the work under the contract must be provided through GST and other charges and must be the best of their kind available and the contractor must be entirely responsible for the proper and efficient carrying out of the work. The work must be done in the best workmanlike manner. Samples of all materials to be used must be submitted to the University when so directed by the University and written approval from University must be obtained prior to placement of order.

During the inclement weather the contractor shall suspend concreting and plastering for such time as the University may direct and shall protect from injury all work when in course of execution. Any damage (during constructions) to any part of the work for any reasons due to rain, storm, or neglect of contractor shall be rectified by the contractor in an approved manner at no extra cost.

Should the work be suspended by reason of rain, strike, lockouts or any other cause, the contractor shall take all precautions necessary for the protection of work and at his expenses shall make good any damage arising from any of these

causes.

The contractor shall cover up and protect from damage, from any cause, all new work and supply all temporary/doors, protection to windows, and any other requisite protection for the execution of the work whether by himself of special tradesmen or nominated sub-contractor and any damage caused must be made good by the contractor at his own expenses.

28. REMOVAL OF IMPROPER WORK

The University shall during the progress of the work have power to order in writing from time to time the removal from the work within such reasonable time to times as may be specified in the order of any materials which in the opinion of the University are not in accordance with specification or instructions, the substitution or proper re-execution of any work executed with materials or workmanship, not in accordance with the drawings and specifications or instructions. In case the contractor refuses to comply with the order, the University shall have the power to employ and pay other agencies to work and all expenses consequent thereon or incidental thereto as certified by the University shall be borne by the contractor or may be deducted from any money due to or that may become due to the contractor. No certificate which may be given by the Architect shall relieve the contractor from his liability in respect of unsound work or bad materials.

29. SITE ENGINEER

The term "Site Engineer" shall mean the person appointed and paid by the University to supervise the work and taking the measurements of work done. The contractor shall afford the site Engineers' every facility and assistance for examining the works and materials and for checking work and materials. The site Engineer shall have no power to revoke, alter, enlarge or relax any requirements of the contractor or to sanction any day work, additions, alternations, deviations or omissions or any extra work whatever, except in so far as such authority may be specially conferred by a written order of the University.

The Site Engineer shall have power to give notice to the contractor or his foreman, of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the University is obtained. The work will from time to time be examined by the concerned Engineer-In-Charge from the University and the site Engineer. But such examination shall not in any way exonerate the contractor from the obligation to

remedy any defects which may be found to exist at any stage of the work or after the same is complete. Subject to the limitations of this clause the contractor shall take instructions only from the Architect concerned Engineer-In-Charge.

30. OFFICE ACCOMMODATION FOR THE SITE ENGINEER

The contractor shall provide, erect and maintain at his cost a separate simple watertight office accommodation for the site Engineers. This accommodation shall be well lighted and ventilated and provided with windows, door with a lock. The site Engineer's office shall be a minimum of 250 sq. ft. and the contractor shall provide a desk, chairs, drawers for keeping drawings, a cupboard having proper lock and a backboard for displaying drawings. The accommodation shall be demolished when directed.

31. Contractor's Employees

The contractor shall employ technically qualified and competent supervisors for the work who shall be available (by run) throughout the working hours to receive and comply with instructions of the concerned Engineer-In-Charge/University authority. The contractor shall engage at least one experienced Engineer as Site in-charge for execution of the work. The contractor shall employ in connection with the work persons having the appropriate skill or ability to perform their job efficiently.

The contractor shall employ local labour on the work as far as possible. No labour below the age of sixteen years, and who is not an Indian National, shall be employed on the work. Any labour supplied by the contractor to be engaged on the work on day work basis either wholly or partly under the direct order or control of the University or his representative shall be deemed to be a person employed by the contractor.

The contractor shall comply with the provisions of all labour legislation including the requirements of:

a) The payment of Wages Act
b) Employer's Liability Act
c) Workmen's Compensation Act
d) Contract Labour (Regulation & Abolition) Act, 1970 and Central Rules 1971.
e) Apprentices Act 1961.
f) Any other Act or enactment relating thereto and rules framed there from time to time.

The contractor shall keep the University saved harmless and indemnified against claims if any of the workmen and all costs and expenses as may be incurred by the University in connection with any claim that may be made by any workmen.

The contractor shall comply at his own cost with the order of requirement of any Health Officer of the state or any local authority or of the University regarding the maintenance of proper environmental sanitation of the area where the contractor's labour are housed or accommodated (if University permits for), for the prevention of small pox, cholera plague, typhoid, malaria and other contagious diseases. The contractor shall provide, maintain and keep in good sanitary condition adequate sanitary accommodation and provide facilities for pure drinking water at all times for the use of men engaged on the works and shall remove and clear away the same on completion of the works. Adequate precautions shall be taken by the contractor to prevent nuisance of any kind on the works or the land adjoining the same.

The contractor shall arrange to provide first-aid treatment to the labour engaged on the works. He shall within 24 hours of the occurrence of any accident at or about the site or in connection with execution of the works, reports such accident to the University and also to the competent authority where such report is required by law.

32. DISMISSAL OF WORKMEN

The contractor shall on the request of the University immediately dismiss from works any person employed thereon by him, who may in the opinion of the University be unsuitable or incompetent or who may misconduct himself. Such discharges shall not be the basis of any claim for compensation, or damages against the University or any of their officer or employee.

33. ASSIGNMENT

The whole of the works included in the contract shall be executed by the contractor and the contractor shall not directly or indirectly transfer, assign or underlet the contractor any part, share or interest therein nor, shall take a new partner, without written consent of the University and no subletting shall relieve the contract from the full and entire responsibility of the contract or from active superintendence of the work during their progress.

34. Damage to persons and Property Insurance etc.

The contractor shall be responsible for all injury to the work or workmen to

persons, animals or things and for all damages to the structural and/or decorative part of the property which may arise from the operations or neglect of himself of any sub-contractor or of any of his or a subcontractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. The clause shall be held to include inter-alia, any damage to buildings whether immediately adjacent or otherwise, and any damage to roads, streets, foot paths or ways as well as damages' caused to the building and the works forming the subject of this contract by rain, wind or other inclemency of the weather. The contractor shall indemnify the University and hold harmless in respect of all and any expenses arising from any such injury or damages to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under any acts of compensation or damages consequent upon such claim. The contractor shall reinstate all damage of every short mentioned in this clause, so as deliver the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to the property or third parties.

The contractor shall affect the insurance necessary and indemnify the University entirely from all responsibility in this respect. The insurance must be placed with a company approved by the University and must be effected jointly in the name of the contractor and the University (the name of the latter being placed first in the policy i. e. Jamia Hamdard.

A/C_____

Contractor's Name

and the policy pledged with the latter. The scope of insurance is to include damage or loss to the contract itself till this is made over in a complete state. Insurance is compulsory and must be affected from the very initial stage. The contractor shall also be responsible for anything which may be excluded from damage to any property arising out of incidents, negligence or defective carrying out of this contract i.e. the contractors. All risk Insurance shall have an extension for covering cross liability arising, if any, during execution of work relating to Air Conditioning, Electrification, Erection of Lift, Space Platform etc.

The University shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or accruing from or in respect of any such claim or damages from any sums due or to become due to the contractor.

35. INSURANCE

Unless otherwise instructed the contractor shall insure the works and keep them insured until the virtual completion of the contract against loss or damage by fire and/or earthquake, flood. The insurance must be placed with a company approved by the University in the joint names of the University and the contractor for such amount and for any further sum if called to do so by the University, the premium of such further sum being allowed to the contractor as an authorized extra.

The contractor shall deposit the policy and receipt for premium paid with the University within 21 (twenty one) days from the date of issue of work order unless otherwise instructed. In default of the contractor insuring as provided above, the University on his behalf may so insure and may deduct the premiums paid from any money due, or which may become due to the claim under the policy is settled or the work reinstated by the Insurance Company should they elect to do so, proceed with due diligence with the completion of the works in the same manner as though the fire has not occurred and in all respects under the conditions of the contract. The contractor in case of rebinding or reinstatement after fire shall be entitled to extension of time for completion as the University may deem fit.

36. ACCOUNTS RECEIPTS & VOUCHERS

The contractor shall, upon the request of the University furnish them with all the invoices, accounts, receipts and other vouchers that they may require in connection with the works under this contract. If the contractor shall use materials less than what he is required under the contract, the value of the difference in the quantity of the materials he was required to use and that he actually used shall be deducted from his dues. The decision of the University shall be final and binding on the contractor as to the amount of materials the contractor is required to use for any work under this contract.

37. Payments

All R/A bills shall be prepared by the contractor in the form prescribed by the University. The bills in proper forms must be duly accompanied by detailed measurements in support of the quantities of work done and must show deductions for all previous payments, retention money, etc.

The concerned Engineer-In-Charge of the University shall verify and certify after scrutiny of the contractor's bill stating the amount due to the contractor from the University and the contractor shall be entitled to payment thereof.

The amount stated in the R/A bill shall be the total value of work properly

executed and 65% of invoiced value of material brought to site for permanent incorporation into the work up to the date of the bill less the amount to be retained by the University as retention money vide clause 20 of these condition and less installments previously paid under these conditions provided that such certificates shall only include the value of said material and goods as and from such time as they are reasonably, properly and not prematurely brought to or placed adjacent to the work and then only if adequately protected against weather or other casualties.

The University will deduct retention money as described in Clause 20 of these conditions. The refund of retention money will be made as specified in the said clause.

If the University has supplied any materials or goods to the contractor, the cost of any such materials or goods will be progressively deducted from the amount due to the contractor in accordance with the quantities consumed in the work.

All the R/A bills' payments shall be regarded payments by way of advance against the final payment only and not as payments for work actually done and completed and shall not preclude the requiring of bad, unsound, and imperfect or unskilled work to be removed and taken away and reconstructed, or re-erected or be considered as an admission of the due performance of the contract, or any part thereof in any respect or the accruing of any claim, nor shall, it conclude determine or affect in anyway the power of the University under these conditions or any of them as to the final settlement and adjustment of the account or otherwise or in any other way vary or effect the contract. The final bill shall be submitted by the contractor within one month of the date fixed for completion of the work or of the date of certificate of completion furnished by the site Engineers/concerned Engineer-In-Charge and payment shall be made within three months.

38. FINAL PAYMENT

The final bill shall be accompanied by a certificate of completion from the University. Payments of final bill shall be made after deduction of Retention Money as specified in clause 20 of these conditions, which sum shall be refunded after the completion of the Defect Liability Period after receiving the University's certificate that the contractor has rectified all defects to the satisfaction of the University. The acceptance of payment of the final bill by the contractor would indicate that he will have no further claim in respect of the work executed. Defect liability period shall extend for a period of one year after the day of virtual completion.

39. VARIATION/DEVIATION

The price of all such additional items/non-tendered items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or on engineering rate analysis based on prevalent fair price of labour, material and other components as required as per the details hereinafter. The tender rates shall hold good for any increase or decrease in the tendered quantities up to variation of 25%. For variation beyond 25%, the rate for the respective item may be reviewed by the University.

No claim for an extra shall be allowed unless it shall have been executed by the authority of the University as herein mentioned. Any such extra is herein referred to as an authorised extra. No variations, i.e. additions, omissions or substitutions shall vitiate the contract.

The rates of items not included in the schedule of quantities shall be settled by the Engineer in-charge of the Project in accordance with the following rules:

a) If the rates for the additional, altered or substituted works are specified in the contract for the work, the contractor is bound to carry out the additional, altered and substituted works at the same rates as are specified in the contract for the work.

b) If the rates for the additional, altered or substituted works are not specifically provided in the contract for the work, the rates will be derived from the rates for a similar class of work as are specified in the contract for the work.

c) If the rates for the additional, altered or substituted work cannot be specified in the sub-clause (a) (b) above, the rates shall be derived on the basis of cost of materials and labour (rates for materials and labour will be as per the prevalent market rates for the same) plus 15% to cover overheads, supervision and profit etc.

40. SUBSTITUTION

Should the contractor desire to substitute any materials and workmanship, he/they must obtain the approval of the University through Architect in writing for any such substitution well in advance. Materials designated in this specification indefinitely by such term as a "Equal" or "Other approved" etc. specific approval of the University has been obtained in writing.

41. PREPARATION OF BUILDING WORKS FOR OCCUPATION AND USE IN COMPLETION

The whole of the work will be thoroughly inspected by the contractor along-with the Site Engineers and deficiencies and defects put right. On completion of

such inspection the contractor shall inform the University that he has completed the work and it is ready for inspection.

