

BIDHAN CHANDRA KRISHI VISWAVIDYALAYA



RKVY-RAFTAAR Project, RKVY-AMEC/2021/1243

Development of Mechanized.....Improved Technologies

Department of Farm Machinery & Power

Faculty of Agricultural Engineering

Mohanpur-741 252, Nadia, West Bengal, India

Prof. S. Karmakar

Principal Investigator

Ref: RKVY/12115/E-Tender/01/22-23

Date: 24.08.2022

Notice for E-Tender

The Principal Investigator of RKVY-RAFTAAR project '**Development of a Mechanized Modern Farm for Promotion, Development and Dissemination of Improved Technologies**', under the Department of Farm Machinery & Power, Faculty of Agricultural Engineering, Mohanpur-741 252, Nadia, West Bengal, India is inviting Sealed quotations from the bona fide suppliers/ vendors for supplying the Instruments/Equipment/ Furniture as per specifications stated below within **ten (10) days of publication**. Please mention terms & condition clearly against each item, if any, for supplying Instruments/Equipment/ Furniture.

i) Price: The price of Instruments/Equipments, including the imported ones, should be quoted in each (including taxes and duties etc). However, quoted rates must be FOR DESTINATION including packing, insurance and delivery charges up to Department of Farm Machinery & Power, Faculty of Agricultural Engineering, and Nadia District of West Bengal with satisfactory of good condition.

ii) EMD: Vendors are required to pay the Demand draft amounting **Rs. 5000/-** along with their quotations. Demand Draft must be in favour of "Bidhan Chandra Krishi Viswavidyalaya" payable at Kalyani (IFSC: SBIN0001082). Supporting document regarding exemption of demand draft must be submitted.

iii) Supporting Documents:

- Bid papers should accompany Trade license, GST registration, Company Credential, IT Return, PAN etc.
- Photocopy (Self attested) of the original supporting document in favour of the specification – claim for each item must have to be submitted separately.
- User list along with certificate from reputed users also need to be submitted if any.
- Photocopy of supporting document of assured after sale service in Eastern India and availability of spare parts need to be submitted.

Price bid of the vendors will be compared only if technical specificity as appended against each item is fulfilled. The Viswavidyalaya reserves the right to accept or reject any tender without showing reason.

N.B: Please read carefully the terms and conditions of items.

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LIST OF EQUIPMENT WITH SPECIFICATION

Sl No	Item	Specification	Quantity
1	Universal Testing Machine	Computerised; Capacity- 10 KN; Accessories - Self tightening Wedge Type Tensile Grip, Eccentric roller grip capacity (1 kN); Compression Plates with provision for coupling Deflectometer suitable for 10 kN, additional Load cell – one each 50 N, 500 N and 1 KN; Windows 10 PC with 1100 VA APC UPS; A4 colour inkjet printer	1
2	Instrumented torque sensors	Nominal (rated) torque 20 N·m, Non-linearity including hysteresis $\leq 0.1\%$ - Non-contacting transmission of measured values - High speeds for angle of rotation measurements up to 5,000 rpm - Cylindrical shaft (25.4 mm) ends for friction fits - with coupler; Integrated measurement system with data logger for rotational speed and angle of rotation - Torque output signal ± 10 V, 10 kHz ± 5 kHz or better; Accessories: Connection cable- 5 m long; Cable socket; junction box	1
3	Rotational torque sensor and transducers with data logger		
3(a)	Rotary Torque sensor (Digital telemetry type)	Capacity: 200 N.m, Resolution: 0.05 N.m, Rated Output 24 Bit Digital, Non linearity $\pm 0.1\%$ of RO Non repeatability $\pm 0.1\%$ of RO; Hysteresis $\pm 0.1\%$ of RO, Safe overload 150% of Rated capacity or better; Power supply Noncontact Inductive transfer, Sampling Rate 2-10 Samples/ Sec or better; Operating Temperature 00 to 70 °C, RF link carrier frequency 433 MHz, RPM 20000 or better; Construction material Stainless Steel	1
3(b)	Datalogger & Digitizer for Rotary Torque sensor	Alpha Numeric LCD display with backlight; Display parameters Torque / Peak Torque, Digital O/P RS 232, with 2-10 sample per second; Set Points User programmable 2 Set points with Relay Output; Power supply Inbuilt rechargeable Battery / 12 VDC/ 220 V AC; Operating Temp. range Digitizer 0-55°C	1
3(c)	Wireless Datalogger & Digitizer for Three Point Hitch System	Communication port RS 232 o/p Power supply Inbuilt Battery Li-Ion & 220 V AC 2 X 8 bit Industrial grade microcontroller Data logging Real-time PC/Laptop based Operating System MS window 8,10; Logging MS Excel(CSV) format Number of channels 1 or better; Logging type with Date & time stamp; Graph display Line graph display wrt time; Data saving is in USB Flash drive with date & time stamp in MS Excel format	1
4	Motorised sieve shaker and Sieve Set	Measuring range: 25 μ m to 4mm Sieve Capacity: Up to 6 Sieves with Lid and Pan Sieve Diameter: ϕ 200 mm Set Timer: Programmable Time 1 min to 999 min; Power Supply: 230V AC; IQ/OQ/PQ Docs Included; Equipped with Digital Timer, Heavy Duty (FHP) motor Sieve Set: 25 μ m, 45 μ m, 75 μ m, 500 μ m, 1 mm, 2.8 mm and 4 mm with lid.	1

