भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान मोहाली

मानव संसाधन विकास मंत्रालय, भारत सरकार द्वारा स्थापित
सैक्टर 81, नॉलेज सिटी, पी. ओ. मनोली, एस. ए. एस. नगर, मोहाली, पंजाब –140306
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH MOHALI
Sector-81, Knowledge city, PO-Manauli, SAS Nagar Mohali-140306, Punjab
PAN NO. - AAAAI1781K GST No- 03AAAAI1781K1ZT

IISER Mohali

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IISERM(802)17/18Pur 21st August 2017

Corrigendum-II

Refer IISER Mohali E-tender Ref. no. IISERM(802)17/18Pur for the **supply and installation of Oscilloscope, functional generator and digital card PCI** at IISER Mohali, Sector-81, Knowledge City, PO-Manauli, SAS Nagar Mohali, Punjab. Due date for the online submission is further extended as per below schedule along with some clarification/revised specification as enclosed.

Revised Date and Time

Sr.no.	Description	Extended Due date/Time
01	Closing Date & Time (Online)	30/08/2017 up to 11:00 AM
02	Opening Date & Time of Technical Bid	31/08/2017 at 11:30 AM

Revised Specification/clarification (Red colour) enclosed.
All the other terms & conditions will remain same as contained in the NIT.

For any information, other modifications and/or corrigendum may kindly visit IISER Mohali websites http://www.iisermohali.ac.in & https://eprocure.gov.in/eprocure/app

Sd/-
Mukesh Kumar
Assistant Registrar (S&P).

18 units: 4CH, 70 to 100MHz Digital Storage Oscilloscope : Teaching lab PHY312 : Item No. 1

Bandwidth	Anything between 69 to 110 MHz or better
No. Channels	4
Sampling Rate (Each Channel)	1GS/s or better
Record Length	Anything between 11 to 30 M points or better
FFT Function	Dedicated short key for FFT , Zoom on FFT and Simultaneous display of Time and FFT
Display	Anything between 7 to 10 inch WVGA or better, 8 bit ADC or better
No. of Direct Measurements	32 or more
Courseware Feature	DSO should have capability of course content storage/integration up to 100MB and direct report generation
Auto set	Enable/Disable function protected with password
Interface	USB Host on front panel , USB device port on back panel for PC connectivity
Time base Range	Anything betwwen 2ns to 100s or better
Time base accuracy	±25 ppm or better
Accessories	Probes : 4 Nos., Certificate of Calibration, CD: containing product documentation and software for Course Content Generation compatible with DSO
Warranty	5 Years

2 units: (4 Ch,199 to 500MHz Digital Storage Oscilloscope) : Teaching Lab PHY312 : Item No. 2

Bandwidth	Anything between 199 to 500 MHz or better
No. Channels	4
Sampling Rate (Each Channel)	1GS/s or better
Record Length	Anything between 1M to 10M points or better
Display	7/10 inch WVGA or better, 8 bit ADC or better (14 bit Vert resolution)
No. of Direct Measurements	29 or more
Pan and Zoom Key	Dedicated keys for Zoom and Search at particular time base
Interface	USB Host on front panel , USB device port on back panel for PC connectivity
Time base Range	2ns to 100s or better range
Time base accuracy	±25 ppm or better
Accessories	Probes : 4 Nos., Certificate of Calibration, CD: containing product documentation
Warranty	5 Years

