



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
UNIVERSITY COLLEGE OF ENGINEERING, Narasaraopet-522601
Phone No. 08647247198/99 Mobile: 7702908555
Email: principal.ucen@gmail.com

REVISED TENDER NOTICE

Lr. No. JNTUK/UCEN/Computer Systems &furniture/2017-18/1, Dt.03.06.2017
Sealed quotations are invited for the supply of **Laboratory Equipment/ furniture**
to our college. For details please refer to the JNTU KAKINADA
Website: www.jntuk.edu.in. Last date for receipt of bids along with E.M.D is
07/06/2017

Sd/- PRINCIPAL

4cmx8cm



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UNIVERSITY COLLEGE OF ENGINEERING - NARASARAOPET-522601

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REVISED TENDER NOTICE

Tender Notice No. JNTUK-UCEN/Equipment & Furniture /2017-17/1,

Date: 03-06-2017

Sealed quotations are invited from reputed Dealers/ Suppliers for the supply of the listed items. The detailed specifications, terms & Conditions for the items can be obtained in respect of items from the undersigned from **29/05/2017** between **11.00 AM to 5.00 PM** on payment of ₹. **500/- (Non-Refundable)** in the form of Demand Draft payable at Narasaraopet in favor of **Principal, University College of Engineering JNTUK, Narasaraopet** drawn on any nationalized bank not earlier than date of this notification. The sealed quotations should reach the undersigned on or before **2.00 PM on 07/06/2017**.

The College Authorities reserve the right to accept or reject any or all bids without assigning any reason whatsoever.

PRINCIPAL



Tender Notice No. JNTUK-UCEN/Equipment & Furniture /2017-17/1,

Date: 03.06.2016

TENDER SCHEDULE

GENERAL CONDITIONS:

1. Please quote your lowest rates for each item described. The quotation should reach this office **on or before 07/06/2017 by 14:00 hrs.** Sealed covers should be submitted for the items super scribing as “**Tender No.**”, “**Date of opening:**”, “**Item Number(s)**”. Separate sealed cover should be submitted for each item. The sealed covers should be sent by the Registered Post or to be dropped in the sealed box provided in the office of the Principal. The tender will be **opened on 09/06/2017 at 14:30 hrs.** by the undersigned/his nominee in the presence of the committee members and available bidders or their representatives.
2. **E.M.D:** The tender documents should be submitted along with earnest money deposit **Rs.5,000/-** in the form of Demand Draft in favor of “**The Principal, University College of Engineering JNTUK, Narasaraopet**” to be payable at State Bank of India, Main branch, Near LB Market, Narasaraopet. The Demand Draft pertaining to E.M.D. of unsuccessful party will be returned.
3. **PRICES:** The price should be F.O.R. destination inclusive of taxes, packing & forwarding charges, freight, delivery and installation charges. Items on rate contract, if any together with the terms and conditions may please be furnished.
4. **PAYMENT:** 100% payment will be made within a reasonable time only after the receipt of all items in good condition and installation as per given specifications and after testing for satisfactory working and on receipt of the company’s invoice with all Supporting vouchers such as copy of A.P. Sales Tax or VAT Registration certificate etc. **No advance will be paid in any case either in part or in full.**
5. **ACCEPTANCE:** It is not binding on the university/ institution to accept the lowest of the tenders. The university/ institution reserves the right to place orders for individual items with different bidders.
6. **SPECIFICATIONS:** Detailed specifications along with the description and make should be mentioned in the bid.
7. **Warranty/Guaranty:** Warranty/Guaranty period should be mentioned by the bidder.
8. **DELIVERY:** The period of delivery at destination from date of placing orders is **FOUR WEEKS.**
9. **VALIDITY:** The quotations should be valid for at least 90 days.
10. The Institution reserves the right to cancel the tender without assigning any reason.

