



॥ त्वं ज्ञानमयो विज्ञानमयोऽसि ॥

TENDER DOCUMENT

FOR

**Providing of electrical connection through UPS for squid, PPMS and Scanning Paneling
Microscope machine installation along with single and three phase power supply for installation
of chiller and compressor in physics lab R.No. 1102 and R.No. 5008 Porta Cabin in Academic
Campus of IIT Jodhpur**

Estimated Cost of Work	: Rs. 249141.00
Earnest Money Deposit	: Rs. 4983.00
Tender Fee	: Rs. 500
Last Date & Time of Submission of Tender	: 30.09.2014 up to 15:00 Hrs
Tender Opening Date & Time	: 30.09.2014 up to 15:30 Hrs

INDIAN INSTITUTE OF TECHNOLOGY JODHPUR
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CONTENTS		
SNo.		PAGE NO
1	NOTICE INVITING TENDER	3-5
2	ARTICLES OF AGREEMENT	6
3	GENERAL CONDITIONS OF CONTRACT	7-25
4	SPECIAL CONDITIONS OF CONTRACT	26
5	ADDITIONAL CONDITIONS OF CONTRACT	27
6	LIST OF MAKE OF MATERIAL	28-29
7	SCHEDULE OF QUANTITY - ANNEXURE A	30-32

NOTICE INVITING TENDER

1. Sealed Tenders are hereby invited for the work of **“Providing of electrical connection through UPS for squid, PPMS and Scanning Paneling Microscope machine installation along with single and three phase power supply for installation of chiller and compressor in physics lab R.No. 1102 and R.No. 5008 Porta Cabin in Academic Campus of IIT Jodhpur.”** from contractors of CPWD, Railways, other Government departments and /or from those who have carried out similar works in IIT having completed **one, two or three similar works amounting to Rs.1.99 Lakh, Rs.1.49 Lakh or Rs.1.00 Lakh** respectively. The tenderers are required to produce proof of fulfilling these conditions while making request for issue of Tender Documents.
2. The estimated cost of **Rs.249141.00 (Rupees Two Lakhs Forty Nine Thousand One Hundred Forty One Only)**.
3. The total time for carrying out the work will be **20 (Twenty Days)**. The date of commencement shall be reckoned from the seventh day of issue of award letter /work order.
4. Tenders should be on the specified form (non-transferable) which may be obtained from the office of Executive Engineer, Institute Works Department (IWD) during office hours on payment of **Rs. 500.00 (nonrefundable)**.
5. Tenders should be submitted tender in double sealed covers super scribed with the name of the work, date and time of opening written both on the inner and outer envelopes. This will be received till **30/09/2014, up to 15.00 Hrs.**
6. Tenders should be dropped in the tender box placed at **IIT Jodhpur Campus, MBM Engineering College, Jodhpur at Administrative Block**, before the closing date and time indicated. In case these are sent by post these should be sent by Regd. post/Speed post addressed to **Administrative Block, Indian Institute of Technology Jodhpur, Old Residency Road, Ratanada Jodhpur-342011**. It is the tenderer who has to ensure that they post the tender well in advance so as to reach before the closing time and date indicated.
7. The Earnest Money Deposit (EMD) amounting to **Rs. 4983.00 (Rupees Four Thousand Nine Hundred Eighty Three Only)** as demand draft or pay order of a schedule bank and drawn in favor of **Director, IIT Jodhpur** should accompany the tender. Tender received without earnest money will be invalid and rejected.

8. The Employer does not bind himself to accept the lowest or any tender and reserves to himself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates as quoted.
9. Canvassing in connection with the tenders is prohibited and the tenders submitted by the contractor who resort to canvassing are liable for rejection.
10. The tenderer shall not be permitted to tender for works in the concerned unit in which a relative is posted. He shall also intimate the names of persons who are working with him in any capacity or subsequently employed by him and who are relatives as mentioned above.
11. Tender submitted shall remain valid for 90 days from the date of opening for the purpose of acceptance and award of work. Validity beyond 90 days from the date of opening shall be by mutual consent.
12. The tenderer shall quote rates both in figures and words. He shall also work out the amount for each item of work and the amount shall be both in figures and words. On check if there are differences between the rates quoted by the tenderer in words and in figures or in the amount worked out by him, the CPWD procedure shall be followed.
13. The tenderer should see drawings and in case of doubt obtain required particulars, which may in any way influence his tender from the Engineer as no claim whatsoever will be entertained for any alleged ignorance thereof.
14. Before tendering, the tenderer shall inspect the sites to fully acquaint himself about the condition in regard to accessibility of site, nature and extent of ground, working condition of site and locally including stacking of materials, installation of tools and plants (T & P) etc., conditions affecting accommodations and movement of labor etc. required for the satisfactory execution of the work contract. No claim whatsoever on such account shall be entertained by the Employer in any circumstances.
15. If the contractor fails to commence the work as per letter of award then the Earnest Money will be forfeited.
16. Except writing rates and amount, the tenderer should not write any conditions or make any changes, additions, alterations and modifications in the printed form of tenders. Tenderers who are desirous to offer rebate the same should be brought out separately in the covering letter and submitted along with the tender.

17. **DEFECT LIABILITY PERIOD:** One Year months from the date of completion of the specific job as certified by the employer.
18. **SECURITY DEPOSIT:** A sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum along with the sum already deposited as earnest money, will amount to security deposit of 5% of the tendered value of the work. In addition, the contractor shall be required to deposit an amount equal to 5% of the tendered value of the contract as Performance Security within the period prescribed for commencement of work in the letter of award issued to him.
19. **COMPENSATION:** Contractor shall pay as compensation an amount equal to one per cent or such smaller amount as the Employer (whose decision in writing shall be final) may decide on the cost of the whole work as shown in the agreement, for every week that the work remains un-commenced or unfinished or due quantity of work remains incomplete after the proper dates. Compensation to be paid shall not exceed ten per cent of the estimated cost of the work.

