

MODEL ENGINEERING COLLEGE  
THRIKKAKA, COCHIN-21  
PH:2577379,2575370

Ref no.A2/2713/17/MEC  
Tender No.6/2017-18/MEC

dtd 29.11.2017

**TENDER shedule**

Sealed tenders in the prescribed format are invited for the purchase of equipments for various labs for Electronics Departments.

- 1.Last date and time of sale of tender form:5/1/2018 10 am
- 2.Last Date & Time of Reciept of Tender: 5/1/2018 11 am
- 3.Date & Time of Opening of Tender:5/1/2018 2 P M

Cost of Tender Form:

Original : 400 + 18% GST

Duplicate :200 + 18% GST

Tender form and details can be had from Model Engineering College,Thrikkakara. Mode of remittance by Cash payment at College Office.Those who apply for tender form by post should remit additional amount of Rs.50/- as postal charges.Agreement in stamp paper worth Rs.200/- to accompany tender. Further details available at [www.mec.ac.in/](http://www.mec.ac.in/) Tenders.

PRINCIPAL

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Specification of Equipments of Electronis department

Sl no	Item	Specification	qty
1	<b>Mounted High Power LED with power supply</b>	<ul style="list-style-type: none"> <li>✗ Wavelength: 420nm, 450nm, 530nm, 620nm, 640nm</li> <li>✗ Spectral width : 40 to 80nm</li> <li>✗ Collimated optical power output : &gt; 2.5w</li> <li>✗ Power output : 2mw, 3mw, 10mw,</li> <li>✗</li> </ul>	1
2	<b>High Intensity Lux Meter</b>	<ul style="list-style-type: none"> <li>✗ Max Range: 4,00,000 Lux Accuaracy:</li> <li>✗ <math>\pm 5\% \pm 10d</math> for all ranges</li> <li>✗ Max resolution:</li> <li>✗ 0.1 lux / Fc</li> </ul>	1
3	<b>Optical Power Meter</b>	<ul style="list-style-type: none"> <li>✗ Wavelength range : 850 nm / 1310 nm / 1550 nm</li> <li>✗ Resolution : 0.01 dB</li> <li>✗ Detector type : Si photo diode</li> <li>✗ Detector range : 0 to -50dB</li> </ul>	1
4	<b>Transducer measurement system using diode thermometer</b>	<ul style="list-style-type: none"> <li>• 0 to 100 °C</li> <li>• Option to plot characteristics</li> <li>• Digital display for temperature indicator</li> <li>• Glass epoxy PCB</li> <li>• Heating equipment with temperature monitoring</li> <li>• Test points</li> <li>• User's Manual with sample experiments</li> </ul>	1
5	<b>Transducer measurement system using LVDT</b>	<ul style="list-style-type: none"> <li>• LVDT Transducer should be visible</li> <li>• Displacement of <math>\pm 5</math>mm or more</li> <li>• Provision for Current and Voltage output</li> <li>• On-board Digital Panel Meter</li> </ul>	1

		<ul style="list-style-type: none"> <li>• Screw Gauge for displacement</li> <li>• Onboard Instrumentation Amplifier</li> <li>• Test points</li> <li>• All ICS should be mounted on Sockets.</li> <li>• Glass Epoxy PCB</li> <li>• Built in Power Supply of +5V,1A, ±12V 250mA</li> <li>• User's Manual with sample experiments</li> <li>•</li> </ul>	
6	<b>Transducer measurement system using Strain Gauge</b>	<ul style="list-style-type: none"> <li>• Resistive load cell</li> <li>• Load in weights above 2 Kgs.</li> <li>• Provision for Voltage and Current output</li> <li>• On-board Digital Panel Meter</li> <li>• Weights can be verified by Physical counting of weights</li> <li>• Weights with different denominations</li> <li>• Onboard Instrumentation Amplifier</li> <li>• Test points</li> <li>• All ICS should be mounted on Sockets.</li> <li>• Glass Epoxy PCB</li> <li>• In-Built Power Supply of +5V 1A, ±12V, 250mA</li> <li>• User's Manual with sample experiments</li> </ul>	1
7	<b>Transducer measurement system using Pressure Transducer</b>	<ul style="list-style-type: none"> <li>• Resistive</li> <li>• Transducer should be visible .</li> <li>• pressure of 0-200mm Hg or above</li> <li>• Provision for voltage and Current output</li> <li>• On-board Digital Panel Meter</li> <li>• Pressure generation and Monitoring</li> <li>• On board Instrumentation Amplifier</li> <li>• Test points</li> <li>• All ICS should be mounted on Sockets.</li> <li>• Glass Epoxy PCB</li> <li>• In-Built Power Supply of +5V,1A, ±12V,250mA</li> <li>• User's Manual with sample experiments</li> </ul>	1

8	<b>Transducer measurement system using Thermocouple</b>	<ul style="list-style-type: none"> <li>• 0 to 100 °C</li> <li>• Thermocouple -K or J or R Type</li> <li>• On-board Digital Panel Meter</li> <li>• Heating equipment with temperature monitoring</li> <li>• On board Instrumentation Amplifier</li> <li>• Test points</li> <li>• All ICS should be mounted on Sockets.</li> <li>• Glass Epoxy PCB</li> <li>• In-Built Power Supply of +5V,1A, ±12V,250mA</li> <li>• User's Manual with sample experiments</li> </ul>	1
9	<b>Transducer measurement system using RTD</b>	<ul style="list-style-type: none"> <li>• 0 to 100 °C</li> <li>• PT-100 -type RTD Sensor</li> <li>• On-board Digital Panel Meter provided</li> <li>• Heating equipment with temperature monitoring</li> <li>• Onboard Instrumentation Amplifier</li> <li>• Test points</li> <li>• All ICS should be mounted on Sockets.</li> <li>• Glass Epoxy PCB</li> <li>• In-Built Power Supply of +5V,1A, ±12V,250mA</li> <li>• User's Manual with sample experiments</li> </ul>	1

