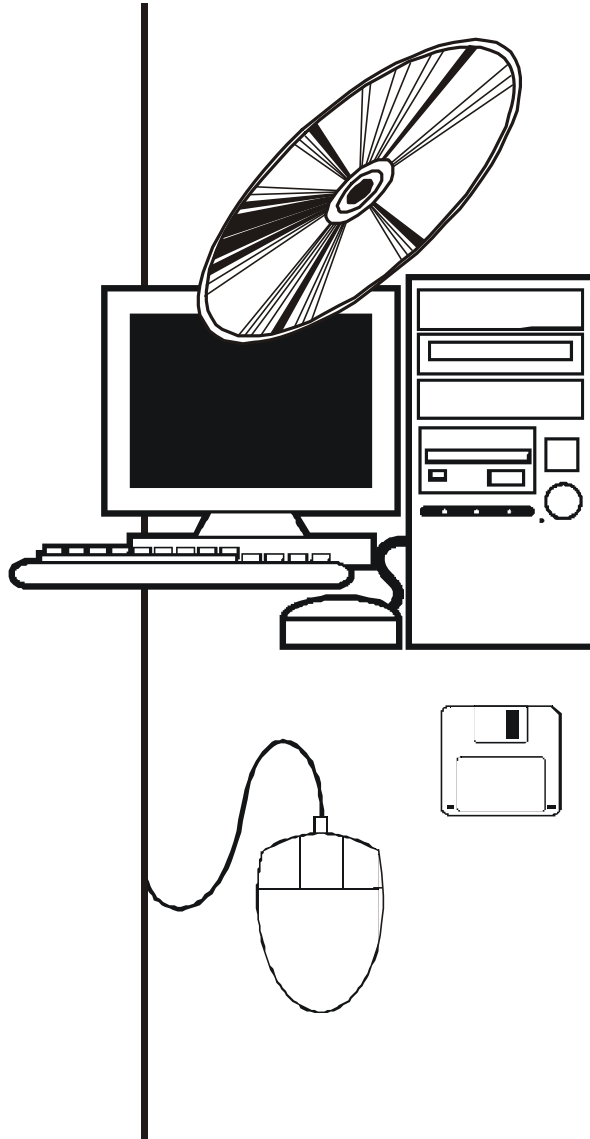




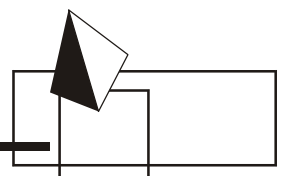
Advt. No:-HARTRON/MSG/2010-11/10	Sr.No:	Date:
DATE OF CLOSING: 24.03.2011	DATE OF OPENING: 25.03.2011	

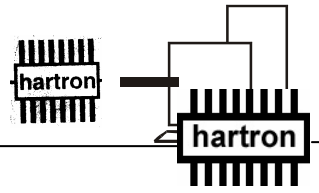


# TENDER DOCUMENT

**CATEGORY:** Rate contract for purchase of electronic/scientific instruments like CRO, signal generator, electronic trainer kits etc.

हरियाणा राज्य इलेक्ट्रॉनिक्स विकास निगम लिमिटेड  
एस. सी. ओ. 111 - 113, सेक्टर 17 बी, चण्डीगढ़ - 160017 (भारत)  
**haryana state electronics development corporation limited**  
**( a state government undertaking )**  
Regd. Office : S.C.O. 111-113, Sector 17-B,  
Chandigarh - 160 017 (India)





हरियाणा राज्य इलैक्ट्रॉनिक्स विकास निगम लिमिटेड  
एस. सी. ओ. 111 – 113, सैक्टर 17 बी, चण्डीगढ़ – 160017 (भारत)  
**haryana state electronics development corporation limited**  
**( a state government undertaking )**  
Regd. Office : S.C.O. 111-113, Sector 17-B,  
Chandigarh – 160 017 (India)

Advt. No :-HARTRON/MSG/2010-11/10

Tender No:

S.No. \_\_\_\_\_

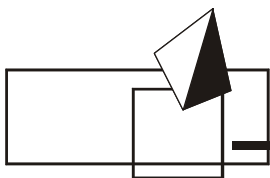
Date \_\_\_\_\_

To

\_\_\_\_\_  
\_\_\_\_\_

CLOSING DATE FOR SALE OF TENDER	:	24.03.2011
TIME	:	5.00 PM
DATE OF SUBMISSION OF TENDER	:	25.03.2011
TIME	:	2.30 PM
DATE OF TENDER OPENING	:	25.03.2011
OPENING TIME (TECHNICAL BID)	:	3.30 PM
COST OF TENDER DOCUMENT	:	Rs.1000/- by cash or enclose DD of Rs. 1000/- with tender document if downloaded from Website
EARNEST MONEY IN THE FORM OF BANK DRAFT ONLY	:	Rs 2,00,000/-
INSTRUCTIONS TO TENDERERS	:	ANNEXURE-I
MANUFACTURER AUTHORISATION CERTIFICATE	:	ANNEXURE-II
UNDERTAKING OF RATES	:	ANNEXURE-III
SERVICE AUTHORISATION CERTIFICATE	:	ANNEXURE-IV
TERMS AND CONDITIONS	:	ANNEXURE-V
SPECIAL TERMS AND CONDITIONS	:	ANNEXURE-V-A
SPECIFICATIONS	:	ANNEXURE-VI
Schedule "A" of Rates	:	ANNEXURE-VII

**(Roshan Lal)**  
Asstt. General Manager  
(Marketing Support Group)



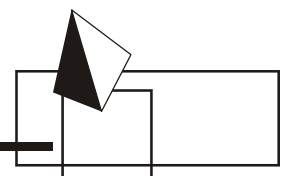


## ANNEXURE-I

### HARYANA STATE ELECTRONICS DEVELOPMENT CORPORATION LIMITED

#### INSTRUCTIONS TO TENDERERS

1. Quotation must be enclosed in a properly sealed envelope addressed to the **Managing Director, HARTRON** with kind attention to **Asstt. General Manager (MSG), HARTRON** by designation and not by name. The quotations must be superscribed "Quotations for **Rate contract for purchase of electronic/scientific instruments** the year 2010-2011 as called for in Tender Notice No. HARTRON/MSG/2010-11/10 dated \_\_\_\_\_" The documents must be put in the tender box lying in the Marketing Division, 2<sup>nd</sup> Floor, HARTRON or must reach to the Asstt. General Manager (MSG), HARTRON before 2.30 PM on the date mentioned in the tender notice/tender document.
2. In the event of quotations being submitted by a firm, it must be signed separately by each member thereof, or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorising him to do so, or in the case of a Company, the quotations should be executed in the manner laid down in the said Company's Articles of Association. The signatures on the quotations shall be deemed to be authorised signatures.
3. All the columns of the quotation form shall be duly, properly and exhaustively filled in. The rates and units shall not be overwritten. Quotations shall always be both in the figures and words. The words "No quotations" should be written across any or all of the items in the schedule for which a tenderer does not wish to tender.
4. Any omission in filling the columns of "units" and "rate" shall altogether debar a quotation for being considered.
5. All corrections must be signed by the tenderers.
6. **EMD: Earnest Money Deposit (EMD) of Rs. 2,00,000/- has to be deposited in the form of Demand Draft payable to HARTRON, Chandigarh.**
7. **The Managing Director, HARTRON does not bind himself to accept the lowest tender and reserve to himself the right to reject any or all tenders without assigning any reasons.**
8. No tender will be considered unless and until all the documents are properly stamped & signed.





9. The quotations will be regarded as constituting an offer or offers open to acceptance in whole or in part or parts at the discretion of Managing Director, HARTRON.

In the event of tender being accepted, the quotations will be converted into contract which will be governed by the conditions in pages (2-9) read with these instructions.

### Condition of contract

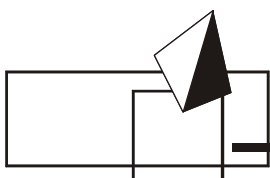
1. This contract is to last from \_\_\_\_\_ to \_\_\_\_\_ but in the event of any breach of the agreement at any time on the part of the contractor; the contract may be terminated summarily by the Managing Director, HARTRON without compensation to the contractor.

Any change in the constitution of the firm shall be notified forthwith by the contractor in writing to the authority sanctioning the contract and such change shall not relieve any former member of the firm from any liability under the contract.

No new partner/partners shall be accepted into the firm by the contractor in respect of this contract unless he/they agree to abide by all its terms, conditions and deposit with the officer sanctioning the contract a written agreement to this effect. The contractor's receipt or acknowledgement or that of any partners subsequently accepted as above shall bind all of them and will be a sufficient discharge for any of the purposes of the contract.

The contractor will supply nothing but genuine articles as described in column 2 of Schedule 'A' from time to time in such quantities as may be entered in the indents sent at rates set forth in column 4 of schedule 'A' No guarantee can be given as to the quantity, which will be ordered during this period. But the purchaser undertakes to order from the contractor all stores as detailed in the Schedule "A' which he requires to purchase, except that he reserves to himself the right of placing the contract with one or more contractors as he may think fit and in consideration of this undertaking by Government, the contractor binds himself not to revoke this contract during the said period. The quantities of stores given in the tender are approximate only. HARTRON may increase the quantity upto 25% than the quantity mentioned in original supply order & no separate consent of the tenderer is required in this regard.