ARTICLES OF AGREEMENT

ARTICLES OF AGREEMENT MADE AT _____ this _____ day of ____
Between Indian Institute of Technology Jodhpur, Rajasthan of the one part and
trading in the name and style of _____ (hereinafter referred to as the
contractor(s) which expression shall include his/their respective heirs, executors, administrators
and permitted assignees) of the other part.

WHEREAS the Employer is desirous of getting the work of _____ done and has
caused drawings, schedule of quantities and specifications describing the work to be prepared.
AND whereas the said specifications and the schedule of quantities and other documents have been
signed by on behalf of the parties.

NOW IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN THE PARTIES HERETO AS
FOLLOWS:

In consideration of the payments to be made to them as hereinafter provided the contractor shall
upon and subject to the conditions hereinafter contained execute and complete, the work at the rates
specified in the attached schedule of quantities and with such materials as are provided for and in
accordance with in all respect with specifications, designs, drawings and instructions in writing.
Time for carrying out the work will be..... And the date of commencement shall be
reckoned from the tenth day of issue of award letter.

The Employer shall pay to the contractors such sums as shall become payable hereunder at the
times and in the manner specified in the said conditions.

- (i) This agreement contains the following documents in addition to pages of Articles of Agreement.
- (ii) General Conditions of Contract page no. _____ to _____
- (iii) Special Conditions page no. _____
- (iv) Additional Conditions page no. _____
- (v) BOQ.

In witness whereof the parties hereto have set their respective hands the day and year hereinabove
written.

Signed by, for and on behalf of Employer _____ In the presence of

Signed by the said Contractor
In the presence of

- (1)
- (2)

GENERAL CONDITION OF CONTRACT

1. INTERPRETATION

- 1.1. In construing these conditions, the specifications, the schedule of quantities, tender, special conditions and agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires.
- 1.2. This contract shall comprise of the Articles of Agreement, General Conditions of Contract, Special Conditions, Additional Special Conditions, the Schedule of Quantities, Specifications, Letter of Acceptance of Tender and other documents mentioned in the contents sheet attached hereto and including those to which only reference is made herein.

WORK OR WORKS: shall mean all work or works define in schedule of quantities, specifications and such other work or works as the contractor may be entrusted with for carrying out under this contract.

EMPLOYER: shall mean Director IIT or any Officer authorized by Director for the purpose.

ENGINEER: shall mean the Engineer designated by the Employer to superintend and perform other duties as indicated in the contract.

CONTRACTOR: shall mean the individual or firm or company, whether incorporated or not undertaking the work and shall include the legal personal representative or such individual or the persons composing such firm or company or the Successor of such firm or company and the permitted assignees of such individual or firm/(s) or Company.

SITE: shall mean the site of contract works including any buildings and erections thereon and any other land adjoining thereto (inclusive) as aforesaid allotted by the employer or the engineer for the contractors use.

COMPENSATION: shall mean all sums payable by way of compensation under any of the conditions shall be considered as reasonable compensation without reference to the actual loss or damage sustained and whether or not any damage sustained, and whether or not any damage shall have been sustained.

Words inputting persons include firms and corporations; words imputing the singular only also include the plural and vice versa where the context so required. The headings are given to the clauses for convenience and they will not limit the meaning or scope of the clauses in any way.

2. SPECIFICATIONS AND DRAWINGS

The contractor shall execute whole and every part of the work in the most substantial manner both as regards material and in accordance with the specifications. The contractor shall also conform exactly to the design, drawings and instructions given in the respect to the work. The contractor shall be furnished one copy of such specification and all such designs, drawings and instructions as are not included in the printed publications.

3. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY

- 3.1 The contractor shall provide at his own cost all materials (except such materials, if any as per the contract be supplied by the employer), plants, tools, appliances, implements, ladders, scaffolding, temporary works etc. requisite and proper for the execution of the work whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or which may be necessary for the purpose of satisfying or complying to the requirements of the institute as to any manner as to which under these conditions he is entitled to be satisfied together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work of materials. Failing his so doing, the institute at the expense of the contractor may provide the same and the expenses may be deducted from any money due to the contractor under the contract and/or from his security deposit.
- 3.2 The contractor shall provide himself with requisite quantity and quality of water for carrying out the works at his own cost. If, however, piped water is supplied by the employer, the contractor shall pay for the water at one percent of the total cost of the work done except on electrical work, air-conditioning work and furniture work. The contractor shall make his own arrangement for water connection and lying of pipelines from the source of supply of the employer. It should be clearly understood that the employer does not guarantee to maintain un-interrupted supply of water and it will be incumbent on the part of the contractor to make alternative arrangement for water at his own cost in the event of any temporary break down in the water mains so that the progress of work is not held up for want of water. No claim as damages or refund of water charges will be entertained on account of such break-downs.
- 3.3 Subject to availability the employer may supply power at only one point from where the contractor shall make his own arrangement for distribution including provision of electric meters, switches, fuses etc. at his own cost. These shall be in the custody of the employer. If there is any hindrance caused to other works the contractor shall reroute or remove such temporary lines without any extra cost. Such temporary lines shall be removed after the completion of work. The cost of power consumed by the contractor shall be payable to the

employer at rates fixed by the employer, which would be deducted from the running account bills. However the employer does not guarantee the supply of power and no compensation for any failure or short supply of power shall be entertained.

4. AUTHORITIES AND NOTICES

- 4.1 The contractor shall conform to any regulations and bye-laws of any corporations and of any electricity supply company and authorities with whose systems the structure is proposed to be connected, and shall before making any variations from the drawing and specifications that may be necessitated for so conforming by giving written notice to the institute specifying the variations proposed to be made, the reasons for making it and apply for instructions thereon. If the compliance with this clause involves any extra work not included in this contract, he shall specify these items of work and the allowance of extra payment required on their account.
- 4.2 The contractor shall give all notices required by the said regulations or bye-laws to be given to any authority and pay to such Authority or to any public office all fees that may be chargeable in respect of the works and lodge the receipts with the bill to the engineer for reimbursement.

