

OFFICE OF THE PRINCIPAL
GOVERNMENT POLYTECHNIC, BALODABAZAR, DISITT – BALODABAZAR-BHATAPARA
(C.G.) 493228

e-mail Address:- gpbalodabazar@gmail.com
Contact No.: 8986892089 / 8085573353 / 9827972266



TENDER - DOCUMENT

FOR

PURCHASE OF MACHINE & EQUIPMENTS

ELECTRICAL ENGINEERING DEPARTMENT

(2020- 2021)

निविदा सूचना क्रमांक / शा0पॉ0बबा0 / स्टोर / 2021 / 127 बलौदाबाजार, दिनांक:-15/01/2021

- | | |
|------------------------------|--|
| 1. Value of work | Approx Rs1497500/- (Rs. Fourteen Lacs
Ninety Seven Thousand Five Hundred
only) |
| 2. Tender document issued to | M/s-----
----- |
| 3. Cost of Tender | Rs 500-00 (Rs Five Hundred only) |
| 4. Money receipt & Date | ----- |
| 5. Date of issue of tender | ----- |

Issued by

Principal,
Government Polytechnic Balodabazar
Disitt – Balodabazar-Bhatapara, CG

OFFICE OF THE PRINCIPAL
GOVERNMENT POLYTECHNIC, BALODABAZAR, DISITT – BALODABAZAR-BHATAPARA
(C.G.) 493228
e-mail Address:- gpbalodabazar@gmail.com

TERMS AND CONDITIONS

Terms and conditions for supply of Machines & Equipments are as per following list:

1. For participation in tender process following signed and stamped documents must be furnished in envelope A – super scribed as **“Technical Bid envelope A”**.
 - a. Income Tax returns of the last three years and Commercial Tax clearance certificate as well as PAN/TAN/TIN/GST registration No. with documental proof.
 - b. Registration of firm/company.
 - c. Sales tax/GST clearing certificate.
 - d. GST certificate from commercial tax department for the related business. GST Registration certificate must be valid and live.
 - e. ISO/BIS certificate for firm/product.
 - f. Manufacturer/dealer/distributor certificate.
 - g. Balance sheet /Turnover of firm/company of last three years duly signed by CA.
 - h. **Demand Draft for Tender fee (if downloaded from website) and Demand Draft for EMD.**
 - i. Item specifications/Literature /Brochure / leaflet regarding quoted items.
 - j. Acceptance of terms and condition (signed and stamped copy of tender document).
 - k. Any other document which you consider as necessary.
 - l. The bid shall be accompanied by Proforma for Technical bid in Annexure-I.
 - m. The bid shall be accompanied by Proforma for DECLARATION FOR NOT BLACK LISTED in Annexure-III.
 - n. The bid shall be accompanied by affidavit in prescribed format as given in Annexure-IV on non-judicial stamp paper or Rs 50 certified by Notary.
 - o. Properly filled vendor information form given in Annexure-V (Valid Email-id should be furnished in so that order can be placed via email id)
2. Envelope B should contain Financial bid in Proforma as given in Annexure-II along with taxes and discount if any and super scribed as **“Financial Bid envelope B”**.
3. Both envelope A & B should be put in a third big envelope and Super scribed as **“Tender for supply and installation of machine & equipments” –Electrical Engineering Department** on the top of the envelope. All envelope should be signed and should be sealed on all joints.
4. All Sealed envelope for the tender should be super scribed as **Tender Notice No. GPBB/STORE/2021/127, Balodabazar, dated- 15/01/2021** should be addressed to Principal, Government Polytechnic, Balodabazar Vill.-Sakari, District – Balodabazar-Bhatapara (CG) Pin No. 493228.
5. Envelope-A of Technical bid and documents will be opened first and if it is found worth

- consideration then only the Financial bid Envelope –B will be opened.
6. The tender is liable to be rejected if not submitted as per the prescribed conditions and in the prescribed format in envelope A and B .as given in point 1 & 2 .No further clarification will be entertained.
 7. The suppliers should quote their offer/ rate in clear terms without any ambiguity. Discount if any must be clearly specified.
 8. The tender will be opened on the date and time given above in the presence of tenderer(s) or their representative who desire to be present.
 9. Tender received after due date and time will not be entertained.
 10. Tender form is nontransferable.
 11. The tender document is also available on the website <http://gpbalodabazar.com>tenderer can download the document from the website, in that case he has to deposit DD of Rs 500=00 in favor of **Principal, Government Polytechnic, Balodabazar Distt – Balodabazar-bhatapara (C.G.)** at the time of submission of tender in Envelope-A. Otherwise his tender will not be entertained.
 12. A soft copy of the tender should be submitted along with the tender document.
 13. Item no. and page no of the tender form should be strictly in chronological order. Make/model, name of the manufacturer with complete address should be mentioned against each item and equipment.
 14. The tender should be sent in firms own letter pad along with terms and conditions. Printed condition on the back of the tender will not be binding unless separately mentioned.
 15. The tenderer must furnish complete and detailed technical specification supported by printed literature/catalogue/leaflet of the equipment offered. Item no.and page no. of the equipment should be mentioned in it. Incomplete specifications/ absence of printed literature support may result in to the rejection of the tender.
 16. The rate should be FOR destination (**Govt. Polytechnic, Balodabazar, Village– Sakri & P.O. –Amera, Tehsil - Pallari, Distt–Balodabazar-Bhatapara (C.G)**) including all taxes, packing forwarding, transportation etc.Warranty/Guarantee installation if any on any item it should also be stated clearly.
 17. Taxes, (whichever is applicable state clearly item wise) if leviable extra, should be clearly indicated, failing which the rate quoted in the tender will be considered as inclusive of all taxes.
 18. There should be no alterations / corrections made in the Tender. The tenderer may quote the rate of any or all the items listed in the tender form. Rates should be quoted separately for individual item and not in lump-sum for all taken together.
 19. An Earnest Money Deposit (EMD) of amount Rs 3% in form of Demand Draft must be given in favor of **Principal, Government Polytechnic, Balodabazar** payable at **Balodabazar Disitt – Balodabazar-Bhatapara (C.G.)**.Tenders received without EMD will be rejected. Exemption of EMD will be provided to those tenderer who comes under Chhattisgarh Store Purchase Rules 2002, clause-4 sub clause-4.7.However the tenderer needs to provide sufficient documentary evidence in support of the exemption along with the tender document to avail the same.
 20. In case of non- acceptance of the tender the EMD will be refunded to the tenderer in due course of time without interest. The EMD will be treated as security deposit in case of selected tenders EMD/ security deposit will be forfeited in case of breach of agreement of supply by the tenderer/supplier. The order shall stand cancelled and security deposit forfeited if.

