CENTRE FOR RURAL ENERGY

GANDHIGRAM RURAL INSTITUTE - Deemed to be University

(Re Accredited with Grade "A" by NAAC)

Gandhigram – 624 302

Dindigul District, Tamil Nadu, India.

Tel: 0451–2452371–76: Extn. 2062 Fax: 0451- 2454466, 2453071

CRE/B.Voc/Equipment/2019 **07.03.2019**

Quotation Call for

For and on behalf of Gandhigram Rural Institute – Deemed to be University, Gandhigram quotations are invited for the supply of following equipment as per the specification below:

Code	Equipment
BVOC01	Work Bench / Board for Residential house wiring using switches, fuse, indicator, lamp and energy meter
BVOC02	Work Bench / Board for Fluorescent lamp wiring
BVOC03	Work Bench / Board for Stair case wiring
BVOC04	Work Bench / Board for Measurement of electrical quantities – voltage, current, power & power factor in RLC circuit
BVOC05	Work Bench / Board for Measurement of energy using single phase energy meter
BVOC06	Work Bench / Board for Measurement of resistance to earth of an electrical equipment
BVOC07	Work Bench / Board for Resistor, colour coding measurement of AC signal parameter (peak-peak, rms period, frequency) using CR.
BVOC08	Work Bench / Board to Study of logic gates AND, OR, EX-OR and NOT
BVOC09	Work Bench / Board to Generation of Clock Signal
BVOC10	Work Bench / Board for Soldering practice – Components Devices and Circuits – Using general purpose PCB
BVOC11	Work Bench / Board to Measurement of ripple factor of HWR and FWR
BVOC12	Work Bench for Simulation and experimental verification of electrical circuit problems using Kirchhoff's voltage and current laws.
BVOC13	Work Bench for Simulation and experimental verification of electrical circuit problems using Thevenin's theorem
BVOC14	Work Bench for Simulation and experimental verification of electrical circuit problems using Norton's theorem
BVOC15	Work Bench for Simulation and experimental verification of electrical circuit problems using Superposition theorem
BVOC16	Work Bench for Simulation and experimental verification of Maximum Power transfer Theorem
BVOC17	Work Bench for Study of Analog and digital oscilloscopes and measurement of sinusoidal voltage, frequency and power factor
BVOC18	Work Bench for Simulation and Experimental validation of R-C electric circuit transients
BVOC19	Work Bench for Simulation and Experimental validation of frequency response of RLC electric circuit
BVOC20	Work Bench for Design and Simulation of series resonance circuit
BVOC21	Work Bench for Design and Simulation of parallel resonant circuits
BVOC22	Work Bench for Simulation of three phase balanced and unbalanced star, delta networks circuits
BVOC23	Box Type Solar Cooker
BVOC24	1.4 m^2 Parabolic Solar Cooker
BVOC25	3 m^2 Parabolic Solar Cooker
BVOC26	Thermocouples and Temperature Indicator
BVOC27	Solar Dryer

BVOC28	Wind Data Logger
BVOC29	Monocrystalline Solar Module 100 W
BVOC30	Polycrystalline Solar Module 100W
BVOC31	Thin Film Solar Module 100W

The terms and conditions for the quotations are as below:

(i) Print TIN / GST or Registration Number in the quotation submission letter.

(ii) The rate should clearly indicate the unit/nos.

(iii) The rate should specify whether it includes duties and taxes land also packing and forwarding charges.

(iv) If the rates are exclusive of the items mentioned against(ii) above the rate at which these items will be charges should also be specified wherever possible

(v) The period upto the materials/equipments are guaranteed should be specified. The amount chargeable as Annual Maintenance charges after the guarantee / warranty period should be indicated separately.

(vi) The nearest service point should also be indicated in the offer.

(vii) The offer should be as far as possible from ready stock.

(viii) Where the offer is not from ready stock, the period before which supply will be affected should be indicated.

(ix) The mode of payment should be specified.

(x) Payment will be made within a week from the date of receipt of materials and duty certified by the officers concerned / with in a week of the satisfactory completion of the work.

(xi) Validity of the offer should normally be for 30 days from the date of offer. If otherwise, the period should be specifically mentioned.

(xii) Quotation should be addressed in the name of
"**Registrar,** Gandhigram Rural Institute – Deemed to be University, Gandhigram"
and should be sent in a sealed envelope super scribing **"Quotation for Equipments"** : Item Code BVOC _____"
to reach the following address:

The Director
Centre for Rural Energy
Gandhigram Rural Institute – Deemed to be University
Gandhigram – 624 302, Dindigul Dt.