5. RATES TO INCLUDE ALL TAXES

- 5.1 Rates quoted by the contractor shall include sales tax, duties, octroi, toll tax, royalties, service tax and all other taxes in respect of this contract and the employer shall not entertain any claim whatsoever in this respect. Tendered rates are inclusive of all taxes and levies payable under the respective statutes.
- 5.2 The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the employer and further shall furnish such other information and documents as the employer may require.

6. TESTING OF MATERIALS

The contractor shall provide assistance, instruments, materials, labor and any other arrangement normally required for testing, checking of materials and workmanship as stipulated in the specifications and by statutory authority at his own cost. The employer has the right to appoint the testing authorities. The contractor shall pay for the cost of test samples, its packing, transportation including testing fees. Failing his so doing, the engineer at the expense of the contractor shall provide the same and the expenses may be deducted from any money due to the contractor under the contract and/or from the security deposit or proceeds thereof or of a sufficient portion thereof.

7. CONTRACTOR'S ENGINEERS AND WORKMEN

- 7.1 The contractor shall give all necessary personal superintendence during the execution of the work and as long thereafter as the institute may consider necessary until the expiration of defects liability period. The contractor shall employ competent engineer/foreman as per CPWD norms and as approved by the institute whose qualification must conform to the requirement specified by the institute who shall be constantly in attendance of the work while the men are at work. Any direction, explanations, instructions or notices given by the institute to such engineer or foreman or any other authorized agent shall be held to be given to the contractor.
- 7.2 The contractor shall on the request of the institute immediately dismiss from the works any person employed thereon who may in the opinion of the engineer be unsuitable or incompetent or who may in the opinion of the employer misconduct himself.

8. ACCESS

- 8.1 The employer or its representative shall at all reasonable time have free access to the works and/or workshops, factories or other places the materials are being prepared or constructed for the contract and also to any place where the materials are lying or from which they are being obtained and the contractor shall give every facility to them for inspection. Except the representatives of statutory authorities and those mentioned above no other person shall be allowed on the works at any time without the permission of the institute.
- 8.2 If any work is to be done at a place other than the site of works, contractor shall obtain written permission of the institute.

9. VARIATION AND PRICE FOR VARIATION

- 9.1 The engineer with the approval of the employer shall have power to make any alterations / omissions / additions and/or substitutions from the original specifications, drawings, designs and written instructions and such alterations, omissions, additions, substitutions shall not invalidate the contract and any altered, additional, or substituted work which the contractor may be directed to do in the manner specified above as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work. The rates for such altered, additional or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order.
- 9.2 If the rates for the altered, additional or substituted work are specified in the contract for the work, the contractor is bound to carry out the altered, additional, or substituted work at the same rates as are specified in the contract for the work.

- 9.3 If the rates for the altered, additional, or substituted work 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.
- 9.4 If the rates for the altered, additional or substituted work cannot be determined in the manner specified in the sub-clause (b) & (c) above, then the contractor shall, within ten working days from the date of receipt of the order to carry out the work through notice in writing, inform the institute of the rate which it is his intention to charge for such class of work, supported by analysis of the rate claimed which shall be based on actual cost of work plus contractor's profit and over-heads as per CPWD. When such notice has been given, the engineer with the consent of the employer may agree to such a rate but if the engineer does not agree to the contractors' rate the engineer may cancel his order to carry out such class of work and arrange to carry out in such a manner as he may consider advisable.
- 9.5 Under no circumstances, the contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

10. FAULTY MATERIALS, WORKMANSHIP AND DEFECTS AFTER COMPLETION

- 10.1 The engineer shall have powers to removal from the site all materials and work which in his opinion are not in accordance with specifications and in case of default, the engineer shall be at liberty to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials to be substituted thereof and in case of default the engineer may cause the same to be supplied and all cost which may attend such removal and/or substitution are to be borne by the contractor.
- 10.2 If it shall appear to the engineer or to the employer based on Audit/Technical Examination, that any work has been executed with unsound imperfect or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to the contracted for or otherwise not in accordance with the contract, any defects shrinkage or other faults which may appear within the defects liability period of twelve months from the date of completion arising in the opinion of the engineer, the contractor shall on demand in writing which shall be made within twelve months of the completion of the work from the engineer specifying the work, materials, articles defects or other faults complained of notwithstanding that the same may have been passed certified and paid for, forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own cost. In case of any such failure, the engineer may rectify or remove or re-execute the work or remove and replace with others, the

material or articles complained of as the case may be at the risk and cost in all respects of the contractor.

10.3 In lieu of rectifying the work not done in accordance with the contract, the Employer may, allow such work to remain, and in that case make allowance for the difference in value, together with such further reduction as in his opinion may be reasonable.

10.4 Provided always that nothing in this clause shall relieve the contractor from his liability to execute the works in all respects in accordance with the terms and conditions of this contract, or from his liability to make good all defects.

11 **WORKS TO BE OPEN FOR INSPECTION:**

11.1 All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Engineer and the contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Engineer to visit the works shall have been given to the contractor either himself be present to receive order and instruction or have a responsible agent duly accredited in writing present for that purpose.

11.2 The contractor shall give not less than seven days' notice in writing to the engineer before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimension thereof be taken before the same is so covered up or placed beyond the reach of measurement and shall not cover up and place beyond the reach of measurement, any work without the consent in writing of the engineer and the engineer shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or the engineer's consent obtained the same shall be uncovered at the contractors expense or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

12 **ASSIGNMENT FOR SUB-LETTING:**

12.1 The contract shall not be assigned or sublet without the written approval of the Employer and if the contractor shall assign or sub-let his contract or attempt to do so or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so or if any bribe, gratuity or gift, loan perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor or any of his servants or agents to any person in the employment of the Employer in any way relating to his office or employment, or if any such employee or person shall become in any way directly or indirectly interested in the contract, the Employer shall have the power to adopt any of the courses specified under clause - 23 as may be best

suited to the interest of the Employer and in the event of any of the courses being adopted the consequences specified in the said clause shall ensure.