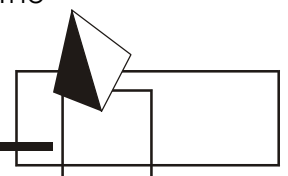
2. The articles to be supplied under this contract will be of the quality equal and answerable in every respect to the specifications given in the list accompanying with the tender approved by the Managing Director, HARTRON. The





contractor shall be responsible for all complaints as regards the quality. In case of dispute regarding quality of articles, the decision of Managing Director, Hartron will be final and binding on the contractor. It will be open to the Managing Director, Hartron to send samples submitted by the tenderer/contractor to any laboratory/committee of technical expert for tests and the cost thereof will be borne by the tenderer/contractor.

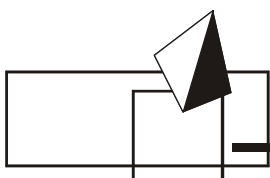
3. The Managing Director, HARTRON may by notice in writing call upon the contractor to supply additional articles to serve as sample and upon such notice in writing, contractor shall at his own cost be bound to supply additional samples, such additional samples being in all respect of the same quality as the sample first supplied.
4. The contractor will be responsible for damage or loss in transit and replace goods broken or lost within 10 days from the date of notice thereof. Unless otherwise specified all goods must be delivered at destination within 4 weeks from the date of placement of order.
5. Condition as to time for performance whether laid down herein or in any indent shall be always regarded as the essence of the contract.
6. a) The Managing Director, HARTRON or any of the experts or the Indenting Officers or any other officer or person duly authorised in writing by Managing Director, HARTRON shall have the power to inspect the stores at manufacturer premises/distributors premises or at consignee site and to reject the same or any part or portion after the written approval of the Managing Director, Hartron, if he or they be not satisfied that the same is equal or according to the specifications submitted by the contractor. The contractor shall not be paid for supplies rejected as above and such supplies shall be removed by the contractor at once and at his expense. He shall neither claim nor be entitled to payment for any damage that rejected supplies may suffer from any harm whatsoever incidental to a full and proper examination and test of such supplies. HARTRON shall be under no liability whatsoever for rejected and the same will be at the contractor's risk. Rejected supplies shall be removed by the contractor within 10 days after notice has been issued to him of such rejection, and failing such removal of rejected goods will be at contractor's risk and Hartron may charge the contractor rent for the space occupied by such rejected goods.
- b) Super inspection of stores, already inspected may be carried out at the discretion of the MD, HARTRON or by such officer as may be authorised by him. The





provisions of conditions (6a) will apply to the Super Inspection also.

- c) If the inspection of stores is required to be conducted second time or more on account of rejection of goods for the 1st time or any other reason on account of firm, expenses of Inspection Committee(as per Govt./HARTRON entitlement) will be borne by the firm.
7. The contractor shall provide without any extra charge all materials, tools, labour and assistance of every kind which the aforesaid officer may consider necessary for any test or examination which he may require to be made on the contractor's premises and shall pay all cost attendants thereon. In the case of stores inspected at maker's premises, the maker shall provide all facilities including testing appliances for making necessary tests other than special tests, or in dependent tests. Failing these facilities at the own premises for making the tests the contractor shall bear the cost of carrying out test elsewhere. The contractor shall also provide and deliver free of charge at such place as the aforesaid officer may direct such materials as he may require for tests. If for the purpose of determining the quality of stores the aforesaid Officer find it necessary to have the stores tested at the test house or laboratory, all expenses incidental to the test shall be borne by the contractor. On the failure of the contractor to pay the expenses within 10 days of the receipt of intimation in this behalf from the Inspecting Officer, the Managing Director, HARTRON shall have the right to deduct the amount from the security deposited by the contractor, and if the amount so deducted is not deposited within 10 days, the Managing Director, HARTRON may treat the default as a breach of agreement and proceed as per agreement without further notice. Further the aforesaid officer shall have the right to put all articles or materials to such tests as he may think proper for the purpose of ascertaining whether the same are in accordance with the specifications or sealed sample mentioned in the tender and to cut out or off and/or destroy a portion not exceeding 2 per cent from each delivery for such purpose and the quantity so cut out or off and/or destroyed as aforesaid shall be replaced by contractor free of charge.
  8. Packing cases, containers, gunny packages etc. which may be used for purposes of packing and which are delivered with stores will not be returned or paid for unless specifically stipulated, and that to contractor's expense.
  9. Unless otherwise specified in a requisition, bills for the whole goods referred to in each indent, in triplicate, will be prepared and submitted by contractor to the Managing Director, HARTRON. The full amount will be paid on receipt of





Stores in good condition after their verification as regards specifications, etc.

## 10. IN CASE OF DIRECT PAYMENT TO CONTRACTOR

If the payment of any bill be not made within three months from the date of its submission, the indenter to whom the bill was forwarded should be addressed first. Failing satisfaction, the matter should be reported to the MD, HARTRON. All such complaints should be with following details: -

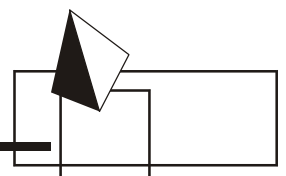
- i) The number and date of the supply order,
  - ii) The date of Inspection along with photocopy of Inspection note,
  - iii) The date of Delivery,
  - iv) The date of Installation,
11. With every dispatch of goods or materials under the contract, invoices in triplicate will be prepared by the contractor. Invoices in duplicate are to be sent by the contractor to the Indenting Officer, the duplicate to be returned by the Indenting Officer, with the quantities or number received duly noted thereon and the third copy to be sent by the contractor to Managing Director, HARTRON for record in his office.

The contractor shall dispatch the material freight paid and duly insured at destination.

This is subject to the condition that the materials are securely packed by the suppliers in sound containers and the consignment is accepted by the carriers without any adverse remarks as to the packing or the condition of the containers. In case of any adverse remarks, the responsibility for the losses in transit will rest with the suppliers.

Subject to these conditions, the contractor will not be entitled to charge or be paid for supplies broken, lost or damaged in transit. The Managing Director, HARTRON will be the authority to determine whether or not the breakage, loss or damage was caused through the contractor's negligence and the decision of the Managing Director, HARTRON or some other officer action on his behalf shall be final and conclusive against the contractor. Such rejected supplies shall be removed by the contractor at his own expense.

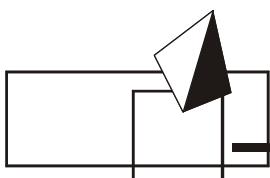
If during the currency of the contract, the specifications of any article or articles to be supplied there under be changed the contractor shall continue to comply with demands for the supply of the said article or articles in accordance with the new specifications at rate to be mutually agreed to in writing at the time of such change, and in default of such agreement the contractor in so far as it relates to the said





article or articles in respect of which no agreement has been arrived at, shall terminate but no such change shall affect the supply of any other articles under the contract or entitle the contractor to any compensation.

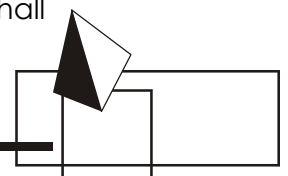
12. In the event of withdrawal or discontinuance of any article or articles and consequent ceasing of or reduction in demand the contractor shall not be entitled to any compensation. Government will however, make all reasonable endeavors to give warning of any impending complete withdrawal or of any reduction seriously affecting quantities likely to be required under contract.
13. The date of delivery stipulated in a supply order shall be deemed to be the essence of the contract and should the contractor fail to deliver any consignment within the period prescribed for such delivery stipulated in the supply order, HARTRON may cancel the supply order & penal action such as debarring, forfeiture of earnest money, security, pending payments may be taken against the firm. HARTRON may accept the delayed consignment subject to 2% penalty per consignment per week recoverable on the value of the stores supplied. In case of non payment by the contractor, recovery will be made from his bills or amount of Earnest Money with HARTRON. However, if the firm request for extension of delivery period, the reasons for delay will be examined by HARTRON & if the reasons for delay are found justified, M.D., HARTRON may extend the delivery period. In case, the delivery period is extended, no penalty for supplies made during the extended period is recovered from the supplier.
  - a) On the failure of the supplier to make supply within the original delivery period or extended period, risk purchase at the cost of supplier will be made by the Managing Director, HARTRON within 6 months of the expiry of the stipulated delivery period by inviting short term quotations from the registered and other known suppliers. The excess cost thus incurred will be recovered from the suppliers from his pending bills/ Earnest Money or through court of law. This procedure will be adopted after serving registered notice to supply stores within 15 days.
14. The contractor acknowledges that he has made himself fully acquainted with all the conditions and circumstances under which the supplies required under the contract will have to be made or furnished and with all the terms, clauses, conditions, specifications and other details of the contract and the contractor shall not plead ignorance of any of those as excuse in case of complaint against or on rejection of supplies tendered by him or with a view either to asking for





encashment of any rates agreed to in the contract or to evading any of his obligations under the contract.