On completion the contractor shall clean all windows and doors including the cleaning and oiling if necessary, of all hardware, inside and outside, all floors, staircases, and every part of the building. He will leave the entire building neat and clean and ready for immediate occupation and to the satisfaction of the University.

42. CLEARING SITE ON COMPLETION

On completion of the works, the contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and the works clean and in a workmanlike condition to the satisfaction of the University.

43. DEFECT AFTER COMPLETION

The contractor shall make good at his own cost and to the satisfaction of the University all defects, shrinkage, settlements or other faults which may appear within 12 months after completion of the work. In default, the University may employ and pay other persons to amend and make good such damages, losses and expenses consequent thereon or incidental, thereto shall be made good and borne by the contractor and such damages, loss and expenses shall be recoverable from him by the University or may be deducted by the University, in lieu of such amending and making good by the contractor, deduct from any money due to the contractor a sum equivalent to the cost of amending such work and in the event of the amount retained being insufficient, recover that balance from the contractor from the amount retained under Clause No. 20 together with any expenses the University may have incurred in connection therewith.

44. CONCEALED WORK

The contractor shall give not less than 5 days notice to the University whenever any work is to be buried in the earth, concrete or in the bodies of walls or otherwise becoming inaccessible later on, in order that the work may be inspected and correct dimensions taken before such burial, in default whereof the same shall, at the opinion of the University be either opened up for measurement the contractor's expenses or no payment may be made for such materials. Should any dispute or differences arise after the execution of any work as to measurements etc or other matters which cannot be conveniently tested or checked, the notes of the University shall be accepted as correct and binding on the contractor.

45. ESCALATION

The rate quoted shall be the final and firm throughout the tenure of the contract (including extension of time, if any, granted) and will not be subject to any fluctuation due to increase in cost of materials, labour, GST, etc.

46. IDLE LABOUR

Whatever the reasons may be, no claim for idle labour, additional establishment cost of hire and labour charges of tools and plants would be entertained under any circumstances.

47. SUSPENSION

If the contractor except on account of any legal restraint upon the University preventing the continuance of the work or in the opinion of the University shall neglect or fail to proceed with due diligence in the performance of his part of the contract if he shall more than once make default, the University shall have the power to give notice in writing to the contractor requiring the work be proceeded within a reasonable manner and with reasonable despatch, such notice purport to be a notice under this clause.

After such notice shall have been given the contractor shall not be at liberty to remove from the site of the works or from any ground contiguous thereto any plant or materials to subsist from the date of such notice being given until the notice shall have been complied with. If the contractor shall fail for 7 (seven) days after such notice has been given to proceed with the works as therein prescribed, the University may proceed as provided as provided in c1ause 49 (Termination of contractor by University).

48. TERMINATION OF CONTRACT BY UNIVERSITY

If the contractor being a company go into liquidation whether voluntary or compulsory or being a firm shall be dissolved or being an individual shall be adjudicated insolvent or shall make an assignment or a composition for the benefit of the greater part, in number of amount of his creditors or shall enter into a Deed or arrangement with his creditors, or if the Official Assignee in insolvency, or the Receiver of the contractor in insolvency, shall repudiate the contractor if a Receiver of the contractor's firm appointed by the court shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction of the University that he is able to carry out and fulfill the contract, and

if so required by the University to give reasonable security therefore or if the contractor shall suffer execution to be issued, or shall suffer assign charge or encumber this contract or any payments due or shall neglect or fail to observe and perform all or any of the acts matters of things by this contract, to be observed and performed by the contractor within three clear days after the notice shall have been given to the contractor in manner hereinafter mentioned requiring the contractor to observe or workmanship in carrying on the works, or shall in the opinion of the University not exercise such diligence and make such due progress as would enable the work to be completed within due time agreed upon and shall fail to proceed to the satisfaction of the University after three clear days notice requiring the contractor so to do shall have been given to the contractor as herein after mentioned, or shall abandon the contract, then and in any of the said cases, the University may notice in writing to the effect as herein after mentioned, but without thereby affecting the powers of the University of the obligations and liabilities of the contractor the whole of which shall continue in force as fully as if the contract, had not been so determined and as if the works subsequently executed had been executed by or on behalf of the contractor (without thereby creating any trust in favour of the contractor) further the University or his representatives, or servants, any enter upon and take possession of the work and all plants, tools, scaffoldings, sheds, machinery, steam and other power, utensils and materials lying upon premises or the adjoining lands or roads and sell the same as his own property ~r may employ the same by means of this own servants and workman in carrying on and completing the work or by employing any other contractors or other persons or person to complete the works, and the contractor shall not in any way interrupt or do any act, matter or things to prevent or hinder such other contractors or other persons or person employed from completing and finishing or using the materials and plants for the works when the works shall be completed, or as soon thereafter as conveniently may be, the University shall give notice in writing to the contractor to remove his surplus materials and plants and should the contractor fail to do so within a period of 14 days after receipt by him the University may sell the same by public Auction and shall give credit to the contractor for the amount so realised. Any expenses or losses incurred by the University in getting the works carried out by other contractors shall be adjusted against the amount payable to the contractor by way of selling his tools and plants or due on account of work carried out by the contractor prior to engaging other contractors or against the security Deposit.

49. VALIDITY OF PRICE

The contractor shall have no right to ask for alteration of the rates, terms and conditions quoted by the contractor and shall be final and to be subsisting and valid for execution of the work.

50. LOWEST TENDER

The University shall have the right to reject any or all the tenders and will not be bound to accept the lowest or any tender and the tenderer or tenderers shall have no right to question the acts of the University in this respect.

51. WATER SUPPLY, LATRINE ETC

The selected tender shall make his own arrangements at his own costs for the supply of approved quality water required for construction and for drinking purposes and shall provide at his own costs all tubes, tanks, fittings and temporary plumbing works required and on completion of the works, shall remove all temporary appliance and make good any work disturbed for making such arrangements to the satisfaction of the owner.

52. POWER

The contractor shall make his own arrangements for power and supply system for driving plant or machinery for the work and for lighting purpose at his own cost. The cost for running and maintenance of the plants are to be included in his tender prices. He shall pay all fees and charges legally demandable and include the same in his tendered rates and hold the University free from all such costs. Contractor will pay against the consumed Electrical energy charges as per sub-meter reading, as and when asked/raised by the University.

53. METHOD OF MEASUREMENT

a: Unless otherwise mentioned in the Schedule of Quantities measurement will be on the net quantities or work produced in accordance with upto date rules laid down by the Indian Standard Institution(as per SP 27 1987). In the event of any dispute with regard to the measurement of the work executed, the decision of the University shall be final and binding on the contractor.

b: The rates quoted by the tenderer shall include for all heights.

54. ACTION WHERE NO SPECIFICATION

In the case of any class of work for which there is no such specification in

Technical specification, such work shall be carried out in accordance with the I.S. Specification, and then in such case the work shall be carried out in all respects in accordance with the instructions and requirements of the concerned Engineer-In-Charge.

55. CONTRACTOR NOT TO DEPOSIT MATERIALS IN A MANNER THAT MAY INCONVENIENCE TO THE PUBLIC

The contractor(s) shall not deposit materials on any site which will seriously inconvenience the public. The Engineer in-charge of the Project may require the contractor to remove any materials, which are considered by him to be a danger or inconvenience to the public or cause them to be removed at the contractor's cost.

56. LIQUIDATED DAMAGES

Should the work be not completed to the satisfaction of the University's Engineer in-charge of the Project within the stipulated period, the contractor shall be bound to pay to the University's sum Calculated as given below by way of liquidated damages and not as penalty during which the work remains uncommenced or unfinished after the expiry of the completion date.

a) For contractor having time for completion 6 months and less.	1% of the estimated amount shown in the tender per week subject to a ceiling of 10% of the accepted contracted sum.
b) For contractors having in the time of completion exceeding 6 months but not exceeding 2 years (24 months).	0.50% of the estimated amount shown in the tender per week subject to a ceiling of 7.5% of the accepted contracted sum.
c) For contracts having time for completion in excess of 2 years.	0.25% of the estimated amount shown in the tender per week subject to a ceiling of 5% of the of the accepted contracted sum.

57. ACTION WHEN WHOLE OF SECURITY DEPOSIT IS FORFEITED

In any case in which under any clause or clauses of this contract, the contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit (whether paid in one sum or deducted by installments) the University shall have power to adopt any of the following courses

as they may deem best suited to the interest of the University:

a) To rescind the contract (of which rescission notice in writing to the contractor under hand of the University through Architect shall be conclusive evidence), and in which case the security deposit of the contractor shall stand forfeited and be absolutely at the disposal of the University.

b) To employ labour paid by the University and to supply materials to carry out the work, or any part of the work, debiting the contractor with the cost of the labour and price of material (of the amount of the which cost and price of a certificate of the University shall be final and conclusive against the contractor) and crediting him with the value of the work done, in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of this contract the certificate of University as to the value of the work done, shall be final and conclusive against the contractor.

c) To measure up the work of the contractor, and to take such part thereof as shall be unexecuted, out of his hands, and to give it to another contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (of the amount of which excess the certificates in writing of the University shall be final and conclusive) shall be borne and" paid by the original contractor and may be deducted from any money due to him by the University under the contract of otherwise, or from his security deposit or the proceeds of sale thereof, or a sufficient part thereof.

In the event of any above courses being adopted by the University the contractor shall have no claim to compensation for any loss sustained by him reasons of his having purchased or procured any materials or entered into any engagements, or make any advances on account of, or with a view to the execution of the work or the performance of the contract. And in case the contract shall be rescind under the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum or any work thereto for actually performed under this contract, unless, and until the University will have certified in writing the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified.

58. NO COMPENSATION FOR ALTLERATION IN OR RESTRICTION OF WORK TO BE CARRIED OUT

If at any time after the commencement of the work, the University shall for any reason whatsoever not require the whole work thereof as specified in the tender to

be carried out the University shall give notice in writing of the fact to the contractor who shall have no claim to any payment or compensation whatsoever on account of any profit or advantage with which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out; neither shall he have any claim for compensation by reason of any alterations having been made in the original specification, drawing, designs and instructions which shall involve any curtailment of the work as originally contemplated.

59. GUARANTEE FOR THE SPECIALISED WORKS

The contractor shall submit a Performance Guarantee from the Specialised Agency for specialized works like Fire Fighting Works, Plumbing, Air-Conditioning, anti-termite treatment, waterproofing treatment to basement, toilets/baths., terrace slab etc and all inclusive item is provided in the tender for the works without giving detailed specifications. The specialised works are being executed through respective Specialised Agency by the Main Contractor after the specified Employments are duly approved by the University's Engineer in-charge of the Project. The Main contractor is bound to furnish this Guarantee to the University as the University as the main contractor is equally responsible for the performance of the Specialist Firm. Main Contractor will also provide separate Guarantee for the similar works undertaken directly by them.

60. METHOD TO QUOTE RATES

A tenderer is to quote rate in ink in both words and figures in English. In case of any variation the rates quoted in words in the original copy of the tender shall only be valid. The tender shall be clearly and legibly written and whole writing must be by the hand of the person signing the tender and with the same pen and ink. Failure to do so may invalidate the tender. Erasing or overwriting shall not be allowed. Corrections in the tender should be avoided and if this becomes unavoidable, the entire rate (and not a portion only) shall be scored out and signed (not simply initialed) by the tenderer as token of such cancellation. A fresh rate in specified manner shall them be correctly written. Wherever the rates quoted are in rupees the word only should be invariably added after amount in words, found in the copies of tenderers, the rates mentioned in words in the tender copy marked "original" will only be considered.

61. INCOME TAX/GST ON WORKS CONTRACT

Statutory deduction of Income Tax/GST shall be made from all R/A and final payments and remitted to the Central Government towards provisional Income Tax, GST of the Contract in accordance with the Government notification.

62. SAFTY REGULATION

Contractor shall abide by the Safety Regulations for factory act and other rules and regulations of related authorities.

63. AGREEMENT

The successful contractor will be required to enter into an agreement in accordance with the Draft Agreement form enclosed & the schedule of conditions within 15 days from the date of the contractor is advised by the University that his tender has been accepted and he shall pay for all stamps & legal expenses incidental thereto. However, the written acceptance by the University of a tender will constitute a binding contract between the University and the person so tendering whether such formal agreement is or is not subsequently executed.

