



भारतीय समुद्री विश्वविद्यालय Indian Maritime University

(केन्द्रीय विश्वविद्यालय, भारत सरकार / A Central University, Govt. of India)
कोलकाता परिसर / Kolkata Campus

No. IMU-KC/Laboratory Equipment/17-18

Date: 21.06.2017

Sub: Quotation for procurement of Instruments for Electrical Machine Laboratory at IMU-Kolkata Campus

Sealed quotations are invited towards procurement of Electrical Machine Laboratory at IMU-KC under two bid systems i.e. Technical Bid and Financial Bid. The details of the instruments are as follows:

Sl. No.	Items	Specifications	Qty.	Unit
01	Determination of equivalent resistance of the resistors when they are connected in Series, Parallel and Series-parallel combinations.	Digital voltmeter 3.5 digit, digital ammeter 3.5 digit. test zig to carry the experiment smoother. Active component to carry the experiment. Input 230v ac 50 Hz \pm 10v. Dust proof close type box laminated with powder coating 70 microns. Patch chord 2mm multi pole type and instruction manual. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
02	Characteristics of Fluorescent lamps	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
03	Characteristics of Tungsten filament lamps	Richardson Equations, Model ETB-198 (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
04	Verification of Thevenin's theorem., Norton's theorems, Maximum power theorem and Superposition theorem	Verification of laws & Network theorem in DC circuits with power supply and 2 meters (C.R.), Model ETB-064. Verification of superposition Theorems & reciprocity theorem with P/S and 4 digital meter (C.R), Model ETB-201 (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
05	Study of R-L-C Series and parallel circuit	Series and Parallel Resonance ETB-030, A.C.Millivoltmeter, Model ACV-25, Audio frequency generator 20 Hz to 200 KHz O/P 0-20V RMS, model AO-300, A.F.Milliammeter 0-5 mA, Model AF-205MO, Study of resonance in LCR circuit & Damping Effect Model Es-215, Audio frequency generator 20 Hz to 200 KHz O/P 0-20VRMS,model AO-300. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set

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पि-19, तारातला रोड, कोलकाता - 700 088 / P-19, Taratala Road, Kolkata - 700 088

Email : director.kol@imu.co.in

Phone : (033) 2401 4673/74/76/78/1946, Fax : (033) 2401 4333, Hostel : 2401 4675

06	Measurement of power in a three phase circuit by two watt meter method.	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
07	Measurement of energy (single and 3 phase) using suitable energy meter	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
08	Measurement of the insulation resistance of a electrical machine and continuity test by the megger	Networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
09	Measurement of energy (single and 3 phase) using suitable energy meter	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
10	Star-Delta Starter for electrical machines	Open type Star-Delta circuit for 37kW motor. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set

Terms & conditions:


- (i) The tender is for all the items i.e. 01 to 10. A bidder may quote for individual item or all the items in the tender. Each item will be considered on the basis of L1 price for that item.
- (ii) The Bid submitted will be evaluated based on the details of technical qualification submitted by the bidder under Cover I in the prescribed formats to ascertain whether the bidders qualify. The Cover II (Price Bid) of only those firms who technically qualify as per the documents in Cover I will be opened. The format for Technical Bid is given in Annexure-I, while price bid format in given in Annexure-II
- (iii) The Cover I shall be addressed to "The Director, Indian Maritime University – Kolkata Campus" and should be duly superscribed as "Cover-I-Technical Bid for procurement of Instruments for Electrical Machine Laboratory at IMU-KC" and sealed properly. Name and Address of the bidder shall also be written/ printed on the cover.
- (iv) The Cover II shall be addressed to "The Director, Indian Maritime University – Kolkata Campus" and should be duly super scribed as "Cover-II-Price Bid for procurement of Instruments for Electrical Machine Laboratory at IMU-KC" and sealed properly. Name and Address of the bidder shall also be written/ printed on the cover.

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(v) Main Cover

Both the "Cover I" and "Cover II" shall be placed inside the main cover, which shall be addressed to "The Director, Indian Maritime University – Kolkata Campus P-19, Taratala Road, Kolkata: 700088, West Bengal, India" and the main cover should be duly superscribed as "Tender for procurement of Instruments for Electrical Machine Laboratory at IMU-KC" and sealed properly.

- (vi) The rates quoted should be comprehensive and inclusive of all taxes, delivery charges, installation, commissioning and trial run.
- (vii) Last date of submission of quotation is 12.07.2017.
- (viii) The Equipment should be delivered and installed within the period of 4 weeks from the date of issue of Purchase Order. If the bidder fails to deliver and place any or all the Equipments or perform the service by the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 10% of total order value will be deducted.
- (ix) Delivery of the above items should be made at IMU - Kolkata Campus at P-19, Taratala Road, Kolkata 700 088.
- (x) Rates quoted should be valid for a period of 2 months from the last date of submission of the bids. Other than the increase in taxes imposed by statutory authority, no change in the rate is acceptable during the period.
- (xi) Conditional bids will not be accepted.
- (xii) 100% Payment will be made through Bank Transfer after successful installation, delivery and trial run of the equipments.
- (xiii) Minimum 3 years free service warranty should be given for the equipment/equipments. Calls should be attended within 24 hrs. in case of any break down.