15. No payment will be made in advance for any Supplies under this Contract.
16. i) The contractor shall not:
  - a) Assign or sublet contract without written approval of the officer sanctioning the contract.
  - a) Disposal details of the conditions governing this contract to unauthorized persons (intending against this contract is permissible only for the bonafide use of Government Departments and Quasi Public and not for private parties or for the private use of the Government Officers).
- ii) In the event of the contractor failing duly and properly to fulfil or committing breach of any of the terms and conditions of this contract or repeatedly supplying goods liable to rejection hereunder or failing, declining, neglecting or delay to comply with any demand or requisition or otherwise not executing the same in accordance with terms of this contract or if the terms of this contract or if the contractor or his agent or servants being guilty of fraud in respect of this contract or any other contract entered into by the contractor or any of his partners or representatives thereof with Government directing, giving, promising or offering any bribes, gratuity, gift loan, perquisite, reward or advantage pecuniary or otherwise to any person in the employment of Government in any way relating to such officers or person or persons, officer or employment or if the contractor or any of his partners become insolvent or apply for relief as insolvent debtor or commence any insolvency proceedings or make any composition with his/their creditors or attempts to do so, then without prejudice to Government's rights and remedies otherwise, Government shall be entitled to terminate this contract forth with and to blacklist the contractor and purchase or procure or arrange from Government's stocks or otherwise at the contractor's risk and at the absolute discretion of the Managing Director, HARTRON as regards the manner, place or time of such purchases, such supplies have not been supplied or have been rejected under this arrangement or are required subsequently by Government there under and in cases where issues in replacement are made from Governments stock or supplies, the cost or value or such stocks or supplies together with all incidental charges or expenses, shall

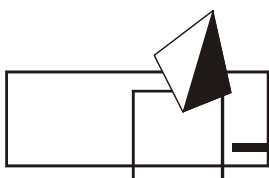


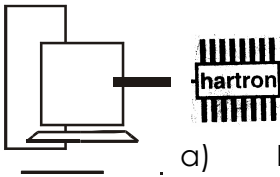


be recoverable from the contractor on demand and the contractor shall not be entitled to benefit from any profit which may thus accrue to Government.

The termination of this contract in whole or part under these conditions shall not be affected by the acceptance, meanwhile or subsequently, of supplies accepted or made at any station whether in ignorance of the termination otherwise.

17. If any question, difference or objection whatsoever shall arise, in any way connected with or arising out of this instrument or the meaning or operation of any part thereof or the rights, duties or liabilities of either party than save in so far as the decision of any such matter is here in before provided for and has been so decided every such matter including whether its decision has been otherwise provided for and/or whether it has been finally decided accordingly in whether the contract should be terminated or has been rightly terminated in whole or part and as regards the rights and obligations of the parties as the result of such termination, shall be referred for arbitration to any Officer appointed by Commissioner IT and his decision shall be final and binding and where the matter involves a claim of the amount if any awarded in such arbitration shall be recoverable in respect of the matters so referred.
18. (a) The Arbitrator and his subordinate staff shall be paid a fee of Rs.100/-per hearing subject to a maximum of Rs.500/- in each case provided that out of this amount 20% will be payable to his staff. The arbitration fee will be borne equally by the Govt. and by the party concerned. The parties, other than the Govt. shall deposit their share in shape of Demand Draft in favour of HARTRON, Chandigarh before announcement of award by the Arbitrator. In case the arbitration proceedings are conducted exparte and the award is announced against the Govt. than entire amount shall be payable by HARTRON or concerned Department as the case may be but where the exparte award is announced in favour of the Govt. the share of the opposite party shall be recoverable from the said party.
19.
  - i) The specifications of items should be strictly as per Annexure-VI.
  - ii) Deviation, if any may please be mentioned separately. If there is no deviation than it should be mentioned as "No Deviation".
20. **There is two bid systems:**
  - A) In pre-qualification cum-technical bid Bidder shall enclose the following document:





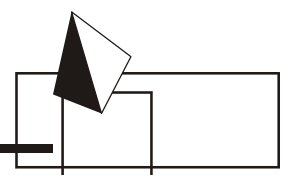
- a) Bidder shall enclose Earnest Money Deposit (EMD).
- b) Bidder must be in business for at least 3 years for supply of electronic equipment/Instruments, scientific equipment; Training kits (attach Proof).
- c) Bidder must be a manufacturer or its authorized dealer. The dealers must enclose a certificate of authorization of manufacturer with the bid.
- d) Bidder should have after sales services set up at, Haryana/ Chandigarh/Delhi, and should be in a position to provide satisfactory after sales service support in the State of Haryana and Chandigarh.
- e) Bidder should mention the brands/makes of the items offered.
- f) Bidder must enclose the acceptance of terms and conditions offered by HARTRON.
- g) All the Annexure enclosed should be duly filled up and signed.
- h) Bidder should provide the list of customers to whom similar type of equipment has been supplied earlier.
- i) Please attach proof/certificate of each condition required in the tender document.

**Note:**

- Documents are not transferable.
- The offers not qualifying for the conditions of pre-qualification cum technical bid shall not be considered for Commercial evaluation.
- Pre-qualification cum technical bid and commercial bid should be sent in a separate sealed envelope.
- The pre-qualification and technical bids should be accompanied with the documentary details (wherever applicable) as per above mentioned points. Otherwise the Bidder will be considered disqualified in the pre-qualification cum technical bid.
- The pre-qualification bidders may be empanelled for one year as per terms and conditions of HARTRON.
- Deviations, if any in specification and terms & conditions should be indicated separately.

**B. Commercial Bid:** Commercial bid should accompany the schedule

'A' of rates. (As per Annexure-VII).





# Certificate of Acceptance

I/We hereby offer to supply the items in the manner in which and within the time specified as set forth in the Notice Inviting Tender.

I/We herewith enclose deposit receipt for sum of Rs.....as Earnest money and should I/We fail to execute an agreement embodying the said conditions. I/We hereby agree that the above sum of Earnest money shall be forfeited by Managing Director, HARTRON.

Read and accepted.  
Tenderer

Signature of the

**IN WITNESS THEREOF the parties have here up to set their hands on the cases indicated below:**

1. (In the case of a Firm)

Sign. by the above-named firm of \_\_\_\_\_  
through \_\_\_\_\_ partner  
of the firm.

Date \_\_\_\_\_

Signature

2. (In the case of a Company)

The seal of the \_\_\_\_\_ Company Limited, was  
affixed by virtue of the resolution of the Board  
No. \_\_\_\_\_ dated  
\_\_\_\_\_ the \_\_\_\_\_ day of  
\_\_\_\_\_ 201 \_\_\_\_\_

Seal

Dated

Directors  
Signature

(In either case)

Secretary's.  
Signature

In the presence of (i)

(i) Signature  
Address  
Description

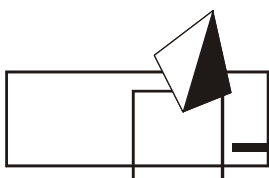
(ii) Signature  
Address  
Description

Signed

by \_\_\_\_\_

Dated \_\_\_\_\_

Signature of \_\_\_\_\_  
on behalf of the Managing Director  
Of HARTRON





**ANNEXURE-II**

From

-----  
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To

Managing Director,  
HARTRON, SCO-111-113,  
Sector 17-B, Chandigarh

**AFFIDAVIT**

**(MANUFACTURER'S AUTHORISATION CERTIFICATE)**

I, \_\_\_\_\_ son of Sh.  
\_\_\_\_\_ resident of \_\_\_\_\_  
\_\_\_\_\_ do hereby solemnly affirm and declare as  
under:-

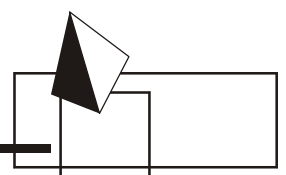
- (i) That this is to certify that M/s \_\_\_\_\_  
\_\_\_\_\_ is our authorized  
dealer/distributor/agent and he is authorized to submit  
tender/quote the rates in the State of Haryana, against  
empanelment enquiry No. \_\_\_\_\_ due on  
\_\_\_\_\_ and to supply the material in original  
manufactured by us.
- (ii) That we shall have full responsibility of satisfactory supplies  
against the supply order/rate contract if  
dealer/distributor/agent against the above mentioned  
tender inquiry.
- (iii) That I am fully authorized to give this affidavit on behalf of  
(name of firm) and the power of attorney has been  
executed in my favour (Attested copy enclosed).
- (iv) That if at any stage a dispute arises between  
dealer/distributor/agent and our manufacturing firm, we will  
be responsible to arrange supply on the terms and  
conditions of supply order/rate contract.
- (v) That in case the dealer/distributor/agent fails to supply the  
goods as per supply order of the contract, the  
manufacturer takes the responsibility of the supply and will  
abide by the terms and conditions of contract, signed by  
the dealer/distributor/agent.

**DEPONENT**

**Verification:**

Verified that the contents of the above affidavit of mine are true  
and correct to the best of my knowledge and nothing has been  
concealed therein.

**DEPONENT**





**UNDERTAKING OF RATES**

**From**

-----  
-----

**To**

Managing Director,  
HARTRON, SCO-111-113,  
Sector 17-B,  
Chandigarh

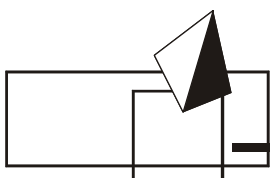
We do hereby confirm that:

1. The rates quoted against this tender are lowest possible and as on date we have not quoted less rates to any other customer than the rates quoted herein. In case, we quote less rates than this tender to any other customer within 1 month of the due date of this tender, then double of the difference in amount will be refunded to HARTRON. We also confirm that in case our Company/principal officially reduce the price before the delivery or within 15 days from the date of delivery, then the benefit for the same will be passed to HARTRON.

For submission of bid, negotiations and for contract we authorize Mr. (Name & Designation of the representative) of our firm.