11. Those that purchased tender schedule officially by paying **Rs. 500/-** in the form of Demand Draft drawn in favor of Principal, JNTUK, University College of Engineering, payable at Narasaraopet are only eligible to participate in the tender. Those who have downloaded the tender schedule from the JNTUK website (www.jntuk.edu.in) should submit a separate DD for **Rs.500/-** along with the quotation.
12. This Institution being Government educational institution is exempted from payment of Central/State Excise Duty.
13. Since the college is Government institution whatever conditions are applicable to any Government institute shall be applicable even if not specified.
14. Any tender that is received after due date will not be accepted. The college is not responsible for any postal delay.
15. List of Major Customers should be provided.

PRINCIPAL

Encl: Items with Description

Important points for the bidder

1. Tender should reach office of the Registrar, JNTUK Kakinada in Kakinada on or before 2:00PM on 07/06/2017.
2. The DD for Rs. 500/- which is towards schedule cost is non refundable, it can be drawn in any nationalized Bank.
3. EMD of Rs. 5,000/- can be drawn in any nationalized bank. With this EMD of Rs.5,000/- the bidder can quote for any one of the items only.
4. EMD will be refunded after satisfactory installation and commissioning of the item procured.
5. If the successful bidder does not honour the purchase order, EMD will not be refunded.
6. The Demand Draft pertaining to E.M.D. of unsuccessful party will be returned.
7. The tender will be opened on 09/06/2017 at 14:30 hrs. by the undersigned/his nominee in the presence of the committee members and available bidders or their representatives.

Item No: 1

Department of ECE

Specifications of

**Equipment for the Electronic Devices &
Circuits (EDC) Lab**



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
UNIVERSITY COLLEGE OF ENGINEERING - NARASARAOPET-522601
Phone No. 08647247198/99 Mobile: 7702908555
Email: principal.ucen@gmail.com

Tender Notice No. JNTUK-UCEN/Equipment & Furniture /2017-18/1, Date: 03.06.2017

EDC Lab Equipment Specifications

S.No	Item	Specification	Quantity
1.	Digital Ammeters(0-1mA)	Resolution - 0.001mA Accuracy - 0.3% Rdg. \pm 2dgts (DC), 0.5% Rdg. \pm 3dgts (AC). Frequency range - 45 ~ 400 Hz for AC range Aux. power source - AC 110V or 220V \pm 10%, 50 / 60 Hz Operating temperature range - 0°C ~ 50° C Calibration – 27°C \pm 5°C Power Consumption - AC 5VA	20
2.	Digital Ammeters (0-500 mA)	Resolution - 0.001A Accuracy - 0.3% Rdg. \pm 2dgts (DC), 0.5% Rdg. \pm 3dgts (AC). Frequency range - 45 ~ 400 Hz for AC range Aux. power source - AC 110V or 220V \pm 10%, 50 / 60 Hz Operating temperature range - 0°C ~ 50° C Calibration – 27°C \pm 5°C Power Consumption - AC 5VA	20
3.	Digital Ammeters (0-200 μ A)	Resolution - 0.1 μ A Accuracy - 0.3% Rdg. \pm 2dgts (DC), 0.5% Rdg. \pm 3dgts (AC). Frequency range - 45 ~ 400 Hz for AC range Aux. power source - AC 110V or 220V \pm 10%, 50 / 60 Hz Operating temperature range - 0°C ~ 50° C Calibration – 27°C \pm 5°C Power Consumption - AC 5VA	20
4.	Digital Ammeters (0-10A)	Resolution – 0.001A Accuracy - 0.3% Rdg. \pm 2dgts (DC), 0.5% Rdg. \pm 3dgts (AC). Frequency range - 45 ~ 400 Hz for AC range Aux. power source - AC 110V or 220V \pm 10%, 50 / 60 Hz Operating temperature range - 0°C ~ 50° C Calibration – 27°C \pm 5°C	20