18 units: (Triple Output DC Power Supply) : Teaching Lab Phy312 : Item No. 3

Sr. No.	Parameter	Specification
1	No of outputs	3 or more
2	Ratings	Two outputs @ 30V/3A and One @ 5V/3A or higher V/A
3	Isolation	All three outputs must be isolated from each other and ground
4	Polarity	Bipolar
5	Ripple	Not to exceed 1mvrms and 6mArms or better
7	Load and Line Regulation	Voltage<0.02%+5mV and Current 0.2%+4mA or better
8	Setting Resolution	Voltage @ 10mV and Current @ 1mA or better
9	Display	Vacuum fluorescent display ; Display voltage and current measurements continuously from all three outputs
10	Tracking And Combination Modes	Tracking Mode: to Maintain the ratio on the two 30V output channels Combination V1 + V2 Series Mode: should Deliver up to 60V Meter reads back combined voltage. Combination I1 + 12 Parallel Mode: should Deliver up to 6A when CH1 and CH2 are wired in parallel. Meter reads back combined current.
11	Memory	Facility to Store frequently used configurations in any of 30 setup memory locations or more
12	Timer	Facility to Turn off any output after a predetermined test time with each channel's output timer

13	Interface	USB/RS232 Interface adapter with USB cable to control the supply through PC & Upload data to PC.
14	Warranty	5 years

1 Unit: (Programmable Triple Output DC Power Supply) : Teaching lab Phy312: Item No. 4

Sr. No.	Parameter	Specification
1	No of outputs	3 or more
2	Ratings	Two outputs @ 30V/1.5A and One @ 6V/5A or higher V/A
3	Isolation	All three outputs must be isolated from each other and ground and should be fully programmable
4	Polarity	Bipolar
5	Ripple	Not to exceed 1mvrms and 6mArms
7	Load and Line Regulation	Voltage<0.03% +10mV and Current 0.1% +3mA or better
8	Setting Resolution	Voltage @ 1mV and Current @ 1mA or better
9	Display	Vacuum fluorescent display ; Display voltage and current measurements continuously from all three outputs
10	Tracking And Combination Modes	Tracking Mode: to Maintain the ratio on the two 30V output channels Combination V1 + V2 Series Mode: should Deliver up to 60V Meter reads back combined voltage. Combination I1 + 12 Parallel Mode: should deliver up to 3A when CH1 and CH2 are wired in parallel. Meter reads back combined current.
11	Memory	Facility to Store frequently used configurations in any of 30 setup memory locations
12	Timer	Facility to Turn off any output after a predetermined test time with each channel's output timer range 0.1s to 99999.9s. or better range
13	Interface	USB Interface adapter with USB cable to control the supply through PC & Upload data to PC and LabView
14	Warranty	5 Years

1 unit: (Programmable DC Power Supply); Teaching lab Phy 312 : Item No. 5

Sr. No.	Parameter	Specification
1	No of outputs	1 or more with following parameters
2	Ratings	Voltage : 0-30V and Current: 0-5A or better V/A
3	Mode	Fully Programmable
4	Power	150W or more
5	Ripple	Not to exceed 1mvrms and 4mArms
7	Line Regulation	Voltage<0.05% +1mV and Current 0.05% +0.1mA or better
8	Setting Resolution	Voltage @ 1mV and Current @ 0.1 mA or better
9	Display	Vacuum fluorescent display ; Display voltage and current measurements continuously
10	Interface	USB/ RS232 Interface adapter with USB cable to control the supply through PC & Upload data to PC and LabView
121	Warranty	5 Years

2 units : 25 to 50 MHz Abitrary Function Generator: **Teaching Lab Phy312: : Item No. 6**

Sr. No.	Parameter	Specification
1	No. of Channels	2 or more
2	Waveforms	Sine, Square, Pulse, Ramp, Triangle, Sin(x)/x, Exponential Rise and Decay, Gaussian, Lorentz, Haversine, DC, Noise
3	Built in display	5.5 inch or larger screen or more color TFT displaying values and parameters for both the channels
4	Frequency Range	Sine Wave – 1 uHz to 25MHz or better

