REGISTERED

Sub: Short term notice inviting quotation for purchase of equipment.

This Institute intends to purchase different equipment as per specifications notified in "Annexure – A". Please send your quotation to the undersigned in a sealed cover duly super scribed on envelop Quotation for supply of equipment for EIE dept.+so as to reach latest by closing date i.e. 30.03.15.

#### The Terms & Conditions are as under:-

- 1) It may be noted that quotation will be sent through registered/speed post only. The institute is located in a remote area and it takes 5 to 7 days to reach the mail, therefore, quotation be dispatched well in time to avoid any sort of delay.
- 2) Rate of ST/VAT if extra must be mentioned clearly.
- 3) The other terms & conditions for submitting the quotation are given overleaf which must be read carefully before submitting the quotation.
- 4) Quotation other than those addressed will not be entertained.
- 5) The Prices quoted must be FOR SLIET, Longowal.
- 6) Quotation must be sent on the letter head of the party.
- 7) As per instructions if purpose of quotation is not super scribed and quotation is opened by mistake then it may be rejected.

F. I/c (Purchase)

Dated: 16.03.2015

## **TERMS & CONDITIONS FOR QUOTATION**

DELIVERY	The rate quoted must preferably be free delivery/F.O.R. Longowal after allowing the discount, if any. Where quoted extra ad-valorem rate payable should clearly be indicated. Supply should be made within the specified delivery period.
TERMS OF PAYMENT	Our normal term of payment is within 45 days after receipt of stores in good condition by means of cheque/draft/RTGS.
PERFORMANCE SECURITY	In case the quoted value is Rupees one lac and above, Performance Security @5% of order value in the shape of Acct. Payee Draft, FDR or BG valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including warranty obligations, as per GFR-2005 rules, is also required.
TAXES	No sales tax concession against Form £qand £qis admissible to this Institute. However, <b>Form E</b> ' certificate being an educational institute can be issued if sales tax concession is admissible.
EXEMPTIONS	Excise and customs duties are exempted to the institute. The relevant exemption certificate will be issued to the successful bidder only if the excise duty/custom duty is exclusively mentioned in the Quotation. In case the offered items are to be imported, the rates should be quoted in foreign currency on FOB basis. Basic duty as applicable under notification No. 51/96 customs dated 23.07.1996 as applicable shall be borne by the institute. If the price quoted is in foreign currency then payment shall be made through letter of credit against submission of B.G. of Min. 25% value of supply order, if the order value is more than US\$ 10,000 or through Telegraphic Transfer (TT) if the order value is less than US\$ 10,000 though Nationalized banks. The bank charges outside India should be borne by the Beneficiary. Clearance at customs will be arranged by us but you will assist our clearance agent. In case of indigenous item the price must be quoted in Indian Rupees and 100% payment will be made only after successful installation, testing and commissioning of equipment. No advance payment will be made.
DIRECTOR'S RIGHTS	Director, SLIET, reserves the rights of acceptance or rejection of any or all quotations. The discretion for increasing or decreasing of the quantities also rests with him. SLIET also not bind itself to accept does the lowest price. In case of any dispute, the decision of Director SLIET will be final & binding.
VALIDITY OF QUOTATIONS	Quotations will be considered valid for 03 months from the date of receipt.
CORRESPONDENCE	No correspondence regarding acceptance/rejection of a quotation will be entertained.
SAMPLE/BRAND/ MAKE/WEIGHT	Sample where asked for, will invariably be made available and sent along with the quotations. However, Brand/Make/Weight etc. must be mentioned clearly in the quotations. Technical literature/pamphlet should also be enclosed.
REJECTION	Quotation not confirming to the set procedure as above will be rejected.  Conditional, telegraphic quotation shall be rejected out rightly.
DISCOUNT/REBATES	A special discount/rebate wherever admissible keeping in view that the supplies are being made for education purpose in respect of Public Institution of national importance may please be indicated.
GENERAL TERMS	SLIET shall not be held responsible for any postal delay in sending or late receipt of quotation. Quotation should be free from corrections & erasures.  Other terms & Conditions will be applicable as per GFR-2005.
	Faculty I/c (Purchase)