12.2 Where the contractor is a partnership firm, the approval in writing of the Employer shall be obtained before any changes in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concerns such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement hereunder the partnership firm would have the right to carry out the work hereby undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned or sub-let in contravention of clause 13(a) and the same action may be taken and the same consequences shall ensure as provided in the said clause 13(a).

13 **INDEMNIFYING AGAINST DAMAGES TO PERSONS, PROPERTY AND STATUTES:**
The contractor shall take all precautions to avoid all accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of work.

13.1 The contractor shall be responsible for all injury to persons, animals or things, and for all damage, whether such injury or damage arises from carelessness or accident in any way connected therewith. This clause shall be held to include inter-alia any damage due to causes as aforesaid to work, building (whether immediately adjacent or otherwise) and to roads, streets, footpaths, bridges or ways as well as all damage caused to the buildings and works forming the subject of this contract by inclemency of weather. The contractor indemnifies the Employer and holds him harmless in respect of all expenses arising from such injury or damages as aforesaid and also in respect of any award of compensation or damage consequent upon such claim including legal costs.

13.2 The contractor shall reinstate all damage of every sort mentioned in this clause, so as to deliver the whole of the contracted works complete and perfect in every respect so as to make good and otherwise satisfy all claims for damage as aforesaid to the property of third parties.

13.3 The contractor also indemnifies the Employer against all claim which may be made upon the Employer for acts during the currency of this contract by any employee or representative of an employee of the contractor or any sub-contractors, employed by him, for any injury to or loss of life of such employees, or for compensation payable under any law for the time being in force to any workmen or to the representative of any deceased or incapacitated workmen.

13.4 The contractor also indemnifies the Employer against all claim which may be made upon the Employer for acts during the currency of this contract by the Central/State Government or

local Municipal authorities for the non-compliance of any laws, regulations, rules pertaining to wages act, safety act in force and any amendments thereof in respect of all labor and apprentices directly or indirectly employed in the work under this contract.

13.5 The Employer shall be at liberty and is hereby empowered to deduct the amount of any damages, compensation costs, charges and/or expenses arising or accruing from or in respect of any such claim and/or damages as aforesaid from any sum or sums due or to become due to the contractor or security deposit.

13.6 The contractor shall indemnify the Employer against any action, claim or proceedings relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against the Employer in respect of any such matters as aforesaid the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise there from. Provided that the contractor shall not be liable to indemnify the Employer if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the said Employer or his authorized representative.

14 LIEN IN RESPECT OF CLAIM IN OTHER CONTRACTS:

14.1 Any sum of money due and payable to the contractor including the security deposit under the contract may be withheld or retained by way of lien by the Employer or Government or any other contracting person or persons against any claim of the Employer or Government or such other persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Employer or Government or with such other persons.

14.2 It is agreed term of the contract that the sum of money so withheld or retained under this clause by the Employer will be kept withheld or retained as such by the Employer or till his claim arising out of in the same contract or any other contract is either mutually settled or determined by the Arbitrator if the contract is governed by arbitration clause or by the competent court as the case may be and that the contractor shall have no claim for interest or damages whatsoever on this account or any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

15 WITHHOLDING LIEN IN RESPECT OF SUMS CLAIMED:

15.1 Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, the Employer shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security deposit, if any deposited by

the contractor and for the purpose aforesaid the Employer shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security deposit being insufficient to cover the claimed amount or amounts or if no security deposit has been taken from the contractor, the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which at any time thereafter may become payable to the contractor under the same or any other contract, with the Employer or any contracting person pending finalization or adjudication of any such claim. It is an agreed term of the contract that the sum of money so withheld or retained under the lien referred above by the Employer will be kept withheld or retained as such by the Employer till the claim arising out of or under the contract is determined by the Arbitrator (if the contract is governed by the arbitration clause) or by the competent court as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company the Employer shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum payable in any Partner/Limited company as the case may be whether in his individual capacity or otherwise.

- 15.2 The Employer shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract etc. to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been over paid in respect of any work done by the contractor under the contract or any work claimed by him to have been done by him under the contract and found not to have been executed the contractor shall be liable to refund the amount of over payment and it shall be lawful for the Employer to recover the same from him in the manner prescribed in sub-clause (a) of this clause or in any other manner legally permissible and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by the Employer to the contractor. Provided that the Employer shall not be entitled to recover any sum over-paid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Employer on the one hand and the contractor on the other hand, under any term of contract permitting payment for work after assessment by the Employer.

16 IN-CASE OF DEATH OF CONTRACTOR:

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Employer shall have the option of terminating the contract without compensation to the contractor.

17 **SUB-CONTRACTORS:**

The Employer reserves the right to use the premises and any portion of the site for the execution of any work not included in the contract. The contractor is to afford all reasonable facilities to all sub-contractors, specialists, merchants, tradesmen and others who may at any time be appointed by the Employer for executing any work or supplying any goods relating to the constructions, servicing, equipping or furnishing of the work under this contract.

18 **COMPLIANCE TO LABOUR LAWS AND APPRENTICE ACT:**

The contractor shall comply with all the provisions of the minimum wages Act, 1948, contract labor (regulation and abolition) Act, 1970, and rules and orders framed there under and other labor laws affective contract labor and Apprentice Act, 1961 and the rules and orders framed there under that may be in force or brought into force from time to time. Contractor shall obtain a valid license under contract labor (R&A) Act 1970 and contract labor (R&A) Central rules 1971 before commencing work and which should be valid till the completion.

19 **COMPENSATION FOR DELAY:**

19.1 The time for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be deemed to be the essence of the contract on the part of the contractor. The work shall throughout the stipulated period of the contract be proceeded with all due diligence and the contractor shall pay as compensation an amount equal to 1% or such smaller amount as the Employer (whose decision in writing shall be final) may decide on the amount of the whole work as shown in the agreement, for every week that the work remains un-commenced or unfinished after the proper dates.

