MAHATMA GANDHI UNIVERSITY
Anneparthy, Yellareddigudem
NALGONDA – 508254

Ten. No.05/MGU/NLG/2017-18 **Date:06.10.2017**

e-Tender Notice

Online tenders are invited under Two-Bid system through e-Procurement Process from the reputed registered manufacturers or their authorized dealers/agencies or reputed suppliers for supply of Lab Equipments, Furniture/Equipment, Computers & Air Conditioners etc.

Ten. No.06/MGU/NLG/2017-18 **Date:06.10.2017**

Online tenders are invited from reputed manufacturers/authorized distributors for entering into Annual Rate Contract for the financial year 2017-18 for the supply of Laboratory Chemicals, Glassware, Plastic wares and Kits.

For Tender notice and other details visit our web site www. mguniversity.ac.in

Sd/-

REGISTRAR

MAHATMA GANDHI UNIVERSITY
NALGONDA
08682- 221904, website-mguniversity.ac.in

No. 05/MGU/NLG/2017-18 **Date:05.10.2017**

e-PROCUREMENT TENDER NOTICE

FOR PROCUREMENT OF LAB EQUIPMENT, FURNITURE/ EQUIPMENT, COMPUTERS & AIR CONDITIONERS etc.

Important Dates

Date of release of Tender through e-procurement	:	06.10.2017
Last date & time for submission of bid	:	26.10.2017 at 01:00 pm
Date & time for opening of technical bid	:	26.10.2017 at 02:00 pm
Date & time for opening of financial bid	:	31.10.2017 at 1:00 pm

Online tenders are invited under Two-Bid system through e-Procurement Process from the reputed registered manufacturers or their authorized dealers/agencies or reputed suppliers having capacity to provide the **Lab Equipments for Electrical and Electronic Engineering(EEE), Electronics & Communication Engineering(ECE), Mechanical Engineering, Biochemistry, Biotechnology, Physics, Geology, Chemistry and Pharmaceutical Sciences & Furniture/ Equipment, Computers, Air Conditioners, LCDs, Scanners, Printers etc. for University Library and University Colleges & other departments** at Mahatma Gandhi University, Nalgonda as per the technical specifications & required quantity (as mentioned in Annexure-I and Annexure-II) , and as per Terms & Conditions of the Contract through e-tendering procurement process.

AND

No. 06/MGU/NLG/2017-18 **Date:05.10.2017**

Online tenders are invited from reputed manufacturers/authorized distributors for entering into Annual Rate Contract for the financial year 2017-18 for the supply of Laboratory Chemicals Glassware, Plastic wares and Kits,

Sd/-
REGISTRAR

e-PROCUREMENT TENDER NOTICE

FOR PROCUREMENT OF LAB EQUIPMENTS OF ENGINEERING DEPARTMENTS

No. 05/Che& IPC/MGU/NLG/2017-18 Date:05.10.2017

ANNEXURE-I

TECHNICAL BID FORMAT

I. Dept., of Chemistry & Pharmaceutical Sciences:-

INORGANIC CHEMISTRY LAB			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
1.	**HOT AIR OVEN**	Double walled units inner chamber made of Al/SS and outer made of mild steel with powder coating. Gap between the walls fitted with glass wool insulation to avoid heat loses. Heating elements are made of high grade chrome plated wire. Temperature is controlled by digital temperature controller. Temperature range $50^{O}C$ to $250^{O}C$.	**01**
2.	**ROTOVAPOUR**	a. Rotary Vacuum Evaporator with digital temperature control bath and diagonal condenser b. Oil free vacuum Pump with teflon diaphragm c. Suitable glassware for the above	**02**
3.	**SUCTION PUMP**	For use with (Equipment): rotary evaporator, filtration flask and manifolds, vaccum oven Hose clamp, funnel, change of oil, oil mist eliminator to be included Pressure: 1mm	**02**

PHYSICAL CHEMISTRY LAB			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
1	**DIGITAL pH METER**	pH Range : 0 to 14 Resolution : 0.01 Accuracy : ±0.01 Repeatability : ±0.01 Stability : ±0.05 in 8 hrs Emf in mV Range : ±1999 Resolution : 1 Accuracy : ±0.1% of fs or ±2 Repeatability : ±1 Input Impedance : $>10^{12}$Ohm @ 25^{o}C Receptacle : BNC Asymmetric Potential Correction : ±100mV with 1 turn potentiometer Temp. Compensation : 0 ^{o}C to 100^{o}C Manual Readout : Digital, 3-Digit min. Power requirement : 230V±10%, 50Hz, 1ϕ Max.15VA	**08**
2.	**POLARIMETER**	a) Polarimeter/saccharimeter body complete with two eye pieces b) With Sodium lamp kept inside the sodium lamp pipe. c) Sodium lamp pipe Bracket d) Clamp for sodium lamp e) Electrical connectors for sodium lamp f) Sample tubes with spare window glass and washers g) Thermometer in jacket h) Choke for Sodium lamp **Scale** With two scales visible: Angular Scale and is divided into intervals from 0 ^{o} to 360^{o}. International Sugar scale extending from +130^{o} to -130^{o} .	**01**

PHYSICAL CHEMISTRY LAB			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
3.	**DIGITAL COLORIMETER**	Wavelength Range : 400 to 700 nm with eight optical filters Filter's Peak wave length (nm): 420,440,490,520,540,570,600,720 Measuring modes : % T, ABS Sample volume (Min): 1ml in 4ml test tube Sample holder : Suitable for 10 mm flat bottom round test tube Source : LED Detector : Photo diode Display : Digital LED, 3-Digit Resolution : 1%T, 0.01ABS Power : 230V, ±10%, 50Hz,10VA(approx.)	**04**
4.	**DIGITAL CONDUCTIVITY METER**	AC source **:** 100 Hz or 1 KHz approx. automatically selected Conductivity Range : 0-200 mS in 5 ranges Measuring Accuracy : ± 1% of FS, ± 1 count in all ranges Conductivity cell : with approx.1.0 cell Constant Cell Constant : 0.9 to 1.1 is acceptably Manual Temp. range : 0 to 100^{o}C Display **:** 3-Digit 7 seg LEDs Power : 230 V ±10%, 10VA (approx.)	**03**
5.	**DIGITAL POTENTIOMETER**	Input Configuration : Bipolar Range : 0 to ±1999 mV Resolution : 1 mV Control Stirrer Speed : 0 to full speed Hold read switch and in read mode : To hold reading when pressed Polarization Current electrode : 10µA for Metal to Metal Input Impedance : 10H Ohm Polarity : Automatic Over range : Last 3 digits blink Magnetic Stirrer : Inbuilt with variable speed Display : 3 1/2 digits LED Power Requirement : 230 V AC ±10%, 50HZ, 10VA approx.	**06**

<table>
<tr><td colspan="4">PHYSICAL CHEMISTRY LAB</td></tr>
<tr><td>Sl. No.</td><td>Name of the Item</td><td>Specification/ description</td><td>Qty</td></tr>
<tr><td>6.</td><td>PLATINUM ELECTRODES</td><td>(FOR SYSTRONICS DIGITAL POTENTIOMETER-318)</td><td>06</td></tr>
<tr><td>7.</td><td>CALOMEL ELECTRODES</td><td>(FOR SYSTRONICS DIGITAL POTENTIOMETER-318)</td><td>06</td></tr>
<tr><td>8.</td><td>SILVER ELECTRODES</td><td>(FOR SYSTRONICS DIGITAL POTENTIOMETER-318)</td><td>05</td></tr>
<tr><td>9.</td><td>CONDUCTIVITY CELLS</td><td>(FOR SYSTRONIC CONDUCTIVITY METER-304)</td><td>06</td></tr>
<tr><td>10.</td><td>COMBINED GLASS ELECTRODES</td><td>(FOR ELICO DIGITAL pH METER-LI 120)</td><td>06</td></tr>
<tr><td colspan="4">ORGANIC CHEMISTRY LAB</td></tr>
<tr><td>1.</td><td>Rings water Bath – 6 holes</td><td>Double walled filled with high grade glass wool insulation between the two chambers. Outer made of MS with powder coated and inner chamber made of SS. Fitted with thermostat Range ambient +5^{O}C to 100^{O}C</td><td>08</td></tr>
<tr><td>2.</td><td>Rings water Bath – 12 holes</td><td>Double walled filled with high grade glass wool insulation between the two chambers. Outer made of MS with powder coated and inner chamber made of SS. Fitted with thermostat Range ambient +5^{O}C to 100^{O}C</td><td>02</td></tr>
<tr><td>3.</td><td>SUCTION PUMPS</td><td>For use with (Equipment): rotary evaporator, filtration flask and manifolds, vacuum oven Hose clamp, funnel, change of oil, oil mist eliminator to be included
Pressure: 1mm</td><td>02</td></tr>
<tr><td>4.</td><td>HOT AIR OVEN</td><td>Double walled units inner chamber made of A/SS and outer made of mild steel with powder coating. Gap between the walls fitted with glass wool insulation to avoid heat loses. Heating elements are made of high grade chrome plated wire. Temperature is controlled by digital temperature controller. Temperature range 50^{O}C to 250^{O}C.
<table>
<tr><td></td><td>Nos of trays</td></tr>
<tr><td>30x30x30cm</td><td>2</td></tr>
<tr><td>35x35x35cm</td><td>2</td></tr>
</table></td><td>02</td></tr>
</table>

ORGANIC CHEMISTRY LAB			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
5.	**MAGNETIC STIRRER WITH HOT PLATE**	2ltr capacity with Hot Plate Hot plate should be chemically resistant to acid and alkali Controls for both hot plate and stirrer should be provided with suitable indicators	**03**
6.	**HEATING MANTLE**	Flask Capacity : 250ml , 500ml ,1000ml Maximum temperature : 450^{o}C Voltage : 230V Chemically resistant outer casing EACH CAPACITY	**02**
7.	**MELTING POINT APPARATUS**	This apparatus is useful in determination of melting point of any substance in small quantities up to 300^{O}C. It consists of an aluminum block which accepts three capillary tubes & mercury thermometer. The block is heated by two elements clamped to the sides. The built in lamps provides uniform & shadow less illumination of sample tube which is viewed by magnifying glass	**02**
8	**UV CABINET**	Ultra Violet Inspection Cabinet (UV Cabinet) useful for viewing paper and thin layer chromatograms.G.I. Epoxy powder coated cabinet. With enclosed long, short wave and white source	**02**
9	**Hot plate medium**		**03**
10	**Steam Distillation**		**04**

ORGANIC CHEMISTRY LAB			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
9.	**FUMING CUPBOARD**	These are to be designed to exhaust toxic and other harmful vapours for protecting laboratory personnel equipment. The main body of the Fume cupboard to be made of good quality Marine Plywood with water & chemical proof coated and inside of the cup -board is made from FRP lining, which is acid or alkali resistant, fitted with a sliding door made of Glass, moves vertically up and down with counter balanced weight operated by steel chain & sprocket. Fluorescent light to be provided inside the chamber for easy working. One water tap and gas cock are also inside the chamber. Working top of the fume cupboard is of Granite. A blower exhaust system fitted on the top of the working area, which generates negative pressure within the hood.	**04**
10	**ICE Making Machine**	Capacity : 20Kg/24H Ice Storage : 10Kg Voltage : 220V Cooling Type: Air cooling Refrigerant : R134a Water supply: Tap water	**02**

PHARMACEUTICAL CHEMISTRY			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
1	**Centrifuge**	Compact Laboratory Centrifuge with speed regulator, safety lid lock Digital speed meter & timer with rotor head and accessories R-41 – 8x15ml- glass tubes (swing out) R-42 – 4x50 ml - glass tubes (swing out) R-43 – 8x15ml – PP tubes 9angle head) R-44 – 4x50ml - PP tubes 9 angle head)	**01**
2	**BINOCULAR MICROSCOPE**	Standard Complete set with Binocular Head, in built 6V-20W halogen light illuminator, with Anti Fungus Achromatic objectives 4X, 10X, 40X and 100X oil immersion, paired eyepieces wide field 10X in thermo Cole packing. FEATURES: Anti - Fungus Optics, interchangeability of Objectives, the abbe condenser & the light relay system fitted with high performance aspheric lenses for bright & crisp image, window in arm & the Ergonomic design, illumination system through SMPS circuit etc.	**01**
3	**MICROWAVE OVEN**	Domestic microwave oven Basic model	**01**
4	**GLASS COLUMN FOR GC**		**01**
5	**OPTICAL MICROSCOPE**		**02**
6	**INVERTER AIR CONDITIONER**	Capacity : 2 ton Function type : split	**01**

BIOTECHNOGY LAB			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
1.	**BINOCULAR MICROSCOPE**	Standard Complete set with Binocular Head, in built 6V-20W halogen light illuminator, with Anti Fungus Achromatic objectives 4X, 10X, 40X and 100X oil immersion, paired eyepieces wide field 10X in thermo Cole packing. FEATURES: Anti - Fungus Optics, interchangeability of Objectives, the abbe condenser & the light relay system fitted with high performance aspheric lenses for bright & crisp image, window in arm & the Ergonomic design, illumination system through SMPS circuit etc.	**03**
2.	**Horizontal gel Electrophoresis**	Specification: PI. No : 03-02, Cat No. : 6508GB, Principal Material : Acrylic Inner tank dimension : 215 x 141 x 55 mm No. of trays : 130 x 130 mm - 1 No. 130 x 65 mm - 2 No 65 x 60 mm - 4 No No. of combs : 13 Well Analytical Acrylic Comb 1.5 mm thick x 1 No. 8 Well Analytical Acrylic Comb 1.5 mm thick x 4 Nos. 3 Well Preparative Acrylic Comb 3 mm thick x 1 No. No. of gel casting tray : 1 universal. Connecting Cord : red and black (1 each). No. of Platinum electrodes : red and black (1 each).Lid	**01**

BIOTECHNOGY LAB			
Sl. No.	**Name of the Item**	**Specification/ description**	**Qty**
3.	**Vertical Gel Electrophoresis**	Pl. No. : 05-04, Cat No. : 106782GB Gel Size : 16 x 14 cms. x 2 gels Principal Material : Acrylic Upper Buffer Tank Dimension : 140 x 70 x 20 mm Lower Buffer Tank Dimension : 200 x 160 x 190 mm No. of Combs : 13 Well Teflon Comb 0.5 mm-2 Nos. 13 Well Teflon Comb 1 mm 2 Nos. Teflon Spacers : 0.5 mm Teflon Spacers 4 Nos. 1 mm Teflon Spacers 4 Nos. Connecting Cord : red and black (1 each). No. of Platinum Electrodes : red and black (1 each).Lid : Glass plate : Notched and Rectangular 2 sets. Gasket : Fixed Clamp and screws : 4 sets. Gel casting unit : Optional.	**01**
	Power supply:	Output DC Voltage : 0-300 Volts variable Output current : 0-300 mA Variable Output : One parallel output, 4 mm socket Display : Digital Body : MS with powder coated body Size : 360 x 230 x 130 mm Input Voltage : 230V, 50Hz, A.C. Supply	
5.	**OPTICAL MICROSCOPE**		**01**
6.	**OCULAR MICROMETER**		**01**
7.	**STAGE MICROMETER**		**01**
8.	**DIGITAL BALANCE**	Capacity 600g Accuracy 0.1g Platform size 150x150 mm	**06**
9.	**TRIPLE PAN BALANCE**		**06**
10.	**Refrigerated Cold Centrifuge**	12000rpm,105/2.0/5/15ML rovter	**01**
11.	**Tran illuminator**	UV	**01**