# ANNEXURE-A PROCUREMENT OF EQUIPMENT FOR ANALYTICAL LAB OF EIE DEPARTMENT

Sr. No.	Name of equipment	Specifications	Qty.
1.	Portable pH Meter	Pen type, Battery operated, Digital display	01
2.	Digital PH Meter	Measurement Range:0 to 14 pH,Accuracy:±0.01 pH,Repeatability:±0.01 pH Stability: ±0.01 pH/month, Temperature Coefficient:±0.003 pH/°C Temperature Compensation:Pt100/Pt1000 RTD, Microprocessor based	01
3.	Portable Conductivity meter	Pen type, Battery operated, Digital display	01
4.	Digital Conductivity meter	Conductivity range 0 to 20,000 S/cm, Accuracy (Temperature):±0.1°C between 5°C and100°C; ±1°C between 101°C and 200°C, Stability:0.5% of reading/month Ambient Temperature Effect:±0.05% of reading/°C, Output Accuracy:±0.1 mA Microprocessor based	01
5.	Hygrometer	Response time: 1°C/min, Readability: 0.25°C temp, vapor pressure: 1mm, Range: -12°C to 48°C Digital readout, Rugged enclosure	01
6.	Psychrometer	Sling type, Wooden/plastic case, Cotton wick	01

### **ELECTRICAL MACHINE LAB.**

Sr. No.	Name of equipment	Qty.
1.	Cut-section Of Reluctance Motor	01
2.	Cut-section of Hysteresis motor	01
3.	Shaded pole motor with complete control panel.  Specifications: 2-Pole, 220/230V,2880 RPM, 15-30Watt	01
4.	Stepper motor with complete control panel.  Specifications: Step angle-1.8, 6.5A rated, torque-240 kg-cm, No. of leads-4,	01
5.	Cut-section of stepper motor.  Specifications: Step angle-1.8, length-165mm, 6.5A rated, torque-240 kg-cm, No. of leads-4, frame size-110	01
6.	Universal motor. <b>Specifications:</b> 120-230V AC/DC, 250W, 8610-15100 rpm, 115-289.89 mN-m	01
7.	Cut-section of Universal motor.  Specifications: 230V AC/DC,110V AC/DC, 250 watts, 190 RPM	01
8.	Cut-section of salient pole alternator.  Specifications: 3 kVA, 1500 RPM, 415 AC, 4.2 A	01
9.	Cut-section of cylindrical alternator without prime mover.  Specifications:  3 kVA, 1500 RPM, 415 AC, 4.2 A	01
10.	AC repulsion motor with complete control panel.  Specifications: 750 Watt, 230 V, 1440 RPM	01
11.	3-phase induction motor coupled with generator with complete control panel  Specifications:  AC SQUIRREL CAGE INDUCTION MOTOR:  3 Phase, 10 HP, 415V, 1440 R.P.M. T.E.F.C. horizontal foot mounted, class & insulation.  D.C. Shunt GENERATOR: screen protected horizontal foot mounted with Interpoles.  6 KW, Volts: 230 V. DC, RPM: 1440  Cooling: Fan cooled Regulation: Through Regulator Insulation: Class & G  Connections: All the terminals of armature and shunt field shall be brought over to a Bakelite sheet, fixed to C.I. terminal box, fitted on top of Motor	
12.	1-phase induction motor coupled with generator with digital torque meter mounted on it.  Specifications:  1-phase induction motor: 3HP,1440 RPM 220V AC, 15 A.  Generator:  1.5 KW, 1440 RPM, 220V DC, 6A	01
13.	Digital Multi-meter Specifications:	02