19.2 And further to ensure good progress during the execution of the work, the contractor shall be bound in all cases in which the time allowed for any work exceeds one month (save for special jobs) to complete one- eighth of the whole of the work before one-fourth of the whole time allowed under the contract as elapsed; three-eighth of the work before one-half of such time has elapsed, and three-fourth of the work before three-fourth of such time has elapsed. However for special jobs if the contractor has submitted a time schedule and the same has been accepted by the Employer, the contractor shall comply with the said time schedule. In the event of the contractor failing to comply with this condition, he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as the Employer (whose decision in writing shall be final) may decide on the said caused of the work for every week that the due quantity of work remains in complete. Provided that the entire compensation to be paid under the provisions of this clause shall not exceeds ten percent on the cause of the work as shown in the agreement.

20 **DAMAGED TO WORKS IN CONSEQUENCE OF HOSTILITIES OR WAR-LIKE OPERATIONS:**

20.1 The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the employer and a certificate from him to that an effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or war-like operations the contractor shall, when ordered in writing by the Employer, remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking, removal of serviceable materials and for the reconstruction of all works ordered by the Employer such payment being In addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for the compensation shall be assessed by the Employer. The contractor shall be paid for the damaged/ destruction suffered and for restoring the material at the rates based on the analysis of rates tendered for in accordance with the provision of this agreement. The certificate of all the employer regarding the quality and the quantity of materials and the purpose for which they were collected shall be final and binding on the contractor.

20.2 Provided always that no compensation shall be payable for any loss in consequence of hostilities or war- like operations (i) unless the contractor had taken all such precautions against Air Raid as are deemed necessary by the A.R.P. Officers or the Employer, (ii) for any materials etc., not on the site of the work or for any tools and plant, machinery, scaffolding, temporary buildings and other things not intended for the work.

20.3 In the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Employer.

21 **EXTENSION OF TIME:**

21.1 If the contractor shall desire and extension of time for the completion of the work on the grounds of his having been unavoidably hindered in its execution or any other ground, he shall apply in writing to the Employer within thirty days of the date of hindrance on account of which he desires extension as aforesaid, and the Employer shall, in his opinion (which shall be final) reasonable grounds shown therefore, authorize such extension of time if any, which may in his opinion be necessary or proper.

21.2 In the event the value of work exceeds the value of the bill of quantities owing to variations the contractor shall be entitled to ask for extension of time in proportion to the increase value of the work.

22 **SUSPENSION OF WORK BY CONTRACTOR:**

22.1 The Employer may without prejudice to his right against the contractor in respect of any delay or inferior workmanship or otherwise or to any claims for damages in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of the contract or otherwise and whether the date for completion has or has not elapsed by notice absolutely determine the contract in any of the following cases:

22.1.1 If the contractor having been given by the Engineer a notice to rectify reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or un-workman-like manner shall omit to comply with the requirements of such notice for a period of seven days thereafter or if the contractor shall delay or suspend the execution of the work so that in the judgment of the Employer (which shall be final and binding) he will be unable to ensure completion of the work by the date for completion or he has already failed to complete the work by that date.

22.1.2 If the contractor being a company shall pass a resolution or the court shall make in order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court of creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.

22.1.3 If the contractor commits breach of any of the terms and conditions of this contract.

22.1.4 If the contractor commits any acts mentioned in Clause 13 hereof.

22.2 When the contractor shall make himself liable for action under any of the cases aforesaid the Employer shall have the following power.

22.2.1 To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Employer shall be conclusive evidence). Upon such determination or rescission the security deposit of the contractor shall be liable to be forfeited and shall be absolutely at the disposal of the Employer.

22.2.2 The Engineer may employ labor paid by the Employer and to supply materials to carry out the work or any part of the work debiting the 1 rate the difference should not be paid to the contractor.

22.2.3 After giving notice to the contractor to measure up the work of the contractor and to take such parts thereof as shall be unexecuted out of his hands and to give it to another contractor to complete in which case in 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 exceed the certificate in writing of the Engineer 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 Employer under this contract or any other account whatsoever or from his security deposit.

22.2.4 In the event any one or more of the above courses being adopted by the Employer the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provisions aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer has 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.

23 SECURED ADVANCE:

The contractor on signing an indenture in the form specified by the Employer during the progress of the execution of the work may be paid if agreed by the Employer up to 75% of the estimated value which shall take into account the market value and contractors tendered rates for the finished items of any material which in the opinion of the Engineer is likely to be incorporated in the work within next three months, are nonperishable and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this clause are incorporated in the work the amount of such advance shall be deducted from the next payment made under any of the clause or clauses of the contract.

24 CERTIFICATES AND PAYMENTS:

24.1 No payments shall be made for a work estimated to cost rupees ten thousand or less till the whole of the work shall have been completed and certificate of completion given. But in the case of a work estimated to cost more than rupees ten thousand, the contractor shall, on submitting the bill be entitled to receive a monthly payment proportionate to the part of the work executed, and to the satisfaction of the Engineer, whose certificate of the sum so payable shall be final and conclusive against the contractor, provided the amount of work done is as per the value of intermediate certificate or for a lesser amount as the discretion of

the Engineer as mentioned in the NIT. All such intermediate payments shall be regarded as 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, 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, of any part thereof in any respect or the accruing of any claim not shall it conclude. Determine or affect in any way the powers of the Employer under these conditions or any of them as to the final settlement and adjustment of the accounts or in any other way vary or affect the contract. The final bill shall be submitted by the contractor within two months of the date fixed for the completion of work or of the date of the certificate of completion furnished by the Employer and payment shall be made within three months if the value of the completed works is up to Rs. Two lakhs and in six months if the same exceeds Rs. Two lakhs of the submission of such bill. If there shall be any dispute about any item or items of the works then the undisputed item or items only shall be paid within the said period of three months or six months as the date may be.