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5	Tri-axial shear test apparatus	<p>FOR 38MM DIA SPECIMEN with Accessories for UU, CD AND CU. As per (IS:2720 Part XI & XII) for determining the shear strength parameters of saturated soils from triaxial compression shear tests conducted under consolidated undrained conditions with measurements of pore water pressures. Must include Triaxial cell for 38mm dia specimen or better, Loading Frame 50 KN with at least 6 different speeds, Proving ring 2 KN or better with Calibration report, Dial Gauge 0.01 X 25mm travel, Lateral Pressure assembly, Pore Pressure apparatus and Oil/Water Constant Pressure system. To work on 220/230 Volts, single phase, AC power supply.</p> <p>Additional: Triaxial cell for 50 mm dia specimen</p>	1
6	Hot Air Oven	<p>Push pull type S.S. punch trays (capable of loading capacity $\frac{3}{4}$ kg each tray) are provide with the oven. Operated on 220/2230 volts. 50 cys, AC mains supplied with 3 mtr. (or better) Long core connecting cable and plug top (15 Amps). INNER SIZE Nos. of Heavy Punch type Tryes (Non Magnetic S.S.); 24"x 24"x24'</p>	1
7	Centrifuge	Fixed angle Rotor portion; Tube Capacity in ml:15 X 6 tubes or better; Speed : 6500 RPM or better; Digital Temperature display with specifying stirring position.	1
8	Colorimeter	Digital wavelength selection, 6V Ni-Cd Re-chargeable Battery, 1 ml solution measurement, Range 400 to 700 nm.	1
9 (a)	Water bath with shaker	Shaker incorporated with Water Bath. Working temperature from Ambient + 5°C to 98°C with sensitivity of $\pm 1^\circ\text{C}$. Shaking under controlled temperature. Tank size: 400 X 375 X 250 mm (Ht).	1
9(b)	Ph Meter	Microprocessor pH /Temperature/mV Meter with Graphical Display, graphical LCD display having auto temperature compensation, 5 point calibration, Range (-) 2.000 to 20.000 pH with accuracy of ± 0.002 pH, ± 1 ; digit Storage facility upto 1000 samples, complete with combined pH Electrode, rotational electrode stand, computer interface through USB (Table Model).	1
9(c)	Solvent extractor (Soxlet apparatus)	Having 6 Nos. of Mantles for accommodating Boiling Flask of 500 ml/ B-24; Extractor: 200 ml/B-24; Condenser: 225 mm/B-50 (All Borosilicate glass). The unit is provided with Energy Regulator one for each position. Vertical stands, Cross-bars, adjustable clamps and boss-head shall be provided for holding Extraction glass assembly of six sets. Complete with neon lamps, plug and cord etc. Operable on 220/230 V, single phase A.C. mains.	1
9(d)	Freeze dryer (Lyophilizer)	<p>Housed in a super structure with copper coil (bounded outside). Digital Temperature controller cum indicator with electronic vacuum gauge with indicator. The freeze dryer consisting of 2 nos hermetically sealed compressor with cascade system having motor driven vacuum pump with 10 microns on pump head. Temperature (-) 40°C to (-) 80° with copper bonded outside insulation. Vacuum drum (drying chamber made of stainless steel (304 grade) with 8 port manifold. Cap. 3 ltr The freeze-dryer unit will have a pre-freeze unit consisting of a suitable capacity CFC-free refrigerant compressor to bring down the temperature from (-) 20°C to (-) 50°C One Servo Voltage stabilizer of 10KVA (single phase) has to provide for safe guarding the 3 cooling compressor of the total system due to voltage fluctuation.</p>	1