(Signature)

Name :  
Designation :  
(Head or Senior  
Executive of Firm)  
Address :  
Phone No :  
Fax No :  
Pager No :  
Mobile No :



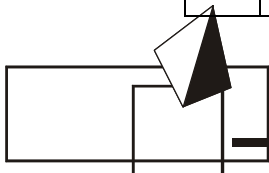


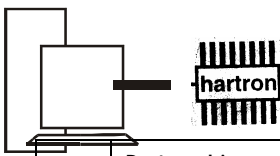


**ANNEXURE-V**

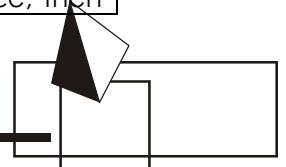
**CONDITIONS WITH TENDER FORM**

1.	<b>Offer Acceptance</b>	Offers are to be submitted along with tender form. Offers received without tender form may be ignored.
2.	<b>Format</b>	Any tender, which is not on the proper tender form or received late, may not be considered.
3.	<b>Contract</b>	The conditions of contract (Schedule 'B') attached to the tender form be returned duly signed along with the Schedule 'A' and in case of non-compliance the tender may be ignored.
4.	<b>Specification Conformity</b>	Tenders which are not strictly according to the specifications laid down in the Schedule 'A' will not be considered. Unless a deviation from the specification/delivery period given in Schedule "A" is pointed out by the tenderers specifically, it will be presumed that offer conforms to the specifications, delivery period as laid down in the Schedule 'A'.
5.	<b>Opening Date</b>	In case, the date of opening falls on holiday, gazetted or subsequently declared, the tender will be opened on the next working day following the closed day.
6.	<b>Jurisdiction</b>	All disputes will be settled within the jurisdiction of Chandigarh.
7.	<b>Offer Discretion</b>	The quotations will be regarded as constituting an offer or offers open to acceptance in whole or in part or parts till the date as indicated in the Schedule 'A'.
8.	<b>Writing</b>	The offers should be typed or written in ink. Offers written with pencil may be ignored.
9.	<b>Certification</b>	If specified in specifications requirement, the firm having ISO 9001/9002/any other certification should furnish the certificates.
10.	<b>Documents</b>	Photocopies of all the required documents should be attached with the offer. The vendor should be in a position to produce the original document(s) for verification, if required.
11.	<b>Sister concerns</b>	The tenderer will give complete addresses of its sister concerns/authorized dealers along with name of partners with their complete address (es) and extent of share.
12.	<b>Authentic Signatory</b>	It should also be ensured that tender/quotation has been signed by an authorized person. His name, designation and address should be given in capital letters. Please also indicate the name, designation of the person who signs the Schedule 'B' and who shall have further correspondence in this case.
13.	<b>Quantity</b>	HARTRON reserves the right to increase or decrease quantity, subject to the final requirement at the time of placement of order.
14.	<b>Inspection</b>	Inspection of the stores will be carried out in the premises of the vendor or at a place to be notified by HARTRON. The testing facilities will be arranged by the vendor.



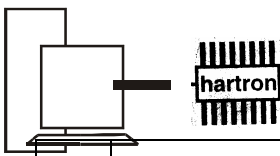


15.	Partnership	The tenderers must attach with their offers the partnership deed or constitution of the firm indicating the name of the proprietor.
16.	Agreement	The successful tenderers are required to send the agreement in duplicate as the condition of the contract, tenders for accepted applicable in this case to the firm of issue of acceptance/adhoc/detailed orders by the HARTRON, failing which no acceptance/supply order will be issued and a copy of the same shall be returned to the tenderers duly executed on behalf of MD, HARTRON by this office and second copy will be retained in this office for record.
17.	Authorization	The manufacturers should supply documentary proof i.e. Registration with the Director of Industries, National Small Scale Industries Corporation or with penal of HARTRON.
18.	Past Performance	Tenderers who are dealing first time with HARTRON are required to furnish particulars of supplies of similar stores made by them during the past three years to various State Govt. / Directorate General, Supplies & Disposals, New Delhi/any other Govt. Institutions in the Country, failing which the offers/tenderers are liable to be ignored.
19.	Price	The total landed prices in the offer should be inclusive of current excise duty, freights, insurance, sales tax etc., failing which the offer may be ignored. However, octroi or other local levis shall be extra if applicable. Further if there is any change in the excise duty by Govt. of India then the same shall be applicable on presentation of the proof. The change in any other duties including sales tax, custom duties effect due to devaluation of rupee shall not be entertained.
20.	Validity	The validity of the quotation/prices should be valid for 90 days from the date of opening of bids unless otherwise specified. The validity of the tender should be kept as mentioned in ANNEXURE-VI. If any firm withdraws their offer within the validity period or modifies conditions without approval of HARTRON, the EMD of the firm may be forfeited and the firm may be debarred from doing any business with HARTRON.
21.	Corrections	The tenderer must sign each Correction.
22.	Price Variation	Offer with price variation clause will not be accepted.
23.	Negotiations	HARTRON reserves the right to call all or selected parties for negotiations.
24.	Signature	<b>An authorized person should sign the tender/quotation. His name, designation and address should be given in capital letters.</b>
25.	Rates	The prices offered in the tender for the stores should be lower than the price at which the tenderer supply the stores of identical description to various State Government Institutions/ Undertakings/any other organization during the validity period. If at any time during the validity period the successful tenderer reduces the sale price of quoted stores to any other organization at a price lower than the price chargeable under this supply order/contract, the tenderer should be forthwith notify such reduction to this office, then

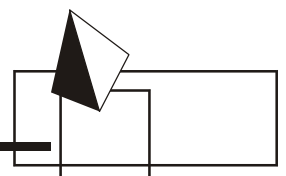


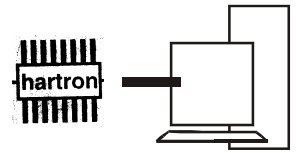


		the prices payable under the supply order/contract for the stores supplied after the date of prices reduction will be reduced to that level. Otherwise double of the difference will have to be <i>refunded</i> to HARTRON.
26.	<b>Payment Terms</b>	Unless otherwise specified at Annexure-VI (Specifications), 90% of payment will be released after inspection and delivery. The balance 10% payment will be released within one month from the date of installation and submission of bank guarantee @10% of the order value in case order value is more than Rs. 2.00 lacs. The Bank Guarantee should be valid up to one month more from the date of expiry of warranty period of the system.
27.	<b>Delivery Period</b>	Unless otherwise specified, the ordered quantity of stores must be offered for inspection and testing within 4 Weeks from the date of placement of confirmed order.
28.	<b>Warranty Period</b>	Unless otherwise specified at ANNEXURE-VI (Specifications) the warranty should be 1 year from the date of supply/installation. Warranty will cover repair/replacement of all defective parts, if any, with the same or equivalent make for any part removed. Maintenance will be provided at site. Limited/carry in warranty will not be accepted. The supplier will provide after sale service during the warranty period from Haryana/ Chandigarh/ Delhi or from nearest place to installation. The supplier will attend the complaint within 24 hours and not beyond 48 hours.
29.	<b>Acceptance Test</b>	Unless otherwise specified, acceptance will include the following: - The system after installation shall be put to testing of the system specs and the program execution specified by HARTRON.  A. If required for the acceptance, the vendor has to demonstrate various system specs. On successful commissioning, HARTRON may issue an acceptance certificate.
30.	<b>Responsibilities</b>	Unless otherwise specified, it shall be the responsibility of the vendor to keep the system in good working condition so as to ensure a minimum of 95% uptime on monthly basis by carrying out the necessary repairs/maintenance of UPS systems, otherwise it shall be treated as a non performance on the part of the vendor for which performance guarantee may be forfeited and firm may be black listed for future business. The vendor shall provide free replacement of equivalent part as and when required. Warranty period shall be applicable from the date of successful supply/inspection/installation.
31.	<b>Installation</b>	Unless otherwise specified;  A. The vendor will install the complete hardware immediately at the different locations in the state mentioned by HARTRON, within the delivery period stipulated in the supply order.  B. The vendor shall give the wiring diagrams if required and the panels required for the system installation in



		<p>advance. User Department/Organization shall make available the necessary wiring panels at installation site.</p> <p>C. Full details of the space requirement with dimensions should be given in advance.</p>
32.	<b>Training</b>	Unless otherwise specified, the vendor shall provide operational training.
33.	<b>Documentation</b>	Unless otherwise specified, documentation must be provided along with the detailed operating instructions. The documents supplied must be neat, concise and readable. The documentation of the hardware should also be provided which covers the mapping and other tunable parameters.
34.	<b>Re-installation</b>	Unless otherwise specified, if the need arises, the supplier shall re-install the said system(s) at a new site without any additional charges. The agreement shall stand valid for 5 years. However, Packing, Forwarding and insurance charges for shifting the systems at new site will be borne by the user organization.
35.	<b>Annual Maintenance Contract</b>	AMC @ ___% of the net hardware price will be optional at the discretion of Managing Director, HARTRON and would become applicable after expiry of warranty period and would remain unchanged for the next 5 years after the warranty period expires.
36.	<b>Billing</b>	The bill shall be raised in the name of the organizations/ departments, which will be mentioned in the order and the payment, shall be released by HARTRON/User Department after the verification of the materials.
37.	<b>Arbitration Clause</b>	In the eventuality of any dispute, the sole Arbitrator shall be Commissioner & Secretary to Govt. of Haryana, Information Technology Department and his decision shall be binding on all the parties.
38.	<b>Augmentation</b>	Unless otherwise specified, Supplier shall have to guarantee for a minimum period of 5 years from the date of acceptance that the systems shall be upgraded to the latest version or some additional systems at their negotiated prices (if any).