Ten. No.05/AB/MGU/NLG/2017-18 Date: 05.10.2017

ANNEXURE-I

TECHNICAL BID FORMAT

II. Dept., of Applied Biosciences:-

SL. NO.	Name of the Item	Specification/ description	Qty
1	**TABLE TOP COLD CENTRIFUGE**	Maximum Speed 20000 RPM Supplied with Angle Rotors**24x1.5ml/2ml, 8 x 50ml and 4x100ml** Swing out Rotors **4x25ml** with click seal Biocontainment lid. The rotors should be tested and approved by HPA, Porton Down, UK for Biocontainment CAMR Pre-cooling feature Microprocessor based unit LED display for Time, Speed and Temperature Max Noise Level: 50 dBA Temperature set range from minus 0 °C to plus 40°C Time set range 1 to 99 min. Toggle between RPM and RCF Electrical 220-240 Volts. 50Hz, Single phase Induction maintenance free rotor With 5kv servo or Suitable Stabilizer	01
2	**WESTERN BLOTTING APPARATUS**	Specifications for Semi Dry Apparatus: Transfers in as little as 15-60 minutes, minimal buffer requirement Capacity to transfer multiple gels; gels may be placed side by side or stacked withdialysis membrane separating gel sandwiches Single-step locking system for simple, speed setup Buffer requirement per run must be preferably 200 ml or less Should be capable of transferring large gels of size 24 x 15 cm Warranty and installation: 3 years warranty including spares and consumables (reagents) should be provided forcomplete system Installation should be done free of charge at our lab Power pack: output DC voltage:0-350V. Output current:0-1000mA Including reagents to demonstrate the apparatus	**01**

SL. NO.	Name of the Item	Specification/ description	Qty
3	**WATERBATH**	Should have a double walled construction. The inner chamber and top lid should be made of stainless steel. The space between the two walls should be packed with thick glass wool. Should provide with a microprocessor based variable digital temperature controller with digital display. Working temperature should be from ambient to 80ºC having an accuracy of +/- 1ºC. Should have an approximate inner chamber dimension of 450mm x 300mm x 175mm	**01**
4	**Cooling circulating Water Baths**.	Required temperature 5 to 60 °C Temperature Precision is ±0.1°C Microprocessor based temperature controller Digital LCD display Internal Chamber Stainless Steel and Crevice free Double walled construction Reservoir size is 5 lts	**01**
5	**BIOSAFETY CABINET**	Biosafety cabinet class-II A2 Working area 3 ft x 2 ft x 2 ft, Blower fitted with ¼ HP Motor, with RPM 1200 to 1400. Exhaust: size 305x305x150mm, 0.3micron 99.99% HEPA filter, Size: 915x457x70 mm, 0.3 micron, rated 99.99%, Working area of Laminar Airflow Cabinets illuminated by fluorescent light Cabinets operated at 230V. Single Phase 50Hz. AC Supply. Fitted with UV Germicidal lamp for sterilization. Fitted with Acrylic Front Door sliding type Fitted with Manometer for Measurement of HEPA Filters Choking system. Glass bead sterilizer.	**01**

SL. NO.	Name of the Item	Specification/ description	Qty
6.	**UV-VIS SPECTROPHOTOMETER**	Optical Design: Double Beam with sample and reference cuvettepositions; Czerny-Turner Monochromator Spectral Bandwidth: 1 nm Light Source: Xenon flash lamp, 3-year warranty Detector: Dual Silicon Photodiodes Scan Ordinate Modes: Absorbance, % Transmittance, Concentration, kinetic Kubelka-Munk, log (1/R), log (Abs), Abs*Factor, Intensity Resolution: >1.6(peak-to-valley ratio) Wavelength Range: 200 –800 nm at 1 nm increment Wavelength Accuracy: ± 0.8 nm (full range) ± 0.5 nm (546.11 nm mercury line) Wavelength Reproducibility: less than 0.1 nm (546.11 nm mercury line, SD of 10 measurements) Scanning Speed: <1 to 6000 nm/min; continuously variable Data Intervals: 10, 5, 2, 1, 0.5, 0.2, 0.1 nm Photometric Range: ≥ 3.0 Abs Photometric Accuracy: 0.5 A: ± 0.004A;1A: ± 0.006A; 2A: ± 0.010A; (440 nm; traceable neutral density filters) Noise: 0A: less than 0.00015 A; 1A: less than 0.00050 A; 2A:less than 0.00080 A; (260 nm,RMS) Drift: < 0.0005 A/hr (500 nm, 1 hour warm-up) Stray light: KCl, 198 nm: less than 1% T NaI, 220 nm: less than 0.05% T NaNO2, 340 nm, : less than 0.05% T Baseline flatness: ±0.0010 A (200-800 nm; smoothing) Keypad: Sealed Membrane Display: Touchscreen LCD panel; 800 x 480; 17.8 cm (7 in), Full operation display. Diagonal Operating System: Microsoft Windows 7 Dimensions: 62.2 x 48.6 x 27.9 cm (24 x 19 x 11 in) L x W x H Electrical Supply: SMPS 100-240V 50Hz Automatically; 150 W maximum Computer Control UV-Vis Power Cord 250v Standard Cuvettes one pair quartz and glass cuvettes Micro cuvette-50µl Laser Printer Suitable Stabilizer	**01**

SL. NO.	Name of the Item	Specification/ description	Qty
7.	**Plant tissue culture rack**	Plant tissue culture rack with four working shelves illuminated by lights Tissue racks are made of tubular mild steel pipes with epoxy powder coated Each rack of size 48"x21" (depth) is covered with thick glass or acrylic	**01**
8	**-20°C Freezer**	Single door horizontal chest 200L Deep freezer Insulated inner door Epoxy powder and rust free covered SS metallic external case Mounted heavy duty castor wheels for easy movement	**01**
9	**Double distillation Unit**	Glass double distillation automatically electrically heated apparatus with heater embedded in Spiral glass tube, heavy cast iron base, rod, clamps etc Automatic cutoff device with electrodes 10L/Hr capacity	**01**
10	**Refrigerator**	Double door refrigerator Top mount freezer with digital inverter 300L capacity	**01**
11	**LED Based Colorimeter**	8 filters from 400 to 700nm narrow band Resolution of 0.01 absorbance and 1% t 21/2 digital led display LED bulb With stabilizer	**05**
12	**Ice flake machine**	Electronic control, control board with display, stainless steel, Built in pump, Capacity- 40kg/24 hrs, Bin Capacity-5kg, Ice type-flake, Suitable Stabilizer.	**01**

SL. NO.	Name of the Item	Specification/ description	Qty
13	**Ultra Low Deep Freezer (-86 C)**	Internal Volume(Liters) 185 No. of trays:3 No. of Internal Door: 2 Operating Temperature Range: -45°C to -86°C Insulation (CFC free polyurethane foam): Body : 150 mm sides, 300 mm Back, Door : 110 mm Temperature Control: Microprocessor with PT-100 sensor Display: 4″ LCD Power Failure Alarm: Audio Visual Alarm Door Open Alarm: Audio Visual Alarm in case door open for over one minute Inner Body Material: S.S. 304 (AISI Grade, Non Corrosive, Non Magnetic) Outer Body Material: Powder Coated CRCA Steel Noise Level: Less Than 65 db(A) Battery Backup: Rechargeable, Back Up 8 hrs (for alarm system & temperature recorder Stablizer: VS06 or suitable Electrical: 220-240 volts, 50 Hz, SINGLE PHASE	**01**
14	**Refrigerated Orbital shaker incubator**	Temperature Range & Accuracy: 5°C to 60°C, ± 0.5°C Maximum Shaking Capacity: Shaking Speed range (RPM):20 to 250 Shaking Amplitude: 25 mm Temperature control:Microprocessor with PT-100 sensor Display: LCD Screen Temperature Variation Alarm :Set Temperature ± 2°C, Audio Visual Alarm Internal Body Material: Stainless Steel – 304 grade External Body Material: Powder Coated CRCA Steel Insulation (CFC free polyurethane foam):70 mm minimum for Body & 80 mm for Door **Clamps**: 100ml clamps- 10 Nos, 50ml clamps-10 Nos, 500ml clamps-5 Nos, 250ml clamps-5 Nos Noise Level: Less Than 65 db (A) Electrical: 230V 50 Hz, Single phase, AC **Stabilizer: 5kv or Suitable**	**01**

SL. NO.	Name of the Item	Specification/ description	Qty
15	**APC Smart-UPS SRT 5000VA 230V for 15 computers for 3 Hours backup**	Output power capacity 4.5 KWatts / 5.0 kVAMax Configurable Power (Watts) 4.5 KWatts / 5.0 kVA Nominal Output Voltage 230V Output Voltage Distortion Less than 2% Output Frequency (sync to mains) 50/60Hz +/- 3 Hz Other Output Voltages 220, 240 Load Crest Factor 3 : 1 Topology: Double Conversion Online Wave form type: Sine wave 65 AH/12V SMF Batteries- 16 (Amaron make)	**01**

ANNEXURE-I

TECHNICAL BID FORMAT

III. **Dept., of Geology**

Sl. No.	Lab	Name of the Equipment	Specifications	Qty
1.	Museum& Field equipment	Crystal models	6”X6”X 6” Wooden	25
		Fossils	5X5X5 CM(Three dimention)	25
		Ore minerals	3X3X3 CM	20
		Rock forming minerals	3X3X3 CM	20
		Haversag bags	30 kgs Capacity Feildbags	02
		Hammers	1 Feet Length	05
		Compass (Brunton)	With water bubble	05
		Rock specimens	6”X6”X 6” wooden Boxes	10
2	Optical Lab*	Mineral thin sections including Oriented thin sections	0.03 thickness Quartz, Calcite, Sphene (or muscovite)	03
		Ore mineral polished sections	1” (inch) full polished	05
		Rockthin sections	0.03 thickness	10
		Optical accessory plates	Quartz wedge Gypsum and Mica plate	03
3.	GIS & Remote sensing *	Aerial photographs	A3 Paper size	05
		Pocket Sterioscopihic lenses	Pocket model	05
		Imagery Light Tables	1.5 M Height 1.5M Width 1.5 Length	10
4	Hydrogeology Lab	Fluoride ion Meter	Ion meter multi point push button Calibration Digital display	01
		Electrical Conductivity meter	With ATC,1 Point calibration	01
		TDS table top	Digital Conductivity meter with cells	01
5		GIS Soft ware	ESIR GIS	

Ten. No.05/Phy./MGU/NLG/2017-18 Date: 05.10.2017

ANNEXURE-I

TECHNICAL BID FORMAT

IV. Dept., of Physics:-

Sl. No.	Name of the item	Specifications	Qty
Modern Physics Lab			
1	Power Adptor of G.m Counting system	**Model**:(GC601A)(NuCleonix)	**01**
2	U- Tube glass limb	U- Tube glass limb	02
3	Lux meter	KM Lus-100K	01
4	Ultrasonic Interferrometry experiment	1,R.F.Oscillator,2.Rotational long tube Spectrometer3,Transparent Crystal Tanks - 3.4,Sodium Lamp 5,Sodium lamp Transformer 6,Wooden box for sodium lamp 7,Liquids i)Benzin,ii) Kirosen iii) Distle water.	01
5	Zeeman effect Experiment	Constant deviation spectrograph Calibration, **Range**:4000Ao+or-10AoConstant deviation spectrograph prism(u=1.71)Fabry-perot etalon Glass plates size:32MM:Clear aperture:25MM R/T =80/20+5% Micrometer eyepiece,Range 25MM (Lease connt:0.01mm) **eyepiece** **Magnification**:10X.V.electromagnet 10 kilo Gauss at 10MM gap between its poles.VI,Digital Constant current power supply (30V,Amp)VII, Neon discharge tubes (2 No.S) VIII, Wooden stad with clamp for holdingdischarge tube IX,High voltage transformar to run the above discharges tubes (Voltage range:1 Kv-4.5 KvX.Digital Gauss meter with probe 0-20kg	01
Electronics Lab (I year)			
6	1MHZ Function generator	0.1 Hz to 1 MHz Function Generator with 4 digit Digital display for frequency readout Sine/Square/Triangle, Amplitude: 5 mV - 20 Vpp.	03
7	Linear & Digital IC Trainer	10 No's of Logic output Indicators Fixed DC Voltage sources of ±5V & ± 12V TTL Clocks 1Hz, 10Hz, 100Hz and 1 KHz Positive and Negative Pulser Built inVariable DC Voltage sources of ± 15V Potentiometers 1MΩ, 470KΩ, 100KΩ, 10KΩ, 1KΩ One number of seven segment display with decoder driver	02
Electronics II year lab			
8	BNC cable	connecting wire	06
9	CRO	LINE Voltage selection 220V-110VRange(50/60HZ)-	02
10	Function Generator	0.1 Hz to 1 MHz Function Generator with 4 digit Digital display for frequency readout Sine/Square/Triangle, Amplitude: 5 mV - 20 Vpp.	02
11	Digital Multi meters	LCDdisplay,20ACurrent,DCV,ACV,DCA,ACA Resistance,Capacitance,Diode,Transister,Continuety Test,Temperature of Auto power of Off/ON	02