- 24.2 Whenever there is likely to be delay in recording detailed measurement for making a running payment, advance payment without detailed measurements for work done worked out at 75 per cent of the tendered rates for assessed quantities may be made in running account bills by the Employer on the basis of a certificate from the Engineer. The advance payments so allowed shall be adjusted in the subsequent running bills by taking detailed measurements thereof. Final payments shall be made only on the basis of detailed measurements.
- 24.3 A bill shall be submitted by the contractor each month on or before one date fixed by the Engineer on printed forms obtainable from the Engineer's office. The Engineer shall take or cause to be taken the requisite measurements for the purpose of having the same verified and the claim, as far as admissible, adjusted as far as possible, before the expiry of ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid the Engineer may cause action within seven days of the date fixed as aforesaid an authorized representative to measure up the said work in the presence of the contractor whose signature to the measurement will be sufficient warrant and the Engineer may prepare the bill from such measurements.
- 24.4 Before taking any measurement of any work the Engineer or his authorized representative deputed by him shall give reasonable notice to the contractor. If the contractor fails to attend after such notice or fails to sign or to record the difference within a week from the date of measurement in the manner required by the Engineer then in any such event the measurements taken by the Engineer or by the authorized representative deputed by him as the case may be, shall be final and binding on the contractor and the contractor shall have no right to dispute the same.

24.5 The charges in the bills shall always be entered at the rates specified in the agreement or in the case of any extra work ordered in pursuance of these conditions and not mentioned or provided for in the agreement at the rate determined as per clause 10. However in case of partially executed items of work, the Employer at his discretion allows proportionate rates for such items of work as determined by the Engineer whose certificate of the sum so payable shall be final and conclusive against the contractor.

25 **SECURITY DEPOSIT:**

25.1 A sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum along with the sum already deposited as earnest money, will amount to security deposit of 5% of the tendered value of the work. In addition, the contractor shall be required to deposit an amount equal to 5% of the tendered value of the contract as Performance Security within the period prescribed for commencement of work in the letter of award issued to him.

25.2 In case a fixed deposit receipt of any scheduled bank is furnished by the contractor to the Employer as part of the security deposit and the bank goes into liquidation or for any reason is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security in the Employer to make good the deficit of such sum from the running bill as mentioned above. Such deductions will be held by the Employer by way of security deposit, provided always that the Employer for this purpose shall be entitled to recover the said percentage of the amount from each running bill till the balance of the amount of security deposit is realized. All compensation of the other sums of money payable by the contractor under the terms of the contract may be deducted from the security deposit or from the interest arising there from or from any sums which may be due to or may become due to the contractor by the Employer on any account whatsoever and in the event of his security deposit being reduced by reason of any such deductions aforesaid, the contractor shall within ten days make good in cash or further fixed deposit receipt pledged in favor of the Employer. The security deposit shall be collected from the running bills of the contractor at the rates mentioned above and the earnest money if deposited at the time of tenders will be treated as part of the security deposit.

25.3 The contractor if he so desires may furnish fixed deposit receipt in advance towards the security deposit. Such fixed deposit receipt shall be of a minimum value of Rs.25000/- each (The last such fixed deposit receipt could be of a lower value on the basis of the amount). In case any recovery effected from running account bills, such recovered amount shall not be replaced with fixed deposit receipt. It is in the contractor's interest to keep a watch about the adequacy of the fixed deposit receipt submitted.

25.4 No partial refund of security deposit shall be made during the defect liability period. In case the final bill is not settled within deposited period for reasons beyond control and the Employer is satisfied that the security deposit is not required for adjustment of Employers dues or whatsoever dues either in this or any other contract then this security deposit either in full or in part could be refunded at the sole discretion of the Employer.

25.5 In case of termination of contract, the security deposit shall be forfeited and amount necessary to make up this amount shall be recovered from money due to the contractor under this contract, or any other contract with the Employer.

26 **COMPLETION CERTIFICATE:**

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Employer and within ten days of the receipt of such notice the Engineer shall inspect the work. If there is no defect in the work the Employer shall furnish the contractor with a certificate of completion otherwise a certificate of completion indicating defects shall be issued but the work shall not be considered to be completed until the contractor shall have removed from the premises on which the work shall be executed all the scaffolding, surplus material, rubbish, and all huts and sanitary arrangements required for his work, people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor and cleaned of the dirt, splashes, droppings of finishing items from all wood work, doors, windows, walls, floors or other parts of any building, in upon or about which the work is to be executed or of which he may have had possession for the purpose of the execution thereof. If the contractor shall fail to comply with requirements of this clause on or before the date fixed for the completion of the work, the Employer may at the risk and cost of the contractor take action as may be think fit and the contractor shall have no claim except for any sum actually realized by the sale thereof.

27 **ARBITRATION:**

27.1 Except where otherwise provided in the contract, all questions and disputes relating to the interpretation of the specifications, designs, drawings and instructions herein before mentioned, and as to the quality or workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, specifications, estimates, instructions, orders on these conditions or otherwise concerning the works, or the execution of failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the person appointed by the Director, Indian Institute of Technology Jodhpur at the time of such dispute. Any party shall appoint the Arbitrator within 30 days from the receipt of a request. The arbitrator to whom the matter is originally referred being unwilling or unable to act for any reason the Director shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at

which his predecessor left it. The Arbitrator shall give a speaking award. The award of the Arbitrator shall be final and binding on the parties. The cost of the Arbitrator shall be borne equally by both the parties.

27.2 It is also a term of the contract that the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.

27.3 It is also a term of the contract that if the contractor does not make any demand for arbitration in respect of any claim in writing within 90 days of receiving the intimation from the Employer that the final bill is ready for payment, the claim of the contractor will be deemed to have been waived and absolutely barred and the Employer shall be discharged and released of all liabilities under the contract in respect of these claims.

27.4 Subject as aforesaid the provision of the arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the Arbitration reference under this clause.