64. ARBITRATION

All disputes or differences of any kind whatsoever which shall at any time arise between the parties hereto touching or concerning the works or the execution or maintenance thereof of this contract or the rights touching or contract or the construction remaining in operation or effect thereof or to the rights or liabilities of the parties or arising out of or in relation thereto whether during or after determination, foreclosure or breach of the contract (other than those in respect of which the decision of any person/persons is by the contract expressed to be final & binding) shall after written notice by either party to the contract to the other or them and to the Appointing Authority who shall be appointed for this purpose by the University be referred for adjudication to a sole Arbitrator to be appointed as hereinafter provided.

For the purpose of appointing the sole Arbitrator referred to above, the Appointing Authority will send within thirty days of receipt by him of the written notice aforesaid to the contractor sole arbitrator, who shall be unconnected with the organization for which the work is executed from the following categories of Arbitrators:

1. Retired High Court/Supreme Court Judges, who have experience in handling Arbitration cases.
2. Member of the Council of Arbitrations.
3. Fellow of the Institution of Engineers.
4. Eminent Retired Chief Engineers from State/Central P.W.D./Public Sector undertakings of good reputation and integrity.
5. Fellow of the Indian Institute of Architect.

The contractor shall on receipt by him of the names as aforesaid, select anyone of the persons named to be appointed as a sole Arbitrator and communicate his name to the Appointing Authority within thirty days of receipt of the names. The Appointing Authority shall there upon without any delay appoint from the above person as a sole arbitrator. If the contractor fails to communicate such selection as provided above within the period specified the Appointing Authority shall make the selection and appoint the selected person as the Sole Arbitrator.

If the Appointing Authority fails to send to the contractor the name of the arbitrator within the stipulated period, the contractor shall send to the Appointing Authority a name of the arbitrator from the above mentioned 5 categories of Arbitrators who shall be unrelated in whatsoever manners with either of the parties. The appointment authority shall on receipt by him of the names of aforesaid select any one of the persons named and appoint him/her as the sole Arbitrator. If the Arbitrator so appointed is unable or unwilling to act or resigns from his appointment or vacates his office due to any reason whatsoever another sole Arbitrator shall be appointed as aforesaid.

The work under the Contract shall, however, continue during the arbitration proceedings and no payment due or payable to the contractor shall be withheld account of such proceedings.

The Arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties fixing the date of the first hearing.

The Arbitrator may from time, to time with the consent of the parties, enlarge the time for making and publishing the award.

The Arbitrator shall give a separate award in respect of each disputes or difference referred to him. The Arbitrator shall decide each dispute in accordance with the terms of the contract and give a reasoned award. The seat and venue of arbitration proceedings shall be New Delhi only. The award of the Arbitrator shall be final and binding on both parties.

It is also a term of the contract that if contractor (s) do/does not make any demand for arbitration in respect of any claim(s) within 90 days of receiving intimation

from University that the bill after due verification is passed for payment of a lesser amount, or otherwise the contractor's right under this agreement to refer to arbitration shall be deemed to have been forfeited and University shall be relieved and discharged of their liability under this agreement in respect of such claim(s). Further it is agreed that for the purpose of this clause, such notice is deemed to have been received by the contractor(s) within 2 days of posting of the letter by University or when delivered by hand immediately after receipt thereof by the contractor (s), whichever is earlier. Further a letter signed by the officials of University that the letter was so posted to the contractor(s) shall be conclusive.

Subject to aforesaid the provisions of the Arbitration Act or any statutory modification or re-enactment thereof and the rules made there under, and for the time being enforce, shall apply to the Arbitration proceeding for the purpose of this clause.

65. TEST CERTIFICATE

The Electrical contractor shall have to furnish manufacturer's test certificates, if asked by the concerned Engineer-In-Charge for particular material/materials brought at site for incorporation in work.

Certificates of High Voltage Insulation Tests, Conductivity Test and any other required as per specifications are to be procured and furnished by the Electrical Contractor.

66. LICENSEES REQUIREMENTS ETC.

The contractor should ensure that all installations conform to Local/Statutory Regulations and requirements. In case of any deficiency /discrepancy or contradictions found in the Technical specifications or Schedule of Items, these shall be immediately brought to the notice of the University and the same should be got modified before execution of the work.

67. SAFETY CODE FOR ELECTRICAL WORK

The Safety code will be as per Indian Electricity Rules 1956 and subsequent amendments made upto date and as 'per various prevailing I.S. codes of practice for Electrical Installation.

Temporary Electrical Wiring shall be done in the manner as advised by the University with necessary supports when drawn overhead and proper clamping/fixing and should conform to requirement of Indian Electricity rules,

various I.S. Code of practice for Electrical Installation and Local Regulations.

68. DECLARATION

I/We have inspected the site of works and have made me/us fully acquainted with the local conditions in and around/vicinity of the sites of works. I/We hereby declare that I/We have gone through the conditions laid down in the Notice Inviting Tender, General Condition of Contract, Technical specifications and understood the same and on the basis of the same I/We quoted our rates in the schedule of quantities attached with the tender documents. I/We shall also uniformly maintain such progress with the work, as may be directed by the University to ensure completion of same within the target date as mentioned in the tender documents that after completion of said work, a completion certificate will be issued by the University for the full and final works completed, remaining or incompleted works (in any), and in relation to this the full and final payments made, remaining, if any. Henceforth, the parties after the issuance of completion certificate and after passing of 30 days shall have no complaints against each other, "whatsoever".

Witness:

Signature of Tenderer
Address:

Date:

LIST OF APPROVED MAKES
CIVIL WORK

S. No.	Description	Approved Brand/Manufacturer
1.	Cement	A.C.C., L&T, Raymond Cement, Birla-Maihar.
2.	Reinforcing Steel	Tisco, Sail, BSNL or any other ISI approved manufacturer.
3.	Glazed Vitrified Tiles	Somany, Kajaria, Nitco, Orient, or equivalent approved make and approved by Engineer In-charge
4.	Ceramic Tiles-Floor & Dado	Kajaria, Orient, Somany or equivalent approved make and approved by Engineer In-charge
6.	Vitrified Tiles	Somany, Kajaria, or equivalent approved make and approved by Engineer In-charge
5.	Flush Door Shutters & Plywood.`	National Plywood Industries Ltd., Kitply Industries Ltd., Green Ply Industries Ltd., Duro, Century.
6.	Mortice Lock & Handles	Harrison, Link, Door Set or equivalent as approved by the Engineer in-charge.
7.	Water Proofing Compound	Patent Product of Snowcem India, Chemseal, Vam Organics, Cico, or equivalent make.
8.	Hardware-Aluminium	Hindalco, Jindal or equivalent make of approved design, brand, quality & Manufactured with ISI mark.
9.	Synthetic Enamel Paints, Distemper	ICI, Berger Paints (India) Ltd., Jenson & Nicholson (India) Ltd., Asian Paints Ltd., Shalimar Nerolac.
10.	Water Proof Cement Paint	Berger, Asian, Nerolac or equivalent approved quality.
11.	Glazing	St. Gobain, Modifloat, M/s Triveni Glass or equivalent of approved quality.
12.	Door Closer	Godrej, Hettich, Ebco, Ozone or equivalent approved make.
13.	Chequered Tiles and	Hindustan, Modern, KGS, NItco, or equivalent as

	interlocking Paver Block, Kerb Stone	approved by the Engineer in-charge.
14.	Lamination	Greenlam, Marino, Century or equivalent as approved by the Engineer in-charge.

LIST OF APPROVED MAKES OF MATERIALS
Plumbing Work

SI. No.	Materials No.	Brand Name
1.	Vitreous china sanitary ware	Kohler, Jaquar ,Hindware
2.	Hand drier	Kopal
3.	Sensor operated flush valve & basin mixer	AOS ,ASR
4.	Plastic WC seats	Commander, Diplomat, Bestolite
5.	Stainless steel sinks	Jayna Niikanth
6.	CP fittings	Jaquar, Kohler, Hindware, Parko
7.	CP accessories	Akoi, Essco, Jaquar, Parko
8.	Soil, waste, vent pipes &, fittings	Prince, Supreme
9.	Water Supply uPVC pipes	TATA ,Jindal, Surya
10.	Gunmetal ball valves (Full way check and globe valves)	Zoloto ,Leader ,Sant
11.	Gunmetal ball valves	RB, Audco, Leader
12.	Stoneware pipes & gully trap	Perfect, Burn
13.	RCC pipes	Any IS Marked
14.	CI double flanged sluice valves	Kirloskar, alpna
15.	CI double flanged non-return valves	Same as sluice values
16.	CI manholes	BC,Kajeco,RIF
17.	Motors	Kirloskar, ABB, Siemens, Crompton Greaves

LIST OF APPROVED MAKES
Electrical Work

S.No.	Details of Materials	Manufacturer's Name
	INTERNAL ELECTRICAL WORKS	
(A)	**INTERNAL WIRING:**	
1.0	PVC Conduit and Conduit Accessories	BEC / AKG / Polypack / Poecision / Anchor
2.0	MS Conduit	BEC/ AKG / Poecision
3.0	MS Conduit Accessories	Fitwell
4.0	PVC Insulated FRLS Copper Conductor wire	Havell's / Finolex / Polycab / Skytone
5.0	Modular type Switches / Sockets / Boxes / Modular Cover plates / Fan regulator /Call Bell /G.I / MS Boxes	Clipsal / Crab Tree / Anchor Roma / North west/ Havells
6.0	MCB / ELCB / Double Door Distribution Boards	Legrand-Lexic/ L&T-Hager/ ABB/ Siemens/ Scheneider/ Havells
7.0	Industrial / weather Proof Sockets	Legrand-Lexic/ L&T-Hager/ ABB
8.0	Under floor channels / Trunking channels	M.K.India/ Legarand-MDS
9.0	Cable Tray	M.K.India/ AKG/Rico Steel/Neddo
10.0	Indoor LED Light Fixtures	Philips / Wipro /Havells
11.0	Lamps / FTL & CFL	Philips / Wipro/Havells
12.0	Ceiling Fans	Crompton Greaves (High Speed) / Havells(High Speed)
13.0	Exhaust fans	Havells / Crompton Greaves
14.0	Moulded Case Circuit Breaker (MCCB)	Schneider Electric-Compact NS / Larsen & Toubro / Seimens
15.0	Cable and Termination	Raychem / 3M Birla

16.0	Brass cable Glands	Dowells / Commet / Gripwell
17.0	Cable Joints	Raychem / Mahindra / M-Seal / cabseal
18.0	Thimbles	Dowells / Action
19.0	Any other Item	As approved by Executive Engineer

LIST OF APPROVED MAKES

(B)	**TELEPHONE WIRING**:	
1.0	Telephone Outlets (Modular type)	
a)	Telephone outlet-RJ-11	Clipsal / MK India / Crab Tree / Roma / North West
2.0	ABC/ ATC Telephone Wires (Armored and Un-Armored)	Finolex / Delton /Skytone /National
3.0	Telephone Tag Block	Krone
(C)	**CABLE TV. WIRING:**	
1.0	Co-Axial TV Outlets (Modular type)	Clipsal /MK India / Crab Tree /Roma
2.0	Co-Axial Cables	Finolex / Delton / Skyline / National
3.0	TV Splitter Box	As approved by Engineer in charge
(D)	**COMPUTER WIRING:**	
1.0	Computer RJ-45 Information Outlets	AT &T / Avaya / AMP / Penduit / Molex / Seimon
2.0	UTP Cat 6 Cable/ Patch Cords	Avaya / AMPs / Molex / Seimon
S.No.	**Details of Materials**	**Manufacturer's Name**
(E)	**MUSIC/P.A. SYSTEM WIRING:**	
1.0	PA/ Music System Speakers	Ahuja / Sony / Bosch
2.0	Volume Controller	Crab Tree / M.K.India / Clipsal / Philips / Ahuja / Bosch
3.0	Music System Wiring	Finolex/ Monster/ National/ Skytone / Delton Polycab
4.0	DVD Player	Sony/ Philips/ Samsung
(F)	**CCTV SYSTEM :**	
1.0	Cameras (Dome/ PTZ/NVR/IR)	Bosch/ American Dynamics/ Vantage/ Samsung/ Honeywell/ Drishti Electronic.
2.0	Digital Video Recorder	Bosch/ American Dynamics/ Vantage/ Samsung/ Honeywell/ Drishti Electronic.
3.0	Matrix Switcher	Bosch / American Dynamics/ Honeywell
4.0	Monitor	Bosch/ American/ Dynamics / HP / Samsung / Honeywell
5.0	Displays 18.5 inch	Samsung/Dell/LG
6.0	Displays 32 inch	Panasonic/Samsung/Sony
7.0	Enrollment Unit	RBH/LENNEL/GE