		Power Consumption - AC 5VA	
5.	Digital Voltmeters (0-5V)	Resolution - 0.01V Accuracy - 0.1% Rdg. \pm 2dgts (DC), 0.5% Rdg. \pm 3dgts (AC). Frequency range - 45 ~ 400 Hz for AC range Aux. power source - AC 110V or 220V \pm 10%, 50 / 60 Hz Operating temperature range - 0°C ~ 50° C Calibration – 27°C \pm 5°C Power Consumption - AC 5VA	15
6.	Digital Voltmeters (0-30V)	Resolution - 0.1V Accuracy - 0.1% Rdg. \pm 2dgts (DC), 0.5% Rdg. \pm 3dgts (AC). Frequency range - 45 ~ 400 Hz for AC range Aux. power source - AC 110V or 220V \pm 10%, 50 / 60 Hz Operating temperature range - 0°C ~ 50° C Calibration – 27°C \pm 5°C Power Consumption - AC 5VA	15
7.	Analog Multimeters	DC Voltage - 0 – 2.5V/10V/50V/250V/1000V Accuracy - \pm 3% AC Voltage - 0 – 10V/50V/250V/1000V Accuracy - \pm 4% DC Current - 0 – 2.5mA/25mA/250mA/10A Accuracy - \pm 3% Resistance - 0 – 2k/20k/2M/20M Accuracy - \pm 3% dB test - -10dB to +62dB Temperature - 25°C for rated accuracy Power - Two 1.5V 'AA' Battery	02
8.	Digital Multimeters	AC Voltage Range - 4V to 750V AC Voltage Accuracy - \pm (1%+5) DC Voltage Range - 400mV-1000V DC Voltage Accuracy - \pm (0.5%+4) AC Current Range - 400 μ A- 20A DC Current Range (Amp) - 400 μ A-20A Resistance Range (Ohm) - 400 - 40 M Capacitance Range (F) - 40nF-100 μ F Frequency Range (Hz) - 9.999Hz to 9.999MHz Accuracy - \pm (0.5%rdg+2 dgt) Temperature - -20°C to 1300°C, Accuracy - \pm (2%rdg+4dgt) Power - 2 X 1.5 V AAA size Battery	20
9.	Function Generators	Frequency Range - 10 Hz to 15 MHz Display Accuracy - Up to 3 Hz : \pm (1% + 3 D), 3 Hz - 3 MHz : \pm (5 \times 10 + 1D) Supply - 230 V \pm 10%, 50 Hz (100/120/220/240 V available on request) Power Consumption - 22 VA approx. Operating Conditions - 0 to 50 °C Output Voltage - 10 Vpp into 50 , max. 20 Vpp open circuit Attenuation - max. 60 dB 2 steps : 20 dB \pm 0.2 dB each Variable : 0 to 20 dB Frequency Change - 1 : 100 approx. Input Impedance - 50 k \parallel 25 pF Input Voltage - \pm 30 V max.	20
10.	CROs	Sensitivity 1mV/cm, Operating Modes: CH I/CH II / CH I & CH II, Alt or Chop (frequency 0.5 MHz approx.) Add or Sub +CH I + CH II (with invert switch for both channels, Bandwidth – 30 MHz Accuracy - \pm2% Time Coefficient Accuracy :18 calibrated steps in 1-2-5 seq 0.5 us/div to 0.2 s/div, with variable to 0.2 us/div, with x10 to 20 ns/div, LED indication when UNCAL + 2%	20

11.	Adaptable Regulated Dc Power Supplies	<p>Metering : 3 Digit DPM. Meter Accuracy : ± 3 counts. Constant Voltage Mode : Regulation : Line : $\pm 0.01\% \pm 2\text{mV}$ for $\pm 10\%$ change in line output. Load : $\pm 0.01\% \pm 2\text{mV}$ for load change from zero to full load. Ripple & Noise : 1mV rms max. $20\text{Hz} - 20\text{MHz}$. Constant Current Mode : Regulation : Line : $\pm 0.1\% \pm 250\mu\text{A}$ for $\pm 10\%$ line change. Load : $\pm 0.1\% \pm 250\mu\text{A}$ for change in output voltage from 0 Volts to maximum output voltage. Ripple & Noise : 0.04% rms. Mode Indication : LED indication for constant voltage / constant current operating mode. Output Polarity : Floating w.r.t. ground. Overload Protection : Automatic overload and short circuit protection. Transient Response : $100\mu\text{secs}$ to within 10mV of set output voltage for load change from 10% to 90%. Stability : Total drift within 8 hours, after warm-up. $< \pm 0.2\%$ plus 5mV in constant voltage mode. $< \pm 0.5\%$ plus 5mA in constant current mode with constant line, load and ambient temperature conditions. O Operating Temperature : $0-50\text{ C}$. Line Voltage : $230\text{V AC} \pm 10\% 50\text{Hz}$, single phase</p>	20
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Item No: 2