- (I) Supplier expresses his inability to execute the order for the quoted items within the validity of supply order period at the rate quoted in the tender and for makes/ brand quoted in the tender.
 - (II) The complete equipment is not supplied within the delivery period (approximately 20-25days) mentioned in the order or within the extended period permitted.
21. Delivery period with installation for the items will be approximately 20-25days only.
 22. Any Equipment/ Trainers/ Hardware or software breakdown must be attended within 48 hours during the valid warranty period of the equipment/ software, free of cost.
 23. Payment shall be released after the successful installation and demonstration/testing of the machine equipment at the institution.
 24. The training for at least two persons for handling the machine/equipments shall be testing provided by the supplier at his own cost.
 25. The tenderer has to give demonstration/testing of the machine/ equipments software at **Government Polytechnic BalodabazarDisitt – Balodabazar-Bhatapara(C.G.)** wherever necessary at his own cost.
 26. Equipment received after the delivery period or dispatched after the delivery period mentioned in the order will not be accepted and will be taken back by the supplier at his own cost and risk,.
 27. In case of any default in execution of the order, the undersigned reserves the right to forfeit the EMD/Security deposit. The undersigned also reserves the right to cancel the order and forfeit the EMD/Security deposit in case the tenderer fails to adhere strictly to all terms and condition of the order/ tender.
 28. If defects of any kind or deviations from the specification are detected and reported to the supplier, the supplier should make replacement or rectify the defects free of cost within 10 days from the date of report, failing which the equipment will not be accepted and will be taken back by the supplier at his own cost and risk, and the EMD will be forfeited, In case the equipment is sent for repairs to the firm, it should be repaired within 10 days. From the date of receipt of equipment failing which the same will not be accepted and EMD will be forfeited, however the undersigned may consider the delay in deserving cases at his/her discretion.
 29. The undersigned reserves the right to increase/ decrease the quantity of the equipment to be supplied. If equipment supplied are not according to the ordered specifications and are not of proper quality, the same will not be accepted. Similarly second hand, reconditioned, damaged, repaired and substandard equipments and equipment having poor workmanship would not be accepted. Only brand new equipment calibrated in SI unit and with fine workmanship will be accepted.
 30. The submission of the tender will be deemed to be the acceptance of all the terms and condition of the tender as stated herein and/ or elsewhere in the tender document.
 31. Exact and earliest possible time of delivery should be indicated in the tender against each item. The delivery period given in the order will be the date of receipt of the equipment in the institute and not the date of dispatch of the equipment by the supplier.
 32. No advance payment will be made. The successful tenderer will have to execute in the form as approved by Government of Chhattisgarh.
 33. If tenderer has supplied these items to any PSU/ Government/reputed Private firm/deptt. Then submit last three years PSU/ Government/ Private Supply record as far as possible.