	Voltage DC:1000V±(0.1%+1)	
	Voltage AC:1000V±(0.1%+1)	
	Current DC:20A ±(0.5%+2)	
	Current AC:20A ±(0.5%+2)	
	Resistance: $50M \pm (0.4\%+1)$	
	Capacitance :9999 µF ±(1%+2)	
14.	D.C. Shunt Motor coupled with	01
	Three phase Synchronous generator	
	Complete with control panel.	
	Specifications: 5H.P.,220V,19A,1500rpm, Excitation220V,1.5A	
	3KVA,415V,4.2A,1500 rpm, excitation 220V,1.4A(salient pole type)	
15.	Three phase Induction motor (Squirrel cage) with control panel including Star Delta	01
	starter and blocking arrangement.	
	Specifications:	
	5H.P,415V,1500rpm,8A 50Hz.	
16.	Single phase capacitor Induction motor with mechanical loading arrangement upto	01
	125% with control panel and starter.	
	Specifications:	
	1.5H.P,230V,6.5A,1500rpm,50Hz	
17.	Three phase transformer.	02
	Specifications:	
	1KVA,415V,3A,	
	(Provisions with star and Delta connection)	
18.	Three phase Auto transformer.	02
	Specifications:	
	415/0-470V,15A(wire wound)	
19.	Single phase Transformers	
	(Two windings).	
	Specifications:	02
	3KVA,230/115V,50Hz	
	2KVA,230/110V,50Hz	02
20.	Complete Dissectible Machines trainer System	01
	Specifications: a.c. and d.c. meters, resistive and capacitive loads and power	
	supplies. Fixed and variable a.c. and d.c. supplies are provided and require a three	
	phase supply input of 400 - 415 V a.c. from a five wire system. Total power	
L	requirement is 6 kVA.	
21.	Single phase AutoT/F.	02
	Specifications:	
	230/0-270V,16A(wire wound)	
22.	Scott Transformers	01
	With connection arrangement.	
	Specifications:	
	1KVA,230/115V4.34A	
	(I/P)	01
	3 KVA	
23.	Scott connection trainer.	01
	Specifications:	
	Main Transformer :	
	Input Winding: 0 - 200 V (50%) ±10%, 50 Hz and 0 - 200 V (50%) ±10%, 50 Hz	
	Output Winding: 0 - 230 V ±10%, 50 Hz	
	Teaser Transformer:	
	Input Winding:	
	0 - 115.6 V (28.9%) ±10%, 50 Hz	

	346.4 V (86.6%) ±10%, 50 Hz	
	400 V ±10%, 50 Hz	
24.	Trainer for Sumpeners Test of two single phase transformer (complete kit).	01
	Specifications:	
	2 KVA, Primary: 0-125V	
	Secondary: 0-125V	
25.	Trainer for Parallel operation of two single phase transformer.	01
	Specifications: Transformer(2 Nos.): Rating- 1KVA, Primary: 0-230 V,	
	Secondary: 0-200-230V	
26.	Starter.	03
	Specifications: D.O.L	
	For 5HP IM,415 V	
27.	Phase sequence meter.	01
	Specifications: 500V	
28.	Wattmeters.	
	Specifications:	
	2.5A/300V(LPF)	02
	10A/150V(ÙPF)	02
	5A/300V(LPF)	02
	10A/75V(UPF)	02
	20A/300V(UPF)	02
	10A/300V(UPF)	02
29.	Three phase wattmeter.	02
	Specifications:	
	5A/10A/20A/500V(LPF and UPF)	
	(	
30.	Voltmeter	
	Specifications:	
	0-300V(M.I)	02
	0-250V(M.I.)	02
	0-150V(M.I.)	02
	0-50V(M.I.)	02
	0-500V(M.Í.)	02
31.	Ammeter	
	Specifications:	
	0-2A (M.C.)	02
	0-2.5À(M.I.)	02
	0-5A(M.I.)	02
	0-10Å(M.Í.)	02
	0-20A(MI)	02
32.	Load box	
	three phase	02
	single phase	02
	Specifications:	-
	230V/0-15A( Rheostat)	
	230V/0-15A( Rheostat)	
33.	Digital Tachometernon contact type	02
	Range : Tachometer: 5.0 to 9999 rpm; Resolution 1 rpm; Accuracy:±0.1% + 2	
	digits; Display:5-digit LCD, Flash duration:<1000 microseconds; Max measuring	
	distance:12+Memory:last reading and min/max;	
34.	Rheostat	
J <del>4</del> .	Specifications:	
	250ohm,1.5A(wire wound)	01
<u> </u>	2000mm, non(who wound)	1 01