Sl. No.	Name of the item	Specifications	Qty
NCPE Lab			
13	Lux meter	KM Lus-100K	01
14	Digital Thermometers	0 to 100 degree centigrade	02
15	Digital Multi meters	LCDdisplay,20ACurrent,DCV,ACV,DCA,ACA Resistance,Capacitance,Diode,Transister,Continuety Test,Temperature of Auto power of Off/ON	02
16	Soldering kit	With Iron rod	01
17	Animometers	Wind Speed Measurement	01
18	Wind Energy Trainer	Contents & Specifications: Wind Turbine Setup : Contain 3 blades Maximum Open Circuit Voltage : 3 V DC Maximum Short Circuit Current : 250 mA DC Voltmeter : 0 -10 V Ammeter : 0 - 500 mA Potentiometer : 5 K AA Rechargeable : 1.2 V NiCd Battery Lamp : 3 V DC Fan : 3 V DC FM Band Radio : 3 V DC C	01
19	Solar PV Module Analyze	Instrument to determine characteristics of Solar PV Module Microcontroller based design RS232CONNECTIVITY,16x2lcd Mains and Battery operation	01
20	Fuel cell experimental Set up	**Solar Panel :** Voltage (at optimum power point) : 2.2 V DC Current (at maximum power point) : 450 mA Dimensions : 125 x 155 x 8 (mm) Note : Solar Panel data is based on standard conditions 2 (1000 W/m , 250C) **Reversible Fuel Cell** : Dimensions : 54 × 54 × 17 (mm) Total Weight : 69.7 grams Electrolyzer Function : Input Voltage : 1.8 ~ 2.6 V DC Input Current : = 0.7 A Hydrogen Production Rate : 7 ml / min at 1A Oxygen Production Rate : 3.5 ml / min at 1A Fuel Cell Function : Output Voltage : 0.9 V DC Output Current : 360 mA Power : 210 mW Volume of Inner Containers for : 16ml Hydrogen/Oxygen Gas Storage Solar PV Cells : Poly Crystalline Technology 0	**01**

Sl. No.	Name of the item	Specifications	Qty
21	Solar stimulator	DC Voltmeter : 0-20V DC	01
		Ammeter : 0-2000mA	
		Temperature Controller : 35-80 C	
		Halogen Lamp : 2 Lamps of 50W	
		Light Regulator : 5 step light regulator	
		Control Box with accessories: User friendly interface with closed chamber	
		Heater coil : 25 W heater	
		Load Resistance : 10 ohm, 100ohm, 5000ohm	
		4-Qadrant Power Supply : For dark characteristics	
22	Solar cooker experiment set up	Environment friendly	01
		Alluminium reflective surface	
		Foldable system for easy transportation	
		Any type of cooking by boiling possible	
		Maintenance free operation	
Heat, Acoustics & Optics Lab			
23	Dimmer stat	Auto Transformer 2Amp	04
24	Digital Temperature indicator	for specific heat of graphite,0-300 degree C	03
25	Ammeter(Galvano meter) for specific heat of graphite	(Stefans constant unit,constant current source,DC differential amplifier)	01
26	Stefan's constant experiment	Thermal conductivity unit,Constant current source,DC differential amplifier	01
27	Thermal conductivity of copper expt.	Thermal conductivity unit,Constant current source,DC differential amplifier	01
28	Digital watches	Water resistant,Digital watch (minutes,Seconds,1/100 Sec.)	02
29	Crown glass prisms	Glass prism	02
30	Laser sources	(Red color)	01
31	Plane Grating	(LPI 2500,LPI1500)	02
32	Digital Multi meters	LCDdisplay,20ACurrent,DCV,ACV,DCA,ACA Resistance,Capacitance,Diode,Transister,Continuety Test,Temperature of Auto power of Off/ON	02

No. 05/ECE/MGU/NLG/2017-18 Date:05.10.2017

ANNEXURE-I

TECHNICAL BID FORMAT

V. Dept., of ECE:

Sl. No.	Name of the item	Specifications	Qty
1	**General Equipment**	Digital Storage Oscilloscope, 2 Channel, 25MHz DSO with coloured display 500 Msa/Sec sampling rate with USB pc interface Cable and Software	03
2		FAR 0.1 Hz to 2 MHz Microcontroller based Function generator with LCD Display for frequency & Amplitude Read out, INT/EXT frequency readout,Sine/Square/Triangle and pulse with variable duty cycle. Amplitude 2mV-20Vpp with 40dB,20dB,10dB attenuation , 50 /600 ohm impedance selection .	20
3		CRO test probes 10:1/1:1 switch selectance	30
4		3 ½ Digit Digital Multimeter LCD Display , 1999 counts with Backlight Display AC/DC Voltage, AC/DC Current , Resistance, Capacitance Frequency ,Temperature ,diode check and Continuity test complete with safety cover.	20
5		Servo Controlled Voltage Stabilizer Capacity: 5 KVA	03
6		3 ½ digit digital DC Ammeter 0 – 200mA	10
7		3 ½ digit digital DC Micro Ammeter 0 – 200μA	10
8		3 ½ digit digital DC Voltmeter 0 – 20V	10
9		Dual Trace Oscilloscope,2 Channel, 30MHz.Model NOOS 5030B. CRO Test Probe 10:1/1:1 Switch selectable	20

V. Dept., of ECE:

Sl. No.	Name of the item	Specifications	Qty
1	**ELECTRONICS DEVICE LAB**	TRANSITOR,JUNCTION DIODE & ZENER DIODE CHARACTERISTICS	**03**
2		RECTIFIERS AND FILTERS KIT	**03**
3		CE CHARACTERISTICS KIT	**03**
4		CB CHARACTERISTICS KIT	**03**
5		FET CHARACTERISTICS KIT	**03**
6		CE AMPLIFIER KIT	**04**
7		CD (FET)AMPLIFIER KIT	**03**
8		COMMON COLLECTOR AMPLIFIER KIT	**03**
9		MEASUREMENT OF H-PARAMETER OF A TRANSISTOR	**04**
10		SCR CHARACTERISTIC KIT	**03**
11		UJT CHARACTERISTICS	**03**
	ANALOG ELECTRONICS LAB		
1	**ANALOG ELECTRONICS LAB**	RC PHASE SHIFT OSCILLATOR KIT	**03**
2		CLASS B PUSH PULL AMPLIFIER KIT	**03**
3		CLASS A POWER AMPLIFIER KIT	**04**
4		TUNED RF AMPLIFIER	**04**
5		CURRENT & VOLTAGE SERIES FEED BACK AMPLIFIER	**03**
6		CURRENT & VOLTAGE SHUNT FEED BACK AMPLIFIER	**03**
7		HARTLEY OSCILLATOR KIT	**03**
8		COLPITTS OSCILLATOR KIT	**03**

Dept., of ECE

Sl. No.	Name of the item	Specifications	Qty
1	**ELECTRONICS ENGINEERING LAB-I**	RC COUPLED AMPLIFIER KIT	**03**
2		COMMON SOURCE FET AMPLIFIER	**04**
3		CASCADE AMPLIFIER KIT	**04**
1	**ELECTRONICS ENGINEERING LAB-II**	WEIN BRIDGE OSCILLATOR USING TRANSISTOR	**04**
2		CLIPPING AND CLAMPING CIRCUITS KIT	**04**
3		OPERATIONAL AMPLIFIERT KIT	**04**
1	**ELECTRONIC WORK SHOP & CIRCUITS LAB**	VERIFICATION OF KIRCHOFFS LAW KIT	**05**
2		PCB FABRICATION OF SMALL CIRCUIT WITH ITS LAYOUT	**10**
3		SOLDERING AND DE-SOLDERING EXERCISES USING DISCRETE COMPONENTS AND IC'S FOR A SPECIFIC CIRCUIT REQUIREMENT	**20**

MP & MC Lab Kits for ECE department:

Sl. No.	Name of the item	Specifications	Qty
1	**8086 Microprocessor Trainer Kit (LCD Version)**	**8086 Microprocessor Trainer Kit (LCD Version)** With 16 X 2 Lines LCD Display and External (PC) ASCII Keyboard.(With on board Assembler and Disassembler) With Power supply (5V, 1.5A; +/- 12V, 0.1A) Features:- CPU@ 5 MHz in MAX Mode with provision for 8087 coprocessor, Max Memory of 256 Kb of EPROM and 256 KB of RAM, system is Supplied with 128 KB of EPROM and 64 KB of RAM, Three 16 bit Timer / counter using 8253, 48 I/O lines using Two no's of 8255, one RS 232 Using 8251, one PIC using 8259. All address, data and control signals are terminated Model and Make: ALS SDA86MEL	05
2	**8031/51 Micro controller Trainer Kit (LCD Version**)	**8031/51 Micro controller Trainer Kit (LCD Version**) with 16 X 2 Lines LCD Display & External ASCII Key board With Built in HELP Menu with ON BOARD LINE ASSEMBLER AND DISASSEMBLER with Power Supply Rating (+5V/1.5A, +/-12V / 0.1A) Features CPU @ 11.0592 MHz with Maximum memory of 128 KB 64 KB EPROM and 64 KB Ram 48 TTL I/O lines using 2 no of 8255's Three 16 Bit Timer using 8253 On-chip port lines and signals INT0, INT1, T0, T1 terminated. All bus signals terminated in FRC connectors Note: System is Supplied with 32 KB of EPROM and 64KB of RAM Model and Make: ALS SDA 51MEL	05
	OPTIONAL ACCESSORIES FOR 8051 TRAINER KITS		
a	26 Core Cable for INTERFACING		05
b	50 Core Cable		05
c	RS 232 Cable		05
d	8051 communication Package		05

Interfacing Kits with Micro Processor and Microcontrollers:

Sl. No.	Name of the item	Specifications	Qty
1	Interfacing Kits	ALS-NIFC-01ASingle Stepper motor Interface (Interface Card and one Motor)	02
		Power Supply for above Module (5V, 1A)	02
2		ALS-NIFC-06A Dual DAC Interface Module	02
3		ALS-NIFC-07A 8 Bit ADC Interface Module	02
4		ALS-NIFC-09 Key Board Display Interface Module	02
5		ALS-NIFC-11Traffic Light Interface Module	02
6		ALS-NIFC-12 LCD Interface	02
7		ALS-NIFC-15 8255 Study Card interface	02
8		ALS-NIFC-17 Elevator Interface	02
9		ALS-NIFC-19 Real Time Clock Interface Module	02
10		ALS-NIFC-21 8251/8253 Study card interface	02
11		ALS-NIFC-24 8279 Study card interface	02
12		ALS-NIFC-26 8031 Study card interface	02
13		ALS-NIFC-27 ADC – DAC Interface Module	02
14		ALS-NIFC-34 8259Study card interface	02

Sl. No.	Name of the item	Specifications	Qty
	CPLD/FGPGA		
1	**ALS-SDA-CPLD/FPGA-01** **UNIVERSAL CPLD/FPGA Trainer Kit**	**ALS-SDA-CPLD/FPGA-01** **UNIVERSAL CPLD/FPGA Trainer Kit** **BASE BOARD** 16/32 Toggle switches for I/P selection with 16/32 LED's To indicate switch status. 16/32 LED's to connected to output ports of the FPGA. Two line X 16 Alpha-Numeric LCD display with backlight Four digit 7-segment display.4X4 key matrix.2. nos. of push button switches.On board 10MHz oscillators.10 MHz clock and one of four different clocks(5MHz, 1 MHz, 500 KHz and 100 KHz).User I/O available for pattern generator and logic Analyzer connection.Standard VGA, PS-2 and RS-232 serial interfaceConnectors are provided. On-board different supply voltage generator to match The multi-volt with LED indication. FPGA/CPLD of different makes (1.8V,2.5V, 3.3V,5V)With LED's to identify the card type. 26-pin FRC cable for connecting to ALS standard Interface boards like stepper motor, ADC, DAC, Traffic Light controller, Elevator, printer interface etc. Four sets of 20 X 2 female berg connectors to plug the child card.	05
2	**DAUGHTER BOARD-1**	FPGA XC3S50 MODULE (XILINX) XILINX XC3S50 – FPGA IC OPTIONAL 1 MB ROM for stand alone programming Push-button switch to re-initialize the FPGA.Power from the bottom board,Four sets of 20 X 2 berg connectors for plugging on to The main board. JTAG connector for boundary scan programming. Mode selection jumpers.	05
3	**DAUGHTER BOARD-2**	CPLD XC9572 MODULE (XILINX) XILINX XC9572 PC84 – CPLD IC Power from the bottom board,Four sets of 20 X 2 berg connectors for plugging on to The main board. JTAG connector for boundary scan programming. Mode selection jumpers.	05

Sl. No.	Name of the item	Specifications	Qty
4	**DAUGHTER BOARD-4**	XILINX FPGA XC3S400 with NVROM	05
5	**XILINX USB DONGLE**	**XILINX USB DONGLE**	05
6	**DONGLE WITH CABLE**	**DONGLE WITH CABLE**	05
7	**POWER SUPPLY (5V, 1.5A, +/-12V, 100mA)**	**POWER SUPPLY (5V, 1.5A, +/-12V, 100mA)**	05

DSP Kit

Sl. No.	Name of the item	Specifications	Qty
1.	**DSP STARTER KIT (DSK) TMS320C6713 WITH CCS***	**DSP STATER KIT FOR THE TMS320C6713 HARDWARE FEATURES**: Texas Instrument's TMS320C6713 DSP operating at 225 MHz Embedded USBJTAG controller with plug and play drivers, USB cable included TL V320AIC codec 2M x 32 on board SDRAM 512K bytes of an board Flash ROM 3 Expansion Connectors (Memory Interface, Peripheral Interface & Host port Interface) On Board I EE 1149.1 JTAG connection for optional emulator debug. Four 3.5mm audio jacks (micro phone, line-in, speaker, and line out) 4 user definable LEDS 4 position dip switch, user definable +5 Volt operation only, power supply included Size : 8.25" x 4.5" (210 x 115mm), 0.062 thick, 6 layers Compatible with Spectrum Digital DSK wire wrap prototype card. SOFTWARE FEATURES: TMS320C6713 DSK Specified Code Composer Studio from TEXAS instruments Test/Sample Code provided to reduce coding time.	05

Software:

Sl. No.	Name of the item	Specifications/ Description	Qty
1.	Softwares	Xilinx Vivado Design Suite (25 user pack)	01

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ANNEXURE-I

TECHNICAL BID FORMAT

VI. MECHANICAL ENGINEERING SUBJECT EQUIPMENT:

Sl. No.	Name of the item	Specifications			Qty
1.	***Vertical drilling machines***	Machine Capacity (mm)	-	25mm	01
		Column Diameter(mm)	-	92mm	
		Center of spindle to column (mm)	-	250mm	
		Distance spindle to Table (mm)	-	645mm	
		Distance spindle to Base (mm)	-	1000mm	
		Distance from spindle center to pillar surface	-	250 mm	
		Table Travel	-	480mm	
		Spindle Nose	-	MT-3	
		Spindle Travel (mm)	-	250mm	
		Range of Spindle speed (RPM)	-	70-2000	
		No.fo spindle speed	-	8	
		Table size (mm)	-	350 Dia	
		Base size (Machined area) (mm)	-	255x310 mm	
		V-Belt Section (mm)	-	B-51	
		Height with ground (mm)	-	1780mm	
		Main Electrical Motor	-	1HD	
2	***UNIVERSAL MILLING MACHINE***	Face of Body	-	7"	
		Surface of Table	-	32 x 7"	
		Size of tee slots	-	1/2"	
		No. of tee-slots	-	3	
		Size of either side of center	-	45"	
		Cross	-	6"	
		Vertical Traverse	-	13'	
		Longitudual traverse	-	15"	
		Standard Arbor	-	1"	
		Taper of Spindal	-	M.T.3	
		No.of Spinle speed	-	6	
		Range of Spindal speed	-	60 to 545	
		Die of Spindle	-	2"	
		No.of Longitudinal feed	-	2	
		Electricals	-	1 h.p	
		Coolant tank capacity	-	2 Gallons	
		Floor shape	-	27" x 18"	
		Height	-	58"	

Sl. No.	Name of the item	Specifications				Qty
3	***LIGHT DUTY LATHE***		**CAPACITY**			**02**
		1	Height of center	-	165mm	
		2	Swing over slide	-	180mm	
		3	Swing over bed	-	320mm	
		4	Swig in gap	-	580mm	
		5	Admit Between	-	685mm	
		6	Length of bed	-	1370mm	
		7	Width of bed	-	240mm	
			HEAD STOCK			
		1	Hole Through the spindle	-	40mm	
		2	Taper Bore in spindle	-	MT-5	
		3	Spindle Nose & Size	-	6T.P.I	
		4	Range of spindle speed	-	40 to 950 RPM	
		5	Spindle speed	-	8	
			TREADS PITCHIES			
		1	Metric Treads	-	1 to 6 mm	
		2	Inches treads	-	4 to 24 TP.M	
			LEAD SCREW			
		1	Diameter	-	25.4mm	
		2	Treads	-	4TPM	
			TAIL STOCKS			
		1	Tapper born in sleeve	-	MT-3	
		2	Sleeve travel	-	125mm	
		3	Sleeve dia		38mm	
			CARRIAGE			
		1	Compound slide swivelling degree	-	45-0-45	
		2	Cross slide siz travel	-	175mm	
		3	Cross slide siz size	-	150MM X 350 MM	
		4	Top slide travel	-	10mm	

- Note: 10% of Dimensional variation is permissible for all above equipment.