		Square Wave – 1uHz to 25 MHz or better Ramp – 500kHz or better Pulse – 1mHz to 25MHz or better as per upper range Arbitrary – 1 Hz to 12.5 MHz or better as per upper range Others – 1uHz-1.5 MHz or better
5	Amplitude	50 Ohm : 10mVpp to 10Vpp or better for entire range of frequency Open Ckt/High Z : 20mVpp to 10Vp-p or better for entire range of frequency. (14 bit Vert resolution)
6	Other Characteristics	**Square Wave**:- Rise/Fall Time ≤ 9ns or better , Jitter(rms) 500ps or better, **Pulse :-** width - 16.00 ns to 999.99 s or better, duty cycle - 0.001% to 99.999% or better, Jitter (rms) 500ps or better **Sine Wave :-** Harmonic distortion (1 Vp-p) : 10 Hz to 20kHz: < -70 dBc or lower ≥1 MHz to < -50 dBc or lower ≥10 MHz to ≤50 MHz: < -40 dBc or lower
7	General Characteristics	Memory and Sampling Rate: 1288k 250MS/s sampling rate or better as per upper range Nonvolatile Memory : 4 or more
8	Software	Should be able to define waveforms by functions, equation editor, and waveform math
9	Interface	USB,GPIB and LAN
10	Modulations	AM,FM,PM,FSK,PWM
11	Warranty	3 Years

2 unit 150 to 200MHz Abitrary Function Generator: **Teaching Lab Phy312: : Item No. 7**

Sr. No.	Parameter	Specification and or better than the specified
1	No. of Channels	2
2	Waveforms	Sine, Square, Pulse, Ramp, Triangle, Sin(x)/x, Exponential Rise and Decay, Gaussian, Lorentz, Haversine, DC, Noise
3	Built in display	5.5 inch/ larger or more color TFT displaying values and parameters for both the channels
4	Frequency Range	Sine Wave – 1 uHz to 150MHz or better as per upper range Square Wave – 1uHz to 100MHz or better as per upper range Ramp – 1MHz or better as per upper range Pulse – 1mHz to 100MHz or better as per upper range Arbitrary – 1 mHz to 100MHz or better as per upper range Others – 1MHz or better as per upper range
5	Amplitude	50 Ohm : 10mVpp to 10Vpp or better for entire range of frequency Open Ckt/High Z : 20mVpp-10Vpp or better for entire range of frequency
6	Other Characteristics	**Square Wave**:- Rise/Fall Time ≤ 3.6ns or better , Jitter(rms) 150ps or better, (14 bit Vert resolution) **Pulse :-** width - 5.00 ns to 999.99 s or better, duty cycle - 0.001% to 99.999% or better, Jitter (rms) 150ps or better **Sine Wave :-** Harmonic distortion (1 Vp-p) : 10 Hz to 1 MHz: < -60 dBc or lower ≥1 MHz to < -50 dBc or lower ≥5 MHz to ≤250 MHz: < -37 dBc or lower
7	General Characteristics	Memory and Sampling Rate: 16 k for up to 1GS/s sampling rate or better 128k for up to 250MS/s sampling rate or better Nonvolatile Memory : 4 or more
8	Software	Should be able to definewaveforms by functions, equation editor, and waveform math
9	Interface	USB,GPIB and LAN
10	Modulations	AM,FM,PM,FSK,PWM

11	Warranty	3 Years

Item No. 1-7 will be consider under Integrated wireless control system through software which can control power supply, oscilloscope, function generator all together. System can be setup via Wi-Fi and the all basic instruments from 5-30 benches are recognized automatically when connected to the system. Automatic recording of integrated instruments asset info including model number, serial number, location and utilization time. No additional cost for this arrangement.

a) 4 channels, 1 GHz-2 GHz bandwidth Oscilloscope:

Details Specification:

4 Analog Channels and 32 or more digital channels, 12 bit ADC or better bit resolution
Bandwidth 1 or 2 GHz or better; Sampling rate : 6.0 GS/s or more on all analog channels simultaneously,
Record length 60/ better Mpoints on all analog, option for upgrade to 250M or more,
Waveform capture rate: >400,000 wfms/s or better/more, Math waveforms
Option for 50MHz/more, Acquisition: Sample, Peakdetect ,Averaging, Envelope ,Hires, fastAcq
LXI Class C interface, Minimum 15.0 inch or larger monitor, DVM>4 digit
Embedded Linux, intel i7 or i5, (upgradable to i7) updated 2.7 GHz or better, 64-bit, dual core processor
16-64 GB of DDR3-1866 DRAM, DP Port, DVI Connector, VGA,
Ext ref in,USB3.0 and 2.0, LAN,Aux out, 1-4GHz/Passive Probes per chs
One digital probe (8 channels), trigger mode: Auto, Normal, and Single
Warranty 5 yrs

2 unit 150 to 200 MHz Arbitrary Function Generator:

Sr. No.	Parameter	Specification or better than the specified
1	No. of Channels	2 or more
2	Waveforms	Sine, Square, Pulse, Ramp, Triangle, Sin(x)/x, Exponential Rise and Decay, Gaussian, Lorentz, Haversine, DC, Noise
3	Built in display	5.5 inch or more color TFT displaying values and parameters for both the channels
4	Frequency Range	Sine Wave – 1 uHz to 150MHz or better Square Wave – 1uHz to 100MHz or better Ramp – 1MHz or better Pulse – 1mHz to 100MHz or better Arbitrary – 1 mHz to 100MHz or better Others – 1MHz or better
5	Amplitude	50 Ohm : 20mVpp to 10Vpp or better for entire range of frequency Open Ckt/High Z : 20mVpp-20Vpp or better for entire range of frequency
6	Other Characteristics	**Square Wave**:- Rise/Fall Time ≤ 3.6ns or better , Jitter(rms) 150ps or better, **Pulse :-** width - 5.00 ns to 999.99 s or better, duty cycle - 0.001% to 99.999% or better, Jitter (rms) 150ps or better **Sine Wave :-** Harmonic distortion (1 Vp-p) : 10 Hz to 1 MHz: < -60 dBc or lower ≥1 MHz to < -50 dBc or lower ≥5 MHz to ≤150 MHz: < -37 dBc or lower
7	General Characteristics	Memory and Sampling Rate: 16 k for up to 1GS/s sampling rate 128k for up to 250MS/s sampling rate Nonvolatile Memory : 4 or more
8	Software	Should be able to definewaveforms by functions, equation editor, and waveform math
9	Interface	USB,GPIB and LAN

10	Modulations	AM,FM,PM,FSK,PWM
11	Warranty	3 Years

4 Unit: **(Programmable Triple Output DC Power Supply) :**

Sr. No.	Parameter	Specification
1	No of outputs	3
2	Ratings	Two outputs @ 30V/1.5A and One @ 6V/5A or higher V/A
3	Isolation	All three outputs must be isolated from each other and ground and should be fully programmable
4	Polarity	Bipolar
5	Ripple	Not to exceed 1mvrms and 6mArms
7	Load and Line Regulation	Voltage<0.03% +10mV and Current 0.1% +3mA or better
8	Setting Resolution	Voltage @ 1mV and Current @ 1mA or better
9	Display	Vacuum fluorescent display ; Display voltage and current measurements continuously from all three outputs
10	Tracking And Combination Modes	Tracking Mode: to Maintain the ratio on the two 30V output channels Combination V1 + V2 Series Mode: should Deliver up to 60V Meter reads back combined voltage. Combination I1 + 12 Parallel Mode: should deliver up to 3A when CH1 and CH2 are wired in parallel. Meter reads back combined current.
11	Memory	Facility to Store frequently used configurations in any of 30 setup memory locations
12	Timer	Facility to Turn off any output after a predetermined test time with each channel's output timer range 0.1s to 99999.9s. or better
13	Interface	USB or RS323 or both Interface adapter with USB cable to control the supply through PC & Upload data to PC and LabView
14	Warranty	5 Years