## ANNEXURE-V-A

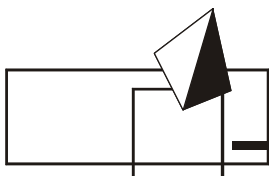
### Special Terms & Conditions

#### Vendor Qualification Criteria

- (a) Turnover: Bidder quoting for electronic equipment/Instruments, scientific equipment, Training kits should have turnover of minimum 1 crore or more in each year during last three years in case of authorized supplier/dealer and 5 Crore or more in each year during last three years in case of manufacturer. In case of dealer both will be applicable.
- (b) Bidder shall enclose Earnest Money Deposit (EMD) Rs. 2 lac.
- (c) Bidder must be in business for at least 3 years for supply of electronic equipment/Instruments, scientific equipment, Training kits.
- (d) Bidder must be a manufacturer or its authorized dealer. The dealers must enclose a certificate of authorization of manufacturer with the bid.
- (e) Bidder should have after sales services set up at Haryana/ Chandigarh/Delhi, and should be in a position to provide satisfactory after sales service support in the State of Haryana and Chandigarh.
- (f) Bidder should mention the brands/makes of the items offered.
- (g) Bidder must enclose the acceptance of terms and conditions offered by HARTRON.
- (h) All the Annexure enclosed with the tender should be duly filled up and signed.
- (i) Bidder should provide the list of customers to whom similar type of equipment has been supplied earlier.
- (j) The Bidder should give undertaking of the following in case the order is awarded:
  1. Technical literature, operational and Service Manual showing description of the circuitry will be provided along with the equipment.
  2. Repair/ maintenance of equipment will be provided for a period of 5 years as and when required by the user Department.

#### **b) Terms & Conditions**

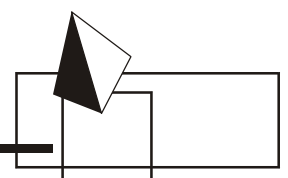
- i). The offered prices should be inclusive of current excise duty, freights, insurance, sales tax etc., failing which the offer may be ignored. However octroi shall be extra if applicable. Further if there is any change in the excise duty by Govt. of India then the same shall be applicable on presentation of the proof. The change in any other duties including sales tax, custom duties effect due to devaluation of Rupee shall not be entertained.
- ii). The prices offered in the tender for the stores should be lower than the price at which the tenderer supply the stores of identical description to various State Government Institutions/





Undertakings/any other organization during the validity period. If at any time during the validity period the successful tenderer reduces the sale price of quoted stores to any other organization at a price lower than the price chargeable under this supply order/contract, the tenderer should be forthwith notify such reduction to this office, then the prices payable under the supply order/contract for the stores supplied after the date of prices reduction will be reduced to that level. Otherwise double of the difference will have to be refunded to HARTRON.

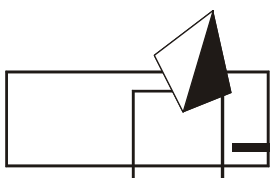
- iii) **Delivery:** 12 weeks in case equipment is imported and 8 weeks in case equipment is indigenous, from the date of placement of confirmed order, FOR at consignee destination.
  - iv) **Payment:** 90% of payment will be released after inspection and delivery. The balance 10% payment will be released within one month from the date of satisfactory demonstration/installation and submission of 10% Bank Guarantee which will be released after expiry of warranty period.
  - v) **Warranty:** The warranty should be 1 year. Warranty will cover repair/replacement of all defective parts, if any, with the same or equivalent make for any part removed. Maintenance will be provided at site. Limited/carry in warranty will not be accepted. The supplier will provide after sale service during the warranty period from, Haryana/ Chandigarh/Delhi or from nearest place to installation.
  - vi) The vendor shall provide operational training on the equipment and other related accessories supplied along with.
  - vii) Other terms & conditions will be as per Tender Document
- f. **The purchase/rate contract** would be decided on the basis of the best valid rates quoted. If it is considered that the best valid rates quoted by L<sub>1</sub> (best valid bid) are not reasonable, the negotiations shall be held only with the L<sub>1</sub> and a counter offer will be made to the L<sub>1</sub>. In case the L<sub>1</sub> bidder does not accept the counter offer, the tender would be dropped and recourse would be taken to invite fresh tenders. Further, in case the L<sub>1</sub> does not have the capability/capacity to execute the complete order, the supply order in excess of the quantity quoted by L<sub>1</sub> could be placed with L<sub>2</sub> (second best valid bid) on the rates quoted by L<sub>1</sub>. Similarly, if the L<sub>2</sub> is also found to be reluctant to supply the stores at such counter offers or the combined capacity of L<sub>1</sub> and L<sub>2</sub> does not meet the supply of complete order, the balance supply order could be placed on L<sub>3</sub> (third best valid bid) at the rates offered by L<sub>1</sub>.
- g. **Purchase Preference** (as per notification dated 28.05.2010 from Industries & Commerce Department, Haryana): MD, HARTRON reserves the right to allow Purchase preference upto 50% of the tendered quantities to the Industrial units located in Haryana on the lowest valid rates, provided:
- The manufacturer firm claims purchase preference in the tender;
  - The firm submits the registration certificate for the quoted items and valid purchase preference certificate issued by the Industries Department alongwith the tender;





- The firm submits an undertaking that their sales office for the purpose of billing is based in Haryana and all the billings are/will be raised from Haryana only;
- The gross rates of the firm claiming Purchase Preference are not higher than 10% of the lowest valid gross rates received in tender and the Haryana based firm agrees to the lowest gross rates;

Where, more than one tenderer claim Purchase Preference and fulfill all the above conditions, 50% quantity covered under purchase preference may be divided between them on proportionate basis keeping in view the quantity/delivery period quoted by them.

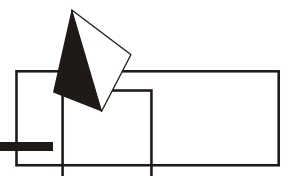


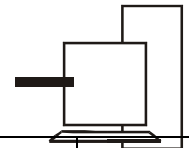


ANNEXURE-VI

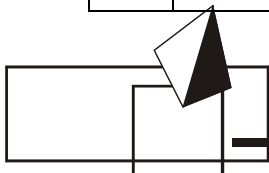
**LIST OF ELECTRONICS & COMMUNICATION ITEMS**

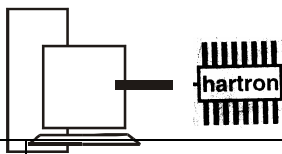
No.	Items	Specifications	Appx. Qty.
1	Universal Programmer	<ul style="list-style-type: none"> <li>• USB 2.0 port</li> <li>• FPGA based IEEE 1284 slave printer port, up to 1MB/s transfer rate</li> <li>• On-board intelligence: powerful microprocessor and FPGA based state machine</li> <li>• Power: 100 to 240 VAC, auto-switching</li> <li>• Frequency range: 47 to 63 Hz</li> <li>• Base Unit (DAC) ZIF Socket : 48 pin ZIF socket suitable for 8-DIP memory devices and microcontrollers . ICP connector (expansion bus) designed for support devices more than 8 pins with special programming adapters and In-Circuit Programming mode. Software controllable rise time and current limit protection.</li> <li>• Logic driver supports pull-up/ pull-down or high impedance on all 48 pins with 2.0 V-5 V level</li> </ul>	2
2	EPROM Programmer	<ul style="list-style-type: none"> <li>• Device (IC) Types Supported: EPROM, Paged EPROM, Parallel and Serial EEPROM, FPGA Configuration Serial PROM, FLASH Memory (NOR), Firmware HUB, EPLD, Microcontroller, Microchip PIC, etc.</li> <li>• Device Packages Supported on Standard Equipment: DIP, SDIP.</li> <li>• Device Packages Supported with Optional Adapters: PLCC, JLCC, SOIC, QFP, TQFP, VQFP, PQFP, TSOP, TSOPII, SOP, SSOP, PSOP, TSSOP, SON, QFN, EBGA, FBGA, VFBGA, <math>\mu</math>BGA, CSP, SCSP, etc.</li> <li>• <u>PC interface</u>: High speed USB 2.0</li> <li>• <u>AC power supply</u>: Input 100V-240V AC, 50/60 HZ. Output 12VDC, 2 Amp.</li> </ul>	2
3	FM Communication Trainer	<p>Waveforms: Sine            Amplifier: Adjustable from 0-5Vpp            Frequency: Adjustable from 0.1 to 1 KHz &amp; 1 to 10 KHz <b>port 1</b>            Output signal: Sine</p>	2