Ten.No. 05/EEE/MGU/NLG/2017-18 Date:05.10.2017

ANNEXURE-I

TECHNICAL BID FORMAT

VII. Lab Equipments for EEE:

Sl. No.	Name of the item	Specifications	Qty
	POWER ELECTRONICS LAB		
1	**CHOPPER DRIVE** Note: For smooth conduction of this experiment all the required accessories should be supplied.	Speed Control of Separately Excited DC Shunt Motor using Four-Quadrant Chopper:- Four quadrant chopper drive – 24V: **IGBTs based 4 quadrant chopper power circuit consists of 4 IGBTs ratings.** ➢ IGBTs ratings Current: 20A - I_A, Voltage: 1200V – V_{AK}. ➢ Protection for high voltage(RCsnubber) & short circuit(fuse). ➢ Each device is mounted on proper heat sink. ➢ An ammeter is provided to record the load current. ➢ A voltmeter is provided to record load voltage. ➢ All the terminals are brought out to front panel. ➢ Four isolated gate signals are provided for IGBTs. ➢ Frequency & duty cycle of the chopper can be set by the keyboard provided. ➢ Frequency & duty cycle of the chopper can be displayed on the LCD display. ➢ Test points are provided on the front panel. ➢ One On/Off switch with indicator provided to control circuit. ➢ Housed in a metal cabinet with terminals brought to front panel. **Motor:** Rating : 18 watts Voltage : 24V Current : 2A Speed : 1500 RPM Load : Mechanical arrangement. The Required Accessories are i) DC Regulated Power supply-30V/2A (Single output) ii) Digital Tachometer(Non Contact)	**01**

Sl. No.	Name of the item	Specifications	Qty
2	**V/F CONTROL OF AC DRIVE.** Note: For smooth conduction of this experiment all the required accessories should be supplied.	**Three phase IGBT based PWM inverter with V/F control module 230V/3A:-** **This setup consists of** **3Ph. IGBT based PWM inverter** with V/F control method. Micro controller based driver circuit with LCD display .Provision for vary duty cycle and frequency. Opto coupler based isolation circuit to drive 6 IGBTs connected as 3-ph. PWM Inverter. Power circuit consists of 6 IGBTs mounted on heat sink and snubber circuit and fuse protection Input 230VAC through isolation transformer with MCB. Rectifier and capacitor filter. **Rating of Power circuit-230V/3A.** **Accessories :-** **a) Three phase induction motor-0.5H.P.-230V** **b) Digital tachometer(non contact)** **c) Single phase isolation transformer:** **Primary:0-230V,sec:0-230V /3Ampswith tapings**	01
3	**SINGLE PHASE INVERTER WITH R AND RL LOAD.** Note: For smooth conduction of this experiment all the required accessories should be supplied.	**Single phase IGBT based PWM inverter -30V/2Amps:-** This experimental setup requires i).Single phase PWM inverter – IGBT BASED. ii).Regulated DC power supply – 30V/2A. iii).Rheostat and Inductor **i) Single phase PWM inverter - IGBT BASED-30V/2A :-** **Features Required:** a) Microcontroller based control circuit to accurately vary the pulse width. b) The following PWM technique needs to be studied :- i. Single pulse modulation. ii. Multiple pulse modulation. iii. Sine triangle modulation. iv. Trapezoidal modulation. v. Staircase modulation. c) LCD display (2line x 16 characters) to indicate the parameters and type of modulation. d) Key board consists of 5 keys – SET, INC, DEC, FREQ/D.CY and RUN/STOP to vary and set the parameters. e) The frequency can be varied from 20Hz to 100Hz. The duty cycle can be varied from 0 to 100%. Carrier frequency – 9 pulses per each half cycle. f) Opto coupler based isolation/driver circuit to drive 4 IGBT's connected as 1 – phase full bridge inverter. g) The power circuit consists of 4 IGBT's with builtin reverse diodes of rating 19A/600V. All the devices are mounted on proper heat sinks and protected by snubber circuit and fuses. **ii).Regulated DC power supply 30V/2Amps.** **iii).Rheostat 100 Ohms/2Amps.** **Loading Inductor-150mH/2Amps**	01

Sl. No.	Name of the item	Specifications	Qty
4	**Study of 1 KVA UPS and SMPS for variable voltage with constant load, constant voltage with variable load.**	**Study of 1 KVA UPS and SMPS for variable voltage with constant load, constant voltage with variable load.** **A)SMPS kit :MOSFET-12V** SMPS kit based on Power MOSFET based fly back converter. Consists of Power transformer, a Power MOSFET, diode rectifier, A capacitor filter and Builtin load resistors. Accessories :- DC regulated power supply 30V/2A.(single) **B) Study of 1 KVA UPS**	**01**
5	**Consumables**	Triac, Diac, SCR, MOSFET, Transistors, Resistors, Inductors.	**20 each different type**
		Digital Hand held Multimeters Bread Board Trainer kits.	**05**
6	**30 MHz , Dual Trace Oscilloscope.**	30 MHz , Dual Trace Oscilloscope.	**02**
7	**0 to 30V, 0 to 2A Dual DC**	0 to 30V, 0 to 2A Dual DC Regulated Power Supply with 2 Digital Meters calibrated to the standards.	**02**
8	**Servo controlled voltage stabilizer 5KVA.**	Servo controlled voltage stabilizer 5KVA.	**02**
	CONTROL SYSTEMS LAB		
1	**FREQUENCY RESPONSE OF COMPENSATING NETWORK.** Note: For smooth conduction of this experiment all the required accessories should be supplied.	**Lag-Lead network study unit:-** This unit consists of the following: Sine wave generator – 50Hz – 1.0KHz. Microcontroller based LCD display to display the frequency/phase angle meter with lead/lag indication. A digital voltmeter is provided to measure the Vpeak of Network input & Network output to calculate gain. Different values of resistors & capacitors supplied along with this unit to connect in Lead – Lag Network.	**01**

Sl. No.	Name of the item	Specifications	Qty
	CONTROL SYSTEMS LAB		
2	**STEP RESPONSE AND FREQUENCY RESPONSE OF GIVEN PLANT.** Note: For smooth conduction of this experiment all the required accessories should be supplied.	**A) Step Response of given plant:-** Time response of Second order system study unit:- This Second Order system is using Op – amps and R, L and C. Built in signal source – square and DC. Damping factor – 0.3, 0.7, 1 and 2. Time constants – 3 msec and 5 msec for second order system using Op amp. Damping factor vary from 0 to 2 for second order system using RLC. Mains operated. **B) Frequency response of a given plant:-** Frequency response of Second Order Systems study unit:- This unit consists of the following items: Sine wave generator – 50Hz – 1.0KHz. Microcontroller based LCD display to display the frequency/phase angle meter with lead/lag indication. A digital voltmeter is provided to measure the Vpeak of Network input & Network output to calculate gain. RLC components with variable R to vary the Damping factor from 0 to 2 to study frequency response of second order system using RLC. Mains operated.	**01**
3	**A.C and D.C Position control Systems** Note: For smooth conduction of this experiment all the required accessories should be supplied.	This set up consists of A). AC Servo Motor set up with Power Module One numbers of AC Servo Motor with mechanical load set up and position sensor (SERVO POT) for motor position measurement and feed back 2 Phase AC servo Motor with Gear ,24VDC - 24VAC , 1500/50 RPM on gear side ,2kg /cm Power Module consists of TRIAC based DC-AC Chopper power circuit for Bi directional rotation with necessary over load protection. In built 24v ac source for power circuit input. • PWM Isolator Pulse driver circuit is provided • Digital controller for chopper PWM generation • LCD display for set position and Motor actual position indication (10-350 degree) B). DC Servo Motor set up with Power Module DC Servo Motor with mechanical load set up and position sensor (SERVO POT) for motor position measurement and feed back • Type : PMDC Motor with Gear , Voltage : 24VDC , 1500/50 RPM on gear side , Torque : 2kg /cm • Power Module consists of MOSFET based DC-DC Chopper H-Bridge power circuit for Bi directional rotation with necessary over load protection. In built 24v dc source for power circuit input. • PWM Isolator IC and MOSFET driver ic is provided	**01**

Sl. No.	Name of the item	Specifications	Qty
	CIRCUITS AND MEASUREMENTS LAB		
1.	**Measurement of % ratio error and phase angle of given PT.** Note: For smooth conduction of this experiment all the required accessories should be supplied.	Consists of a Panel Closed type with front Hylam sheet. Aft ht x B ft wd x C mm depth. Standard PTs of Different Ratio. PTs under test of various Ratio 1 Phase Auto Transformer------6 Amps. Phase shifting Transformer --- 1no. Digital Voltmeter-------500 Volts AC----02 no. Analog Panel mounted wattmeter (0-250V, 0.5 Amps) ----02 nos. MCB Protection Neon Indications-------LED. Terminals Patch cords. **Measurement of % ratio error and phase angle of given CT by comparison.** Standard CTs of Different Ratio. CTs under test of various Ratio 1 Phase Auto Transformer------8 Amps. Phase shifting Transformer --- 1no. Digital Voltmeter-------500 Volts AC----01 no. Digital Ammeter--------20 Amps AC-----02 no. Analog Panel mounted wattmeter (0-250V, 5 Amps) ----02 nos. MCB Protection Neon Indications-------LED. Terminals BTI – 30. Patch cords.	**01**
2	**Calibration and testing of single phase energy Meter by phantom loading.** Note: For smooth conduction of this experiment all the required accessories should be supplied.	Consists of a Panel Closed type with front Hylam sheet. Panel size 2ft ht x 4 ft wd x 200mm depth. 1 Phase Auto Transformer------10 Amps. Digital Voltmeter-------300 Volts AC----01 no. Digital Ammeter--------20 Amps AC-----01 no. Analog Panel mounted wattmeter (0-500V, 10 Amps) Energy meter single phase R- Load MCB Protection Neon Indications-------LED. Terminals Patch cords.	**01**

Dept., of EEE:

Sl. No.	Name of the item	Specifications	Qty
3	Measurement of 3 phase power with single watt meter and 2 NO'S of C.T Note: For smooth conduction of this experiment all the required accessories should be supplied.	**Measurement of 3 phase power with single watt meter and 2 NO'S of C.T** Consists of a Panel Closed type with front Hylam sheet. 2ft ht x 4 ft wd x 200mm depth. 3 Phase Auto Transformer------8 Amps. Digital Voltmeter-------500 Volts AC----01 no. Digital Ammeter--------20 Amps AC-----01 no. Wattmeter----------600V, 10A, UPF---01No. Load bank MCB Protection Neon Indications-------LED. Terminals BTI – 30. Patch cords.	**01**
4	Measurements of Iron losses by Lloyd Fischer square method.	All the accessories to conduct this experiment	**01**
5	Calibration of Ammeter and voltmeter by DC Crompton's potentiometer	All the accessories to conduct this experiment	**01**
	ELECTRICAL MACHINES LAB		
1	**Three phase Auto transformer.**	Three phase Auto transformer. 0-470V/8Amps.	**02**
2	**Single phase auto transformer.**	Single phase auto transformer. 0-270V/8Amps.	**02**
3	**Digital Tachometer**	Digital Tachometer hand held type.	**02**
4	**Single Phase Resistive load bank.** **Qty 2No.**	Single Phase Resistive load bank. Qty 2No. Voltage: 230Volts. Current: 5 Amps. Max power: 1.2KW No. of steps: 3 steps.	
5	**Digital Hand Held Multi meter.**	Digital Hand Held Multi meter.	**02**
6	**Electrical Tool kit.**	Electrical Tool kit.	
7	**Soldering Tool Box.**	Soldering Tool Box.	
8	**Connecting Wires (Wound)**	Connecting Wires (Wound)	

Sl. No.	Name of the item	Specifications	Qty
	DSP LAB		
1	**Stepper Motor Control using DSP trainer kit** Note: For smooth conduction of this experiment all the required accessories should be supplied.	Stepper Motor Control using DSP trainer kit **This set up needs** a. MOSFET Power Circuit b. DSP based PWM Controller c. Stepper motor set up. **Detailed specifications:** **MOSFET Power Circuit-** 4 numbers of IRF250 MOSFET based power circuit / 24Vdc @ 2A, / With proper heat sink / power Diode with filter capacitor for AC-DC Conversion / Built In driver circuit / OPTO IC is provided for all PWM isolation / MOSFET outputs are terminated in banana connector – Specifications- Input- 24VAC, Output – @ 2A ratings suitable for 4 phase stepper motor **DSP based PWM Controller** This controller needs TMS320FC2812/TMS320F28335 based controller from "TI" for Motor control applications and this controller can be used to generate PWM Signals for SCR, IGBT based power electronics application like BLDC Switched Reluctance Motor (SRM) control application. PWM output of this controller can be interfaced with IGBT Power Module through External cable connection 12 Numbers of PWM Outputs up to 20KHZ of switching frequency b) 32 bit fixed point high speed processor c) 150 MHZ Clock frequency d) Built in 128 K X16 Flash & 256 X16K SRAM , 4 X 16K BOOT ROM e).USB - PGM Down loader f).2 Bit / 6 Channel ADC input g)QEP Sensor /Hall sensor/Speed sensor(Proximity)Interface h)PWM increment & decrement key i)Reset switch & LED's for Sensor status j) 20 X 4 LCD Connector k) PWM outputs are terminated by 34 pin FRC Connector **Stepper Motor**- 6kg stepper motor /4 phase unipolar / 6v or 12v / sensor for closed operations / with spring balance load set up	01