Department of EEE

Specifications of

Equipment for the Electrical Circuits Lab

Electrical Circuits Lab Specifications

S.No	Apparatus		Rating	Quantity	
1	Rheostats		70 / 2.8A	6	
2			10 / 10A	5	
3			200 / 2.8A	4	
4			110 / 3A	4	
5			45 / 5A	6	
6			380 / 1.8A	4	
7			100 / 3.5A	4	
8			50 / 3.5A	3	
9			100 / 3A	4	
10			20 / 6.8A	3	
11			350 / 2A	3	
12			90 / 1.8A	2	
13			6 / 10A	2	
14			2 / 10A	2	
15	Resistors		2.2k	4	
16			1.1k	3	
17	Inductance Box		1- \emptyset , 230V, 7.5A, 10step	4	
18			3- \emptyset , balanced , 415V, 15A, 15step	1	
19	Capacitance		Variable capacitance box (0-100) μ F,5A	2	
20			100 μ F, 5A	2	
21	1- \emptyset Choke Coil		0.1H, 5	3	
22	1- \emptyset Variac		230V/(0-270)V, 8 A	7	
23	Frequency Meter		(0-60) Hz, 115V/230V/415V	2	
24	3- \emptyset Variac		400V/0-470V, 12kVA	1	
25	Voltmeters	MI	(0-300)V	8	
26				(0-150)V	8
27				(0-500)V	2
28		MC	(0-30)V	2	
29				(0-300)V	5
30				(0-60)V	3
31		(0-150)V	3		
32	Ammeters	MC	(0-2)A	3	
33				(0-250) mA	2
33		MI	(0-5)A	6	
34				(0-10)A	3
35				(0-2)A	3

36			(0-15)A	3
37			(0-3)A	3
38	Transformers		220V/134V, 3.3kVA	1
39			230V/115V, 3 kVA	2
40	DPST		Switches	8
41	DPDT			3
42	TRPS		(0-30)V, 0.3A	2
43	Wattmeter		150V/10A –LPF	2
45			150V/10A –UPF	2
46			600V/10A –UPF	2
47	Balanced Resistive Load		3-Ø,415 V, 7kVA,9.7A	2
48	Rectifiers		Indoor Type, 3-Ø,415V,25kW,100A, Output voltage DC (0-250)V	1
49			Indoor Type, 3-Ø,415V,50A, Output voltage DC (30-50)V	1

- Note:** 1. All Rheostats should be of EUREKA wire wound on porcelain tube duly coated with silicon coating.
2. All Meters should have an accuracy of $\pm 1\%$ on full scale.
3. All UPF wattmeters should be calibrated at $\cos\phi=1$ & LPF wattmeters be calibrated at $\cos\phi=0.2$ lag.