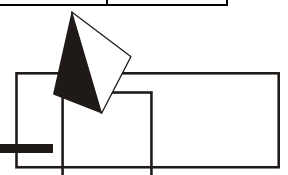


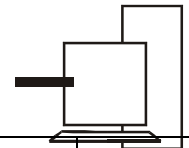
		Frequency: 400 KHz to 1500 KHz Amplifier: adjustable from 0-2Vpp Inputs: Modulating Signal <b>Port 2</b> Output Signal: Sine Frequency: Switching on 2 ranges 400 KHz to 500 KHz and 500 KHz to 1500 KHz Amplitude: adjustable from 0-2Vpp Input: Modulating Signal, Marker Sweep:Bandwidth: 3±1KHz Power Supply: 220 ± 10%, 50 Hz.	
4	PCB ETCHING MACHINE	Useful Etching Area: 250 mm x 300 mm (10" x 12") Tank Capacity: 20 Litres. Includes a heater and air flow compressor. All construction materials are corrosion free. Heater: Titanium non-corrosive with thermostat Control. Timer: 0 - 4 minutes Electrical Power: 230V/50Hz,5A Socket required	1
5	Video Cassette Player Trainer	Complete block diagram on top panel with digital keyboard & test points Power Requirement Power Supply: 220 ± 10%, 50 Hz	1
6	LCD (TV) 32"	The 32-inch measured diagonally LCD DISPLAY with the stand. Video and Audio □ 1920/1080 native resolution and a 6 millisecond pixel response time. Should offer a 60 Hz refresh rate and a 16:9 aspect ratio. A contrast ratio of 80,000:1 Feature a 200 watt SRS Tru Surround sound system, with the speakers built in to the television. Remote control to handle all of the user's home theatre devices, and Connect Share technology. Auto power-off, a volume leveler, single-tuner picture-in-picture and a V-chip. Wi-Fi installed Should have channel memory feature. Inputs and Outputs □ Three HDMI, two composite and two component inputs with a 15-pin D-sub PC input, along with two mini jacks for PC audio input and DVI input. The television should have one USB port, an RF antenna input and an optical digital audio output.	2
7	DVD Player Trainer	Standard: PAL, NTSC In built power supply In built audio power amplifier In built speaker 8W (L &H) LCD Display and control key on front panel Different test points for observation voltage Power Supply: 230 V± 10%, 50 Hz	1
8	EPABX Trainer	Number of inputs: 2 Trunk / direct Lines Number of Extension: 4 lines Technology: Cross Point space division	2



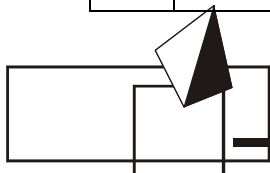


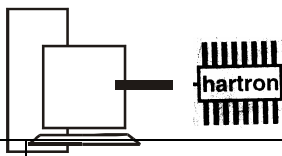
		<p>(Microprocessor based)          Standard Features: Tones such as Dial, Busy, Ring etc.          Dialling-DTMF and Pulse (Ratio 10pps)          Programme Memory: 64Kb EEPROM          Loop Resistance: Extension -600ohms, co-line-1200 ohms.          Cross Talk Attenuation: &gt; 70 dBm          Test Points: More than 25 Nos.          Power Supply: 230 V<math>\pm</math> 10%, 50 Hz/60 Hz on request          With fault finding and test points facility          Features that can set: Line Hunting, Direct Access to trunk line, Redial, Line status Indication, Automatic call back, Do Not Disturb, call transfer, call pick up, direct access truck call forwarding, call parking conference, Hot line system, extension privacy, call transfer.</p>	
9	FAX Machine Trainer	<p>Ports for telephone interfacing.          Transmission &amp; receiving modes          With optical scanner assembly          Built in Power supply with battery backup facility          All the test points should be on the front panel          Fault diagnosis facility</p>	2
10	C .R .O dual channel 25 MHZ	<p>Operating Modes: Channel 1, Channel II, Channel I &amp; II alternate or chopped (Appro. 350 KHz), X-Y operation (Ratio 1:1 input via CH II), Add/Sub CH <math>\pm</math> CH II, invert CH II.          Vertical Deflection (Y) : Bandwidth: DC-25 MHz          Risetime: 17.5 ns (Approx.)          Deflection Coefficients: Micro-controller based calibrated steps 2 mV/Div-10 V/Div . Adjustable by up-down keys. Step position indicated glowing LEDs.          Accuracy: <math>\pm</math> 2%          Hold Off : Variable Control stable triggering          Input impedance: 1M<math>\Omega</math>   30 pF          Input coupling: DC-AC-GND          Maximum Input Voltage: 400 V (DC + Peak AC)          Timebase: Time Coefficients : Steps of 0.5us / Div-0.2 s/ Div (1-2-5 sequence) with magnifier X10.          Ramp Input: 5 Vpp (approx.)          Accuracy: <math>\pm</math> 2%          Ramp output: 5 Vpp (approx.)          Trigger System: Modes: Auto / Level          Source: CH 1, CH2, ALT-CH-1/CH2, Line, Ext.          Slope: Positive or Negative          Coupling: AC, Line Trigger          Trigger Bandwidth: 50 MHz          Horizontal Deflection (CH II-x) Bandwidth: DC-2-3 MHz (-3dB)X-Y mode.          Deflection Coefficients: Micro-controller based 12 calibrated steps 2 mV/Div-10 V/Div (1-2-5) sequence). Adjustable by up-down keys. Step position indicated by glowing LEDs.          Input Impedance: 1 M<math>\Omega</math>   30pf          Cathode Ray Tube display.</p>	6



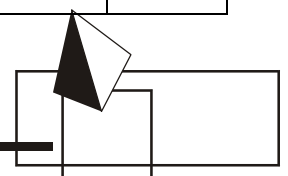


		Display: 8x10 cm Trace Rotation: Adjustable on front panel.	
	Colour T.V. Trainer	Standard: CCIR-b-PAL-G, 625 Lines Channels: 230 2-4 VHP I (VL) 5-12 VHP III (VH) 12-100: BAND IV else: S Band & Hyper band Picture Tube Size: 36 cms. Diagonal RF input Impedance: 75 W Circuit Blocks: System Control Circuit, Video IF, Sound Section, Tuner Section, Horizontal, Oscillator, Horizontal Output, Vertical oscillator, vertical output, video & chroma section, Power supply, AV sections On Screen Display to set: volume, Brightness, Contrast, colour, channel, & band Selection, Tuning Panel Control: On-Off switch, stand by memo vol $\pm$ /- Prog $\pm$ /- Remote Control Function: Volume, Brightness, stand by, colour contrast, channel selection, audio mute, AV mode, Zoom, swap, scan, child lock with fault finding and test points facility. I.F. Frequency: Video-38.9 MHz, audio-33.4 MHz Accelerating Potential: 24 KV max. Operating Voltage for EHT: 110V Power supply: 220V $\pm$ 15% 50 Hz.	1
11	Digital Multimeter	3 ½ Digit Hand Held, LCD Display, Battery Operated DC V- 100mV to 1000V AC V- 1V to 750V DC A- 100 mA to 20A AC A- 2 ma to 20A Ohm- 200 ohms to 20 Mohms Transistor & Diode Check, full overload protection	20
12	Digital Storage Oscilloscope 25MHz	Band width: DC-25MHz Channels: Duel USB interface Input Coupling: DC/AC Input Impedance: 1M ohm Sampling range: 10S/s~100MS/s Vertical Resolution : 8 bits Trigger mode: EDGE/Video Output Voltage: 5 volt Power Supply: 230 V $\pm$ 10%, 50 Hz	2
	Diode Clipping & Clamping Circuit	Built in DC Regulated Power Supply 0-3VDC/150mA, Two fix output DC Power supplies connected in series of Diodes for Positive & Negative Clipping, circuit diagram for clipping & clamping Circuit printed, Components placed inside connections brought out at sockets.	2
13	Function Generator 20Mhz , 0.1 Hz to 20 Mhz	<ul style="list-style-type: none"><li>o 0.1Hz to 20 MHz Frequency</li><li>o Sine, Square, Triangle, Ramp, Pulse Outputs</li><li>o 20Vpp output and DC offset</li><li>o 3 ½ Digit Display</li><li>o TTL output</li><li>o 50<math>\Omega</math> output</li></ul>	3



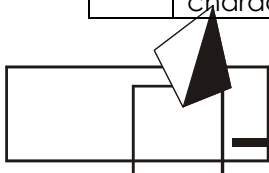


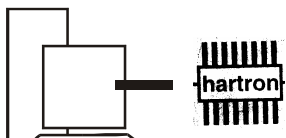
		<ul style="list-style-type: none"> <li>o AM Balance, AM stand FM, ASK, FSK, PWM, modulation</li> <li>o Internal Modulation Generator</li> <li>o Rise &amp; Fall time <math>\leq 50</math> ns</li> <li>o Power supply = <math>230V \pm 10\%</math></li> </ul>	
14	Power Electronics Trainer (SCR, DIAC, Triac characteristics)	Instrument comprises of DC Regulated Power Supply 0-50 VDC/150mA, one SCR, Diac, TRIAC mounted on the front panel, connections of supplies.	5
15	Temp. Measurement using Thermocouple /RTD Kit	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. Socket for applying temperature. Platinum R.T.D K Type Thermocouple Temperature variation from 0-100 degree centigrade Temperature sensitivity 1mV/degree centigrade Accuracy: $\pm 2\%$	5
16	Verification of Network Theorems kit	Instrument comprises of 3 fixed output DC Regulated Power Supplies of 12V 5V at 250mA current, 4 moving coil meters, circuit diagram for all the theorems printed on the front with facility to verify all theorems panel connections of supplies, Meter Resistances Potentiometers brought out at sockets.	3
17	experiment board for study of three phase full controlled bridge converter	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. With all the necessary meters & test points	2
18	Experimental board for Hartley oscillator	Built in 30 VDC Regulated Power Supply, circuit diagram printed components mounted on front panel.	2
	Experimental board for phase shift oscillator	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel.	2
19	Experimental board for observation of wave shapes and measurement of voltage at relevant point in TRIAC based AC phase control circuit for varying lamp intensity of AC bulb & fan speed control	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. With all the necessary meters & test points. Lamp of 60W with lamp holder be provided. DC Fan on front panel with motor to drive this fan be provided on the front panel. Adjustable pot for lamp intensity & fan speed should be provided.	2
20	Experimental board for P.N junction/zener diode characteristic combined apparatus	Instrument comprises of two DC power supplies, two meters to measure voltage & current, 1 PN Junction Diode & 1 Zener Diode mounted behind the panel & connections brought out at sockets	2
21	Experimental board for push pull amplifier board	Built in DC Regulated Power Supply, Circuit diagram is printed, components mounted on the front panel connections of important points brought out at sockets.	2
22	Experimental board for speed control of motor using SCRs (complete with heavy duty universal AC/DC motor)	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. With all the necessary meters & test points. Adjustable pot for AC & DC motor should be provided.	2



