GOVERNEMNT COLLEGE OF ENGINEERING, KARAD
(An Autonomous Institute of Government of Maharashtra)

Dist. Satara, Maharashtra, India, PIN: 415124
Tel.: 91- 02164- 271711, 272414, 272415(P), 271712(R)
Fax No.: 91- 02164- 271713
Web: http://www.gcekarad.ac.in.

No. CEK/ ENTC/Quotation /2018-2019/ 3798

DATE – /12/2018

To,

13 DEC 2018

Subject – Quotation for Power Electronics kits

Dear Sir,

With reference to above, I have to request you to kindly quote your rates for below mentioned material for **Electronics and Telecommunication_Engineering_Department** "of this Institute so as to reach this office on or before 10/01/2019 till 5.00 pm ,The details are as given below –

Sr. No.	Description	Qty.
1	**SCR Triggering Circuit Kit**	02
2	**UJT Triggering Circuit Kit**	02
3	**Understanding Characteristics of DIAC, TRIAC, IGBT and SCR Kit**	02
4	**Full converter and semi converter with reactive load-R,L,C kit**	02
5	**Inverter Trainer Kit**	02
6	**MOSFET, IGBT, Transistor & SCR based Step Down Chopper Kit**	02
7	**MOSFET, IGBT, Transistor & SCR based Step Up Chopper Kit**	02
8	**Fly-Back Converter Kit**	02

Your quotation should be valid for at least 30 days from the date of opening. The quotation should be sent to **"The Principal, Government College of Engineering, Karad"** in sealed envelope superscripted with word **"Quotation of Power Electronics for Electronics and Telecommunication Engineering Department" due on 10/01/2019.**The Institute does not bind itself to accept or reject the quotation. Please note that if there is any over-writing in the quotation, the said term will not be taken into consideration.

Terms and Conditions:

1. Quotation validity for at least 30 days from the date of opening.
2. Delivery period 4 weeks from date of supply order.
3. Payment 100% after delivery and satisfactory acceptance.
4. Warranty 12 months or more.
5. Total amount will be considered for final call for quotation.

The quotation will be opened on **11/01/2019 at 03.00 p.m.**
Specifications are as enclosed.

Thanking you.

Principal,
Govt. College of Engineering, Karad.

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Sr. No.	Name and description of the equipment	Specification
1	**SCR Triggering Circuit**	On board AC source : 18 V - 0 V - 18 V On board firing circuits : R Triggering Circuit RC Half Wave Triggering Circuit RC Full Wave Triggering Circuit Interconnections : 2 mm sockets (Gold plated) Firing angle variation : Gradually variation using firing control POTS SCR assembly : 4 SCRs 2P4M, 400 V/2A Test points : 8 nos (Gold plated)
2	**UJT Triggering Circuit**	On board AC source : 48 V On board firing circuits : UJT line Synchronized Triggering Circuit Firing angle variation : 5° to 172°using firing control POTS SCR assembly : 4 SCRs of 4 A Diode assembly : 2 diodes of 4 A (Half Controlled Bridge and Full Controlled Bridge) Test points : 12 nos (Gold plated)
3	**Understanding Characteristics of DIAC, TRIAC, SCR and IGBT**	Standalone operation Inbuilt fixed and variable power supply Toggle switch for selection of variable power supply Inbuilt Ammeter and Voltmeter Bread board Resistance bank 10 turn potentiometer Mains power supply : 90 - 270V ±10%, 50Hz Fixed DC power supply : +15V, Regulated +35V, Regulated -35V, Regulated Bread Board Dimension (mm) : 75 x 61 x 10 Distribution strips : 2 Terminal strips : 1 Distribution holes : 200 Terminal holes : 640 DIAC : DB3 TRIAC : BT136 SCR : TYN616 Resistor Bank M.F.R. 2.2K 1% 1/4W (3 Nos.) M.F.R. 470E 1% 1/4W (3 Nos.) M.F.R. 1K 1% 5W (3 Nos.) M.F.R. 4.7K 1% 5W (3 Nos.) M.F.R. 1K 1% 10W (3 Nos.) Variable Resistance bank 5K 10 turn Potentiometer (2 Nos.) Voltmeter Range : 0V to 99V Ammeter Range : 0mA to 20mA Internal supply : +35 V, +15 V Interconnection : 2 mm socket Gate voltage & Collector Emitter voltage variation :

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		Gate voltage variation from 0 to 15 V using Pot 1 Collector to Emitter voltage from 0 to 35 V using Pot 2 IGBT : G4BC20S, 600V/ 10 A
4	**Single Phase Controlled Rectifier** (Full converter and Semi converter with reactive load-R,L,C kit)	Built in Power Supply Sockets to make connections On board AC source : 0 V - 15 V,18 V - 0 V - 18 V On board firing circuits : Cosine firing scheme SCR Assembly : 4 SCRs 2P4M, 400 V/2 A SCR and Diode Assembly: 2 SCRs, 2 diodes Mains Supply : 220V/110V, 50 Hz / 60 Hz Test points : 9 nos Interconnection : 2 mm socket
5	**Inverter Trainer**	Rated Power : 60W Charging Transformer : Step down type Input voltage : 230V Output voltage : 16V Inverter Transformer : Step up type Input voltage : 12-0-12V Output voltage : 230V Inverter output voltage : 230V ±10% 50Hz ±5% Inverter voltage control : By PWM technique Battery : 12V DC /7.5Ah /12 Hours Relay : 2 Pole/12V/285W LED Indicators : Inverter ON, mains ON, charging ON Fuse for inverter protection : 1A (on Trainer board) Mains Fuse : 1A Mains Supply : 230V ±10%, 50Hz Single Phase
6	**MOSFET, IGBT, Transistor & SCR based Step Down Chopper**	On board PWM circuit : Triangular Comparator circuit Frequency variation : 27 Hz to 5 KHz (approx.) PWM variation : 0-90% DC Geared motor : 24V/ 0.5A, 100 RPM Interconnections : 2 mm sockets MOSFET : MOSFET IRFZ44N, 55V, 49A IGBT : IGBT G4BC20S, 600V, 10A Transistor : Transistor TIP122, 100V, 5A SCR : SCR TYN 616, 600 V, 16A Test points : 4 nos (Gold plated) Mains Supply : 220V/110V; 50 Hz / 60 Hz
7	**MOSFET, IGBT, Transistor & SCR based Step Up Chopper**	Built in Power Supply ; On board PWM circuit On board MOSFET, IGBT, Transistor & SCR Assembly; Test points provided to check the
8	**Fly-Back Converter**	Input DC Voltage : 12-15V/3A PWM Frequency Variation : 5KHz to 22KHz Duty Cycle Variation : 7% to 45% Load Assembly : RL1 & RL2 (75Ù & 75Ù) Power Isolation Section : Single channel Power device : MOSFET IRF3205 MOSFET/IGBT Driver : MC33153 Inductors : L1 (3.4µH), L2 (3.8µH), L3(optional) Capacitors : C1 (1000µF/63V) C2 (470µF/63V) C3 (220µF/63V) Test Points : 18 nos. Banana Socket insert 2mm : 39 nos.

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