8.0	EM-Lock	BELL/ALGETEC/Dorma
9.0	Electronic Push Button Panic Switch	BELL/ALGETEC/Dorma
10.0	Workstation PC/SERVER	IBM/HP/Dell
11.0	Controller, Reader EM-Lock	RBH/LENNEL/GE BELL/ALGTEC/DORMA
12.0	Boom Barrier & Flap Barriers	Gunnebo/Faac/Magnetic/Kaba
13.0	Any other Item	As approved by Engineer Incharge

LIST OF APPROVED MAKES

S.No.	Details of Materials	Manufacturer's Name
(G)	**FIRE ALARM SYSTEM (Conventional):**	
1.0	Main Fire Alarm Panel / Zonal Panels	AGNI/ Wizmart / Edward / System Sensor/ Cease Fire / Siemens / System Tek
2.0	Smoke Detector / Heat Detector	AGNI/ Wizmart / Edward / System Sensor / Appollo / Hochiki / Cease Fire / Siemens / System Tek
3.0	Response indicators	AGNI/ Wizmart / Edward / System Sensor / Appollo / Hochiki / Cease Fire / Siemens / System Tek
4.0	Manual Call Point	AGNI / Wizmart / Edward / System Sensor / Appollo / Hochiki / Cease Fire / Siemens / System Tek
5.0	Hooter	AGNI/ Wizmart / Edward / System Sensor / Appollo / Hochiki / Cease Fire / Siemens / System Tek / Philips / Ahuja
6.0	MS Conduit and Conduit Accessories	BEC / AKG
7.0	PVC Insulated FR / FRLS Copper Conductor Wire	Finolex / Havell's / LAPP / National / Anchor
(H)	**Panels:**	
1.0	LT Panel/ Panel Manufacturers	Advance Panels and Switchgears (P) Ltd, (Narela) / Tricolite / Adlece / Unilec / Jackson Engineers.
2.0	Air Circuit Breaker (3/4 pole)	Schneider Electric-Enerpact / Larsen & Toubro / Seimens
3.0	Moulded Case Circuit Breaker (MCCB)	Schneider Electric-Compact NS / Larsen & Toubro / Seimens
4.0	Voltage Surge Protection Devices	MDS / L&T / Seimens / Schneider
5.0	Protection Relay	
a)	Numeric Type	Alstom / Asea Brown Boveri / Siemens / L&T
6.0	Rising Mains & Busduct	Zeta / Control & Switchgear/ GE/ United Electric
a)	Electromagnetic type	Alstrom / Easun Reyrolle / L&T
7.0	Overloaded with built in Single Phase preventer	Schneider Electric (Telemechanique) / Asea Brown Boveri / Larsen & Toubro / Siemens

8.0	Automatic power factor correction relay	Siemens (EPCOS) / Enercon / L&T
9.0	Power / Auxiliary Contractor	Schneider Electric (Telemechanique) / Asea Brown Boveri / Larsen & Toubro / Siemens / GE
10.0	Capacitor Duty Contractor	Schneider Electric (Telemechanique) / Asea Brown Boveri / Larsen & Toubro / Siemens / GE
11.0	On/ Off Load Change Over Switch	H H Elcon / HPL – Socomec
12.0	Current / Potential Transformer	KAPPA / ESC / Pragati / L&T/ Siemens
13.0	Power Capacitor	Mehar (L&T) Siemens (EPCOS)
14.0	Mechanical Interlock with Links & Contract	(Reputed Make)
15.0	Busbar Support	Nomex / Power Mex
16.0	Connector	Elemox / L&T Cromeford /Wago
17.0	Terminal Block	Elmex / Toshiba / Wego
18.0	Current / Terminal Strip	Connectreed
19.0	Crimping Type Lugs	Dowells / Jainsan
(20.0)	Indication Meters/Instruments	
a)	Electronic Digital Meters (A/V/PF/Hz/KW/KWH) with LED Display	Enercon / Rishabh / Corbane / AE / Hanger (L&T)
b)	Analog Meters (A/V/PF/Hz/KW/KWH)	MDS (Legrand) / Merlin Gerin / Meco / Rishabh (L&T)
21.0	Time Switch	L&T / MDS / Siemens / GE
22.0	LED type Indicating lamps	L&T (ESBEE) / MDS / Siemens / Schneider (MG) / C&S
23.0	Push Button Actuators	L&T (ESBEE) / MDS / Siemens / Schneider (MG) / C&S
24.0	Toggle Switch	Salzer (L&T) / MDS / Schneider (MG) / C&S / Seimens
25.0	Energy Analyzer	Enercon / L&T / Schneider
26.0	LT Cable PVC / XLPE Insulated	Havell's / Nicco / Polycab
27.0	Cable and Termination	Raychem / 3M Birla
28.0	Brass cable Glands	Dowells / Commet / Gripwell
29.0	Cable Joints	Raychem / Mahindra / M-Seal / cabseal
30.0	Thimbles	Dowells / Action
31.0	Any other Item	As approved by Engineer Incharge
(I)	**<u>UPS SYSTEM: (OPTIONAL)</u>**	
1.0	UPS (UL listed)	AROS (PCI) / Liebert (EMERSON) / Powerware / Merlin Gerin / EATON / Mitsubishi
2.0	Battery (UL listed)	Exide/Panasonic/ Yuasa Standard/Amron
3.0	Any other Item	As approved by Engineer Incharge

LIST OF APPROVED MAKES

S.No.	Details of Materials	Manufacturer's Name
	Air Conditioning work	
1.0	AC Split type	Daikin/O General
2.0	Cassette Type	Daikin/O General/Mitsubishi
3.0	Voltage Stabilizer	Blue Bird/Logic stat
4.0	Axial flow fan	Daikin/Samsung/Mitsubishi Electric / L.G / Bluestar
5.0	Inline fan	Krugar/Nicotra/Greenheck/Airflow/Conaire
6.0	Fresh air blower	Systemair /Greenheok/Ostberg
7.0	VFD for AHUs	Krugar/Nicotra/Greenheck
8.0	Power cables	Havells/Plolycab/Finolex
9.0	Push button starters	Siemens/Control and Switchgear/Cutler Hammer/Victory Enterprises
10.0	Any other Item	As approved by Engineer Incharge

Bill of Quantities of Civil Works

Name of Work: - Left over work of Renovation works of Scholars House Jamia Hamdard.

S.No	Description of work	Qty	Unit	Rate	Amount
(A)	**Civil Work**				
1	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-incharge. All kinds of soil cum	20.00	Cum		
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	15.00	cum		
3	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including getting out and disposal of excavated earth upto 50 m and lift upto 1.5 m, as directed by Engineer-in-Charge: All kinds of soil	200.00	sqm		
4	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m. All kinds of soil	200.00	Sqm		
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	2.00	cum		
6	1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	7.00	cum		

7	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	50.00	Sqm		
8	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	18.00	Cum		
9	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement : 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	5.00	Cum		
10	Centering and shuttering including strutting, propping etc. and removal of form for Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.				
11	Suspended floors, roofs, landings, balconies and access platform	70.00	Sqm		
12	Lintels, beams, plinth beams, girders, bressumers and cantilevers	60.00	Sqm		
13	Columns, Pillars, Piers, Abutments, Posts and Struts	50.00	Sqm		
14	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level. Cold twisted bars	4,000.00	Kg		
15	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: Cement mortar 1:6 (1 cement : 6 coarse sand)	8.00	cum		

16	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	20.00	Cum		
17	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level. Cement mortar 1:4 (1 cement :4 coarse sand)	75.00	Sqm		
18	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	75.00	Sqm		
19	Brick work with common burnt clay selected F.P.S. (non modular) bricks of class designation 7.5 in exposed brick work including making horizontal and vertical grooves 10 mm wide 12 mm deep complete in cement mortar 1:6 (1 cement : 6 coarse sand) Above plinth level upto floor V level	3.50	Cum		
20	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade Area of slab over 0.50 sqm	35.00	Sqm		
21	Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge. 18 mm thick Italian Marble stone slab,Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	6.00	sqm		

22	Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with : Makrana white second quality (Granite)	30.00	Sqm		
23	Extra for pre finished nosing to treads of steps of marble stone.	15.00	metre		
24	Extra for marble stone flooring in treads of steps and risers using single length up to 2.00 metre.	10.00	sqm		
25	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. Granite work	40.00	Rmt		
26	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	16.00	Rmt		
27	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	10.00	Each		
28	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	300.00	Sqm		
29	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineerin- Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	100.00	Sqm		

30	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately). Second class teak wood	1.25	cum		
31	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters: 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	32.00	Sqm		
32	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality. 1.0 mm thick	64.00	sqm		
33	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	32.00	Sqm		
34	Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 35 kg and door width upto 700 mm), with necessary accessories and screws etc. complete.	10.00	Each		
35	Providing and fixing fly proof stainless steel grade 304 wire gauge, to windows and clerestory windows using wire gauge with average width of aperture 1.4 mm in both directions with wire of dia. 0.50 mm all complete. With 2nd class teak wood beading 62X19 mm	20.00	Sqm		
36	Providing and fixing bright /matt finished Stainless Steel handles of approved quality & make with necessary screws etc all complete. 125 mm	10.00	Each		
37	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	400.00	Kg		

38	Providing & fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with : 4.0 mm thick glass panes	20.00	Sqm		
39	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete. 40 mm thick with 40 mm nominal size stone aggregate	40.00	Sqm		
40	Providing and laying rectified Glazed Ceramic floor tiles (anti skid) of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	32.00	Sqm		
41	Providing and laying vitrified floor anti skid tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm	400.00	Sqm		

42	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. termediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :				
	12.5 mm thick tapered edge gypsum moisture resistant board	110.00	Sqm		

43	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all Tsections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge				
44	GI Metal Ceiling Lay in plain Tegular edge Global white color tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	45.00	Sqm		

45	Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calicum silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T', bottom exposed with 24 mm of all Tsections shall be pre-painted with polyster baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge.	280.00	Sqm		
46	12 mm cement plaster of mix : 1:6 (1 cement: 6 fine sand)	175.00	Sqm		
47	15 mm cement plaster on rough side of single or half brick wall of mix: 1:6 (1 cement: 6 coarse sand)	125.00	Sqm		
48	15 mm cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement on the rough side of single or half brick wall.	30.00	Sqm		

49	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade: New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	175.00	Sqm		
50	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	90.00	Sqm		
51	French spirit polishing : Two or more coats on new works including a coat of wood filler	100.00	Sqm		
52	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	700.00	Sqm		
53	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	500.00	Sqm		
54	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade : Two or more coats on new work	700.00	Sqm		
55	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade: One or more coats on old work	1,500.00	Sqm		
56	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq.meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineerin-Charge. With cement mortar 1:4 (1cement: 4 coarse sand)	100.00	Sqm		

57	Fixing chowkhats in existing opening including embedding chowkhats in floors or walls cutting masonry for holdfasts, embedding hold fasts in cement concrete blocks of size 15 x 10 x 10 cm with cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size), painting two coats of approved wood preservative to sides of chowkhats and making good the damages to walls and floors as required complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge. Door chowkhats	4.00	Each		
58	Renewing glass panes, with wooden fillets wherever necessary: Float glass panes of nominal thickness 5 mm (weight not less than 12.5kg/sqm)	20.00	Sqm		
59	Renewal of old putty of glass panes (length)	10.00	Sqm		
60	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	3.00	cum		
61	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer- in- charge.	14.00	sqm		
62	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	5.00	cum		
63	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar	13.00	Cum		
64	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead : Of area 3 sq. metres and below	8.00	Each		
65	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead. For thickness of tiles 10 mm to 25 mm	10.00	Sqm		
66	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead.	50.00	Sqm		

67	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	25.00	Sqm		
68	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of: (i) Ist course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. (ii) IInd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. (iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area. (iv) IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm).	50.00	Sqm		
69	Chequered terrazo tiles 22 mm thick with graded marble chips of size up to 6 mm in floors, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) : Light shade pigment using white cement	100.00	Sqm		
70	kota stone Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	60.00	sqm		
71	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : New work (two or more coats) over and including water thinnable priming coat with cement primer	1,500.00	sqm		
72	Dismantling of flushing cistern / W.C /sink of all types (C.I./PVC/Vitrious China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.	2.00	Each		