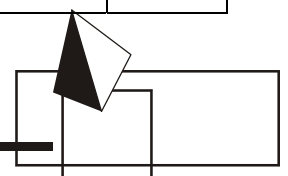


23	Experimental board for study of common collector (emitter follower) board	Built in DC Regulated Power supply, Circuit diagram printed, components mounted on the front panel connections of important points brought out at sockets.	2
24	Experimental board for study of DC chopper circuit	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. The pot for all (class A, B, C,D, E) choppers should be provided.	2
25	Experimental board for study of SCR commutation techniques like class A class B class C class D class E etc	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. Necessary meters to be provided.	3
26	Experimental board for study of single phase cyclo converter	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. Necessary meters to be provided.	2
27	Experimental board for study of three phase half controlled bridge converter	Built in 12 V DC regulated power supply, circuit diagram printed & components mounted on front panel. Necessary meters to be provided.	3
28	Experimental board for study of UJT relaxation oscillator. And observe I/P and O/P wave forms	Built in 30V DC Regulated Power Supply, circuit Diagram printed & components mounted on front panel.	3
29	Experimental board for One / two stage RC coupled amplifier	Built in DC regulated power supply Toggle switch to isolate too stages Circuit diagram & components mounted on front panel	2
30	Experimental board for VI characteristic of an SCR, DIAC, TRIAC	Built in 12 V DC regulated power supply, separate power supply for applying gate current. Three Meters for anode voltage, anode current, gate current should be provided circuit diagram printed & components mounted on front panel.	2
31	Experimental board for VI characteristics of UJT	Instrument comprises of 2 DC Regulated Power Supplies 0-15 VDC/150mA & 0-25 VDC/150mA, three meters for voltage & current measurement, one UJT mounted behind the panel & connections of supplies.	2
32	Experimental board of colpitts oscillator	Built in 12V DC Regulated Power supply, circuit diagram printed & components mounted on front panel	2
33	Experimental Board with cut-off frequency 960 Hz. (for constant-k filters) & $m = 0.6$ (for m-derived filters) to carry out following experiments to plot impedance & attenuation Vs frequency characteristics curve for constant -K low pass filter. To plot impedance & attenuation-Vs frequency characteristics curve of constant-K high pass filter. To plot impedance & attenuation Vs frequency characteristics curve of	Built in 12 V DC regulated power supply power for all the filter sections. All the filters circuits with necessary meters be provided on the front panel. In built Signal generator with frequency ranging from 1Hz to 1MHz.	3

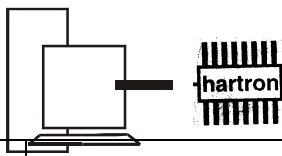




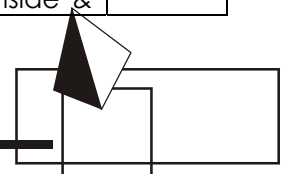
	constant-K Band pass filter. To plot impedance & attenuation Vs frequency characteristics curve of constant-K Band pass filter. To Plot impedance & attenuation Vs frequency characteristics curve of -m derived high pass filter.		
34	Experimental kit for measurement of force / load	Based on load cell made up of strain gauges with built in power source / supply and display to read directly the force. Provision should display to read directly the force. Provision should be there to measure wheat stone bridge's out put directly also. Capacity 5 Kg (Display 3 ½ digit FND	2
35	Experimental board for observation of wave shape of voltage at relevant point of single-phase full wave controlled rectifier.	Built in 12V DC Regulated Power supply, circuit diagram printed & components mounted on front panel with all the necessary meters. Pot for change of firing angle should be provided. Leads must be provided to pickup the signal.	2
36	Experimental board for observation of wave shape of voltage at relevant point of single-phase half wave controlled rectifier and effect of change of firing angle using SCR	Built in 12V DC Regulated Power supply, circuit diagram printed & components mounted on front panel with all the necessary meters. Pot for change of firing angle should be provided. Leads must be provided to pickup the signal.	2
37	FET Amplifier	Instrument comprises of DC Regulated Power Supply, Circuit diagram is printed, components mounted on the front panel connections of important points brought out at sockets.	2
38	Fiber optic cable module	Length of different fibers with 100,500,1000 metres Multimode fiber	3
39	Fiber optic passive component module	Coupling ratio 50-50 Operating wavelength: 1310nm Low in Insertion Vibration & Temperature resistant Dual window wide band coupler	3
40	Fiber optic power meter	Four digit display Microprocessor control dB & dBm measurement from +5 dBm to – 65dBm Calibrated wave length: 850, 1310, 1550nm	2
41	Fiber optic source & detector module	Built in DC Regulated Power Supply unit having two fixed output DC regulated power supplies 6 VDC and 3 VDC. Preamplifier stages consists of MIC Microphone, Photodetector, Transistors and biasing network of Resistances and Capacitors. Power amplifier stages output section having LEDs and speaker. Fiber optic cable for transmission of signal. Length of 15"	2
42	FM modulator/ demodulator Trainer kit-FM modular--VCO type, Armstrong methods type, Fm demodulator-ratio detector, foster-scaly detector	Built in Audio Oscillator with adjustable amplitude & frequency All the FM modulator Circuits on the same board Transmitter output frequency 455KHz Should be provided with mixer, amplifier low pass filter & amplitude limiter	2



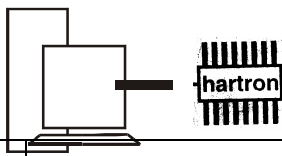
		Built in Power supply with all the test points mounted on the front panel & fault diagnosis facility.	
43	Full Wave Rectifier	<b>Full Wave &amp; Bridge Rectifier Apparatus with 2 Meters:</b> Instrument comprises of AC Power Supply, 2 meters to measure output voltage & output current, 4 PN Junction Diodes, Filter circuit kit. Load Resistances selectable using bandswitch & all important connections points at Sockets	2
44	Function generator (100 khz)	<ul style="list-style-type: none"> <li>o Function Generator with power amplifier</li> <li>o 0.1 Hz to 100 KHz</li> <li>o Sine , Square , Triangle, Pulse and TTL output</li> <li>o LCD display 3 ½ digit</li> <li>o AM-FM modulation</li> <li>o 20 Vpp output</li> <li>o Power supply = 230V ± 10%</li> </ul>	2
45	Function Generator 20Mhz , 0.1 Hz to 20 Mhz	<ul style="list-style-type: none"> <li>o 0.1Hz to 20 MHz Frequency</li> <li>o Sine, Square, Triangle, Ramp, Pulse Outputs</li> <li>o 20Vpp output and DC offset</li> <li>o 3 ½ Digit Display</li> <li>o TTL output</li> <li>o 50Ω output</li> <li>o AM Balance, AM stand FM, ASK, FSK, PWM, modulation</li> <li>o Internal Modulation Generator</li> <li>o Rise &amp; Fall time ≤ 50 ns</li> <li>o Power supply = 230V ± 10%</li> </ul>	2
46	Kelvin Double Bridge	Over range 0.2 micro-ohm to 11 ohms with 5 multiplier ranges, 10 steps of standard resistance of x0.01 ohms	2
47	LVDT kit	Measurement Range: 20 mm (±mm) Excitation Frequency: 4 KHz(approx.) Excitation Voltage: 4Vpp (Approx.) Sensitivity: 10mVDC/mm Display: 3 ½ Digit LED	2
48	Kirchoff''s law apparatus with 3 digital meters	1 D.C Regulated, short circuit & overload protected (continuously variable) power supply, two meters, combination of resistances mounted on front panel.	2
49	kit EEG trainer	EEG Amplifier No. of Channels:1 Gain Control: Variable Frequency Response: 0.1Hz-3 KHz CMRR: Better than 80 db Output: Compatible with Oscilloscope Compatible with EEG Simulator EEG simulator Output: Standard EEG Signal output Alpha, Beta, delta and Theta wave generator Power supply: 220 V ± 10% , 50 HZ	2
50	kit EMG trainer	No. of Channels:1 Gain Control: Variable Frequency Response: 1Hz-10 KHz CMRR: Better than 80 db Filters: 1HZ-2KHz 1HZ-4KHz	2