28 PERFORMANCE GUARANTEE:

Performance guarantee may be taken from the contractor before the award of the work, by the officer authorized to award the contract if and where considered necessary, to ensure that a part or whole of the contract is completed by the contractor. In case of non-performance, this guarantee could be encashed.

29 ESCALATION:

29.1 If the prices of materials not being supplied by the Employer and/or wages of labor required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contractor shall accordingly be varied subject to the condition the compensation for escalation in prices shall be available only for the work done during the stipulated period of the contract including such period for which the contract is validly extended under the provisions of Clause 22 of General Conditions of Contract without levy of compensation under Clause 20 of General Conditions of Contract and also subject to the condition that no such compensation shall be payable for a work for which the stipulated period of completion is eighteen months or less. Such compensation for escalation in the prices of materials and labor when due, shall be worked out based on the following provision.

(i) The base date for working out such escalation shall be the last date on which the tenders were stipulated to be received.

(ii) The cost of work on which escalation will be payable shall be reckoned as 85% of the work as per the bills, running or final, and from this amount the value of material supplied by the Employer and proposed to be recovered in the particular bill shall be deducted before the amount of compensation for escalation is worked out. In case of materials brought to site for which secured advance is included in the bill full value of such materials as assessed by the Engineer in charge (and not the reduced amount for which secured advance has been paid), shall be included in the cost of work done for operation of this clause. Similarly when such materials are incorporated in the work, the secured advance is deducted from the bill the full-assessed value of the materials originally considered for operation of this clause shall be deducted from the cost of work shown in the bill running or final. Further the cost of work shall not include any work for which payment is made for any item at prevailing market rates.

(iii) The compensation for escalation for materials & labor shall be worked out as per the formula given

$$VM = W \times (A \times MI) \div (100 \times MI)$$

VM - Variation in material cost i.e. increase or decrease in the amount in rupees to be paid or recovered.

W - Cost of work done worked out as indicated in sub para (ii) above.

A - Component of materials expressed as per cent of the total value of work and is predetermined as 75.

MI - Index numbers of Wholesale prices in India for all commodities published by the Reserve Bank of India for the period under reckoning.

MIo - Index numbers of Wholesale prices in India for all commodities published by the Reserve Bank of India on the date of receipt of tenders.

$$VL = W \times (B \times LI) \div (100 \times LI)$$

VL - Variation in labor cost i.e. increases or decrease in the amount in rupees to be paid or recovered.

W - Value of work done, worked out as indicated in sub para (ii) above.

B - Component of labor expressed as per cent of the total value of work and is predetermined as 25.

LI - All India consumer price index numbers for industrial workers published by the Reserve Bank of India for the period under reckoning as for the period under consideration.

LIo - All India consumer price index numbers for industrial workers published by the Reserve Bank of India and valid on the stipulated date of receipt of tenders.

29.2 The following principle shall be followed while working out indices mentioned in sub-para (iii) above.

- (i) The compensation for escalation shall be worked out at half yearly intervals and shall be with respect to the cost of work done during the six calendar months of the said work. The first such payment shall be made at the end of the six calendar months of the said work. The first such payment shall be made at the end of the six months after the month (excluding) in which the tender was accepted and thereafter as six monthly intervals. At the time of completion of work, the last period for payment might become less than six months, depending on the actual date of completion.
- (ii) The index (MI or LI) relevant to any six months for which such compensation is paid shall be the arithmetical average of the indices relevant to the six calendar months. If the period up to date of completion after the six months covered by the last such instalment of payment is less than six months, the index MI or LI shall be the average of the indices for the months falling within that period.
- (iii) The base index (MIo or LIo) shall be the one relating to the month in which the tender was stipulated to be received.

29.3 In the event the price of materials and / or wages of labor required for execution of the work decreases there shall be downward adjustment of the cost of work so that the price of materials and/or wages of labor shall be deductible from the cost of work under this contract and in this regard formula herein before stated under this clause shall mutatis mutandis apply provided that no such adjustment for the decrease in the prices of materials and/or wages of labor aforementioned would be made in case of contracts in which the stipulated period of completion of the work is six months or less.

29.4 Employer shall have the discretion to permit IEEMA (Indian Electrical & Electronics Manufacturer's Association) clause for Escalation In Case of specialized works e.g. lifts and electrical and Mechanical Installations etc. where the price variation is not similar to building works.

SPECIAL CONDITIONS OF CONTRACT

1. These special conditions are meant to amplify the general specifications and general conditions of contract.
2. Contractor will take all necessary actions to provide detail design, drawings, revised bill of quantities if any, execution at site after necessary approval by department, commissioning as directed for the work. All the above must be carried out within stipulated time frame as laid down by the department.
3. Work shall be done as per CPWD specification.
In case of any discrepancy the order of precedence in interpretation shall be as under:
 - (a) Schedule of quantities
 - (b) Drawings
 - (c) Additional Conditions.
 - (d) General Conditions of Contract
 - (e) Special Conditions
 - (f) Additional Technical Specifications.
 - (g) CPWD latest civil work specifications.
 - (h) I.S. Codes
 - (i) International codes.
 - (j) Best Engineering practice.
4. Unless otherwise provided in the schedule of quantities the rates tendered by the contractor shall apply for all heights, lifts, leads and depths of the work and nothing extra shall be payable on this account.
5. The surplus excavated earth, which is beyond the requirement of the Employer's work, may be allowed by the Employer to be disposed off by the contractor on his own or sell the surplus excavated earth to private parties at the discretion. But nothing extra will be paid for the cartage or disposal of surplus earth if the same is not required on any other work of the Employer.