(xiii) **Hard Copy of Quotation will be received (By Post / In Person) up to 3.00 p.m. on 15.03.2019**

(xiv) Quotation will be opened at 4.00 p.m. on the same day in the presence of the Representatives of the firms who are available.

BVOC01to BVOC22

Specification

Each Experimental Setup should have installed in separate Work Bench / Board

Minimum Requirements
1. Assorted electrical components for wiring
2. Electrical measuring instruments 10sets
3. Study purpose items: Iron box, fan and regulator, emergency lamp etc each 1
4. Megger (Digital) 500 V - 2 No
5. Power Tools: (a) Range Finder (b) Digital Live-wire detector
6. Soldering guns - 10 Nos.
7. Assorted electronic components for making circuits 50 Nos
8. Small PCBs 10 Nos.
9. Multimeters 10 Nos.
10. Study purpose items: Telephone, FM radio, low-voltage power supply each1
11 Regulated Power Supply: 0 – 15 V D.C - 10 Nos / Distributed Power Source.
12 Function Generator (1 MHz) - 10 Nos.
13 Single Phase Energy Meter - 1 No.
14 Oscilloscope (20 MHz) - 10 Nos.
15 Digital Storage Oscilloscope (20 MHz) – 1 No.
16 10 Nos. of PC with Circuit Simulation Software (min 10 Users) (e-Sim / Scilab/ Pspice / MATLAB /other Equivalent software Package) and Printer (1 No.)
17 AC/DC - Voltmeters (10 Nos.), Ammeters (10 Nos.)
18 Single Phase Wattmeter – 3 Nos.
19 Decade Resistance Box, Decade Inductance Box, Decade Capacitance Box - 6 Nos each.
20 Circuit Connection Boards - 10 Nos.

BVOC23 BOX TYPE SOLAR COOKER

Specification

Type 1 : 500 mm * 500 mm

Type 2 : 600 mm * 600 mm

Required pots
Insulation
Mirror for focusing

BVOC24 1.2 m^2 PARABOLIC SOLAR COOKER

Material	Stainless Steel
Finishing	Paint Coated
Diameter	1.2 meters

BVOC25 3 m^2 PARABOLIC SOLAR COOKER

Material	Stainless Steel
Finishing	Paint Coated
Apexure Area	3 m^2

BVOC26 THERMOCOUPLES AND TEMPERATURE INDICATOR

Model : “T” Type (Teflon / Teflon)

Required Length: 300 meters

Model : “K” Type (Teflon / Teflon)

Required Length: 100 meters

Model : “K” Type (fibre / fibre with SS insulation)

Required Length: 100 meters

K Thermocouple Probe

3mm dia 10 cm length, extension wire with male socket

Required nos.05

K Thermocouple Probe

6mm dia 30 cm length, probe with extension wire with male socket

Required nos.05

Temperature Indicator

Portable

Battery operated (9V)

Digital with LCD display

Type: K Type Thermocouple

Accuracy 0.1 °C

Required nos.05

BVOC27 SOLAR DRYER

Specification

Covering Sheet	-	Poly carbonate Sheet
Structure	-	GI Rectangular Pipe
Bottom and top cup	-	Aluminum
Sheet Locking	-	Self Threaded Screw
Exhaust Fan		
Temperature and Humidity Control		
Size	-	4 m * 2 m

BVOC28 WIND DATA LOGGER

Specification

Wind Velocity Sensor	Three Cup Assembly with Infra red Sensor
Wind Direction Sensor	Wind Vane with Analogue out put
Data Logging	
PC Interface	
Inbuilt Memory	

BVOC29 MONOCRYSTALLINE SOLAR PANEL 100 W

Specification

Open-Circuit voltage (Voc): 22.5 Volt,
Optimum operating current (Imp): 5.29 Amps,
Short-circuit current :(Isc): 5.75 Amps.
High modules conversion efficiency
Inbuilt Diodes

BVOC30 POLYCRYSTALLINE SOLAR MODULE 100W

Specification

Maximum Power	100W
Tolerance	± 3%
Open Circuit Voltage	22V
Short Circuit Current	6A
Maximum Power Voltage	18V
Maximum Power Current	5.5 A

BVOC31 THIN FILM SOLAR MODULE 100W

Maximum Power	100W
Maximum Power Voltage	108V
Maximum Power Current	0.93A
Open Circuit Voltage	141V
Short Circuit Current	1.17A