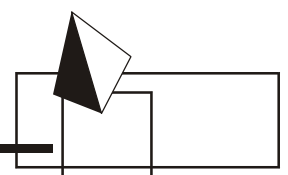
		1HZ-10KHz Power supply: 220 V $\pm$ 10% , 50 HZ	
51	Kit for capacitive transducer for angular displacement	Built in Power supply, circuit diagram printed & components mounted on front panel with all the necessary meters. Pot for change of capacitance should be provided (Ganged Capacitor). Scale for angular displacement & Leads must be provided to pickup the signal. Sensitivity = 1mV/1pf. Accuracy = $\pm$ 0.1%	2
52	Kit for flow measurement using rotameter, ventury & U-tube manometer	Built in Power supply, circuit diagram printed & components mounted on front panel with all the necessary meters. Inlet & Outlets for flow of liquid. Leads must be provided to pickup the signal. Sensitivity = 1mV/1ltr. Accuracy = $\pm$ 0.1%	2
53	kit for frequency response of loud speaker	Built in Audio Oscillator with adjustable amplitude & frequency with built in power supply. All the test points mounted on the front panel & fault diagnosis facility.	2
54	kit for frequency response of microphone	Built in Audio Oscillator with adjustable amplitude & frequency with built in power supply. All the test points mounted on the front panel & fault diagnosis facility	2
55	Kit for KCL & KVL	1 D.C Regulated, short circuit & overload protected (continuously variable) power supply, two meters, combination of resistances mounted on front panel.	2
56	Kit for LDR, photo diode, photo transistor, capacitive transducer	Instrument comprises of DC Regulated Power supply 0-3VDC/150mA, two round meters for voltage & current measurement, LDR Photodetector, Phototransistors mounted on the panel, connections of supplies	2
57	Kit for magnetic & optical pickup	Built in Power supply, circuit diagram printed & components mounted on front panel with all the necessary meters. Based on reed relay for magnetic pick up and photo diode and phototransistor for optical pick up. Accuracy = $\pm$ 0.1%	2
58	Kit for pneumatic & hydraulic transducer	Built in Power supply, circuit diagram printed & components mounted on front panel with all the necessary meters. Accuracy = $\pm$ 0.1%	2
59	Kit for pressure measurement using piezoelectric transducer	Built in Power supply, circuit diagram printed & components mounted on front panel with all the necessary meters. Platform to be provided on the front side to apply the pressure. Sensitivity = 1 mV/1N. Accuracy = $\pm$ 0.1%	2
60	Kit for strain gauge	Gauge Factor: 2.1 Bridge Configuration: Full Bridge Display: 3 ½ Digit LED Material -Stainless steel Accuracy = $\pm$ 0.1%	2
61	Kit for temperature measurement using RTD, thermistor & thermocouple	Instrument comprises of DC Regulated Power supply 0-3V DC/150mA, two round meters for voltage & current measurement, LDR Photodetector, Phototransistors mounted on the panel, connections of supplies	2
62	Kit RLC Series Parallel	Instrument comprises of 3 Resistances, 3 Capacitors & 1 Inductance connected inside &	2

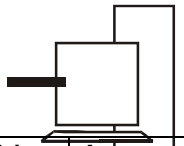


		connections brought out at Sockets. 2 AC moving coil meters to measure voltage & current.	
63	Kit to measure & calculate numerical aperture of optical fiber Kit to measure various losses in optical fibers Kit to observe characteristics of optical source & detector Kit to observe the radiation pattern of LED Kit to study various component & tools used in optical fiber communication	Transmitter 1 No. , Fiber Optic LED Receiver: 1 No. Fiber Optic Photodetector Crystal Controlled Clock Digital Band Width: upto 2.5 MHz Analog Band Width: upto 350KHz Fiber Diameter: 1000 microns Fiber Length: .5m & 1m Built in DC power supply	2
64			
65			
66	Klystron Power Supply	Beam Supply: 240-420 V DC, Variable Current: 50mA Regulation: 0.5 % for 10% I/P variation Ripple: < 5m Vrms (on load) Repeller Supply: -18V to -270V DC variable Modulation: AM (square) FM (saw-tooth) Frequency Range: 500-2000 Hz Amplifier: 0-110 Vpp 0-60 Vpp External: Through External Modulating Signal Display: Digital Display for 1. Beam Voltage, 2. Beam Current, 3. Repeller Voltage Modulation Selector: CW/AM/FM/EXT 3 ½ Digital Panel meter: 2V Meter Selector: Beam Voltage (V)/ Current (I)/ Rep. (repeller) Connectors: 2. 8-pin pctal socket, b. BNC for External Modulation Power Supply; 220 V ± 10% , 50 HZ	2
67	CD Player Trainer	System: PAL, NTSC Wave Length: 780, 790nm Frequency range: 20Hz to 20 KHz Sampling Frequency: 44.1 KHz Audio output: 10W Different test points on front panel Power Supply; 220 V ± 10% , 50 HZ	2
68	D/A Converter Trainer	4 bit Weighted Resistor 4 Bit R-2R Ladder network DC supply with toggle switches Power Supply; 220 V ± 10% , 50 Hz	2
69	Applications of Op-amp	Have 3 DC regulated power supplies, Two dual range moving coil meters Different R&C provided on front panel	2
70	Digital IC Tester	Operates on 6V battery Tests TTL, CMOS & RAMs Potential free ZIF Socket 10 Character clear contrast LCD display Automatic Protection against wrong insertion of IC's	2
71	Dual Regulated Power Supply	DC output 0-30V, 1A Display: 3 ½ digit digital display Accuracy: ± 1% Over range & Over load indicator	10
72	Digital Trainer Kit	Verification of Truth Table for different gates, shift	10

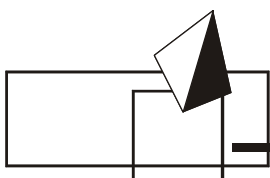


		registers, comparator, flop, flops etc. BCD to 7-segment, 74181, adder, comparator etc.	
73	Distortion Factor Meter	Frequency range 20Hz to 200 KHz, distortion range 0.1% to 100%. Input voltage 150mV to 15V max.	2
74	Interfacing cards for 8085, 8086 Microprocessor kit	8255 PPI card , 8257 DMI card, 8259 PIC study card, 8279 card Display interface card Stepper motor controller interface card	5
75	Microprocessor kit (8085)	Based on 8085 CPU operating at 6.144MHz 8 KB RAM 24 input out lines through 8225 All address, data & control lines Power Supply; 220 V $\pm$ 10% , 50 HZ In built power supply	10
76	Microprocessor kit (8086)	8086 CPU operating at 2.5MHz (on board ) 72 input out lines through 8255 16 bit timer/ counter through 8253 Interrupt control 8259 Hexa decimal keyboard, Power Supply; 220 V $\pm$ 10% , 50 HZ	10
77	Mixed Signal Scope	Band width: DC-25MHz Channels: Dual USB interface Support Logging & Analyser having sampling rate 100MHz /sec. with 16 input channel Maximum storage: 4 M/channel Measurement B.W 33MHz Input Coupling: DC/AC, Input Impedance: 1M ohm Sampling range: 10S/s~100MS/s, Vertical Resolution : 8 bits Trigger mode: EDGE/Video Output Voltage: 5 volt , Power Supply: 230 V $\pm$ 10%, 50 Hz	2
78	Monochrome T.V. Trainer	TV standard: Pal Sound Output: 20w Control button of TV: volume, brightness, contrast, tuner, band switch Video IF: 38.9MHz, Sound IF: 33.4 MHz Power Supply; 220 V $\pm$ 10% , 50 HZ	1
79	Ohm's Law apparatus	Have 2 Moving Coil meters to measure V & I, 1 wire POT, & 1 wire wound resistance	1
80	PCM Receiver / Transmitter	System have 5 blocks Clock generator, S & H amplifier, A/D converter, multiplexer, Timing & Control Logging Glass Epoxy PCB Block Diagram printed on front panel. On board Dc supply as Modulating signal(0 to 5 V DC)	2
81	CCTV	Camera 1/3" <b>SONY SUPER HAD COLOR CCD</b> , High Resolution 420 TV Lines, <b>Fixed Lens 8.0mm</b> , Day & Night, 0 Lux , Manual Pan & Tilt, Auto Tracking White Balance, Back Light Compensation, 36 IR LED's, Weatherproof IP68 Housing & Mount, 12V DC	4





82	<b>16 Channel Standalone Network Digital Video Recorder</b>	<b>16 Channel Standalone Network Digital Video Recorder</b> , 16 Composite Video Inputs, 1 Composite Video Output, 1 VGA Video Output, PENTAPLEX Functions: Live/ Recording/ Playback/ Backup/ & Remote Access, GUI, Full & Multi Screen Display 1/ 4 /8 / 16, 400 FPS, H.264 Video Compression, Recording Based on Continuous, Motion Detection, Back up by USB, Remote back up via TCP/IP, 2 USB Ports, Networkable, Equipped with IR Remote Control, IP Based & <b>HARD DISK</b> Supply & installation of 2 TB (2000 GB) Hard Disk for DVR	1
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Advt. No. HARTRON/MSG/2010-11/10

SCHEDULE 'A' OF RATES

1	2	3	4	5	6	7	8	9	10	11	12	13
Tender No.	Description of Items	Certification Compliance	Unit Price	Qty.	Sales Tax	Excise Duty	Packing & Forwarding	Net Unit Price 4+6+7+8	Total Price 9x5	Name of Mfr.	Make & Model	Country of Origin
1												
2												
3												
TOTAL												

**Note:- Rates with form "C" & VAT C-3 and without form "C" & VAT C-3 may also be quoted**

Total landed price at Destination is Rs.....

Signature::

In words (.....)

Name:

Designation:

Place:

.....

Address:

Date...

Telephone No.:

Mobile No.:

N.B.

FAX No.:

1. Please do not forget to fill in all the above columns.
2. In case of discrepancy between net unit price and total price, the total price shall prevail.