Sl. No.	Name of the item	Specifications	Qty
	DSP LAB		
2	**Brushless DC Motor controlling using DSP trainer kit** Note: For smooth conduction of this experiment all the required accessories should be supplied.	This set up needs **a. DSP based PWM controller** **b. IGBT Power Module** **c. BLDC Motor set up (1hp)** **a. DSP based Microcontroller based PWM Controller** This PWM controller needs Dspic30f4011 controller chip specially designed for Power Electronics & Motor control applications and this controller can be used to generate PWM Signals for SCR, IGBT based power electronics application like DC-AC Inverter ,DC-DC Chopper & SCR converter based AC/DC/BLDC Switched Reluctance Motor (SRM) control application. PWM output of this controller can be directly interfaced with Power Module through External cable connection. **Features** i).High-Performance Microchip dsPIC30F4011 Microcontroller with 48kb Internal Flash Program Memory ii) 6 Numbers of PWM Outputs up to 15KHZ of switching frequency iii) RS232 Connection with MAX232 , Internal EEPROM , Five 16-bit Timers ,Programming and Test LED's , 2MB PROM & 24 Mhz clock speed , USB - PGM Down loader , 6 Numbers of ADC input iv). QEP Sensor /Hall sensor/Speed sensor(Proximity)Interface , PWM increment & decrement key v) Reset switch & LED's for Sensor status , 20 X 4 LCD screen vi).PWM outputs are terminated by 34 pin FRC Connector **b. IGBT power module (Voltage source Inverter)** i) IGBT based Smart Power Module (SPM) based Voltage source inverter ii) Six numbers of IGBT in a single chip, Ratings @ 600V @ 20A,/**Model FSBB20CH60B** iii) Device is fixed With proper heat sink for cooling iv). Single phase Diode rectifier (35A , 600V) with filter capacitor is provided for AC-DC Conversion v).Built In IGBT driver circuit & OPTO-IC provision is for all PWM isolation vi)Hall effect current sensor is provided for output AC/DC current measurement and Hall effect current sensor is provided for input DC current measurement vii). Over current trip circuit is provided with trip status indicator, External RESET switch is provided for Trip clear.&MCB provided for input power ON/OFF viii). IGBT outputs and AC inputs are terminated in banana connector **c. BLDC Motor with spring balance load set up** **Type** BLDC Motor **Power** 1 hp **Voltage** 300VDC- **Speed** 1800 RPM **Feedback sensor** 3 Number of Hall sensor **Loading** spring balance loading **Spring balance loading** • One number Brake DRUM with spring balance set up is coupled with the above motor Two numbers of dial indication (0-10kg) for Load measurement in Kg	**01**

Dept., of EEE:

Sl. No.	Name of the item	Specifications	Qty
	Three phase Induction motor speed control using DSP trainer kit Note: For smooth conduction of this experiment all the required accessories should be supplied.	This set up consists of 1. DSP based PWM Controller 2. IGBT Based Voltage source inverter 3. 3Ø AC Motor set up **1. DSP based PWM Controller** **Features** • 12 Numbers of PWM Outputs up to 20KHZ of switching frequency • 32 bit fixed point high speed processor • 150 MHZ Clock frequency • Built in 128 K X16 Flash & 256 X16K SRAM , 4 X 16K BOOT ROM • USB - PGM Down loader • 12 Bit / 6 Channel ADC input • QEP Sensor /Hall sensor/Speed sensor(Proximity)Interface • PWM increment & decrement key • Reset switch & LED's for Sensor status • 20 X 4 LCD Connector • PWM outputs are terminated by 34 pin FRC Connector **2. IGBT Based Voltage source Inverter** • IGBT based Smart Power Module (SPM) based Voltage source inverter • Six numbers of IGBT in a single chip, Ratings @ 600V @ 20A,/**Model FSBB20CH60B** • Device fixed With proper heat sink for cooling • Single phase Diode rectifier (35A , 600V) with filter capacitor is provided for AC-DC Conversion • Built In IGBT driver circuit & OPTO-IC is provided for all PWM isolation • 3 numbers of Hall effect current sensor is provided for output AC/DC current measurement • One numbers of Hall effect current sensor is provided for input DC current measurement • Over current trip circuit is provided with trip status indicator • External RESET switch is provided for Trip clear. • MCB provided for input power ON/OFF • IGBT outputs and AC inputs are terminated in banana connector **3.AC Motor set up Specifications-** Input- 230VAC, Output – 0-300V DC @ 5A or 1 Phase 200VAC@ 5A suitable for 1 hp AC motor	**01**
	Note	All DSP trainer kits should provide with code composer studio software latest version. **ALL** kits should be programmed so that Experiments like Waveform generation ,convolution LED interfacing etc can be performed.	

MP&MC Lab for EEE:

Sl. No.	Name of the item	Specifications	Qty
1.	**8086 Microprocessor Trainer kit**	**8086 Microprocessor Trainer kit** With Assembly level programming Using Kit based Assembler/Disassembler In standalone Mode Without PC **Universal Microprocessor/Controller Trainer** ➢ Specifications:- ➢ Universal Mother Board with 128K onboard RAM ➢ On board RTC 58167(socket) optional ➢ On board Speaker interface ➢ RS232c port ➢ 48 I/O lines using 2 Nos 0f 8255 ➢ 8251 USART ➢ 8253 T/C ➢ Mother board should be compatible to 8/16 bit Microprocessor and controller. ➢ LCD display ➢ SMPS Power supply with 5V, +/-12V for above. ➢ PC Keyboard for above. **Optional CPU card Of 8051 With Assembly level programming Using Kit based Assembler/Disassembler In standalone**	01

Dept.of EEE:

Sl. No.	Name of the item	Specifications	Qty
2.	***Peripheral study cards***	***Peripheral study cards for*** ➢ **8253 Periware** **Specification:** It Should have buffers,switches,debounce ckts for software, Single stepping,One 8255 with tags for all I/O ports,Vcc & GND tags.LEDs to display status ➢ **Converter card for connecting Periware card.** Two 50 pin FRC cables to attach for periware ➢ **8279 Periware** **Specification:** It Should have buffers,switches, debounce ckts for software, Single stepping of every access to the 8279 card and LEDs to display status. Switch S1 is used to enable single stepping or to keep CPU in free running mode and ➢ **Converter card for connecting Periware card.** Two 50 pin FRC cables to attach for periware ➢ **8251 Periware** **Specification**: It consists of buffers, switches, debounce circuits for software Single Stepping, one 8251 with tags for all the required input output pins, Vcc & Ground tags, LEDs to display status ➢ **Converter card for connecting Periware card.** Two 50 pin FRC cables to attach for periware ➢ ***8255 I/O study Card*** **Specifications:** It consists of buffers with tags for all I/O ports, VCC & GND tags, LEDs to display status.	01

Sl. No.	Name of the item	Specifications	Qty
3.		*Different Sample programs provided along with each peripheral model for studying its different modes.* ➢ *8**-bit ADC/DAC Card*** ***Specification:*** *8 bit 8 channel ADC & 8 bit DAC (0-5V)* ➢ ***Traffic light controller*** *and logical I/O Interface card* ***Specification:*** *Traffic Light of 2 intersections with 24 LEDs and tags* ➢ *7* ***segment Display*** ***Specification:*** *Scanning Techniques illustrating 8X8 LED Matrix,4X4 Keypad 7 segment 8 digit red LED display study card* ➢ ***Stepper motor /Dc motor*** *combined interface card.* **Specification:** Stepper motor and 12V DC motor Interface card with motors mounted to illustrate speed, direction control.	01
4.		***Cables and Connectors*** RS 232 Cable , 26 Pin FRC and USB to serial Dongle	

MATLAB SOFTWARE

Sl.No.	Product Code	Description	Qty
1	ML	MATLAB	30
2	SL	Simulink	30
3	AA	Antenna Toolbox	30
4	CM	Communications System Toolbox	30
5	CT	Control System Toolbox	30
6	DS	DSP System Toolbox	30
7	GD	Global Optimization Toolbox	30
8	IP	Image Processing Toolbox	30
9	NN	Neural Network Toolbox	30
10	OP	Optimization Toolbox	30
11	SG	Signal Processing Toolbox	30
12	SS	Simscape	30
13	PS	Simscape Power Systems	30
14	SD	Simulink Control Design	30
15		Simscape Electronics	30

Ten. No.05/Engg.Physics/MGU/NLG/2017-18 Date: 05.10.2017

ANNEXURE-I

TECHNICAL BID FORMAT

VIII. ENGINEERING PHYSICS LAB

SI. NO	NAME OF THE EXPERIMENT	SPECIFICATIONS	QTY
1	**p-n Junction Diode**	Variable DC regulated power supply 0-15 V On board Silicon and Germanium diodes Dual range DC Volt meter of 1.5V/15V Dual range DC Ammeter of 250 µA/25mA Different values of three resistors on board	**03**
2	**Photo Cell / Planks constant**	Complete set with power supply, variable light source and 5 different filters.	**02**
3	**Solar Cell**	Variable light source built in digital voltmeter and ammeters with 20V and 2000mA ranges respectively. Different values of resistors and one potentiometer and different output variable light source.	**02**
4	**Thermister**	Variable DC regulated power supply 0-5V One Galvanometer on board One thermistor and 1KΩ potentiometer with calibrated dial on board.	**02**
5	**Energy gap of semiconductor**	Supply calibrated to multi turn potentiometer, Analog meter, Oven and Thermo meter.	**02**
6	**Dielectric constant of a dielectric material**	With inbuilt capacitance meter , Brass Discs on stand ,with specimen samples ,plywood , glass etc.	**01**
7	**Hall effect**	Hall Probe (Ge Crystal,Mounted on aPCB), Electromagnet 10,000 Gauss, Constant Current Power Supply with 2 digital meters. Digital mV 0 to 200 mV sensitivity ±0.1mV auto polarity. Digital mA -0-20mA, sensitivity ±0.01mA Digital Gauss meter with Hall probe, 20KG Two wooden stand for probes.	**01**

Sl. No.	NAME OF THE EXPERIMENT	SPECIFICATIONS	Qty
1	p-n Junction Diode	Variable DC regulated power supply 0-15 V On board Silicon and Germanium diodes Dual range DC Volt meter of 1.5V/15V Dual range DC Ammeter of 250 µA/25mA Different values of three resistors on board	03
2	Photo Cell / Planks constant	Complete set with power supply ,variable light source and 5 different filters .	02
3	Solar Cell	Variable light source built in digital voltmeter and ammeters with **20V** and 2000Ma ranges respectively. Different values of resistors and one potentiometer and different output variable light source.	02
4	Thermister	Variable DC regulated power supply 0-5V One Galvanometer on board One thermistor and **1KΩ** potentiometer with calibrated dial on board.	02
5	Energy gap of semiconductor	Supply calibrated to multi turn potentiometer, Analog meter, Oven and Thermo meter.	02
6	Dielectric constant of a dielectric material	With inbuilt capacitance meter , Brass Discs on stand ,with specimen samples ,plywood , glass etc.	01
7	Hall effect	Hall Probe (Ge Crystal, Hall Probe (InAs), Hall Effect Set-up (Digital) DHE-21. Electromagnet, Model EMU-75 or EMU-50V. Constant Current Power Supply, DPS-175 or DPS-50. Digital Gauss meter, DGM-102	01

ANNEXURE-I

TECHNICAL BID FORMAT

IX. Engineering Chemistry:

ENGINEERING CHEMISTRY LAB

SI. NO.	NAME OF THE ITEM	SPECIFICATIONS	QTY
1	**Colorimeter**	**Wavelength Range:** 400 to 700 nm with 8 optical filters **Filter's Peak Wavelength (nm):** 420,440,490,520,540,570,600,720 **Measuring Modes:** %T, ABS **Sample Volume (min):** 1 ml in 4 ml test tube **Source:** LED **Detector:** Photodiode **Display:** Digital LED **Resolution:** 1 %T, 0.01 ABS **Power:** 230V ±10%, 50Hz, 10VA (Approx) **Dimensions:** 160(W) X 200 (D) X 100 (H) mm **Weight:** 1.5 kg (Approx) **Accessories:** Four matched flat bottom test tubes	04
2	**Conductivity meter**	**AC Source:** 100 Hz or 1 KHz approx Conductivity Range: 0-200mS in 5 ranges Measuring Accuracy: ± 1% of FS, ± 1 count in all ranges Conductivity Cell: Approx. 1.0 Cell Constant Cell Constant: 0.9 to 1.1 is acceptable Manual Temp Range: 0 to 100^0C Display: 3-Digit 7 seg LEDs Power: 230 V ± 10 %, 10VA (approx) Dimension: 235 (W) X 185 (D) X 85 (H) mm Weight: 1.25 Kg (Approx) Accessories: a. Conductivity Cell of 1.0 CC b. Clamp / Stand	04

Sl. NO.	NAME OF THE ITEM	SPECIFICATIONS	QTY
3	**pH & Potentiometer**	**pH & Potentiometer** pH Range: 0 to 14 Resolution: 0.01 Accuracy: ± 0.01 Repeatability: ± 0.01 Stability: ± 0.05 in 8 hrs EMF in mV Range: ±1999 Resolution: 1 Accuracy: ± 0.1% of fs or ± 2 Repeatability: ± 1 Input Impedance: >1012 Ohm @ 25o C Receptacle: BNC Asymmetric Potential Correction: ± 100 mV with 1 turn potentiometer Temp. Compensation: 0 to 100oC Readout: 3.5 Digit 7 seg LED of 12.7 mm Power : 230 V ±10%, 50Hz, 1ϕ, Max. 15 VA Size (WXDXH): 295 X 165 X 140	**07**
5	**Digital Stopwatches**	LED Display with (Hrs: Min: Sec) format	**10**