34. The minimum guarantee/warranty period for the equipment supplied by the supplier should be mentioned clearly and should not be less than one year from the date of installation. The tenderer will be required to undertake repair/ replacement of defective parts free of cost at the institution during the guarantee period.
35. All the disputes with regard to the contract of purchase of equipment etc. is subjected to **Balodabazar Chhattisgarh** Jurisdiction only.
36. In the event of the order, supplier who is the manufacturer of the equipment will be required to furnish a certificate to the effect that they are manufacturers of such and such make whereas the authorized dealer/distributor will have to furnish certificate issued by the manufacturer certifying that tenderer is their authorized dealer/distributor of that product/item. Without this certificate tender will not be accepted.
37. The tenderer shall guarantee that after sales services will be provided as and when required. Replacement or repair of part should be done and delivered free of cost at this institution within guarantee/warranty period.
38. The supplier will render necessary assistances, if required, in the installation of the equipment/ machinery in the institute/ site free of charge.
39. No. offer should be made for imported item for which import license has to be arranged by the supplier. The entire imported item will have to be delivered in the institute and payment will be made in rupees.
40. The payments shall be released only after satisfactory and successful commissioning and installation of the equipment/ machinery at the designated site/ institute and on submission of bill by the firm.
41. In the event of any dispute arising out of the tender or from the resultant contract, the decision of the Principal, **Government Polytechnic, Balodabazar Disitt – Balodabazar (C.G.)** will be final.
42. The Tender document/ resultants contract will be interpreted under Indian laws.
43. The undersigned is not responsible for any loss or damage to the equipments during transit irrespective of the fact that they are insured or not insured or delivery is ex- go down or factory station.
44. No claim shall be entertained in respect of interest on Earnest Money/Security deposit/ Tender Deposit.
45. Inspection of the equipment will be carried out at the institution after receipt of the equipments. Any request for the inspection of the same at the firm's factory/ go down/ showroom etc. will not be accepted.
46. Illustrated operation manuals, pamphlets/catalogue/literature/working instructions, trainers, software and hardware, erection/ wiring details as the case may be of the ordered equipments must be supplied in suitable damp proof cover. Without operational/instruction manual no equipment/machinery will be accepted.
47. If there is any variation of specification of any machine /equipment from tendered specification, it should be clearly mentioned. Specification nearest can also be considered if it is as per technical norms for the given equipment/machinery.
48. Tenderer should mention list of spares, tools and accessories provided along with equipment without any extra cost.
49. Only actual manufacturer or their authorized dealer/distributor may submit the tender .It is mandatory to have ISO/BIS certification for supply/manufacture of the item/equipments/machineries. Only BIS/ISO /ISI certified item has to be quoted.
50. The bidder shall submit a signed and stamped (on each page) copy of tender document as testimony of acceptance of T&C of tender document.

51. No octroi/excise duty shall be paid by the institution.
52. All prices quoted and other information in this regard having a bearing on the price shall be written both in figures and words in the prescribed offer form. If there is a discrepancy between words and figures, the amount mentioned in words will prevail. All prices should be in Indian National Rupees (INR).
53. Tenderer shall be entirely responsible to pay all Government. (Central and State) GST Taxes & DUTIES, custom duties and levies, sales tax, payable on components, raw materials any other items used for their consumption or dispatched directly to respective location of **Government Polytechnic, Balodabazar Disitt–Balodabazar-Bhatapara (C.G.)**.
54. **In case of supply order value is 2.5lacs or more in this case supplier will have to deposit 2% GST TDS of Net Value in the form of Demand Draft(DD) in favor of Principal, Government Polytechnic, Balodabazar payable at Balodabazar,Disitt – Balodabazar-Bhatapara (C.G.)**.
55. **Delivery and Documents**
The suppliers shall notify the purchaser & delivery the following documents to be Purchaser-
 - 1) Three Original copy of the suppliers Invoice, showing Purchaser, The Purchaser order number, Goods Description, quantity, unit price and total amount. Invoice must be signed in original and stamped or sealed with the company stamp/seal.
 - 2) One original of the manufacturers warranty certificate (if any) covering each item supplied.
 - 3) Invoice should be raised in the name as “PRINCIPAL, GOVERNMENT POLYTECHNIC BALODABAZAR (CG)
56. **OTHER IMPORTANT CONDITIONS**
 1. The purchaser shall have all rights to modify, addition, subtraction of any term(s) and condition(s) of the tender and different bids therein during any time of tender process, which shall be communicated to the tenderer.
 2. Any condition imposed by the firm/ Manufactures/company/Supplier will not be accepted.
 3. No change in the Quoted price shall be allowed to any reason.
 4. In case the item installed by the supplier/tenderer not meets the specifications of quoted equipment/item, the purchaser shall have all rights to cancel the item’s purchase order, and the supplier/tenderer shall be responsible to take back the installed item at his/her own cost after getting the order of purchaser.
 5. In all the above conditions the decision of the Government Polytechnic Balodabazar(CG) Purchase Committee or any officer authorized by the committee shall be final and binding.
 6. Principal, Government Polytechnic Balodabazar(CG) will be the final authority for any changes in tender terms.
57. All provisions of Chhattisgarh Store Purchase Rules 2002, with all amendments upto the date of publication of this tender, shall be applicable.

Principal,
Government Polytechnic Balodabazar
Disitt – Balodabazar-Bhatapara (C.G.)

ANNEXURE - I

Format for Technical Bid to be put in envelope A only

(Please provide hard copy as well as soft copy (CD) in MS. Words/M.S.Excel Format in the envelope)

S. No.	Name of Items along with Make and model	Specifications given in the Tender	Technical Specification the bidder wants to supply as per catalogue/ brochure	Deviation (If any)	Brochure/ literature/ catalogue attached Yes/No	Remark
1	2	3	4	5	6	7

Signature:
(Name & stamp of the Firm/Tenderer)

ANNEXURE - II

The Price offer should be submitted in the following format Envelope-B only

(Please provide hard copy as well as soft copy (CD) in MS. Words/M.S. Excel Format in the envelope)

Sl. No.	Name of Items along with Make/ Model	Specifications	Price of the Equipment excluding (GST) In Rs.	(GST) %	GST In Rs.	Cost of the Equipment Inclusive of all taxes & charges (8=5+7)	Remark
1	2	3	4	5	6	7	8

Signature:
(Name & stamp of the Firm/tenderer)

ANNEXURE - III

DECLARATION FOR NOT BLACK LISTED

Date.....