73	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : In 75x75 mm deep chase	65.00	Rmt		
74	Providing precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand(zone-III) : 4 graded stone aggregate 6mm nominal size), reinforced with 1.6 mm dia mild steel wire, including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete, excluding plastering of the jambs, sills and soffits. 50mm thick	24.00	Sqm		
75	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge : Using rough Kota stone	30.00	sqm		

76	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. (b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water roofing compound conforming to IS : 2645 and approved by Engineerin- charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineerin-charge to required slope and treating similarly the adjoining walls upto 300 mm height ncluding rounding of junctions of walls and slabs. (c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. (e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test.“All above operations to be done in order and as directed and specified by the Engineer-in-Charge : With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	300.00	sqm		

77	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, hannels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	75.00	kg		
78	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for ayment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	8.00	cum		
79	Demolishing mud phaska in terracing and disposal of material within 50 metres lead.	35.00	cum		
80	Disposal of building rubbish / malba /construction waste materials and soil etc. similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.(within campus primises)	500.00	cum		
81	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
	75 mm diameter	50.00	Rmt		
	110 mm diameter	75.00	Rmt		

82	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
	75mm	10.00	Each		
	110mm	15.00	Each		
83	Anti termite treatment with injecting of solution, drilling holes of 10-20cm deep at every 60cm along the rooms, corridor, dininmg hall, kitchen , all wooden doors and chokhat complete as reqired with necessary specifications including bats treatement and outer area of the primises.(payment on the bases of covered area)	2,300.00	Sqm		
84	Providing and fixing the aluminum Door with extruded built up standard tubular sections of size top, vertical and middle 3.25"x1.75" of 14 gauge, fixing with dash fasteners of quired dia and size, including necessary filling up the gaps at junctions i.e at top ,bottom and sides with required EPDM rubber/neoprene gasket etc .Aluminium sections shall be mooth ,rust free, straight, mitered and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing /paneling ,c.p brass/stainless steel screws, all complete as per the direction of Engineer in charge. The door having the 5mm thick glass on top and on bottom 12 mm thick particle board of approved color including p/f the aluminium tower bolt, al-drope. door stopper complete as required.	45.00	Sqft		
85	Rebarring of . Reinforcement /Steel bar in existing RCC slab / beam/ column / similar location by applying and fixing the bar with Hilti chemical of approved strength complete as required .				
	8 mm	50.00	Each		
	10 mm	200.00	Each		
	12 mm	10.00	Each		
	16 mm	24.00	Each		
	20 mm	72.00	Each		

	25 mm	3.00	Each		
86	Providing the core cutting on existing RCC complete as required.				
	75 mm	8.00	Each		
	100mm	10.00	Each		
87	Providing and fixing aluminum 2mm anodized colour 25 microns sliding window Euro profile run over section of approx 50mm x 47 mm outer frame with frame fastner of Hilti as per detail given in drawing. The window shall be provided complete accessories like locking handle, Nib, Counter plate, Drainage Hole cover, Antidust Plug, Machining plug Shoulder aligning Square, Shock absorber, Corner Cleats, EPDM rubber gaskets, of approved make. The gaps will be filled by 3M expandable polystyrene and finished with Silicon of approved make colour. 6 mm thick plain float glass (Saint Gobainfloat glass)/ ACP sheet/ Navapan board as per approved by Architect. Before execution shop drawings shall be prepared by contractor and approved by Architect. Net area shall be measured as per drawings for billing. 3-Track sliding window with SS mesh	16.00	sqm		
88	Providing and fixing Brick tile cladding (Splindor make Sleek 230X40X20 mm in terracotta shade) over 12 mm thick rough plaster broomed finished 1:3 (1 cement :3 coarse sand). Basic rate of tile is upto Rs.1725 per sqm	50.00	Sqm		

89	P/Fwall panelling, 900mm high (or as per design), with MS hollow section (18 gauge) framework – 25 mm x 25 mm in max. 600x600 mm C/C in both direction as required. Partition shall be provided with 10 mm thick MDF board of approved quality duly screened & fixed on the faces on the MS framework. finished 4mm thick veneer of approved shade & quality of partition with necessary horizontal and vertical grooves 6/4mm(as per design) finished duly with matching colour matt melamine polish, putty etc. The skirting shall be 100 mm high & 12 mm recessed skirting as per design of MS section BWP 8mm ply finished. The skirting shall be 100 mm & 14 mm recessed skirting as per detail of MS section BWP 8mm ply finished with metallic laminate 1 mm thick of approved manufacture and shade. Edging will be done using 20 mm x 3/4 mm Rubber wood.	88.00	Sqm		
90	Providing & fixing 12mm thick clear toughen glass partition with SS patch fitting (Overpanel side patch, connector for overpanel/ sidepanel, bottom patch, top patch, corner patch lock, Wall to Glass connectors-one/ two panel, Glass to Glass onnector- two panel, over panel connector with required accesseries) of approved make & size with lock) of given size (as par drawing & detail) with the door opeing of size 750 x2100mm (or as per standard) . Joint shall be filled with clear silicon complete in all asspect.	48.00	Sqm		
91	Providing and fixing door lock with handle of Door set make complete as required.	10.00	Each		
92	Providing and fixing s.s tower bolt of 200mm in sice complete as required.	10.00	Each		
93	Providing and fixing 8 mm dia **C.P. / S.S. Health faucet** with flexible tube upto 1 metre long with hand spray of quality and make as approved by Engineer - in - charge.	3.00	Each		

94	Providing & fixing of fresh color Restroom cubicles System of thickness of compct aminated board 12mm, sigle color HPL Board (as approved). The size of cubicle 1000mm (W) x 1550mm (D) x 2003mm (H) with the door 1750mm (H) x 610mm (W), Overall Height Of Cubicle 2003 mm (Including bottom Gap of 150mm) Accessories: Standard – Aluminium, Stainless Steel - 304 Grade accessories)- a) Aluminium "U" Channel, b) Aluminium "F" channel , c) Aluminium Door Stopper Channel, d) Aluminium Top Rail, e) SS Coat Hook, f) SS Lock Set c/w Occupancy Indicator, g) SS Hinges with Cover, h) SS Adjustable Foot 316 Grade, i) Rubber Door Stopper Lining, j) S.S.Screws 304 Grade & P.V.C Wall Plugs, etc.Mock up to be approved prior to procurement.	3.00	Nos		
95	Providing & fixing of fresh partiyion of 50mm thickness of compct laminated board , single color HPL Board (as approved). The size of partition 900mm (W) x 2003mm (H) with the door opening 1750mm (H) x 610mm (W) (Including bottom Gap of 150mm) Accessories: Standard – Aluminium, Stainless Steel - 304 Grade accessories)- a) Aluminium "U" Channel, b) Aluminium "F" channel , c) Aluminium Channel, d) SS Hinges with Cover, h) SS Adjustable Foot 316 Grade, i) S.S.Screws 304 Grade & P.V.C Wall Plugs, etc.Mock up to be approved prior to procurement.	2.00	Each		
96	Dismentling of the existing concealed cistern and re-fixing the same including necessary cuttung the walls and repair the same complete as required.	2.00	Each		
	Total A				
(B)	**Bill of Quantities of Plumbing work**				
97	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.	3.00	Each		

98	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete. Flexible pipe 32 mm dia	8.00	Each		
99	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	8.00	Each		
100	Providing and fixing toilet paper holder : C.P. brass	3.00	Each		
101	Providing and fixing stainless steel A ISI 304 (18/8) **Kitchensink** as per IS : 13983 with CI bracket and stainless steel plug 40 mm including painting of fittings and brackets ,cutting and making good the walls wherever required: Kitchen sink with drain board 510 x 1040 mm bowl depth 200 mm	3.00	Each		
102	Providing and fixing CP Brass 32mm size **Bottle Trap** of approved quality & make and as per the direction of Engineer-in- charge.	8.00	Each		
103	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge.	2.00	Each		
104	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
	20 mm nominal outer dia Pipes	90.00	metre		
	25 mm nominal outer dia Pipes	75.00	metre		
	32 mm nominal outer dia Pipes	164.00	metre		
	40 mm nominal outer dia Pipes	100.00	metre		

105	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same ncluding testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
	20 mm nominal outer dia Pipes	75.00	Rmt		
	25 mm nominal outer dia Pipes	25.00	Rmt		
	32 mm nominal outer dia Pipes	20.00	Rmt		
106	Providing and fixing uplasticised PVC connection pipe with brass unions : 45 cm length 15 mm nominal bore	24.00	Each		
107	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10,000.00	per litre		
108	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 : 15 mm nominal bore	3.00	Each		
109	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 15mm nominal bore	24.00	Each		
110	Providing and fixing C.P. Brass extension nipple (size 15mmx50mm) of approved make and quality as per direction of Engineer-in-charge.	30.00	Each		
111	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design: 100x100 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	4.00	Each		

112	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone- III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design : Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	6.00	Each		
113	Supplying and fixing C.I. cover without frame for manholes : 455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	6.00	Each		
114	Supplying and fixing C.I. cover 300x300 mm without frame for gully trap (standard pattern) the weight of cover to be not less than 4.5 kg	4.00	Each		
115	Raising manhole cover and frame slab to required level including dismantling existing slab and making good the damage as required (Raising depth of manhole to be paid eparately) : Rectangular manhole 90x80 cm with rectangular cover 600 x 450 mm of grade LD - 2.5	5.00	Each		
116	Extra for depth for manholes : Size 90x80 cm With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	1.50	rmt		
117	Providing and fixing counter **top/under counter Oval shape wash basin** withh C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern including painting of fittings and brackets, cutting and making good the walls wherever require: White Vitreous China Wash basin size 580 x 430 mm	8.00	Each		

118	Providing and fixing PVC bend of required degree with access door, insertion rubber washer complete. 100 mm dia	3.00	Each		
119	Providing and fixing PVC plain bend of required degree. 100 mm dia	6.00	Each		
	75 mm dia	4.00	Each		
120	Providing and fixing PVC trap of self cleansing design with grating with or without vent arm complete, including cost of cutting and making good the walls and floors : 100 mm inlet and 100 mm outlet	10.00	Each		
121	Providing and fixing C.P cast brass **Double coat hook** fixed to PVC cleats with C.P. brass screws complete as per instructions of the engineer-in-charge. (Model No. Jaquar ACN 1161N or equivalent)	3.00	Each		
122	Providing and fixing 600mm long **CP Brass towel rail** complete with brackets fixed to wooden cleats with CP brass screws with concealed fitting arrangement of approved quality and colour. (Model No. Parryware T600A1 or equivalent)	5.00	Each		
123	Providing and fixing **vertical or horizontal storage type hot water heater** fixed to wall with anchor bolts & nuts, 15mm CP brass angle stop cock and 15mm CP brass non-return valve complete including making connections with 15mm dia CP connecting pipes on inlet and outlet, suitable length of power cable and 15 amps plug . 25 Litre Capacity	4.00	Each		
124	Providing and fixing concealed cistern capacity of 10 litre for installing of wall hung W.C. approved make is JAQUAR	1.00	Each		
125	Providing and fixing wash basin mixer of approved make is JAQUAR	8.00	Each		
126	Providing and fixing Floor trap C.P. jail of 125 mm Dia,	10.00	Each		
127	Providing and fixing PVC gate valve with wheel of approved quality (screwed end) :				
	25 mm nominal bore	5.00	Each		
	20 mm nominal bore	5.00	Each		

	32 mm nominal bore	5.00	Each		
128	Providing, laying and jointing PVC pipes class SP-1 including testing of joints etc. complete :				
	100 mm diameter	75.00	Rmt		
	150 mm diameter	50.00	Rmt		
129	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round pipes including bed concrete as per standard design :				
	100 mm diameter pipe	75.00	Rmt		
	150 mm diameter pipe	50.00	Rmt		
130	Providing and fixing CP brass soap dish of approved quality and make.	4.00	Each		
131	Providing and fixing CP brass soap dispenser of approved quality and make.	4.00	Each		
	Total (B)				
(C)	**Bill of Quantities of Fire Fighting work**				
	FIRE HAND APPLIANCES	-			-
132	Supply & erection of ISI marked CO2 Portable Fire extinguisher, Carbon-Dioxide type Flat base Horn Including Valve, High Pressure Rubber Wire Braided Discharge Hose of not less than 10 mm dia. & complete in all respects including initial fill with CO2 Gas confirming to IS:15222.				
	CO2 gas type. 4.5 kg. capacity	3.00	No.		
133	Supply & erection of ISI marked ABC MAP-90% Powder based Fire Extinguisher, Applicable Fire Class A, B & C, EPDM Rubber Hose, NRV Valve and Helium Leak Detection Tested, Internal Coating - Epoxy Powder and External Pure Polyester Powder Coated (UV resistant), IS 15683:2006 Marked.				
	ABC dry powder Type 6kg. capacity	5.00	No.		