O.I.C. - Purchase

To
The Director
Indian Maritime University – Kolkata Campus
P-19 Taratala Road, Kolkata – 7000 88

Dear Sir,

Having agreed to the terms and condition of the tender, we hereby submit our Technical Bid for “Procurement of Instruments for Electrical Machine Laboratory at IMU-KC” as detailed below

Annexure - I

Format of Technical Bid

Procurement of Instruments for Electrical Machine Laboratory at IMU-KC

Sl. No.	Items	Specifications	Qty	Unit
01	Determination of equivalent resistance of the resistors when they are connected in Series, Parallel and Series-parallel combinations.	Digital voltmeter 3.5 digit, digital ammeter 3.5 digit. test zig to carry the experiment smoother. active component to carry the experiment. input 230v ac 50 Hz $\pm 10v$. dust proof close type box laminated with powder coating 70 microns. patch chord 2mm multi pole type and instruction manual. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
02	Characteristics of Fluorescent lamps	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
03	Characteristics of Tungsten filament lamps	Richardson Equations, Model ETB-198 (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
04	Verification of Thevenin's theorem., Norton's theorems, Maximum power theorem and Superposition theorem	Verification of laws & Network theorem in DC circuits with power supply and 2 meters (C.R.), Model ETB-064. Verification of superposition Theorems & reciprocity theorem with P/S and 4 digital meter (C.R), Model ETB-201 (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
05	Study of R-L-C Series and parallel circuit	Series and Parallel Resonance ETB-030, A.C.Millivoltmeter, Model ACV-25, Audio frequency generator 20 Hz to 200 KHz O/P 0-20V RMS, model AO-300, A.F.Milliammeter 0-5 mA, Model AF-205MO, Study of resonance in LCR circuit & Damping Effect Model Es-215, Audio frequency generator 20 Hz to 200 KHz O/P 0-20VRMS,model AO-300. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set

06	Measurement of power in a three phase circuit by two watt meter method.	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
07	Measurement of energy (single and 3 phase) using suitable energy meter	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
08	Measurement of the insulation resistance of a electrical machine and continuity test by the megger	Networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
09	Measurement of energy (single and 3 phase) using suitable energy meter	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
10	Star-Delta Starter for electrical machines	Open type Star-Delta circuit for 37kW motor. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set

Yours faithfully,

Date

Place: Signature with Seal of Authorized Signatory

To

The Director

Indian Maritime University – Kolkata Campus

P-19 Taratala Road, Kolkata – 7000 88

Dear Sir,

Having agreed to the terms and condition of the tender, we hereby submit our Financial Bid for “Procurement of Instruments for Electrical Machine Laboratory at IMU-KC” as detailed below

Annexure-II

Format of Price Bid

Procurement of Instruments for Electrical Machine Laboratory at IMU-KC

Sl. No.	Items	Specifications	Qty	Unit
01	Determination of equivalent resistance of the resistors when they are connected in Series, Parallel and Series-parallel combinations.	Digital voltmeter 3.5 digit, digital ammeter 3.5 digit. test zig to carry the experiment smoother. active component to carry the experiment. input 230v ac 50 Hz $\pm 10v$. dust proof close type box laminated with powder coating 70 microns. patch chord 2mm multi pole type and instruction manual. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
02	Characteristics of Fluorescent lamps	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
03	Characteristics of Tungsten filament lamps	Richardson Equations, Model ETB-198 (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
04	Verification of Thevenin's theorem., Norton's theorems, Maximum power theorem and Superposition theorem	Verification of laws & Network theorem in DC circuits with power supply and 2 meters (C.R.), Model ETB-064. Verification of superposition Theorems & reciprocity theorem with P/S and 4 digital meter (C.R), Model ETB-201 (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
05	Study of R-L-C Series and parallel circuit	Series and Parallel Resonance ETB-030, A.C.Millivoltmeter, Model ACV-25, Audio frequency generator 20 Hz to 200 KHz O/P 0-20V RMS, model AO-300, A.F.Milliammeter 0-5 mA, Model AF-205MO, Study of resonance in LCR circuit & Damping Effect Model Es-215, Audio frequency generator 20 Hz to 200 KHz O/P 0-20VRMS,model AO-300. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set

06	Measurement of power in a three phase circuit by two watt meter method.	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
07	Measurement of energy (single and 3 phase) using suitable energy meter	All terminals of the meters etc. are brought out on BS-4 terminals for flexible connection. All meters, voltage source, networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
08	Measurement of the insulation resistance of a electrical machine and continuity test by the megger	Networks are fitted / mount on Bakelite sheet which fitted on self stand, foot mounted, Table top, power coated MS sheet panel with required Armstrong's Patch chords, operating manual etc. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set
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10	Star-Delta Starter for electrical machines	Open type Star-Delta circuit for 37kW motor. (48 inch X 24 inch X 30 inch) wooden table as per required of 18 gauge CRC sheet, Powder coating, I.P. Protection.	01	Set

Yours faithfully,

Date

Place: Signature with Seal of Authorized Signatory