To,
The Principal,
Government Polytechnic Balodabazar,
Disitt – Balodabazar-Bhatapara,(C.G.).

Dear Sir,

Ref.:- Tender No.

I/We hereby confirm that our firm has not been banned or blacklisted by any Government organization/Financial Institution/Court/Public sector Unit/ Central Government.

Place

Signature of Bidder

Date

Name

Designation

Seal

ANNEXURE-IV

(On Non Judicial Stamp Paper of Rs. 50/-)

निविदाकर्ता Bid के साथदिए जानेवाला शपथ-पत्र

निविदाकर्ता फर्म मेसर्स की ओर से मुझे/हमे अधिकृत किया गया है और मैं/हम निम्नलिखित कथन शपथपूर्वक कहता हूँ/कहते हैं कि :-

1. मैंने/हमने निविदा की सारी शर्तें ध्यान पूर्वक पढ़ी है और उनसे सहमत हैं तथा उन्हें मानने के लिए वचन बद्ध है।
2. मेरे/हमारे द्वारा संलग्न किए गए सभी दस्तावेज सही है और उनमें किसी प्रकार की कांट-छांट नहीं किया गया है एवं गलत जानकारी नहीं दी गई है।
3. मेरे/हमारे द्वारा कामर्शियल बिड में सामग्रीयों के लिए जो स्पेशिफिकेशन दिया गया है। और उनके सपोर्ट में जो भी संबंधित दस्तावेज, कैटलॉग/ब्रोशर्स आदि संलग्न किए गए हैं उनमें लिखा विवरण निर्माता द्वारा जारी किया गया है एवं मूल रूप में है, और उनमें कोई फेरबदल या कांट-छांट नहीं किया गया है।
4. मेरे/हमारे द्वारा निर्माता से मुझे/हमें जारी अथॉराइजेशन प्रमाण-पत्र जो कि बिड के साथ संलग्न किया गए है। वे सही एवं मूल रूप में है और उनमें कोई फेरबदल नहीं किया गया है।
5. मैं/हम दिए गए क्रयादेशानुसार सामग्रीयों को निर्धारित समय सीमा में स्पेशिफिकेशन के अनुसार सप्लाई करने के लिए बाध्य है। देर होने या सामग्रीयों के स्पेशिफिकेशन में अन्तर होने पर मुझे/हमें दिए गए क्रयादेश को निरस्त किया जा सकता है, एवं शासन को होने वाले नुकसान की भरपाई मेरे/हमारे द्वारा की जावेगी।
6. टेण्डर के तहत प्राप्त क्रयादेश द्वारा प्रदाय की जाने वाली सामग्रीयों में लगने वाले सभी शासकीय (केन्द्र व राज्य) GST Taxes & DUTIES, custom duties and levies, sales tax इत्यादि का भुगतान करने की सम्पूर्ण जिम्मेदारी मेरी/हमारी होगी कृपया कर सहित राशि का भुगतान करें इस आशय से मेरे द्वारा निवेदन पत्र करुंगा।
7. मेरे/हमारे द्वारा दी गई जानकारी असत्य पाए जाने पर मुझे/हमें एवं हमारी फर्म को निविदा में भाग लेने से वंचित किया जा सकता है।
8. उपरोक्त बिन्दुओं की जानकारी गलत पाये जाने अथवा टेण्डर के नियमों का पालन नहीं करने पर हमारी फर्म को **BLACK LIST** किया जा सकता है। जिसकी सम्पूर्ण जिम्मेदारी मेरी/हमारी होगी।

दिनांक

हस्ताक्षर
 नाम
 धारित पद
 फर्म का नाम
 (सील सहित).....

ANNEXURE-V

Vendor Information	
GST NO.	
TIN No.	
PAN NO.	
Vendor Name	
Address	
Mobile No.	
State	
District	
Bank Name	
Branch Name	
Bank A/c No.	
Bank IFSC Code	
Vendor Code	
Valid Email ID.	

I hereby certify that the above particulars are correct to the best of my knowledge and I will responsible for the consequences that may arise due to wrong information if any in the above.

Vendor Signature

List and Specification of Equipments for Electrical Engineering

No	Name of the Equipment's to be Procured	Specification						
Elements of Electrical Engineering								
1	Electrolytic Capacitor	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Voltage Rating</td> <td>20</td> </tr> <tr> <td>Capacitance</td> <td>1mfd</td> </tr> <tr> <td>Application</td> <td>Power, HT</td> </tr> </table>	Voltage Rating	20	Capacitance	1mfd	Application	Power, HT
Voltage Rating	20							
Capacitance	1mfd							
Application	Power, HT							
2	Ceramic Capacitor	100000pF (104pF) Voltage-Rated 50V.Tolerance +-10%. T.C Z5U. Body Diameter 4mm. Lead Spacing 5.08mm						
3	Magnetic and Electromagnetic Devices	15V-0-15V AC(built in power supply),mains: 230v AC						