134	Providing and fixing standard fire hose cabinet single/double door with required size of frame as per site or (suitable to fit in the duct made of not less than 16 SWG MS sheet having glass hinged door (5 mm thick glass) including necessary locking arrangement with handle as required as per standard specifictaion, including key box , brackets for mounting accessories, painting (one coat primer and two coats of fire red color). The door shall be fixed in the masonry wall or as required with Key Box. The words "FIRE HOSE" to be painted on the box. (for all internal & terrace FHC)	4.00	Nos		
135	Supply, fixing, testing & commissioning of 20 mm bore and 30 meter long hose Thermo plastic (Textile reinforced) fire hose pipe as per IS 12585) and hose reel, (The complete assembly shall be capable of withstanding the hydrostatic test pressure 21 kg/sqcm), for first aid fire fighting conforming to IS : 884, with 180^0 full swing drum, fixing brackets, 5 mm dia shut off SS nozzle, connecting directly from the riser through 40 mm dia. G.I. (Class C) pipe with sockets, elbows, nipples, 40x20 mm reducer, 20 dia pipe, 20 mm dia. hand lever operated isolating ball valve, etc. including providing operating instructions on a metal plate and fixing it near hose reel. The system shall be complete in all respects as per drawings and directions of Engineer-in-charge.	4.00	Nos		
136	Providing gun metal ISI marked 63 mm. dia. male Instantaneous pattern short Gun Metal branch pipes with 15 mm dia. Nozzle as per IS : 903, suitable for hydrostatic test pressure 21 kg/sqcm and suitable for interconnections to hose pipe coupling as required.	4.00	Nos		
137	Providing & fixing standard carbon steel fireman axe with rubber insulated handle tested to 415 Volts.	4.00	Nos		
138	Providing & fixing 100 mm dia dial pressure gauge with isolation valve including making connections with MS pipe complete in all respects	4.00	Nos		
139	Supply & installation of ISI marked single headed 63 mm dia. gun metal Hydrant Valve (Type A) suitable for hydrostatic test pressure of 21 kg/sqcm, 80 mm dia flanged inlet with 63 mm female instantaneous outlet confirming to IS : 5290 on the fire wet riser/down comer, including making 80 NB pipe connection with riser, fixing the landing valves in proper positions, including supply of nuts, bolts, gaskets, caps, chains etc. testing the hydrant and completing the work in all respect as per directions of the Engineer-in-charge.	4.00	Nos		
140	Supply & fixing in position ISI marked Ductile iron double flanged **butterfly valves,** as per IS:13095, (PN 10), with SS disc, shaft, seating rings, nitrile rubber lining, internal fastening, nuts, bolts including transporting to worksite, 3 mm thick rubber gaskets etc. including testing, Complete as per drawings & directions of the Engineer-in-charge.				
141	100 mm	2.00	No.		
142	80 mm	2.00	No.		

143	Supply & installation of cast iron body **2 way** 63 mm dia male instantaneous inlet coupling complete with inbuilt NRV, cap and chain for **fire brigade connection** conforming to IS : 904 and making connection with fire fighting pipe or under ground water tank, completing the work in all respect as per the directions of the Engineer-in-charge.	3.00	No.		
144	Providing & fixing **air release valve** with forged brass body full way ball valve type isolating valve, flanges / union, suitable for wet riser / down comer system with all necessary connections complete in all respects.				
	25 mm dia air release valve	1.00	No.		
	SPRINKLER SYSTEM				
145	Supply, erection and testing of ISI marked M.S. pipes (Class C - heavy duty) and specials etc. (as per IS:1239 for upto 150 mm dia and IS:3589 for 200 mm and above) for above ground laying for hydrants and sprinkler system including transportation of materials upto the worksite, cutting the pipes to required length, edge preparation, welding, fixing / erection of pipes including specials i.e. bends, tees, reducers, flanges and expansion joints wherever required, washers, nuts, bolts etc. in proper position including all supports. jointing by welding, aligning the pipe line, painting with two primer coat by zinc chromate primer and two coats of synthetic enamel fire red color, providing tapping for pressure gauges and for other instruments etc. Hydrostatic testing of system at 1.5 times of operating pressure or whichever is higher and as specified, flushing & cleaning by water etc. complete as per drawings & direction of the Engineer-in-charge.				
	The quoted rates shall also include for making holes in masonry , wall, chases in wall wherever required & making good the same by sealing the opening to original conditions.				
	25 NB	90.00	RM		
	32 NB	20.00	RM		
	40 NB	15.00	RM		
	50 NB	5.00	RM		
	65 NB	5.00	RM		
	80 NB	5.00	RM		
	100 NB	60.00	RM		
	150 NB	25.00	RM		

146	Supply, fixing, testing & commissioning of C.P. bronze / gun metal quick response type Sprinklers, comprises of 15mm dia, glass bulb type, UL listed & FM listed approved. The jointing shall be done by teflon tape and the installation shall be complete as per the drawings with positioning of sprinklers as per final coordinated plan and requirement of , local fire service & Engineer-in-charge.				
	Concealed flush sprinkler (15mm adjustable) (68 deg.c)	50.00	No.		
	Pendant / Upright sprinkler (68 deg.C)	25.00	No.		
147	All sprinkler shall be chrome finish / powder coated except for the concealed ones. The concealed sprinkler shall be of brass finish. The cover plates of the concealed sprinkler shall be factory painted at manufacturer's work and the shade shall be confirmed prior to application on the cover plate.				
	The sprinkler shall be either pendent OR upright type and shall not be universal style / nature.				
	Contractor shall ensure provision of sprinkler guard at no additional cost, as required by the Project Manager.				
148	Supply & fixing in position ISI marked Ductile iron double flanged **butterfly valves,** as per (PN 10), with SS disc, shaft, seating rings, nitrile rubber lining, internal fastening, nuts, bolts including transporting to worksite, 3 mm thick rubber gaskets etc. including testing, Complete as per drawings & directions of the Engineer-in-charge.				
	100 mm	4.00	No.		
	80 mm	1.00	No.		
149	**Supplying, installation, testing and commissioning of electric driven terrace pump suitable for automatic operation and consisting of following, complete in all respects, as required: on the Terrace (Pump) Horizontal type, multistage, centrifugal, split pump of cast iron body & bronze impeller with 5HP Suitable HP squirell cage induction motor TEFC type suitable for operation on 415 volts, 3 phase, 50 Hz, AC supply with IP55 class of protection for enclosure, horiziontal foot mounted type with Class-'F' insulation, conforming to IS-325.stainless steel shaft, mechanical confirming to IS : 1520 M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc.as required. Suitable cement concrete foundation duly plastered and with anti vibration pads. 50 rpm at 35 mtr Head (make Kirloskar, ABB, Crompton Grieves)**	1.00	No		
	FIRE DETECTION AND ALARM SYSTEM (CONVENTIONAL)	-	-		-
	MAKE AGNI ' REVAL APOLLO				

	Supplying, installation, testing & commissioning of RRL pipe 63mm dia and 15m long with male female SS coupling of approved brand as per fire norms	7	No.		
	Supplying, installation, testing & commissioning of pressure switch with cock (Danfoss make)	1	No.		
150	Supplying, installation, testing & commissioning of smoke detector with built-in LED and mounting base complete with all connections etc. as required.	12	No.		
151	Supplying, installation, testing & commissioning of Heat detector with built-in LED and mounting base complete with all connections etc. as required.	3	No.		
152	Supplying, installation, testing & commissioning of manual call boxes of MS construction in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc. as required	3	No.		
153	Supplying, installation, testing & commissioning response indicator on surface/recess MS box having two LEDs metallic cover complete with all connections etc. as required.	6	No.		
154	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in M.S. box (16 SWG) with hinged cover plate & suitable for operation	3	No.		
155	Supplying, installation, testing & commissioning fire alarm Control madoul suitable for operation	3	No.		
156	Supplying, installation, testing & commissioning sector panel suitable for following zones, complete with visual indications for short circuit fault, open circuit fault, fire condition and all other standard facilities as per IS:2189 with mimic diagram for all area/zone covered, complete with all connections, interconnections as required.				
	4 ZONE	1	Each		
157	Providing and fixing in position the following M.S. conduits including all accessories concealed in F. ceiling/wall/floor as required including 1.6 mm thick M.S. junction or pull boxes with 3mm thick perspex sheet cover plate complte with 1.6 mm dia. G.I. pull wires in the length of conduit.				
	Supply & Fixing 25 mm dia MS Conduit	150	RM		
	Supply & Leying 2x1.5 sqmm FRLS flexsiwal	150	RM		

	cable				
	TOTAL C				
	Grand Total (A+B+C)				

Bill of Quantities for Electrical work, Air-conditioning & LV works

A. Bill of Quantities for Electrical work

S.NO.	DESCRIPTION	UNIT	Quantity	RATE	AMOUNT
	WIRING & DISTRIBUTION BOARD				
1.0	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthling the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.				
1.1	Group C	Point	80		
2.0	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthling the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required.	Each	10		
3.0	Rewiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable and 1.5 sq.mm FRLS PVC insulated copper conductor single core cable as earth wire in existing surface/ recessed steel/PVC conduit including dismantling as required.	Each			
3.1	Group C	Point	20		
4.0	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed PVC conduit, and earthling the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.				
4.1	Group C	Point	10		
5.0	Supplying and fixing following modular switch / socket on existing modular plate and switch box including connections but excluding modular plate etc as required.				
5.1	5/6 amps switch	Each	35		

5.2	15/16 amp switch	Each	2		
5.3	3 pin 5/6 amp socket outlet	Each	10		
5.4	6 pin 15/16 amp socket outlet	Each	2		
5.5	Telephone socket outlet	Each	1		
5.6	TV antenna socket outlet	Each	1		
5.7	Bell Push	Each	-		
6.0	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.				
6.1	1 or 2 Module	Each	6		
6.2	3 Module	Each	20		
6.3	4 Module	Each	1		
6.4	6 Module	Each	15		
6.5	8 Module	Each	1		
6.6	12 Module	Each	1		
7.0	Supplying and fixing following Modular base & cover plate on existing modular metal boxes etc. as required.				
7.1	1 or 2 Module	Each	12		
7.2	3 Module	Each	4		
7.3	4 Module	Each	3		
7.4	6 Module	Each	1		
7.5	8 Module	Each	4		
7.6	12 Module	Each	3		
8	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.				
8.1	2 x 1.5 sq.mm. + 1 x 1.5 sq.mm. earth wire.	Metre	Rate Only		
8.2	2 x 2.5 sq.mm. + 1 x 2.5 sq.mm. earth wire.	Metre	250		
8.3	2 x 4 sq.mm. + 1 x 4 sq.mm. earth wire	Metre	435		
8.4	2 x 6 sq.mm. + 1 x 6 sq.mm. earth wire	Metre	Rate Only		

8.5	4 x 6 sq.mm. + 2 x 6 sq.mm. earth wire	Metre	Rate Only		
8.6	4 x 10 sq.mm. + 2 x 6 sq.mm. earth wire	Metre	Rate Only		
9.0	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	30		
10.0	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	10		
11.0	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
11.1	2 x 1.5 sq.mm. + 1 x 1.5 sq.mm. earth wire.	Metre	Rate Only		
11.2	2 x 2.5 sq.mm. + 1 x 2.5 sq.mm. earth wire.	Metre	60		
11.3	2 x 4 sq.mm. + 1 x 4 sq.mm. earth wire	Metre	45		
12.0	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing commissioning etc. as required.	Each			
12.1	(a): Up to 450mm sweep	Each	2		
13.0	Extra for fixing the louvers / shutters complete with frame for a exhaust fan of all sizes.	Each	2		
14.0	Supplying & fixing suitable size GI box wih modular plate and cover in front on surface or in recess including providing and fixing 25 A modular socket outlet and 25 A modular SP MCB, “C” curve including connections, painting etc. as required.	Each	6		
15.0	Installation, testing and commissioning of ceiling fan,including wiring the down rods of length (upto 30 cm) with 1.5sq. mm FRLS PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as required.	Each	30		
16.0	Supplying and fixing 25mm dia flexible pipe with PVC coating with all ancillaries like coupler etc. as required	Metre	100		
17.0	Supplying and drawing of UTP 4 Pair Cat 6 LAN Cable in the existing surface / recessed Steel / PVC conduit as required.				
17.1	1 run of cable	Meter	300		