Ten. No.05/Lib.Fur./MGU/NLG/2017-18 Date: 05.10.2017

ANNEXURE-I

TECHNICAL BID FORMAT

Furniture for University Library

Sl. No.	Name of the Item	Specifications	Qty
1	Books shelves, **Wooden**	Made in 18mm pre laminated particle board having all sides edge banded with open shelves. **Singlefaced 900Lx450Dx1825H mm**	01
2	Flexi Rack Two Way	Sides made in 18mm pre laminated particle board having all sides edge banded with five compartments, five adjustable shelves & fifty book separators made in powder coated MS CRCA sheet. Size: 4500 L x 650 D x 1900 H	01
3	Flexi Rack Two Way	Sides made in 18mm pre laminated particle board having all sides edge banded with two compartments, five adjustable shelves & twenty book separators made in powder coated MS CRCA sheet. Size: 1800 L x 650 D x 1900 H	01
4	Reading TableTwo Way Four Seated	Made in 18mm pre laminated particle board having all sides edge banded .Middle Partition: 18mm thick x 1200mm Height Size: 1600 L x 1200 D x 750	01
5	Reading Module	Made in 18mm pre laminated particle board having all sides edge banded Partition: 18mm thick x 1200mm Height	
		Two seats: size:1600Lx600Dx750/1200H mm	01
		Three seats: size:2400Lx600Dx750/1200H mm	01
6	Journals Rack (12)	Made in 18mm pre laminated particle board having all sides edge banded with 12 flap doors. 1200Lx420Dx1140H mm	01
7	journals Rack (16)	Made in 18mm pre laminated particle board having all sides edge banded with 16 flap doors &two drawers. 1200Lx420Dx1870H mm	01
8	Set of Reception Table and side table	Top made in 25mm & U/s made in 18 mm prelaminated particle board having all sides edge banded with keyboard tray, one drawer & one door. 06mm Aluminium T strips on modesty. Size 2350Lx600DX750/1150H mm	01
		Side Table : Top made in 25mm &U/s made in 18mm pre laminated particle board having all sides edge banded with two drawers & two doors. Size : 900Lx450Dx750H mm	

9	Office tables and Side Table	Top made in 25mm & U/s made in 18mm pre laminated particle board having all sides edge banded with three drawers & 08mm plain glass on top. **Size**:1800Lx900Dx750H mm Side Table : Top made in 25mm & U/s made in 18mm pre laminated particle board having all sides edge banded with two drawers and two doors. And 08 mm plain glass un top Size:900Lx450Dx750H	1 1
10	Office Chair	Medium Back revolving chair with cushion seat, Nylon net on back, P.V.C arms & gas lift.	1
11	Visitor Chair	chair with cushion seat and back, soft handles & frame made in MS Pipe.	1
12	Visitors Sofa	Three Seater Chrome plated Bench with handles. Size: 1800 L x 680 D x 800 H Seat width: 520mm	1
13	Round Table	Made in 18mm pre laminated particle board having all sides edge banded. **Size:** Ⓓ 1200x750H	1
14	Shopping Trolley	Load Capacity 50 kg, Material Stainless Steel, Mild Steel Feature ,Foldable, Height Adjustable,	1
15	Rotary filing unit	Rotary Filing Rack - load capacity50kg, height1930	1
16	Book cart	Made in 18mm pre laminated particle board having all sides edge banded with open shelves and wheels. **Size:**900Lx450Dx900H	1
17	Display and direction boards		Each item rate
18	Circulation counter(Books Issue and return) Design has to submit.	Front table made in 18mm post laminated commercial ply wood having all sides edge banded with 2 key board trays, 12 mm glass curved vertically fitted and Black granite on top. Size:4070Lx800Dx750/1250H - 01No. Side Table 18mmpost laminated commercial ply wood having all side edge banded with three doors, one key board tray and black granite on top. Size:2400Lx600Dx750H 02Nos Back table made in 18mmpost laminated commercial ply wood having all side edge banded with open shelves, and black granite on top. Size:2635Lx600Dx750H 02Nos Flap door size:600Lx600Dx 01N	1
		Barrier Table:Made in 18mm post laminated commercial ply wood having all sides edge banded with 12mm glass fitted vertically Size:1500Lx450Dx750/1200H	1
19	S-Type Chairs with arms	S-Type Chairs with arms- Godrej make	1
20	Fiber Chairs	Fiber chairs seat and back cushion Design/sample has to submit.	1
21	Magazine Display Rack	Made in 18mm post laminated commercial plywood having all sides edge banded with open racks. Size: 900 L x 600 D x 1800 H 	1

Digital Library/ automation Servers and client systems:

Sl.No	Particulars	Configuration	Qty
1	SERVER For Digital Library	1 Server (Brand Model: Lenovo/Dell - Configuration: 8Core Processor E5-2600 v4 Series, 32GB RAM, 4TB HDD, DVD Drive), 21" Monitor.	1
2	SERVER For Library Automation	1 Server (Brand Model: Lenovo/Dell/hp - Configuration: i5 6th Gen, 16GB RAM, 2TB HDD, DVD Drive), 21" Monitor, Keyboard, Mouse.	1
3	Barcode Reader	Wireless Bar Code Readers with display and memory (Stock verification purpose)	1
4	Client system	i3 6th gen 4GB ram 1TB HDD DVD writer 20" Monitor Keyboard and Mouse	10
5	UPS	10KV UPS with at least 4Hrs Backup 20KV UPS with at least 4Hrs Backup	1+1

Note: Kindly send the quotations for **Dell**/ Lenovo/HP brands.

Computers for University

Sl. No.	Name of the item	Specifications/ Description	Qty
1	Computers	**Display Size** 20 inches **Display Resolution** 1600x900 **Display Type** HD, WLED **Processor Brand** Intel **Processor** Intel Core i3 (3rd Generation) **Clock Speed** 2.90 GHz **Operating System** Windows 8.1(OEM Pack) **Processor Model** 3240 T **Cache Memory** 3 MB **MAIN MEMORY** **System Memory (RAM)** 8 GB DDR 3 **MEMORY STORAGE** **Hard Drive** 500 GB **Storage Interface** SATA Hard Drive **Reading speed** 7200 RPM **GRAPHICS** **Integrated Graphic Processor** 1 GB NVidia GeForce 610M **OPTICAL DRIVE** **Drive Type** Tray-load DVD+/- RW **INPUT DEVICES** **Mouse** Yes **Keyboard** Yes **CONNECTIVITY** **Wireless** 1703 802.11b/g/n **USB** USB 2.0	
		Display Size 20 inches **Display Resolution** 1600x900 **Display Type** HD, WLED **Processor Brand** Intel **Processor** Intel Core i3 (3rd Generation) **Clock Speed** 2.90 GHz **Operating System** Windows 8 **Processor Model** 3240 T **Cache Memory** 3 MB **MAIN MEMORY** **System Memory (RAM)** 4 GB DDR 3 **MEMORY STORAGE** **Hard Drive** 500 GB **Storage Interface** SATA Hard Drive **Reading speed** 7200 RPM **GRAPHICS** **Integrated Graphic Processor** 1 GB NVidia GeForce 610M **OPTICAL DRIVE** **Drive Type** Tray-load DVD+/- RW **INPUT DEVICES** **Mouse** Yes **Keyboard** Yes **CONNECTIVITY** **Wireless** 1703 802.11b/g/n **USB** USB 2.0	

Sl. No.	Name of the item	Specifications/ Description	Qty
1	Computers	**DISPLAY** **Display Size** 20 inches **Display Resolution** 1600x900 **Display Type** HD, WLED **Processor Brand** Intel **Processor** Intel Core i3 (3rd Generation) **Clock Speed** 2.90 GHz **Operating System** Windows 8 **Processor Model** 3240 T **Cache Memory** 3 MB **MAIN MEMORY** **System Memory (RAM)** 4 GB DDR 3 **MEMORY STORAGE** **Hard Drive** 500 GB **Storage Interface** SATA Hard Drive **Reading speed** 7200 RPM **GRAPHICS** **In-built Graphic card** **OPTICAL DRIVE** **Drive Type** Tray-load DVD+/- RW **INPUT DEVICES** **Mouse** Yes **Keyboard** Yes **CONNECTIVITY** **Wireless** 1703 802.11b/g/n **USB** USB 2.0	
		1. Operating System : Windows 10 OEM 2. Processor : Intel core i3 Processor. 3. RAM : 4 GB 4. HDD : 500 GB 5. DVD Drive : Read / Write DVD Drive 6. USB Support : Front min 2 no.s and Rear min 6 no.s 7. LAN : Network Facility 8. Monitor : LED 21”	08

Furniture / Equipment for University

Sl. No.	Name of the item	Specifications/ Description	Qty
2	Printers	Printing Type : Black & White Printing Technology : Laser Print Resolution : 600 X 600 dpi (dots per inch) Paper size : A4, A5, A6, B5, C5, DL, Postcard Print Cartridge : Black Warranty : 1 Year	07
3	LCD Projectors	Display type : LCD Light Output : 3200 Lumens Screen coverage : 30 to 300 inches Contrast ratio : 2500:1 Resolution : XGA (1024 x 768) Projector lens : 1.3x Manual Zoom / Manual Focus Features : Digital Keystone Correction, VGA & HDMI Input, Speakers Warranty : 2 Year(s)	10
4	Scanners	Scanner type : Flatbed color Output resolution : up to 1200 x 1200 dpi with CIS sensor Interface : One USB 2.0 Hi-speed port Light source : White LED, IR LED Bed Size : A4, Document Size: A4 Warranty : 1 Year	01
5	Monitors	LED Monitor Display Size: 19 inches (18.5 inch) Input : 1 VGA, Warranty : 3 Year(s)	05
6	Air Conditioners	Tonnage Class :1.5 TR./2.0TR/2.2TR Unit : In Door Unit & Net weight : Out Door Unit & Net weight : Star rating : Fan Speed : 3 Steps Air flow (IDU) Cooling/Heating : (cubic feet per minute) Warranty : Year(s)	06

Furniture / Equipment for University

Sl. No.	Name of the item	Specifications/ Description	Qty
7	UPS	10KV Online UPS with 100 AH/12V sms Batteries 16 No.s 5KV Online UPS with 65 AH/12V sms Batteries 16 No.s 3 KV UPS sms Batteries 8 No.s Each one	**01**
8	Office Table	3x6 size with two sides draws (Godrej make)	**01**
9	Almirah	78''x36''x19'' (Godrej standard)	**03**
10	Servers	1. Operating System : Microsoft ® Windows Server® 2016 Licensed. 2. Type of Product : Rack Server 3. Processor : Intel® Xeon® E5 4. RAM : 32 GB DDR4 RAM 5. HDD : 4 x 1 TB 6. DVD Drive : Read / Write DVD Drive 7. Monitor : LED 21" 8. Key Board : 1 no. 9. Mouse : 1 no. 10. RACK : Standard Rack (for Fixing Rack Server).	**02**
11	MS Windows 2016 Server OS	MS Windows 2016 Server OS	**02**
12	Server RACK with other Accessories	Server RACK with other Accessories	**01**

ANNEXURE-II

FINANCIAL BID FORMAT

#	Name of Lab Equipment with Description/Specification	Qnty. Reqd.	Unit	Unit Rate (inclusive of all duty / taxes **except GST**)	Amount of GST	Total Unit Rate	Warranty period
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

MAHATMA GANDHI UNIVERSITY
NALGONDA

08682- 221904, website-mguniversity.ac.in

INFORAMATION SUPPORTING FOR CAPACITY / CREDIBILITY

1. The bidder should have Digital Signatures so as to enable him to submit his/her bids online through e-tendering.

2. The bidder should be manufacturer/authorized dealer of a manufacturer. He is required to furnish Performance Certificate for the last three years showing turnover of the category of the items for which bid is submitted.

3. The bidder has to produce the proof of supplying the similar items in preceding 3 years to the Technical/Teaching/Research Institution of well known high standard reputed Institutions and other Laboratories etc.

4. The bidder must furnish details of their 10-15 customers reputed institutions with full address, telephone number etc.

5. The bidder must furnish details of some relevant equipments supplies made, like name of the equipments, order number, cost and date of supply etc. during the last financial year.

6. If the bidder is manufacturer, he/she must furnish details of its organization, stating the number of personnel employed, manufacturing facilities, after sales service facilities and quality control systems etc.

7. If the bidder is authorized dealer, he/she must furnish details of its organization, stating the number of personnel employed, tie-ups for after sales service facilities.

8. All the quoted items/equipments should be of standard make.

9. Participating bidder shall pay fee @ i.e 0.03% of ECV +l4 % of Service Tax towards transaction fee on e-procurement at the time of bid submission in favour of M/s Vayam Technologies, Hyderabad by way of Electronic payment Gateway. The transaction fee is not refundable.

REGISTRAR
Mahatma Gandhi University,
Nalgonda

MAHATMA GANDHI UNIVERSITY
NALGONDA

08682- 221904, website-mguniversity.ac.in

GUIDELINES/PROCEDURE TO BE FOLLOWED IN INTRODUCTION OF „E- PROCUREMENT SOLUTION

1. Payment Of Cost Of Tender Documents:- The Tender document can be downloaded from website on payment of Rs.2000/-(Rupees two thousand only) in the form of crossed Demand Draft on any Nationalized Bank drawn in favour of the Registrar, Mahatma Gandhi University, Nalgonda payable at Nalgonda .
   Photo copy of the DD is to be scanned and uploaded along with the bid, and the original DD shall be sent to Registrar, Mahatma Gandhi University, Nalgonda,

2. Tender fee once paid is neither refundable, transferable nor adjustable for other tenders. The tender form is non- transferable and should be purchased in the exclusive name of the party and who has to actually submit the offer.

3. Submission of Bids:- The bidders desirous to participate in „e"-procurement shall submit their price bids in the standard formats prescribed in the Tender documents , displayed at e-procurement.gov.in The bidder should upload the scanned copies of all the relevant certificates, documents etc. at e-procurement.gov.in in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity.

3. Payment of Bid Security (Earnest Money Deposit):- The EMD has been shown in the e-procurement Tender Notice. The EMD shall be in the form of the Demand Draft/Pay order of Nationalized Bank/Fixed Deposit Receipt of a Nationalized Bank issued in favour of Registrar, Mahatma Gandhi University.

   Zerox/Photo copy of the DD/PO/FDR is to be scanned and uploaded along with the bid, and the original DD/PO/FDR shall be sent to Registrar, so as to reach before the date of closing of the bids. Failure to furnish the original DD/PO/FDR before the closing of the bid will entail rejection of bid.

4. Price Bid Opening:- The Price Bids will be opened online by the concerned officer /officers at the specified date & time and the result will be displayed on the e-procurement.gov.in, which can be seen by all the bidders who participated in the tenders. If any of the date earmarked for opening of technical or financial bids happens to be holiday, the bids will be opened on the very next working day.