ADDITIONAL CONDITIONS OF CONTRACT

1. The structural and architectural drawings shall at all times be properly correlated before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and drawings relating to the relevant item the former shall prevail unless and otherwise given in writing by the Engineer.
2. No payment shall be made to the contractor for any damage caused by the rain, snowfall, floods or any other natural cause whatsoever during the execution of work. The damage to work will be made good by the contractor at his own cost, and no claim on this account shall be entertained.
3. All materials used shall be as per specifications and ISI marked whenever applicable ISI marking referred relate to latest BIS code as published by Bureau of Indian Standards up to 30 days before the date of opening the tender.
4. The contractor shall give a performance test of the entire installation(s) as per standard specifications and / or as directed by the Engineer and will also submit test certificates as are required by Municipal / Electrical authority or any other authority. Nothing extra shall be payable for the same other than the fees paid to such authorities, which shall be reimbursed on production of receipts.

LIST OF MAKES OF MATERIALS

ITEM	MAKE
1. Conduit pipe	BEC/ AKG make/ Painted inside and outside (ISI marked) 16 SWG MS conduit.
2. PVC Conduit Pipes	Polycab/ Kent/ Finolex
3. Conduits accessories & Junction boxes	All made out of 16G MS sheet
4. Bushes	Rubber/ PVC
5. Wires PVC insulated and PVC sheathed -	FRLS National/ Finolex (ISI marked)/ Havells
6. PVC/ XLPE insulated cables	Fort Gloster/ Universal/ Havells/ Polycab
7. Moulded switches and sockets	MK Electric/ North-West/ Clipsal/ ABB
8. Piano switch and sockets	Anchor/ Vinay/ Great white
9. Air circuit breakers	L&T/ Siemens/ ABB/ Legrand/ Schneider
10. MCCB	L&T/ Legrand/ ABB/ Schneider
11. Distribution boards MCB type	MDS(Lexic)/ ABB/ Schneider/ Havells
12. Loose Wire box for Distribution boards	MDS(Lexic)/ Siemens
13. Lighting fixtures	Philips/ Wipro/ Havells
14. Ceiling fans	Crompton/ Orient/ Bajaj/ Alstom
15. MCB's	MDS(Lexic)/ Schneider / ABB
16. Exhaust fans	Alstom/ Almonard/ Havells
17. Cable sockets	Alcon (Heavy gauge)
18. Holders brass of sizes	KAY/SSK
20. Safe trip /RCCB/ELCB	MDS Lexic/ Schneider/ Havells
21. GI pipe 'B' class	TATA/ Jindal/ GST
22. Electrical Switchboards/ Feeder Pillars	Milestone Engineering/ Tricolite Industries/ Essaar Universal
23. Telephone Wires	National/ Finolex

24. Telephone Tag Blocks	Krone/Pouyet
25. Telephone outlets	MK Electric /North West/Clipsal/ABB
26. GI raceways	Milestones Engineering
27. PVC raceways	Fixopan/Modi
28. Panel meters	L&T Rishab/AE
29. Current Transformers	Gilbert Maxwell/Kappa
30. Selector Switch	L&T Salzer/Kaycee
31. Protective Relays	Alstom/L&T
32. Electronic Energy Meters	Enercon/L&T
33. Smoke/Heat Detectors	Apollo/Edwards/System Sensor
34. Manual Call point	PRD/Systems-Tek/Simplex/System Sensor
35. Response indicators	PRD/Systems-Tek/Simplex/System Sensor
36. Fire Exit Signs	PRD/Systems-Tek/Simplex
37. Fire Control Panel	PRD/Systems-Tek/Morley
38. Speaker/Hooter	PRD/Systems-Tek/Philips

(Signature of the Tenderer)

ANNEXURE-A

Schedule of Quantity					
<p>Name of work: - Providing of electrical connection through UPS for squid, PPMS and Scanning Panelling Microscope machine installation along with single and three phase power supply for installation of chiller and compressor in physics lab R.No. 1102 and R.No. 5008 Porta Cabin in Academic Campus of IIT Jodhpur.</p>					
S.No	Description	Qty.	Unit	Rate	Amount
1	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required				
a	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	170	Metre		
b	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	105	Metre		
c	4 X 10 sq. mm + 2 X 10 sq. mm earth wire	30	Metre		
2	Supplying and fixing following way prewired TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FRLS PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator)				
a	6 way (4 +18), Double door	2	Each		
3	Supplying and fixing following way prewired SP&N MCB distribution board of steel sheet for 240 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator)				
a	2 + 12 way, Single door	1	Each		
4	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.		-		
a	63 amps	8	Each		
5	Supplying and fixing 5 amps to 32 amps rating, 240/415 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.				
a	Single pole	24	Each		

6	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 amps "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.	2	Each		
7	Supplying and fixing 5 amps to 32 amps rating, 240/415 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.				
a	Double pole	1	Each		
b	Triple pole and neutral	4	Each		
8	Supplying and fixing 30 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 30 amps "C" curve, TPMCB, 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.	6	Each		
9	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.				
a	3-1/2 x 50 Sqmm (35 mm)	4	Each		
10	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
a	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	110	Mtr.		
11	Supplying and Fixing of Metal enclosure for Four Pole MCCB on surface or recessed etc. as required.	4	Nos.		
12	Providing and Fixing following rating and breaking capacity 36 ka, MCCB in Distribution Board includingt drilling holes in Distribution Panel, making connection etc. as required.				
a)	100 Amp. 36 KA, 4 Pole MCCB, Cat No. 420095	5	Nos.		
13	Supplying of one no. PVC insulated & PVC sheathed aluminium conductor steel armoured cable of size 3-1/2x50 sqmm 1.1kV grade etc. as per specifications as reqd.	118	Mtr.		
14	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	120	Mtr.		
15	Supplying and fixing TP sheet steel enclosure on surface/ recess along with 16/25/32amps 415 volts "C" curve TP MCB complete with connections, testing and commissioning etc. as required.	4	Nos.		

16	Supplying and fixing following piano type switch/ socket on the existing switch box/ cover including connections etc. as required.				
a	15/16 amp switch	10	Each		
b	6 pin 15/16 amp socket outlet	10	Each		
17	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
a	180 mm X 100 mm X 60 mm deep	10	Each		
	Total "Rs" (In Figures)				
	Total "Rs" (In Words)				