	400ohm,8A.(double tube)	06
35.	Loading Rheostat Specifications:	01
00.	2KVA 1.5A per step	0.
36.	Fuses(glass cartridge)	
	Specifications:	
	5A	12
	10A	12
37.	SPST Switch	
	Specifications: 20A	02
38.	DC machine Starter:	00
	3-point starter	02
	4-point starter	02
	3-point demo starter	01
39.	4-point demo starter	01 01
აყ.	Clamp meter Specifications:	UΙ
	AC current range:200A	
	DC current range:200A	
	(2% ± 5)	
	AC voltage range:600V	
	AC voltage range:600V	
	(1.5% ± 5)	
40.	MG set Coupler	04
41.	Single Phase Power Analyzer	01
	Able to capture voltage sags, transients and inrush current and other power relate	
	events with voltage, current, frequency, power harmonics up to the 50th harmonic	
	or more. Able to log harmonics and all other readings over time and provide a	
	complete harmonics profile. Able to record selectable parameters for up to 15 days	
	or more and memories to save/recall screens and data with cursor readings up to	
	20 measurements or more. True-rms voltage (ac + dc) up to 1000 V or higher,	
	Current (ac + dc) up to 500 A with accuracy of ±1%, Frequency up to 15.0 kHz	
	with accuracy of ±0.5%, Measurement of Watts, VA, VA Reactive, PF, DPF,	
	Display of Total Harmonic Distortion, Volts (Fund. & Harmonic), Amps (F&H) Watts	
42.	(F&H) Freq. (H), %(H) of total, Phase (H), bandwidth up to 1 MHz.	04
₹2.	Hall Effect AC/DC Current probes Shall be able to measure currents in the range of 20mA to 50 A.	04
43.	AC/DC Voltage probes (Differential Probes)	04
	Shall be able to measure voltages up to 1500V.	
44.	Digital Storage oscilloscope	01
	100 MHz bandwidth with 4input Channels, 250 MSa/s Real time and 25 GSa/s	
	Equivalent time sampling, or higher; 4k memory length per channel, peak detect	
	as fast as 10 ns, save/recall of 15 front panel settings & waveforms, 5.7+TFT	
	Colour Display, 19 auto measurements, arithmetic operators-add subtract, FFT,	
l	USB port for PC Connection data logger	

. Wi	re Roll	
7/2	<b>2:-</b> Red	02
	Yellow	02
	Blue	02
3/2	<b>22:-</b> Red	02
	Yellow	02
	Blue	02