5. Processing Of Tenders:- The concerned officer/officers will evaluate and process the tenders as done in the conventional tenders and the documents will be communicate to the bidder online.

6. Payment of Performance Guarantee:- The successful bidder shall furnish a FDR for 10% of the value of the cost of the item. In case the performance of the item is not found satisfactory, the performance security will be forfeited.

7. Rules for Financial participation of E-Procurement:- The e-procurement system would be applicable for purchase of goods, outsourcing of services and execution of work as prescribed in General Financial Rules.

8. Clarification/Assistance: -For any query/clarification in respect of Technical aspect of e- procurement contact email: registrar_mgu@yahoo.com

Sd/-
REGISTRAR

MAHATMA GANDHI UNIVERSITY
NALGONDA

08682- 221904, website-mguniversity.ac.in

TERMS AND CONDITIONS

1. Procedure for submission of bids: -

   (i) The bidders desire to participate in "e- procurement shall submit their Technical and Price bids in the standard formats prescribed in the Tender documents, displayed at e-procurement.gov.in .The bidder should upload the scanned copies of all the relevant certificates, documents etc. in the e-procurement.gov.in in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity.

   (ii) Tender shall be uploaded as per guidelines indicated for e-procurement solution.

   (iii) The prices must be quoted in Indian Rupee only and it must be inclusive of all type of taxes etc.

2. Technical Specifications / Terms & Conditions: -

   (i) The detail technical specifications, quantity required for items covered under each category are mentioned in Annexure-I and Annexure-II.

   (ii) The specification issued with this form of tender should not be altered by the Suppliers.

   (iii) The specification of the item quoted by the firm should be in confirming with to the University specifications. Confirmation, in this respect should be specifically mentioned in the tender. Where the tenderer feels that the specification of the item not fully given or differ, from the specification of the item mentioned by the University, the exact specification of such item should be attached with the tender indicating the item quoted. The bidder should not mention best quality/good quality/superior quality etc. but give make and brand of the item quoted.

   (iv) The Firm is required to attach the University specifications with catalogues & Design leaflets/literature for each item. Details features, for compliance of specification should be provided on specification sheet & appropriate reference i.e. page no. & para of literature, leaflet where the relevant information CAN BE checked, should be indicated.

3. Cost of Bidding:-

(i) The bidder shall bear all the costs associated with the preparation and submission of its bids through e-tendering system. The Purchaser will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

(ii) The bidder is expected to examine all instructions, forms terms & conditions in the Bid documents, failure to furnish all information required by the bid documents or submission of bid not substantially responsive to the documents in every respect will be at the bidder risk and may result in the rejection of their Bid.

4. Bid Validity: -

Both technical and financial bids shall remain valid for a period of six months from the date of order for supply & installation of equipment.

5. Quotation: -

(i) The quoted price should be mentioned inclusive of all taxes such as customs duty etc , but GST should be mentioned separately as given in the Price Bid format. The aggregate price quoted along with all taxes should not exceed the M.R.P. of the items.

(ii) Revisions of rates are not allowed after the opening of tenders and the same rates are valid for a period of six months only.

(iii) In case tenderer not able quote for one or more of the items invited for in the tender the word “NOT QUOTED” (in the rate column) should be indicated.

6. Earnest Money Deposit (EMD): -

2.5% of the value of the each product will be taken as EMD.
EMD should be attached with the Technical bid. The EMD shall be in the form of the Demand Draft/Pay Order of Nationalized Bank/Fixed Deposit Receipt of a Nationalized Bank issued in favour of DDO, Registrar, Mahatma Gandhi University, Nalgonda. Photo copy of the DD/PO/FDR is to be scanned and uploaded along with the bid, and the original DD/PO/FDR shall be sent to Registrar, Mahatma Gandhi University, Nalgonda.

7. Delivery Period and its extension: -

(i) The minimum delivery period should be clearly mentioned against each item, incase, the items are not readily available; ex-stock offer will be preferred.

(ii) The supplies shall have to be made within 04 (four) weeks from the date of purchase order. However, in exceptional circumstance and, on written request, from the supplier/ tenderer, extension of date for supply of the material may be considered. Extension in supply period is at the sole discretion of the

competent authority. If the supplier fails to deliver any or all of the goods or to perform the services within delivery period including extension, if any, the purchaser shall without prejudice to its other remedies under the contract, as a liquidated damages @ 1% per week on undelivered items. Once the maximum deduction of 9% is reached, the purchaser will terminate the contract and forfeit the performance security for undelivered goods.

(iii) In exceptional circumstances, the purchaser may solicit the bidder"s consent for an extension of the period of validity of 60 days. The request and the response thereto shall be made in writing. The validity of Performance Security provided shall also be suitably extended.

(iv) If the Contractor / Supplier fails to deliver/install the stores or any installment thereof within the period fixed for such delivery or at any time repudiates the contract before the expiry of such period, Registrar, Mahatma Gandhi University, Nalgonda -508254 may without prejudice to the right of the purchaser may recover damages for breach of the contract.

8. Insurance of Consignment: -

Consignment will be insured at the cost of Tenderer/Supplier till satisfactory supply and installation of the equipment and not at the cost of Institute.

9. Submission of On-line Bid: -

The Tenderers are required to upload the scanned copies of the following information/documents along with technical/financial bids at e-procurement.gov.in

a. Copy of GST Registration Number.

b. Copy of Challan submitting of last three (2014-15, 2015-16 and 2016-17) VAT / Annual Sales Tax Return, duly signed and stamped by Trade & Taxes Department of the concerned State.

c. Copy of PAN card.

d. Copy of annual financial turnover (Trading A/c and Balance Sheet) for the last three years (2014-15, 2015-16 and 2016-17), duly audited by C.A.)

e. Copy of EMD submitted.

f. Annexure –I-A duly filled in and signed by the Tenderer.

g. Product Catalogue of respective items quoted, having item"s model number, its specifications, complete address of manufacturer etc.

h. Specification Comparison Statement (tabular comparison) of required specification and offered specifications.

i. Copy of authorization certificate issued by manufacturer of respective item, in case bidder is an authorized dealer.

j. Proof of at least 03 supply orders of similar equipments, like name of the equipments, order number, cost and date of supply etc. during the last 03 years to the Technical/Teaching/Research Institution of reputed high standard e.g. I.I.T/N.I.T/C.S.I.R and other Laboratories etc.

10. Submission of Original Documents: -

The bidder / tenderer are required to submit the following documents, in original, to the Registrar, Mahatma Gandhi University, Nalgonda -508254 before the closing of bid:-

(i) Tender Document cost –Original DD
(ii) EMD in original.
(iii) Original Printed Product Catalogue/ Design of respective items quoted, having item‟s model number, its specifications, complete address of manufacturer etc.

11. Opening of Technical Bid:-

(i) The technical & financial bids of only those bidders will be opened who fulfill the eligibility criteria required and whose documents are found in order, on the date and time earmarked for opening of technical & financial bids.

(ii) If any of the date earmarked for opening of technical & financial bids happens to be holiday, the bids will be opened on the very next working day.

(iii) The bidder"s representative, who are present shall have to sign on the minutes of bid opening document for evidencing their attendance.

(iv) The rates of items found, as per specification of Tender Document of the respective firm will be announced.

12. Bid Rejection:-

(i) The bid will be rejected out rightly in case of non-uploading the scanned copies of any of the following documents at e-procurement.gov.in

a. Copy of SGST, CGST and IGST Registration Number.

b. Copy of Challan submitting of last three (2014-15, 2015-16 and 2016-17) VAT / Annual Sales Tax Return, duly signed and stamped by Trade & Taxes Department of the concerned State.

c. Copy of PAN card.

d. Copy of annual financial turnover (Trading A/c and Balance Sheet) for the last three years (2014-15, 2015-16 and 2016-17), duly audited by C.A.)

e. Copy of EMD submitted.

f. Annexure 1-A duly filled in and signed by the Tenderer.

g. Product Catalogue of respective items quoted, having item"s model number, its specifications, complete address of manufacturer etc..

h. Copy of authorization certificate issued by manufacturer of respective item, in case bidder is an authorized dealer.

i. Proof of at least 03 supply orders of similar equipments, like name of the equipments, order number, cost and date of supply etc. during the last 03 years to the Technical/Teaching/Research Institution of well known high standard Institutions e.g. I.I.T/N.I.T/C.S.I.R and other Laboratories etc.

(ii) The bids will also be rejected out rightly under any one or more of the following cases: -

a. Non-submission of original Bid Security (EMD) to the institute/undersigned, before the date of closing of bids.

b. Not meeting the technical specifications.

c. If the bidder is not found eligible as per requisite criteria.

d. If the column found blank and quoted rates are not as per criteria.

e. If the Technical and/or Financial Bid is not signed and stamped by the bidder.

f. If the prices are quoted other than in Indian Rupee.

g. If the bidder found indulging in malpractice of pooling of bid.

h. If the bidder provides Conditional/Incomplete quotation.

i. Non-production of items for demonstration, if desired.

j. Non-production of original documents for verification.

k. Non-submission of information in support of Capacity/Credibility of the organisation.

l. Submission of any wrong information.

m. Non-submission of Original Printed Product Catalogue of respective items quoted, having item"s model number, its specifications, complete address of manufacturer etc

(iii) The Competent Authority reserves the right to reject any or all the tenders without assigning any reason, at any stage, and his decision will be final.

13. Evaluation and Comparison of Bids: -

(i) The purchaser's price evaluation of the bid will be as below: -

Unit rate of item inclusive of Excise Duty / CST / any other tax (including GST), if any.

(ii) The bidder should quote all the rate on the basis of the delivery at the purchaser site. No extra transportation charges, delivery charges, installation charges will be paid or considered.

(iii) The purchaser will evaluate and compare the total bid price for each item, which have been determined to be substantially responsive as per the qualified criteria of bidder.

(iv) The Competent Authority of the College does not bind himself/ her self to accept the lowest or any tender.

(v) If the bidder has quoted longer delivery period than the stipulated as above in item No. „7", an amount of 1% of the quoted price shall be added per week for the period beyond the stipulated period in the quoted price for the purpose of financial evaluation of tender.

14. Notification of Contract and Placement of Supply Order:-

(i) Prior to the expiration of the period of bids validity, the purchaser will notify the successful bidders in writing that their bid has been accepted.

(ii) The notification of award will constitute the formation of the contract.

(iii) Upon the successful bidder"s furnishing of Performance Security, the purchaser will promptly notify each unsuccessful bidder and will discharge its EMD.

15. Inspection: -

(i) The inspection of the goods shall be carried out to check whether the goods are in conformity with the technical specifications attached to the contract.

(ii) The final inspection of the goods ordered shall be carried out by the technical expert committee duly constituted by the University.

(iii) If the firm fails to supply items as per specifications mentioned in the contract within stipulated time, its performance security will be forfeited.

16. Change in quantity of equipments: -

The purchaser reserve the right at the time of award of contract to increase or decrease the quantity of goods specified in the schedule of requirement without any change in price or other terms and conditions.

17. Payment: -

The payment will be made within 60 days after the successful demonstration/ installation of the equipment. Rejected items/goods should be removed within 30 days after which no responsibility will be lies with the University .

18. Performance of Product: -

(i) Service manuals, wherever available/required, should be provided along-with the Equipments.

(ii) A WARRANTY certificate should invariably be supplied along with the item at the time of delivery and the validity of the Warranty Certificate should be valid from the date of installation of the item for a minimum period of one year. Non-Compliance of the same will result in non-acceptance of the item from the firm with whom the order was placed beside rejection of the tender.

(iii) The supplier warrants the goods supplied under the contract are new, unused and most recent. The supplier further warrants that the goods supplied under the contract shall have no defect arising from design or

materials or workmanship or from any act or omission of the supplier that may develop under normal use of the supplied goods in the conditions at the consignee place.

19. Cancellation of Contract: -

(i) Demonstration of equipments has to be arranged by the suppliers, if desired by the University. Non-production of items for demonstration will result in rejection of the tender.

(ii) If the Supplier, in the opinion of the University fails or neglects to comply with any of the terms & conditions forming, part of the order issued, the head of University shall without prejudice to any other right or remedies under the contract, has the right to cancel the contract /order by giving 15 days notice in writing to the Suppliers/firms without being liable to pay compensation for such cancellation.

(iii) a. If the supplier fails to execute the supply order by the date;

specified in the order or within any extension thereof granted by the purchaser;

b. If the supplier fails to perform any other obligation under the contract;

c. If the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practice in executing the contract;

the purchaser may, without pre-judice to any other remedy for breach of contract, by written notice, terminate the contract in whole or in part.

20. Forfeiture of Bid Security: -

(i) The bid security will be forfeited, if the bidder withdraws its bid during the period of bid validity.

(ii) In the case of successful bidder, if the bidder fails to sign the contract or fails to submit the performance security, the bid security will be forfeited.

(ii) “Force Majeure” means an event beyond the control of the supplier and not involving the supplier‟s fault or negligence and not foreseeable. Such an event may include but are not restricted to, acts of the purchaser, either in its sovereign or contractual capacity, wars or revolution, fire, floods, epidemics, quarantine restrictions and freight embargoes.

(iii) If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligation under the contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

23. Resolution of Dispute:-

(i) The purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation on any disagreement or dispute arising between them under or in connection with the contract.

(ii) Any dispute is subject to the jurisdiction of the Nalgonda, Telangana State Courts only.

Note: Bidder should note that, the documents submitted online shall be considered only for bidding. The University shall have the right to demand the copy/ photocopy of any document which is submitted online through e-procurement website and the photocopy of any document which is not legible or readable. If any contractor fails to provide the requisite information/document within 03 (three) days, the University reserves the right to disqualify the bid.

REGISTRAR

ANNEXURE-I-A

MAHATMA GANDHI UNIVERSITY
NALGONDA

08682- 221904, website-mguniversity.ac.in

(TO BE SUBMITTED ALONG WITH TECHNICAL BID)

TENDER I.D. NUMBER : _____

1. File Reference Number	:	_____
2. Name & Address of the Firm	:	_____ _____ _____
3. Telephone Numbers	:	Office : _____Residence_____ Mobile No. _____
4. Name(s) of the Partner	:	(1) _____ (2) _____
5. Whether Manufacturer or Authorized Dealer in r/o quoted item/s	:	_____
6. GST Registration No.	:	_____
7. PAN Card No.	:	_____
8. Name of items for which quoted	:	_____ _____ _____ _____ _____ _____
9. Details of EMD Submitted (DD/Pay Order/FDR)	:	Amount _____Dated _____ No._____Bank_____ _____
10.Whether agree for demonstration at	:	College Premises / Manufacturer Site / Site where item already installed

I / we undertake to abide the terms and conditions provided with the tender documents.