17.2	2 run of cable	Meter	Rate Only		
18.0	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Meter	40		
19.0	Supplying and drawing following pair 0.5 mm dia co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Meter	40		
20.0	Supply & Installation of CAT 6 information outlets complying fully or exceeding with category 6 connecting hardware specifications for all pair combinations up to 250 MHz. Outlets shall use lead frame technology, non PCB pyramid type. complete as required and as per technical specifications.	Each	3		
21.0	Supply & Installation of Quad, triplex, dual, single Face Plates along with clearly printed labels and holders complete as required specifications.	Each	3		
22.0	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
22.1	40 mm	Metre	Rate Only		
23.0	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
23.1	25 mm	Metre	70		
23.2	32 mm	Metre	Rate Only		
24.0	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthling etc. as required. (But without MCB/RCCB/Isolator)				
24.1	8 way, Double door	Each	1		

25.0	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthling etc. as required. (But without MCB/RCCB/Isolator)				
25.1	6 way (4 + 18), Double door	Each	Rate Only		
25.2	8 way (4 + 24), Double door	Each	5		
26.0	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A, tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required. (Note: Vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
26.1	4 way Double door (8 + 12)	Each	Rate Only		
26.2	8 way Double door (8 + 24)	Each	1		
26.3	12 way Double door (8 + 36)	Each	Rate Only		
27.0	Supplying and fixing 5 amps to 32 amps rating, 240 volts, 'C' curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
27.1	Single Pole	Each	132		
27.2	Double Pole	Each	Rate Only		
28.0	Supplying and fixing Cable End Box (Loose wire box)(IP 43) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with testing and commissioning etc. as required.				
28.1	For 8 way, Double door TPN MCBDB	Each	Rate Only		
29.0	Supplying and fixing Cable End Box (Loose wire box) suitable for triple pole and neutral, sheet steel, Vertical MCB distribution board, 415 V, on surface/ recess, complete with testing and commissioning etc. as required.	Each			
30.0	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	10		

31.0	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
31.1	40Amp	Each	1		
32.0	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
32.1	40Amp	Each	1		
32.2	63Amp		5		
32.3	100Amp	Each	1		
33.0	Supplying and fixing 20 A, 240 V, SPN Industrial type socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 A "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	Each	4		
34.0	Supplying & fixing 20A, 415V, TPN industrial type socket with 4 pole and earth metal enclosed plug top along with 20A C Curve TP MCB in sheet steel enclosure in recess or surface suitable size GI box wih modular plate and cover in front on surface or in recess with chain metal cover for socket outlet and complete with connections, testing and commissioning etc. complete as required	Each	4		
35.0	Supply, Installation testing commissioning of 2 module 230V, 15A modular key card switch including connections etc as required complete in all repsect	Each	12		
	FIXTURES AND FANS				
36.0	Supply, Installation, Testing and Commissioning of following Points inside the building. All the below mentioned points shall be wired as per the described scheme and with 1.1kV grade, FRLS type of Cu. The primary shall mean the first light point connected to switch and secondary means rest all points looped with the said primary. The said wires shall have stranded conductors and proper gauge. The rate shall include complete Supply, Installation, Testing and Commissioning rates including cost of concealed PVC conduit in slab along with the cost of electronic drivers, ballasts, capacitors, ignitors, ceiling rose /				

	connectors / angle holders, lugs and all tools and accessories required to as required to do the job in all respect in accordance with laid specification or upto the satisfaction of engineer in charge.				
37.0	Supplying, installation, testing & commissioning of 2'x2' 36-40W recess mounting type LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 100 lm/W CRCA housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthling etc. upto suitable point complete as required.	Each	50		
38.0	Supplying, installation, testing & commissioning of 12W-15W recess mounting type square LED down lighter luminaire, IP 20,colour temperature 6000K having efficacy not less than 80 lm/W, THD ≤ 20%, die cast aluminum/polycarbonate housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthling etc. upto suitable point complete as required.	Each	25		
39.0	Supplying, installation, testing & commissioning of 15W-20W surface mounting type circular down lighter LED luminaire, IP 20, colour temperature 6000K having efficacy not less than 85 lm/W, THD ≤ 20%, die cast aluminum/polycarbonate housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthling etc. upto suitable point complete as required.	Each	15		
40.0	Supplying, installation, testing & commissioning of 4 ft linear 18W-20W surface mounting type LED luminaire, IP 20 ,colour temperature 6500K having efficacy not less than 100 lm/W, THD ≤ 20%, PC / PMMA housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required.	Each	10		

41.0	Supplying, installation, testing & commissioning of 1 ft linear 7W-10W surface mounting type LED luminaire, IP 20 ,colour temperature 6000K having efficacy not less than 100 lm/W, THD ≤ 20%, PC / PMMA housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthing etc. upto suitable point complete as required.	Each	2		
42.0	Supplying, installation, testing & commissioning of bulk head light 9W-10W surface mounting type LED luminaire, IP 65 ,colour temperature 5700K having efficacy not less than 80 lm/W, THD ≤ 20%, die cast aluminum housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthling etc. upto suitable point complete as required.	Each	2		
43.0	Supplying, installation, testing & commissioning of 12 W LED light dressing mirror with colour temperature 5700K having efficacy not less than 100 lm/W CRCA housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthling etc. upto suitable point complete as required.	Each	11		
44.0	Supplying, installation, testing & commissioning of bracket light 12W-15W surface mounting type LED luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 100 lm/W, THD ≤ 20%, pc/pmma housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthling etc. upto suitable point complete as required.	Each	Rate Only		
45.0	Supplying, installation, testing & commissioning of 20-24W LED strip luminaire, IP 20 ,colour temperature 5700K having efficacy not less than 100 lm/W, THD ≤ 20%, pc/pmma housing, suitable diffuser, inbuilt electronic driver, including 3 core 1.5 sq.mm FRLS PVC insulated and PVC sheathed copper conductor cable and earthling etc. upto suitable point complete as required.	Metre	Rate Only		

46.0	Supply of 1200 mm sweep, BEE 5 star rated, ceiling fan with Brush Less Disect Current(BLDC) motor, class of insulation: B, 3 nos. blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, Power Factor not less than 0.9, Service Value(CMM?W) minimum 215 CMM, 350 RPM(tolerance as per IS: 374-2019), THD less than 10% remote or electronic regulator unit for speed control and all remaining accessories including safety pin, nut bolts, washere, temperature rise+ 75 degree C(max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC Supply, earthling etc. complete as required.	Each	30		
47.0	Supply of AC 230/250 Volts, 50 Hz 60 w 1325 rpm exhaust fans including providing nuts, bolts, mounting frame and other accessories including connections etc. complete as required		2		
48.0	Supply, installation, testing & commissioning of BEE 5star rated 400 mm sweep wall mounted fan, including wiring with 3x1.5 sqmm FRLS PVC insulated copper conductor single core cables etc., mounting clamps , as required to do the job in all respect in accordance with laid specification or upto the satisfaction of engineer in charge.	Each	Rate Only		
	LT PANELS				

	Supply, installation, testing and commissioning of indoor/outdoor floor mounted/ wall mounted, IP43/IP55, factory built, modular, sectionalised, compartmentalized, extendable type LT cubicle panel of suitable size suitable for operation on 433/415 volts, 50 Hz AC 3 phase 4 wire supply system fabricated from CRCA sheet steel of 2mm thick for frame work and covers, 3mm thick for gland plates with stiffeners wherever required, having vibration free structure chemically treated with seven tank process or better before painting for surface treatment and powder coated in approved shade, with suitable electrolytic grade high conductivity bus bars extensible, DMC/ SMC (whichever is superior) bus bar supports, with short circuit withstand capacity as mentioned ,bottom base channel of section not less than 100mmX 50mmX 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common earth bar of required size at the rear with 2 Nos. earth stud, connections and interconnection with solid conductor wires / copper strips, neutral links, control wiring with 1.5 sqmm. & 2.5sqmm. PVC insulated FRLS copper conductor S/C cable for voltage & current respectively, including providing and fixing following switch gears and as per schedules, technical specifications etc.complete as required.				
a	The Switchboards shall have provision to accommodate all cables from the bottom /top as required.				
b	All live accessible parts shall be shrouded with 1mm thick polycarbonate/3 mm thick FRP sheet and all equipment shall be finger touch proof. The busbar insulation shall be with heat shrinkable sleeves according to the colour code. SMC shrouds and busbar supports shall be used. All MCCB door handle shall be interlocked and lockable in OFF position.				
c	Galvanised hardware with zinc passivation shall be used in fabrication of Switchboards.				
d	Suitable Aluminium earth bus to be provided throughout the length of Switchboards.				
e	All indication lamps / illuminated push buttons shall be LED type.				

f	2A SP MCBs shall be used as backup protections.				
g	All MCCBs shall be provided at least with ON, OFF & Trip indication lamps.				
h	All MCCBs shall be with thermal magnetic releases up to 200 A rating and with microprocessor based releases above 200 A rating, line load reversibility, Ics = 100% Icu,& extended rotary handle unless otherwise specified				
i	All MCCB shall have rotary handle with pad locking arrangement.				
j	All microprocessor based MCCBs shall have inbuilt earth fault protection and all thermal magnetic based MCCBs shall be provided earth fault protection through E/F module.				
k	Door interlocking for all outgoing feeders shall be provided.				
l	All TP MCCB'S shall have solid neutral link, disconnect type.				
m	All control & power wiring shall be brought out upto the cable alley in the terminal blocks.				
n	All ACBs shall be with microprocessor based releases (O/C, S/C, E/F & Instantaneous). All ACBs shall have ZSI protection & trip history.				
o	All outgoing terminals shall be provided in cable alley on proper insulated supports (SMC/DMC).				
p	All rear door of Main Isolation Panel shall be almirah type with lockable arrangement.				
q	Space heater shall be provided with thermostat with 6A MCB as backup protection inside all cable alleys controlled with feeder 20 A DP MCB 10 KA.				
r	An approval shall be taken for each panel before manufacturing.				
s	Provision of one 6/16 amp socket & compartment lighting for each vertical section of panel.				
t	5 nos extra of each R, Y,B,G,A colour indicating lamp and illuminated push buttons and normal push button shall be provided with all panels.				
u	MIMIC diagram shall be provided for Main panel				

v	MIMIC shall be made of polycarbonate sheet of 5 mm thickness fixed on acylic sheet of 2mm thick.the size of panel shall be such that the diagram can be visualized from 5 to 6 meter distance. The panel shall display complete single line diagram of Main LT Panel. this line diagram shall be made from luminous non fading materials to glow in dark and each breaker legend shall be provided with bi-colour LED lights to show the ON/OFF status of the respective feeder (Incomers / Bus couplers)				
w	Illuminated push button on Starter Panels of Pumps.				
x	Interlocking / Auto start command terminals for starter Panels.				
y	All breaking Capacity for ACB to be Ics=100%Icu and Icw for 1 sec..				
z	All breaking Capacity for MCCB to be Ics=100%Icu and Uimp of 8KV & shall be single frame till 250A to save the inventory				
aa	All ACB's shall have all standard accessories such as CT's Arc chute, safety shuttered.				
ab	Links and drops from ACB/MCCB shall be designed for full rated current of ACB/MCCB rating at same amount of current density as of main busbar.				
ac	All MCB to be C Curve for lighting & power and D curve for UPS power.				
ad	Removable lifting hook shall be provided in all transportation section.				
ae	Multifunction meters installed shall be BMS Compatible, capable of delivering Bacnet, Modbus or Lonworks protocol etc.				
af	Bus bar shall be high conductivity (99%), ETP - Electrical grade copper or 50-55% Aluminium as specified in BOQ.				
ag	Bus bar shall be designed on 45 deg. Ambient temperature and limit of temperature rise shall be 35 deg. Over and above Ambient temperature.				
ah	Bus bars shall be with heat shrinkable PVC sleeves.				
ai	MCB's shall be of minimum 10kA fault with stand capacity.				
aj	Concerning vendor needs to furnish the busbar calculations (for both phase and earth bus) at the time of GA approval and busbar size has to be as per the approved GA drawing.				
49.0	Main Distribution LT PANEL	Set	1		