### **PROCESS CONTROL LAB.**

Sr. No			
<u>.</u> 1.	CURRENT TO PNEUMATIC CONVERTER		04
	INPUT	4-20 mA	
	OUTPUT	0.2-1.0KG/CM2	
	AIR SUPPLY	1.4 KG/CM2	
	ACTION	DIRECT	
	ACCURACY	+/- 0.5 %	
	MOUNTING	FOR FIELD MOUNTING	
	HOUSING	IP65	
	ACCESSORIES	MOUNTING BRACKET & SCREWS	
	ELECTRICAL	½qqNPT(F)	
	CONNECTIONS		
	AREACLASSIFICATIO	SAFE AREA	
	N		
2.	PID CONTROLLER		04
	FUNCTION	INDICATION & CONTROL	
	CASE & COLOUR	MFR.STD.	
	MOUNTING	PANEL MOUNTING	
	ENCLOSURE CLASS	GEN.PURPOSE	
	POWER SUPPLY	240 V AC, 50 Hz.	
	CONTROL MODES	PID(CONFIGURABLE)	
	CONTROL ACTION	SELECTABLE	
	AUTO/MAN SWITCH	MFR. STD.	
	SET POINT ADJ.	REM/LOC SELECTABLE	
	OUTPUT	4-20 mA	
	INPUT	UNIVERSAL (RTD, T/C, 4-20 MA)	
	NO.OF INPUTS	TWO	
	POWER FOR	24 V REQD.	
	TRANSMITTER		
	ALARM SWITCHES	RELAY	
	ALARM FUNCTION	VAR./DEV SELECTABLE	
3.	RTD		04
	RANGE	-50 to 500C-	
	COMPLETE ASSY.	YES	
	HEAD COVER TYPE	SCREWED	
	HEAD TYPE	GENERAL	
	HEAD MATL	AL	
	CONDUIT CONN.	3/4 cqNPT	
	NIPPLE SIZE	½qqNPT	
	DIMENSION `Nq	150 MM WITH UNION	
	ELEMENT TYPE	Pt 100 @ .00385	
	Accuracy	Class C	
	SHEATH MATL	SS316	
	ELEMENT OD	8 MM	
	RTD TYPE	3 WIRE SIMPLEX	

	TERMINAL BLOCK	SPRING LOADED	
	LENGTH U	400 mm	
4.	THERMOCOUPLE		04
	Type	K TYPE-(chromel alumel)	
	COMPLETE ASSY.	YES	
	HEAD TYPE	IP-65 universal screwed type	
	HEAD MATL	AL	
	RESPONSE TIME	LESS THAN 20sec for measurement	
	TERMINAL BLOCKS	SCREW TYPE	
	CONDUIT CONN.	3/4 cqNPT	
	NIPPLE SIZE	½qqNPT	
	LEADS	STD.	
	SHEATH MATL	SS316	
	ELEMENT OD	8 mm	
5.		T PRESSURE TRANSMITTER	04
	SERVICE	LIQUID	
	RANGE	0-1500mmWC	
	WORKING PRINCIPLE		
	TYPE	TWO WIRE	
	OUTPUT	4-20mA DC SIGNAL	
	MEASURING	CAPSULE/DIAPHRAGM	
	ELEMENT		
	OUTPUT INDICATOR	LCD	
	BODY	FORGED CARBON STEEL	
	OPERATING	16-48 VOLTS DC	
	VOLTAGE	/ 0.00 / OF OPAN	
	ACCURACY	+/-0.2 % OF SPAN	
	REPEATABILITY	+/05% OF SPAN	
	HOUSING	IP65	
	ACCESSORIES	UNIVERSAL MOUNTING BRACKET	
•	SPAN AND ZERO	LOCALLY ADJUSTABLE	0.4
6.	STRIP CHART RECOR		04
	INPUT	Universal input	
	MEASURING	2	
	CHANNELS COLORS	RED & GREEN	
	CHART	7.5m FANFOLD OR 15m ROLL	
	PEN RESPONSE TIME		
	DISPLAY	5 DIGIT LED	
	PEN ACCURACY	0.2% OF SPAN	
	DISPLAY	+/-1 DIGIT	
	RESOLUTION	4/-1 DIGI1	
	DISPLAY RANGE	-9999 TO +99999	
	CONFIGURATION	FRONT FASCIA OR VIA PC	
	POWER SUPPLY	85-265V	
	ELECTRICAL	SCREW TERMINALS	
	CONNECTIONS	SOILLY TERMINALO	
	COLD JUNCTION	AUTOMATIC	
		AUTOMATIC	

	COMPENSATION		
	ANALOG INPUTS	1 OR 2 ISOLATED	1
	PROTECTION	IP65	
7.	PLC trainer		01
	Plc Trainer must consist (1). PLC with expansion sl	Of ots having at least 8 Digital	
	and 2 Analog Inputs and 8 Digital and 2 Analog Outputs.		
	2) A Simulator For The Inputs And Outputs With		
	24VDC Power Supply		
	3) PLC/PC Cable Along	With Programming Software	