Dated: _____

_____
(Signature of Tenderer)

Name in BLOCK Letters: _____

Stamp of the firm

(TO BE SUBMITTED ALONG WITH TECHNICAL BID)

TENDER I.D. NUMBER : _____

TENDER FORM

The Registrar
Mahatma Gandhi University
Nalgonda.

Sir,

We the undersigned (herein after called as Contractor/Vendors/Suppliers) hereby offer to execute supply of items as per specification against which we have quoted over rates and for which this tender may be accepted at the rates stated there in and subject to the terms & conditions set forth for such items as may be ordered by the Registrar, Mahatma Gandhi University, Nalgonda, or officer acting on his/her behalf.

Date this _____ Day of_____

Signature of Contractor _____

Address_____

_____

_____

MAHATMA GANDHI UNIVERSITY
NALGONDA

(Website- www.mguniversity.ac.in)

Ten.No.06/MGU/NLG/2017-18 Date : 06.10.2017

e-TENDER NOTICE

e-tenders are invited from reputed manufacturers/authorized distributors for entering into Annual Rate Contract for the financial year 2017-18 for the supply of (1) Laboratory Chemicals (2) Laboratory Glassware (3) Laboratory Plastic wares and Kits etc. The tender document is available on the University website i.e www.mguniversity.ac.in

REGISTRAR

MAHATMA GANDHI UNIVERSITY
NALGONDA

(Website- www.mguniversity.ac.in)

Ten.No.06/MGU/NLG/2017-18 Date : 06.10.2017

TENDER FORM FOR ENTERING INTO RATE CONTRACT FOR CHEMICALS/ GLASSWARE/ PLASTICWRE. ETC. WITH MAHATMA GANDHI UNIVERSITY FOR FINANCIAL YEAR 2017-18

1. Name & full address of the applicant:

2. Item/ materials for which rate contract desired/ applied for
   a) Chemicals
   b) Glassware
   c) Plastic ware
   d) Kits

3. If the Firm is under Rate Contract with Other Govt. Dept. Res.Inst.Give details along with Certified copies of rate contract issued by Institutes/ Dept.s

4. Annual Turnover of the firm/ company During financial year 2016-17 (enclose documents in support of claim) Rs…….

5. Whether the firm is registered under company Act: Yes/No
   If yes, enclose certified copies: ……
   In case firm is registered with other Govt. Dept./Agency.. ……
   The same may be stated with documentary evidence. ……..

6. a). Certified copies of state sales tax Regn. No. GST with date of validity
   b) Central Sale Tax Regn.No.
   c) Latest copy of Sales Tax Return
   (Please enclose copies of relevant papers)

7. a). PAN No.
   (in the name of firm/ company, not individual) ……

   b) Latest copy of IT Return filed with Income Tax Dept., ……..

8. Whether product catalogue is in circulation, if so, please enclose one copy/ set: …….

9. State whether you have been currently banned/ blacklisted by any Organization for supply Ministry/ Dept., of Central Govt., of State Govt. if so give details ……..

10. i). Please indicate name & full address of your Banker ……
    ii). Bank A/c No. ……..
    iii). IFSC Code: ……

11. In case you wish to enter into rate contract for imported goods, please furnish details as given below:

Name of the Principal fir	**Brand/ Make of the goods**	**Date of acquiring Dealership**	**Date of expiry of Dealership**	**Prices in foreign currency or in Indian Rupees**	**Certified copy Dealership Enclosed (Yes/No)**

12. Name & Address of authorized / valid dealers for Hqr. & Campuses, if any for the year 2017-18 ……

13. Certificate of not giving higher discount to any other Department to be enclosed ……

14. Any other information vital for entering into rate contract ……

Signature

Name of Company/ Firm Complete address:

PROCEDURE FOR SUBMISSION OF BIDS

a). Bidders may to contact the Registrar, Mahatma Gandhi University, Nalgonda for further information on e- procurement.

b). Bidders need to register on the electronic procurement market place of Government of unified Andhra Pradesh/ Telangana i.e.' www. eprocurement.gov.in'' on registration on the e- procurement market place they will be provided with a user ID and password by the system using which they can submit their bids online.

c). While registering on the e-procurement market place, bidders need to scan and upload the required documents as per the tender requirements on to their profile.

d). i). The technical bid evaluation of the tenderers will be done on the certificates/ documents uploaded through online only towards qualification criteria furnished by the tenderers.

ii). The tenderer shall invariably furnish the original DDs to the Registrar, Mahatma Gandhi University, Nalgonda before opening the price bids either personally or through courier or by post and the receipt of the same within the stipulated time shall be the responsibility of the bidder. Department will not take any responsibility for any delay or non- receipt.

iii). The successful (L1) tenderer shall furnish the original hard copies of all the documents/ certificates/ statements uploaded by him before concluding the agreement.

iv). The tenderers shall be required to furnish a declaration in online stating that the soft copies uploaded by them are genuine. Any incorrectness/ deviation noticed will be viewed seriously apart from canceling the work duly forfeiting the EMD. Criminal action will be initiated including suspension of business.

e). Steps for registration and submission of bids are described in detail in the Bidders Training Booklet available with the department as well as at the above website.

ELIGIBILITY CRETERION

1. Qualification requirements: To Qualify for consideration of award of the contract, each bidder should fulfil the following criteria:

   i) To pay EMD by way of crossed demand draft for Rs. 30,000/- (i.e., 2 % of ECV Rs. 15.00 lakhs) drawn in favour of Registrar, Mahatma Gandhi University, Nalgonda issued by any nationalised bank/ scheduled commercial bank. The DD should be valid for a period of THREE months from the date issue of Notice Inviting Tender.

   ii) The tenderer shall submit online the copies of documents of (i) Registration as civil contractor required as per NIT (ii) Registration (iii) PAN card and copy of latest IT returns submitted along with proof (iv) Necessary DD towards EMD and (v) Transaction fee at 0.03% of ECV+ 14% service tax on 0.03% of ECV to be paid by way of Electronic Payment Gateway.

   iii) Participating bidder shall pay fee @ 0.03% of ECV + 14% of service Tax towards transaction fee on e – Procurement at the time of bid submission in favour of M/s Vayam Technologies, Hyderabad by way of Electronic Payment Gateway. The transaction fee is not refundable.

   iv) The bidder is subjected to be black listed and his EMD is to be forfeited if he is found to have furnished false information in the forms/ statements / certificates submitted in proof of qualification requirement or record of performance such as abandoning of supply not properly completed in earlier contracts, inordinate delays in supply of requirement, litigation history, financial failures or participated in the previous tendering for the same supply and had quoted unreasonable high bid prices.

   v) Even while execution of the contract, if found that the produce false/ fake certificates of experience he will be black listed and the contract will be terminated.

Terms & Conditions of Rate Contract

1. No equipment, apparatus, liquid handing system Gel electrophoresis apparatus, single channel and multi channel micropipettes etc., are covered under this rate contract.
2. That the freight, insurance charges, if any will not be borne by the purchaser, similarly shortage, pilferage in transit will be sole responsibility of the supplier and the same will be intimated to the supplier on receipt of goods by the purchaser to make good the loss caused on this account. The defective supply will have to be replaced by the supplier within 7 days without freight/ transport charge.
3. The delivery of goods will be taken at the risk and cost of the supplier from railway/ transport.
4. The supply of material will have to be completed within 30 days from date of issue of purchase order. The liquidated charges @0.5% per week shall be imposed if supply made after stipulated delivery period subject to maximum 10% of the total value of goods/ contract value.
5. The payment of the bill will be made within 30 days on receipt of the goods in satisfactory condition.
6. No revision in rate (on higher side) will be accepted during contract period.
7. The order will be placed as per requirement irrespective of value of the order.
8. The firm has to supply the required items as per unit price mentioned in the price list.
9. The dispute arising between manufacturer and the purchaser will be referred to Arbitrator.
10. Supply should be made in full against the order and shortage will be procured on the risk and cost of the supplier.
11. No. Payment will be made for unsatisfactory items supply.
12. The articles should be securely packed to avoid damages etc. In transit.
13. Supply should be made from the latest batch of production with the maximum life period & original packing.

14. Advance stamp receipted bills should be sent along with goods.
15. The bills may be prepared in the name of the officer.

    Purchase order placed Mahatma Gandhi University, Nalgonda. T.S.
16. In case a proposal is accepted by the University the firm shall sign an agreement with the University while entering into rate contract.
17. The Registrar, Mahatma Gandhi University, reserves the right to cancel the rate contract without assigning any reason.
18. Bid Security (Earnest Money): Bid security (Earnest Money) of Rs. 30,000/- should be submitted in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque from any of the Nationalized Banks drawn in favour of Registrar, Mahatma Gandhi University, Nalgonda, T. S along with tender. (Other details as mentioned in the tender form).
19. Discount: The Discount which will be offered by the manufacturers / authorized distributors on the manufacturer's price list for the years 2017-18 may be mentioned. Firms must offer a flat discount rate on all items instead of item wise discount on different items like culture media, chemicals, etc.
20. Validity: The Annual Rate Contract is valid for the financial year 2017-18 and may be extendable for another year on mutual consent.
21. Delivery: The Delivery should be give at Mahatma Gandhi University, Anneparthy Yellareddigudem, Nalgonda. No delivery and packing charges will be paid by the University.
22. Sale Tax/GST: The rate of sale Tax/ GST should be mentioned clearly.
23. Authorization Letter: Authorization letter from the manufacturer should be submitted along with quotation, failing which quotation will not be considered.

Note: ***Each page of the Tender document and annexure if any, should be signed by the tenderers failing which tender will not be considered.***

Signature.....

. Complete address of the firm

INSTRUCTIONS TO BIDDERS/ TENDERERS

1. Incomplete proposals and tenders received after due date shall not be entertained.
2. A Certificate to be given by the tenderer that the price list supplied is the only one in circulation.
3. Printed & Bounded price list for 2017-18 duly signed & Certified by authorized signatory must accompany the tender, in duplicate.
4. The tenderer should certify that higher discount is not given to any other Department then offered.
5. In case of discrepancy between unit price & total price, the unit price shall prevail.
6. In case of supply of goods made through valid authorized dealer, their name & mail address may be declared / indicated in the tender.
7. Where contract (R/C) for supply of equipments, goods etc., imported (Subject to custom duty and foreign exchange fluctuations) and / or locally manufactured (Subject to excise duty and other duties & taxes,) the percentage of price should be specifically stated along with the selling rates of foreign exchange element taken into account in the calculation of the price list of the imported items.
8. Printed price list (Hard copy) 2017-18 may be furnished in bond form, An undertaking may be given that the price list been furnished with the proposal will remain valid for the current rate contract.
9. Authorization certificate in respect of foreign firms duly self attested and showing validity for the year 2017-18 may be submitted.
10. Terms & Conditions given in the University format duly signed/ sealed may be submitted.
11. Photocopy of the price list and price list in spiral binding will not be accepted.
12. Proposal for rate contract may be submitted in the prescribed format and all columns may be filled up.
13. In case the price list for the previous year 2016-17 is still valid for the entire period of rate contract for the year 2017-18 certificate to this effect may please be furnished duly signed by the authorized signatory.

14. The price list which is in website may be download and a copy may be supplied to this office duly signed and sealed by the authorized signatory.
15. The Annual Turnover of the firm during last 3 years with the Institutes may also please be furnished. (Enclosed document in support of the claim)
16. The competent authority reserve the right to accept or reject any or all tenders without assignment any reason.
17. Supplier will have to sign an agreement deed on a non – judicial stamp of appropriate value.
18. The Rate contracts concluded as a result of this Tender Inquiry shall be governed by the Terms & Conditions and other relevant instructions as contained in this Tender Document.
19. Tenderers are requested to quote their prices on a firm & fixed basis only for the entire period of the Rate Contract. Tenders of the firms received with prices quoted on variable basis shall be rejected straightaway.
20. Quotations/ Tender qualified by such vague and indefinite expressions such as " Subject to prior confirmation" Subject to immediate acceptance" etc. Will be treated as vague offers and rejected accordingly.
21. Tenderers are requested to enclose a copy of their valid certificate of PAN No., GST, Service Tax No. With their tender.
22. enderers may note that if the date of tender opening given in this Tender Document is declared to be a gazetted holiday on subsequent day tenders will be opened.
23. Each and every page of the tender documents must be signed by bidder.

Signature.....

Complete address of the firm

FINANCIAL BID
SCHEDLE OF ITEMS

The details of (1.) Laboratory Chemicals, (2.) Laboratory Glassware,(3.) Laboratory Plastic wares and kits, etc. Which are to be supplied at Mahatma Gandhi University, Nalgonda under Annual Rate Contract for the following make / brand.

Laboratory Chemicals:

Sl. No.	**Item**	**% of discount quoted by the firm**
1	Merck	
2	Hi- Media	
3	S.D.' S. (S.d. Fine)	
4	SRL (Sisco)	
5	Alfa - Aesar	
6	Sigma – Aldrich	
7	CDH	
8	Rankem	
9	Merck (Bio Sci.)	
10	Qualigens	
11	Banglore Genei/ Marck India	
12	Genetix	
13	Xcleris	
14	Imperial Life Science	
15	Thermo Fisher	
16	Fisher Scientific	
17	Promega	
18	Qiagen	
19	Fermentas	
20	Life technologies	
21	Eppendorf	
22	Dow corning	
23	MP Biomedicals	
24	Finar	

Laboratory Glassware:

Sl. No.	Item	% of discount quoted by the firm
1	Borosil	
2	Riviera	
3	Vensil	
4	JSGW	
5	Corning	
6	Eppendorf	
7	Genaxy	
8	Lakshmi Glassworls	
9	Scigenics	

Laboratory Plastic ware:

Sl. No.	Item	% of discount quoted by the firm
1	Tarsons	
2	Thermo Fisher	
3	Hi – Media	
4	Axiva / Axygen	
5	Genexy	
6	Grenier	
7	Corning	
8	Eppendorf	

Laboratory Filter Papers, etc:

Sl. No.	Item	% of discount quoted by the firm
1	Whatman	
2	Sartorius	
3	Axiva	
4	SD- Fine	
5	Millipore	

Kits (Including all Mol. Biology & Biochemical etc):

Sl. No.	Item	% of discount quoted by the firm
1	Himedia	
2	Merck (Biosci.)	
3	Bangalore Genei/ Marck	
4	Genetix	
5	Xcleris	
6	Imperial Life Sciences	
7	Epicenter Biotechnologies	
8	Qiagen	
9	Promega	
10	Fermentas	
11	Eppendorf	
12	Life Technologies	
13	Dow Coring	
14	3B Biotools	
15	Span diagnostics	
16	VIBGYOR	
17	Scigenics	

Signature.....
Complete address of the firm