No	Name of the Equipment's to be Procured	Specification
Basic Electronics		
1	PN Diode Trainer	230v,50Hz Ac
2	Transistor Trainer	230v,50Hz Ac
3	PNP Transistor	230v,50Hz Ac
4	NPN Transistor	230v,50Hz Ac
5	PN Diode	230v,50Hz Ac
6	Analog Trainer Kit	
7	DC Electronic Kit	
8	Bridge Rectifier Trainer Kit	Bridge Rectifier Trainer Kit is a complete set consists of a step down transformer of different taping with four diode fitted on board for bridge connection with necessary terminals. All terminals are special Push to Open Hole type and circuit can be connect with bair Hook up wire a filter section provided with one Inductor and two electrolytic capacitors. Complete with variable load resistance and one AC voltmeter in dual range for measuring input AC supply voltage and ripple voltage. One DC voltmeter and one current meter is also provided on panel.
9	Zener Diode Kit	Current (Amp): 0.1AMP to 2AMP Voltage: 0.5V to 2V
10	CRO	Bandwidth AC 10Hz ~ 30MHz (-3dB) DC ~ 30MHz (-3dB) Y Deflection 5mV / div ~ 20V / div Rise Time < 18ns Mag x 5 Accuracy : < 5% Max Input 400V (DC+ACp-p) Sweep Mode Auto, Trig, Lock, Single Sweep Rate 0.1µs / div 0.2s / div 1-2-5 20 steps, error ±5 Trig Source Y1, Y2, ALT, Line, Ext, TV-H, TV-V Min Sync. Level Trig DC ~ 30MHz, Int. 1 div Ext. 0.2Vp-p TV Int. 2div Ext. 0.3Vp-p Trig Lock (50Hz ~ 10MHz) Internal 2div Freq. Response AC : 10Hz ~ 1MHz -3dB DC : 0 ~ 1MHz -3dB Max. Input 400V (DC+ACp-p) Min Input Level TTL Level Wave Form Square wave Highest Sensitivity up to 1mV /div (After Expand) Full band Trig Auto Sweep Circuit Flex Trig mode (Select either CH1 or CH2 Signal / External Signal) Alt-Trig View 2 in relative Signal Ext Trig Input Power Supply : AC 200 ±10%V

11	Clipper Clamper Kit	Power Supply $\pm 15V$ Clipper Circuit Using 741 OP-Amp Clamper Circuit Using 741 OP-Amp Wood Box (Closed Type)+ve and -ve clipping, +ve and -ve clamping Input : 230V, AC
12	Multivibrator	DC power supply +/- 12 V , 500 mA On panel three circuits for Astable, Monostable & Bistable multivibrators Required numbers of patch cords and operating manual.
13	Function Generator	Type Analog Power Supply 230v ac +/- 10% Output Amplitude 0 - 20v p/p for all function Frequency 0.1 hz to 1 mhz in six decade range
14	Hartley Oscillator	On board hartley oscillator section. On board separate tank circuit Test points are provided to analyse signals at various points ON/OFF switch and LED for power indication. Bare board Tested Glass Epoxy SMOBC PCB is used. Block Description Screen printed on glassy epoxy PCB All interconnections are made using 2mm banana Patch cords Supplied with User manual and patch cords With built-in power supply Enclosed in a wooden/plastic box
15	Wein Bridge	Dimension W 340 x H 110 x D 210 Frequency Range 50Hz Input Voltage (V) 230V
16	LC oscillator	
17	Capacitor Charge Oscillator	

No	Name of the Equipment's to be Procured	Specification
Electrical Circuit Lab		
1	Kirchoffs Law kit	Mains : 230v +/-10% ,50hz, dc power supply 12v
2	Superposition Theorem Kit	Built in:+12v variable and -12v variable dc ,mains 230v AC
3	Reciprocity Theorem kit	Built in:+15v variable and -15v variable dc ,mains 230v AC
4	Network Theorems Kit	Built in:+15v variable and -15v variable dc ,mains 230v AC
5	RLC Circuit Kit Series Resonance Kit Parallel Resonance Kit	90-275v,50-60 hz
6	Advanced Network Theorem	Built in:+15v variable and -15v variable dc,+5v variable -5v variable dc,mains:230v
7	Inductor	Sys volt: 230V Ripple freq: 300Hz CRGO/Amorphous/Ferrite based Power Upto 25kVAR
8	Capacitor	Oil Filled, Dry Filled, 230V, 275V, 415V, 1.15 TO 10 MFD
9	Rheostat	120 Watt

No	Name of the Equipment's to be Procured	Specification
Electrical Workshop		
1	Phase Changer	Phase: Three Phase AMPS Rating 60 A Maximum Loading Capacity: 12 KVA Weight: 5.8 KGS Dimension in MM (size): 450 x 360 x 100

No	Name of the Equipment's to be Procured	Specification
Electrical Measurement & Measuring Instruments		
1	Ammeter	Usage Industrial, Laboratory Measuring Range 0-30A Frequency 50-60HZ Packaging Type Box
2	Voltmeter	Usage Industrial, Laboratory Measuring Range 0-250 V Display Type Analog Least Count 5 V Packaging Type Box
3	Wattmeter	Input Voltage 10-300V Input Current 0.01 to 1 A / 0.05 to 5A / 0.1 to 10A (Any One) Accuracy Class 0.5 Resolution Floating Decimal Point Panel Dimensions 96 X 96 X 85 mm Auxiliary 230 V +/- 20%
4	Phase Sequence Meter	AC Voltage : 90V-600V Frequency Range : 15Hz-400Hz Phase Sequence Indicator Missing Phase Indication Motor rotation Indicator
5	Wheatstone Bridge	Built in power supply : +15V DC Mains : 230V AC Dimension : 27CMS X 17CMS [metal cabinet] Weight : 2KGS APPX
6	Kelvin's Double Bridge	On board oscillator section. On board circuit for designing Kelvin's double Bridge On board amplifier section On board unknown Resistors for conducting the experiment On board Speaker interface Test points are provided to analyse signals at various points ON/OFF switch and LED for power indication. Bare board Tested Glass Epoxy SMOBC PCB is used. Block Description Screen printed on glassy epoxy PCB All interconnections are made using 2mm banana Patch cords Supplied with User manual and patch cords With built-in power supply Enclosed in a wooden/plastic box
7	Earth Tester	