10	<b>Transducer measurement system using Photocells</b>	<ul style="list-style-type: none"> <li>• 0 to 1000 Lux or Above</li> <li>• Photo conductive cell, Photo voltaic cell, Photo transistor, PiN Photo diode</li> <li>• Digital display</li>   <li>• Lighting Equipment with monitoring (using Lux Meter)</li> <li>• In-Built Power Supply of +5V,1A, ±12V,250mA</li> <li>• Glass epoxy PCB</li> <li>• Test points</li> <li>• User's Manual with sample experimental programs</li> </ul>	1
11	<b>Boost DC-DC Converter</b>	<ul style="list-style-type: none"> <li>• Output voltage can be varied from 5V or above to 24V or above</li> <li>• Input DC should be 24V or below</li> <li>• Inbuilt power with isolation</li> <li>• Inbuilt load</li> <li>• Output power - 10 W or above</li> <li>• Option to measure efficiency</li> <li>• Option to observe current and voltage waveforms</li> <li>• MOSFET / IGBT</li> <li>• Switching frequency 20 k Hz or above</li> <li>• Provision to change duty cycle with minimum range 20% to 70%</li> <li>• overload protection</li> </ul>	1
12	<b>Push Pull DC-DC Converter set up</b>	<ul style="list-style-type: none"> <li>• Output voltage 12V or above</li> <li>• Input DC should be 24V or below</li> <li>• Inbuilt power with isolation</li> <li>• Inbuilt load</li> <li>• Output power - 100 W or above</li> <li>• Option to measure efficiency</li> <li>• Option to observe current and voltage waveforms</li> <li>• MOSFET / IGBT</li> <li>• Switching frequency 20 k Hz or above</li> <li>• Provision to change duty cycle with minimum range 20% to 70%</li> <li>• overload protection</li> </ul>	1
13	<b>Buck DC-DC Converter set up</b>		1

		<ul style="list-style-type: none"> <li>• Output voltage can be varied from 0V to 12V or above</li> <li>• Input DC should be 24V or below</li> <li>• Inbuilt load</li> <li>• Inbuilt power with isolation</li> <li>• Output power – 10 W or above</li> <li>• Option to measure efficiency</li> <li>• Option to observe current and voltage waveforms</li> <li>• MOSFET / IGBT</li> <li>• Switching frequency 20 k Hz or above</li> <li>• Provision to change duty cycle with minimum range 20% to 70%</li> </ul>	
14	<b>Buck -boost DC-DC Converter set up</b>	<ul style="list-style-type: none"> <li>• Output voltage 0V to 12V or above</li> <li>• Output power – 10 W or above</li> <li>• Input DC should be 24V or below</li> <li>• Inbuilt load</li> <li>• Inbuilt power with isolation</li> <li>• Option to measure efficiency</li> <li>• Option to observe current and voltage waveforms</li> <li>• MOSFET / IGBT</li> <li>• Switching frequency 20 k Hz or above</li> <li>• Provision to change duty cycle with minimum range 20% to 70%</li> </ul>	1
15	<b>SMPS set up</b>	<ul style="list-style-type: none"> <li>• Inbuilt power &amp;load</li> <li>• Facility to measure efficiency</li> <li>• Facility to load SMPS</li> <li>• Isolation transformer</li> <li>• MOSFET / IGBT</li> <li>• Switching frequency 20 k Hz or above</li> <li>• Output: <ul style="list-style-type: none"> <li>○ +12V or +15 V, 1A or above</li> <li>○ -12V or -15 V, 1A or above</li> <li>○ +5V , 5A or above</li> </ul> </li> <li>• Various test points to observe signals</li> <li>• Product tutorial</li> </ul>	1
16	<b>Half bridge and full bridge Converter set up</b>		1

		<ul style="list-style-type: none"> <li>• output voltage 12V or above</li> <li>• Input DC should be 24V or below</li> <li>• Inbuilt load</li> <li>• Inbuilt power with isolation</li> <li>• Output power - 100 W or above</li> <li>• Option to measure efficiency</li> <li>• Option to observe current and voltage waveforms</li> <li>• MOSFET / IGBT</li> <li>• Switching frequency 20 k Hz or above</li> <li>• Provision to change duty cycle with minimum range 20% to 70%</li> <li>• overload protection</li> </ul>	
17	Basic Inverter Circuit set up	<ul style="list-style-type: none"> <li>• Square wave and sine wave output</li> <li>• Output voltage 220 VRMS</li> <li>• Output frequency 50 Hz</li> <li>• Input DC should be 12V or 24 V</li> <li>• Provision to connect external battery</li> <li>• MOSFET / IGBT / BJT</li> <li>• Output power - 100 W or above</li> <li>• Option to measure efficiency</li> <li>• Option to observe current and voltage waveforms</li> <li>• Short circuit and overload protection</li> <li>• Inbuilt power &amp;load</li> </ul>	1

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