	Incomer: 2 x 250 A, FP, 36kA, MCCB microprocessor based. 2 x 50kA, 2kVp surge arrester with suitable Fuse. 2 x (Digital flush type class -1.0 accuracy multifunction meter with RS-485 communication port for measurement of THD, KVARH KW, KWH, KVAR, PF, V, A, Hz with 10VA Class 1.0 CTs of required ratio)				
	Busbar (2 Set - 4P + E) Busbar made up of electrolytic grade high conductivity aluminium in rectangular cross section and suitable for 415V, FP, 50 Hz, 300A, 25 kA for 1 sec of required length and cross sectional area.				
	Outgoings: 4 x 125 A, TPN, 25kA, MCCB. 4x 100 A, TPN, 25kA, MCCB. 4x 63 A, TPN, 25kA, MCCB.				
	LT CABLES & TERMINATIONS				
50.0	Supplying following 1.1kV grade, XLPE insulated, FRLS type armoured cables suitable for 415V, 50Hz, AC system, with inner and outer PVC sheath, outer sheath provided with FRLS insulation and with all components as mentioned in BOQ, specifications and schedule, complete as required.				
50.1	3.5C X 50 Sqmm A2XFY.	Metre	30		
50.2	3.5C X 35 Sqmm A2XFY.	Metre	70		
50.3	4C X 25 Sqmm A2XFY.	Metre	24		
51.0	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
52.0	Upto 35 sq. mm (clamped with 1mm thick saddle)	Metre	94		
53.0	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Metre	30		
54.0	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required.				
54.1	3½ X 50 sq. mm (35 mm)	Each	2		
54.2	3.5X 35 sq. mm (32 mm)	Each	4		
54.3	4 X 25 sq. mm (28 mm)	Each			

			2		
55.0	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc. as required.				
55.1	100 mm width x 50 mm depth x 1.6 mm thickness	Metre	Rate Only		
55.2	150 mm width x 50 mm depth x 1.6 mm thickness	Metre	20		
55.3	200 mm width x 50 mm depth x 1.6 mm thickness	Metre	Rate Only		
56.0	Fabricating Installation testing and commissioning 2 mm thick M.S. powder coated, sheet steel 5 sided junction boxes along with 3 mm thick cover, rubber gasket between the cover and the junction box, steel screws and all other accessories complete as required.				
56.1	Junction box suitable for 100 mm x 50 mm x 1.6 mm raceway	Each	Rate Only		
56.2	Junction box suitable for 150 mm x 50 mm x 1.6 mm raceway	Each	Rate Only		
56.3	Junction box suitable for 200 mm x 50 mm x 1.6 mm raceway	Each	Rate Only		
	EARTHING & LIGHTNING PROTECTION				
57.0	Earthling with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/coke and salt as required.	Each	2		
58.0	Earthling with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Each	1		
59.0	Earthling with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Each	1		
60.0	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthling as required.	Metre	25		

61.0	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	10		
62.0	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Metre	10		
63.0	Dismantling, old panels, DBs Circuits reconnections old circuits in DBs etc and rerouting of circuits, cables, Cable tray, etc of previous work done or unfinished and unforeseen works (please visit the site for this item)	Job	1		
	Total for Electrical Works 'A'				

B. **Bill of Quantities of Air Conditioning work**

The prices are to be quoted in the below mentioned form and shall include the supply, installation, testing and commissioning at site of all the equipments, ancillary materials as specified and all such items what so ever which may be required.					
Notes:-					
1) All cabling/piping to be installed neatly and with proper dressing, wherever exposed it needs to be placed in cable trays with cover & saddled properly.					
2) Single phase power points near each indoor units & 3 phase supply with neutral with earthing near outdoor units as per drawings lauouts to be provided by electrical contractor.					
3) All ceiling/false ceiling/partitions & opening etc for indoor units installations are to be done by civil contractor.					
4) All civil work such as base foundation for outdoor equipments, opening in wall and making good for running ducts, pipes, cables etc. & drain traps on floors to be done by civils contractor					
5) Prices to be quoted must include all cost of lifting, shifting & installation etc.					
6) Actually quantity may vary as per site condition or as per details engineering.					
S.No.	Description	Unit	Qty.	Rate	Amount
	Split Type				
1	Supply, installation ,testing & Comissioning of Air Cooled Split air-conditioners of eco-friendly refrigerant each comprising an outdoor unit consisting of hermetic compressor, air cooled condensing unit, Condenser fan etc. with eco-friendly refrigerant, outer casing and indoor fan coil unit(s) consisting of centrifugal fans, fan motor, DX cooling coil, outer casing, filter, control and power panel with remote control etc. both interconnected with copper refrigerant & drain pipe of required length with insulation, full charge of refrigerant gas and oil, M.S. base frame duly primered & painted, supports supports with nuts,bolts, washers, fasteners etc. complete as per specifications and drawings.				
1.1	2.0 TR Hi-Wall Type - 5 Star Rating- Inverter Type	Nos.	13		
1.2	SITC of 5 KVA stablizer for Hi-wall Split Unit.	Nos.	13		
2	Supply, installation, testing & commissioning of refrigerant copper pipes between indoor to outdoor unit(with nitrile tube insulation). , cut to required length and installed with all joints, including the necessary fittings of hard copper pipe. (As per Multi Circuit)				
2.1	5/8" & 1/4"	Rmt	20		
3	Supply and fixing MS wall/floor stand for outdoor units	Nos.	13		

3	Supply, Installation, Testing & Commissioning of Cassette units of following capacity suitable to operate from 410+10% volt, 50 Hz, 3 phase AC power supply with air-cooled evaporator with coil, fan, and fan motor, compressor, condenser coil, propeller fans controls, inter connection control panel, Including control wiring, weather proof isolator panel of required capacity with MS encloser box, including gas charging as required etc. Necessary power cable from isolator panel to outdoor unit, M.S. frame duly painted to locate Outdoor Unit. Refrigerant pipe size and gas quantity should suit to the copper pipe length at actual. The capacity guarantee should be ensured by the vendor.				
3.1	4 TR	Nos	6		
4	Supply, installation, testing & commissioning of refrigerant copper pipes between indoor to outdoor unit(with nitrile tube insulation). , cut to required length and installed with all joints, including the necessary fittings of hard copper pipe. (As per Multi Circuit)				
4.1	9/8" & 7/8"	Rmt	120		
4.2	5/8",1/2" & 1/4"	Rmt	120		
5	Supply and fixing of Ms stand duly painted Out Door Stand for cassttee Unit	Nos	6		
6	SITC of 63 A TPN, 25kA, MCB. outdoor units	Nos	6		
7	MCCB for indoor units 16Amp	Nos	12		
8	Supply, laying, affecting connections and Testing of the following sizes of 1.1 KV Copper armoured PVC insulated cables. Cables shall be inclusive of all clamps, saddles, screws, cable identification tags, cable terminal joints including terminal lugs, insulating tapes, affecting terminal connections/Earthling to the equipment as per the specifications and as required.				
9	Power Cable (4C X 6 Sq.mm) -Outdoor Unit	Rmt	75		
10	Providing & fixing control cum transmission wiring of 2 core x 1.5 sqmm copper in suitable PVC conduits between indoor and outdoor unit.	Rmt	100		
	In-Line/Propeller Fans(Toilet /KitchenExaust)				
11	Supplying, installation, testing & commissioning of inline /propeller fans with motor, supporting frame with bird screen, access panel complete as per specifications and drawings.				
11.1	100 CFM - Propeller Fans	Nos.	3		
11.2	250 CFM - Propeller Fans	Nos.	1		
11.3	350 CFM - Inline Fans	Nos.	1		
	TOTAL 'B'				

C. Bill of Quantities of Low Voltage Work

S.NO.	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	CCTV SYSTEM				
1	Supply, installation, testing and commissioning of UL Listed IP CCTV fixed dome Coloured Camera,2 megapixel, Full HD (1920 x 1080) high resolution,1/2.8" Progressive scan CMOS, 0.07 lux with 2.8 mm auto iris lens or equivalent high definition, motion detection,120dB wide dynamic range, H.265 / H.264 /MPEG, Bit rate 32 Kbps-16Mbps, 12 VDC ± 10%, PoE (802.3af), with ONVIF supported, in built MicroSDHC HD card slot up to 128 GB, IP66, IK10, ONVIF S&G complaint, UL listed, IR distance upto 20 mtrs, connectors complete as required in dome shape fixed type for mounting recessed in false ceiling or mounted on wall complete as required in accordance with laid specification or upto the satisfaction of engineer in charge.	Each	10		
2	Supply, installation, testing and commissioning of UL Listed IP CCTV Coloured Camera, 2 megapixel (1920 x 1080) high resolution, 1/2.8" Progressive scan CMOS, 0.05@F1.2, AGC ON. 0 Lux with IR on, H.265 / H.264 / MJPEG, Dual stream, Bit rate 32 Kbps-16Mbps, Standard IP66, 12 VDC ± 10%, PoE (802.3af), 2.7 to 13.5 mm auto iris lens or equivalent high definition,IR range upto 60 mtr, Up to 128 GB microSDHC card, motion detection, with ONVIF S&G supported, UL listed, IP66, IK10, connectors complete as required IR Bullet type mounted on wall complete as per tender specifications required.	Each	2		
3	Supply, Installation, Testing and commissioning of 8 Channel NVR (Network Video Recorder), for recording upto 8CH @ 1080P with 02 nos. SATA HDDs minimum 4TB storage or more (recording requirement all cameras recording at 2MP, 25fps for 30 days),H.265/H.264/MJPEG/MPEG4 codec decoding, loaded VMS, Front Control Panel with LEDs Indication, 3 nos. USB, iPhone; iPad; Android based Mobile clients, Video Export feature on USB, Search Mode: Time/Date; Alarm; Motion Detection (MD); Exact Search (accurate to a second); Smart Search, Dual HDMI Output, Alarm Input (16 nos.), Alarm Output (6 nos.), 16 POE Ports, eSATA Device, 320Mbps each Incoiming &	Each	2		

	Outgoing throughout, Operating Temperature –10°C to 55°CCertification : CE, FCC & UL including fixing accessories and cable termination with required connectors/Jack, complete in all respect as per instruction of engineer in-charge.				
4	Supply, installation, testing & commissioning with proper connection & termination of following size equipment rack made out of CRCA sheet to house all the control equipment complete as required in accordance with laid specification or upto the satisfaction of engineer in charge.				
4.1	19" equipment rack -6 U	Each	2		
4.2	19" equipment rack -15 U	Each	1		
5	Supply, installation, testing and commissioning of web Managed switches - 8 Port PoE 10/100 EB Switch with 2 Fiber uplinks including Fibre module for LAN base feature set with support to integration with CCTV, with all related hardware (Weather Proof 16 gauge box MS powder coated) (L2 Switch)	Each	2		
6	Supply, installation, testing and commissioning of web Managed switches - 24 Port PoE 10/100 EB Switch with 2 Fiber uplinks including Fibre module for LAN base feature set with support to integration with CCTV, with all related hardware (Weather Proof 16 gauge box MS powder coated) (L2 Switch)	Each	Rate only		
7	Supply, Installation, Testing & Commissioning of Layer 3 Switch with switching capacity of 1.2Tbps, forwarding performance of 1Bpps with 24 x 1/10G SFP+ ports plus , dual hot swappable internal power supply, 60K IPv6 routes and 48K IPv6 multicast routes. Should support advance layer 3 (RIPng, OSPF, BGP and MPLS) with 1 year support complete as required and as per technical specifications.	Each	Rate only		
8	Supply, installation, testing and commissioning of 21" LED Display size colour TFT Monitor including decodes and all accessories complete as required in accordance with laid specification or upto the satisfaction of engineer in charge.	Each	1		

9	Supply installation, testing and commissioning of Desktop Computer comprising CPU, Keyboard and a mouse complete with operating system (OS) and other required software to control NVR in control room including Centralized Video Management Software as per the requirement of the successful operation of the surveillance system complete as required in accordance with laid specification or upto the satisfaction of engineer in charge.	Each	1		
10.00	Supplying and drawing of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed Steel/ PVC conduit as required.	Metre	Rate only		
10.1	1 run of cable	Metre	750		
11	Supply, Installation, Testing and Commissioning of outdoor armoured Single mode fiber optic cable for outdoor connectivity where ever required in prelaid conduits / raceways / HDPE / DWC pipes, whichever maybe available etc. as required.	Metre	Rate only		
12.00	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
12.10	25 mm	Meter	600		
12.20	32 mm	Meter	Rate only		
	TOTAL 'C'				
	G.TOTAL (A+B+C)				