		<table border="1"> <tr> <td>Display</td> <td>4 Digits Extra Large Backlit Dual Lcd Display</td> </tr> <tr> <td>Earth Resistance Range</td> <td>0 - 10/100/1000 Ohms, Accuracy : +/-2%</td> </tr> <tr> <td>Low Resistance Range</td> <td>0 - 200 k.Ohms, Accuracy : +/-2%</td> </tr> <tr> <td>DC Voltage</td> <td>0 - 1000V, Accuracy : +/-0.8%</td> </tr> <tr> <td>AC Voltage</td> <td>0 - 750V, Accuracy : +/-1.2%</td> </tr> </table>	Display	4 Digits Extra Large Backlit Dual Lcd Display	Earth Resistance Range	0 - 10/100/1000 Ohms, Accuracy : +/-2%	Low Resistance Range	0 - 200 k.Ohms, Accuracy : +/-2%	DC Voltage	0 - 1000V, Accuracy : +/-0.8%	AC Voltage	0 - 750V, Accuracy : +/-1.2%						
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8	Megger	5 KV - 10,000 MOHMS, Analogue Display, Metal Body, Hand Driven, Insulation Tester Range : 5000 Volts - 10,000 Mohms																
9	Potentiometer	Riding on unfathomable volumes of industrial expertise, we are providing a broad array of Carey Foster Bridge Cum Potentiometer.																
10	Multimeter	Basic dc accuracy 0.5 % CAT III 600 V safety rated Diode and continuity test with buzzer Small lightweight design for one-handed use Rugged, durable design Automatic shutdown Battery is easy to replace Continuity (audible) : Yes CAT rating : CAT III 600 V Auto shutoff : Yes Drop test : 1 meter to surface Duty Cycle : 0.1 to 99.9% , 0.1% Resolution																
11	Energymeter	<table border="1"> <tr> <td>Frequency</td> <td>50-60 Hz</td> </tr> <tr> <td>Phase</td> <td>Three Phase</td> </tr> <tr> <td>Voltage</td> <td>3x240V</td> </tr> <tr> <td>Display Size</td> <td>1.5 Inch</td> </tr> <tr> <td>Display Type</td> <td>Digital</td> </tr> <tr> <td>Current</td> <td>3x5-20 A</td> </tr> <tr> <td>Energy consumption</td> <td>1600 imp/Kwh</td> </tr> <tr> <td>Other details</td> <td>Type RS 34</td> </tr> </table>	Frequency	50-60 Hz	Phase	Three Phase	Voltage	3x240V	Display Size	1.5 Inch	Display Type	Digital	Current	3x5-20 A	Energy consumption	1600 imp/Kwh	Other details	Type RS 34
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Other details	Type RS 34																	

No	Name of the Equipment's to be Procured	Specification
Electrical Machines I /Electrical Machines II		
1	Advanced Electrical Machines Trainer Kit	<p style="text-align: center;">DC MACHINES</p> <p>DC Shunt motor without Interpole DC Shunt motor with Interpole DC Series motor without Interpole DC Series motor with Interpole DC Compound motor without Interpole DC Compound motor with Interpole DC Shunt Generator without Interpole DC Shunt Generator with Interpole DC Series Generator without Interpole DC Series Generator with Interpole DC Compound Generator without Interpole DC Compound Generator with Interpole DC Separately excited Generator without Interpole DC Separately excited Generator with Interpole</p> <p style="text-align: center;">2) AC MACHINES (Single Phase)</p> <p>Single Phase 4 Pole, Induction motor Capacitor Start/Run. Single Phase AC Series motor. Single Phase AC Generator Rotating Field Single Phase AC Generator Rotating Armature. Single Phase Universal motor.</p>