10 (a)	Refractometer	Measurement Range: 0.0 to 53.0% Brix Range: With Automatic Temperature Compensation:10.0 to 100°C; Resolution:0.1% Brix / 0.1°C; Accuracy :± 0.2% Brix / 1°C	1
10 (b)	Leaf Area Meter	Measures Area, Length, width, Perimeter, Geometric shape Factor & Aspect; Buitt-in data logger stores over 8,000 data point; Transfer data to computer, USB Interface; Ideal for Field and Lab use; Scan board, Laser Scanner with built-in control unit. Measuring thickness:1.5 cm or better; Measuring width15 cm or better; Measuring Length: 36 cm or better; Accuracy: ± 1%; Scanner: 670 nm LASER or better; Resolution: 0.01 cm²; Memory: 8000 measurements or better; Disptay: LCD; Scanning speed: 200 mm/Second; Operating Temperature: 0-50°C	1
11(a)	Office Chair	Sturdy tubular steel under structure. Padded seat and back. Cushioned Chair with Armrest; BACK SIZE: 42.0 cm. (W) X 26.5 cm. (H) SEAT SIZE: 42.0 cm. (W) X 42.0 cm. (D)	1
11(b)	Office Table	With a round tubular under-structure; Dimensions (mm) 1199 Width x 590 Depth x 750 Height with MS. Tubular Frame with three storage drawers	1
11(c)	Steel Almirah	Sturdy CRCA Build; Size: 916 mm (W) x 486 mm (D) x 1980 mm(H). 4 shelves; Grey colour; Height wise adjustable shelf mounting	1
11(d)	Desk	With ERU and pedestal, Size: 1650x1950x750 (WxDxH); Made of 25 mm thick MDF one side pre-laminate board confirming to IS-14587:1998 with 0.4mm PVC membrane pressed on to top Soft closing access flap with in-build power box provided on work surface for wire management; Integrated Pedestal.	1
12	Three-point Hitch Dynamometer	Wireless; Capacity-3000 kgf; Load cell: Clevis Pin type; Three-point fixture for Implement and Trolley Hitching; Operational contact: Specifications Load cell (Clevis Pin Type Load cell) :-Rated Output 1/2mv/V; Safe Over Load 150% of RO; Safe Side Load 50% of RO; Excitation 10 V DC maximum; Operating Temperature -10° to 70°C; Input Impedance 390 Ohm; Output Impedance 350 Ohm	1
The work includes the following: (1.) The supply and installation of equipment with accessories. (2) Demonstration and Testing of equipment. (3) Provide, one copy each of following documentation (on CD/DVD and printed manual, both) (i.) installation manual, (ii.) operating manual, and (iii.) Service Manual. (4.) Any other work required for equipment making functional up to the satisfaction.			

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