		<p style="text-align: center;">3) AC MACHINES (Three Phase)</p> <p>AC 3 Phase Induction motor Squirrel cage type. AC 3 Phase Induction motor Slipring type. AC 3 Phase Generator Rotating field type. AC 3 Phase Generator Rotating Armature type. AC 3 Phase Synchronous Generator Rotating field type.</p>										
2	Autotransformer	<table border="0"> <tr> <td>Reversible Voltage</td> <td>220-380-440-480V</td> </tr> <tr> <td>Frequencies</td> <td>50/60 Hz</td> </tr> <tr> <td>Proteccion Degree</td> <td>IP23</td> </tr> <tr> <td>Proteccion Class</td> <td>1</td> </tr> <tr> <td>Insolation Class</td> <td>T40/E</td> </tr> </table>	Reversible Voltage	220-380-440-480V	Frequencies	50/60 Hz	Proteccion Degree	IP23	Proteccion Class	1	Insolation Class	T40/E
Reversible Voltage	220-380-440-480V											
Frequencies	50/60 Hz											
Proteccion Degree	IP23											
Proteccion Class	1											
Insolation Class	T40/E											
3	Transformer Lab Trainer	Mains Supply : 415 V ±10%, 50Hz Type 3phase Power rating 1kva Voltage 415/230 Rated Current 4Amp										
4	Synchronous Motor with Starter and Accessories	3 or 5 HP, 3 Phase, 50 Hz, 415 V, AC supply, 1500 rpm with DC exciter mounted on shaft of motor and suitable Starter required for above motor With connecting leads along with operating and service manuals. Complete with all protecting & measuring accessories										
5	Single Phase Transformer With Resistive Load For Connection	Rating-1kVA Tapping-different volts Single phase Separate unit for resistive load of different current ratings-0 to 50 Amps										
6	Electrical Load Banks (1 phase-R, L and C)	Input Voltage: 230 Phase, equipped with Voltmeter-0 to 300 V, Ammeter-0 to 10 Amp, Load Range : 2000 volt ampere, Load Type : R,L,C (1 phase) 3 in 1 unit, Handle/Knob to be provided for varying load, portable										
7	Electrical Load Banks (3 phase-R, L and C)	Input Voltage: 415 Phase, equipped with Voltmeter-0 to 500 V, Ammeter-0 to 10 Amp, Load Range : 5000 volt ampere, Load Type : R,L,C (3 Phase) 3 in one unit, Handle/Knob to be provided for varying load, portable										
8	Single phase induction motor Trainer kit	Technical Specification Mains Supply : 230 V ±10%, 50 Hz Induction Motor Type : Capacitor start Phase : Single Current type : AC Rating : 1 HP Voltage rating : 230 V ± 10% Meters Used Voltmeter : 0-300 V Ammeter : 0-10 A Wattmeter : 1000 W MCB : 10 A										
9	DC Motor Speed Control Trainer Kit	<table border="0"> <tr> <td>Frequency (Hz)</td> <td>50Hz</td> </tr> <tr> <td>Phase</td> <td>Single Phase</td> </tr> <tr> <td>Display Type</td> <td>Digital</td> </tr> <tr> <td>Current Type</td> <td>DC</td> </tr> <tr> <td>Voltage</td> <td>230V-460V</td> </tr> </table>	Frequency (Hz)	50Hz	Phase	Single Phase	Display Type	Digital	Current Type	DC	Voltage	230V-460V
Frequency (Hz)	50Hz											
Phase	Single Phase											
Display Type	Digital											
Current Type	DC											
Voltage	230V-460V											
10	Three Phase SquirelCsge Trainer Kit	<p style="text-align: center;">3 Phase Squirrel Cage Motor Specification:</p> <p>Voltage: 415 V AC, 50 Hz Capacity: 300 W / 4 pole / 1500 RPM / 12 terminals Rotor construction: Diecast squirrel cage rotor Stator construction: 6 x 2 terminals are brought out to run machine at 2 speeds using pole changing method (Dahllander winding) Frame / mounting: 100 frame, chassis mounted</p>										

11	Three Phase Alternator Trainer Kit	In Built Fixed DC Supply	200VDC
		In Built Variable DC Supply	0-200VDC
		Type	DC Shunt Type
		Rating	3HP, 5HP
		DC Voltmeter	0-300V 1Nos
		AC Voltmeter	0-500V 1Nos
		DC Ammeter	0-20A (1 Nos)
		MCB	10A

No	Name of the Equipment's to be Procured	Specification										
Digital Electronics Lab												
1	Logic Gates	<table border="1"> <tr> <td>Voltage (V)</td> <td>230V</td> </tr> <tr> <td>Frequency (Hz)</td> <td>50Hz</td> </tr> <tr> <td>Application</td> <td>Laboratory</td> </tr> <tr> <td>Condition</td> <td>New</td> </tr> <tr> <td>Phase</td> <td>Single Phase</td> </tr> </table>	Voltage (V)	230V	Frequency (Hz)	50Hz	Application	Laboratory	Condition	New	Phase	Single Phase
Voltage (V)	230V											
Frequency (Hz)	50Hz											
Application	Laboratory											
Condition	New											
Phase	Single Phase											
2	NOR gate											
3	EXOR gate											
4	Flip Flop Trainer Kit	<table border="1"> <tr> <td>Input</td> <td>+5v dc</td> </tr> <tr> <td>high(logic 1)</td> <td>+5v</td> </tr> <tr> <td>low (logic 0)</td> <td>0v</td> </tr> <tr> <td>dimensions (mm)</td> <td>240 x 345 x 110</td> </tr> <tr> <td>Socket Size</td> <td>2 mm</td> </tr> </table>	Input	+5v dc	high(logic 1)	+5v	low (logic 0)	0v	dimensions (mm)	240 x 345 x 110	Socket Size	2 mm
Input	+5v dc											
high(logic 1)	+5v											
low (logic 0)	0v											
dimensions (mm)	240 x 345 x 110											
Socket Size	2 mm											
5	Ripple counter	<p>On board 7408(AND Gate), 7432(OR Gate), 7400(NAND Gate), 7402(NOR Gate), 7404(NOT Gate), 7486(XOR Gate), 7490(Decade Counter), 7476(J-K Flip Flop), 7420(4 i/p NAND Gate), 7425(4 i/p NOR gate), 74121(Mono Stable Multivibrator), 74163(Synchronous Counter)</p> <p>On board 8 TTL inputs with dual color LEDs to indicate HIGH & LOW</p> <p>8 Output LEDs</p> <p>2 Seven Segment Display with BCD to 7 segment conversion</p> <p>On board 1Hz, 10Hz, 1KHz, & 1MHz clock</p> <p>On board Logic Probe</p> <ul style="list-style-type: none"> On board Manual Pulsar(Low to High & High to Low) <p>On board +5 V and GND</p> <p>On board 20PIN ZIF socket for further expansion.</p> <p>ON/OFF switch and LED for power indication.</p> <p>Bare board Tested Glass Epoxy SMOBC PCB is used.</p> <p>Block Description Screen printed on glassy epoxy PCB</p> <p>All interconnections are made using 2mm bananaPatch cords</p> <p>Supplied with User manual and patch cords</p> <p>With built-in power supply</p>										
6	Multiplexer Demultiplexer Kit	Computer Logic Training Board has been designed specifically for the study of 4 line to 16 line Decoder, 1 to 16 demultiplexer and its application as										

		sequencer. This Training Board gives a better understanding of decoding 4 lines to 16 lines. It also explains the phenomena of Demultiplexing with one input signal and sixteen outputs using four control signals. It gives an idea to sequence among a number of states. The board is absolutely self contained and requires no other apparatus. Practical experience on this board carries great educative value for Science and Engineering Students.
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No	Name of the Equipment's to be Procured	Specification														
Instrumentation & control Lab																
1	LVDT	<table border="0"> <tr> <td>Power Supply (V)</td> <td>220V</td> </tr> <tr> <td>Display</td> <td>DIGITAL</td> </tr> <tr> <td>Frequency (Hz)</td> <td>50 HZ</td> </tr> </table> <p>Excitation source : Built in AC source 2.5 KHz sine approx. L.V.D.T. : in non metallic structure. Micrometer : One (for displacement) Displacement range : 10mm. Test points : Sockets at different places for signals Display (mm) : 3.5 digit digital Power supply : IC regulated Phase detection : Balanced demodulator Power supply : Short circuit & overload Protected Mains : 230V/50Hz AC Instruction manual : One Size : 310x210x80mm(approx).</p>	Power Supply (V)	220V	Display	DIGITAL	Frequency (Hz)	50 HZ								
Power Supply (V)	220V															
Display	DIGITAL															
Frequency (Hz)	50 HZ															
2	Thermocouple	<table border="0"> <tr> <td>Temperature Range</td> <td>1000</td> </tr> <tr> <td>Assembly Length</td> <td>150mm</td> </tr> <tr> <td>Material</td> <td>Stainless Steel</td> </tr> </table>	Temperature Range	1000	Assembly Length	150mm	Material	Stainless Steel								
Temperature Range	1000															
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3	Thermistor kit	Variable DC supply 0 to 5 V @ 500 mA On panel built-in variable load resistance, On panel whetstone bridge & temperature calorimeter. Required numbers of patch cords, operating manual & thermometer.														
4	Pressure Transducer	<p style="text-align: center;">Product details:</p> <table border="0"> <tr> <td>Output</td> <td>4 mA to 20 mA</td> </tr> <tr> <td>Range</td> <td>40 bar</td> </tr> <tr> <td>Accuracy Range</td> <td>+/-0.15 % BFSL / +/-0.25 % BFSL</td> </tr> <tr> <td>Media</td> <td>Gases, Liquids Compatible with Wetted Parts</td> </tr> <tr> <td>Operating Temperature</td> <td>4 Degree C to 60 Degree C</td> </tr> <tr> <td>Wetted Parts Material</td> <td>Ha C276/316L Stainless Steel</td> </tr> <tr> <td>Supply</td> <td>9 - 28 V Dc</td> </tr> </table>	Output	4 mA to 20 mA	Range	40 bar	Accuracy Range	+/-0.15 % BFSL / +/-0.25 % BFSL	Media	Gases, Liquids Compatible with Wetted Parts	Operating Temperature	4 Degree C to 60 Degree C	Wetted Parts Material	Ha C276/316L Stainless Steel	Supply	9 - 28 V Dc
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Supply	9 - 28 V Dc															
5	Digital Ph metre	Digital pH Meter is suitable for most pH and ion selective electrodes. They are compact, economical and easy to operate instruments. The results are displayed in pH units or millivolts on a 3½ digit LED display.														
6	Measurement Of Angular Displacement Using Capacitive Pickup	The provided set is designed to study of capacitive transducer. It has inbuilt excitation source, signal processing circuitry and a digital panel meter which can be adjusted to read displacement in 1,0. The set up has a ppc dielectric PVC ganged capacitor as transducer well printed in blocks														
7	Strain Guage Trainer															
8	Angular Displacement Trainer Kit															

No	Name of the Equipment's to be Procured	Specification
Power Electronics		
1	Three Phase Half Full Controlled Bridge Converter Trainer	Product details:
		Power Supply +15Vat 150mA
		Feature Protection Cover
		Size 14x12 Inch, Also available in 18x12 Inch