Item No: 3

Department of CSE

Specifications of Computer Systems for Computer Labs

Computer Systems – 120 No.s

<u>Item</u>		<u>Qty</u>
Clients		120
Specifications:		
S.No	Item	Specifications
1	Processor	Intel® 7 th Gen i5 i5-7500 Processor
2	Chipset	Intel Q270 Chipset
3	Motherboard	OEM Motherboard
4	Memory	8GB, Up to four DIMM slots; Memory Expandable to 64 GB DDR4-2133 MT/s
5	Hard Disk Drive & controller	1TB, SATA 3.0- Hard Drive (6Gb/s , 7200 RPM) SMART IV
6	Optical Drive	No Optical Drive
7	Graphics & Monitor	Integrated Intel HD Graphics with 21.5” LED monitor
8	Audio	Integrated High Definition audio with Realtek ALC221codec (all ports are stereo) with Internal Speaker
9	Ethernet	Integrated Gigabit NIC
10	Slots	(3) Full Height PCIe x1 slots; (1) Full Height PCIe x16 & 1 PCI Slot
11	Bays	(1) 3.5-inch internal drive bay supporting hard disk drive; (1) 2.5 inch internal storage drive bay, (1) 5.25 inch half height external bay for optional optical drive, or other devices
12	Port	6 USB 3.0 & 4 USB 2.0 Ports(1 fast charging port front side), (2) PS/2 ports, (1) RJ-45, (1) HDMI & Display port, audio in/out , (1) headphone and mic
13	Form Factor	Minitower
14	Power Supply	240W , Upto 90% efficient, Active PFC. Energy Star Qualified & EPEAT GOLD Certified
15	Keyboard	PS/2 or USB 104 keys keyboard (Same make as PC)
16	Mouse	PS/2 or USB 2 Button Scroll Mouse (Same make as PC)
17	Operating System	Preinstalled: Linux Distribution with Ubuntu OS (32-bit 64-bit)
18	Supported:	Genuine Windows® 7, Windows 10 & Linux (32-bit 64-bit)
19	Security	Trusted Platform Module (TPM) 1.2(Common Criteria EAL4+Certified); SATA port Disablement (via BIOS); Removable Media write/boot Control ; Power-on Password (Via BIOS); Administrator Password (via BIOS); Support for chassis padlocks and Cable lock Devices; Drive lock (via BIOS)
20	Compliance And Certification	For PC : UL, FCC and Win certification & Linux (Redhat/SuSe Certification)
21	Dimension	16.5 x 34 x 35.5 Cm
22	Warranty	3-3-3 years
23	OEM Authorization Letter	To Be Enclosed
24***	Head Phones	required for 66 Computer Systems with specifications of

output impedance -32E, Transmission range – 10mtrs,
 BT Range- 7 to 10 mtrs, Data rates- 8kbps-300kbps,
 Earphone output power-10mWx2

Computer Systems – 30 No.s

<u>Item</u>		<u>Qty</u>
Clients		30
Specifications:		
S.No	Item	Specifications
1	Processor	Intel® 7 th Gen i5 i5-7500 Processor
2	Chipset	Intel Q270 Chipset
3	Motherboard	OEM Motherboard
4	Memory	8GB, Up to four DIMM slots; Memory Expandable to 64 GB DDR4-2133 MT/s
5	Hard Disk Drive & controller	1TB, SATA 3.0- Hard Drive (6Gb/s , 7200 RPM) SMART IV
6	Optical Drive	No Optical Drive
7	Graphics & Monitor	Integrated Intel HD Graphics with 21.5” LED monitor
8	Audio	Integrated High Definition audio with Realtek ALC221codec (all ports are stereo) with Internal Speaker
9	Ethernet	Integrated Gigabit NIC
10	Slots	(3) Full Height PCIe x1 slots; (1) Full Height PCIe x16 & 1 PCI Slot
11	Bays	(1) 3.5-inch internal drive bay supporting hard disk drive; (1) 2.5 inch internal storage drive bay, (1) 5.25 inch half height external bay for optional optical drive, or other devices
12	Port	6 USB 3.0 & 4 USB 2.0 Ports(1 fast charging port front side), (2) PS/2 ports, (1) RJ-45, (1) HDMI & Display port, audio in/out , (1) headphone and mic
13	Form Factor	Minitower
14	Power Supply	240W , Upto 90% efficient, Active PFC. Energy Star Qualified & EPEAT GOLD Certified
15	Keyboard	PS/2 or USB 104 keys keyboard (Same make as PC)
16	Mouse	PS/2 or USB 2 Button Scroll Mouse (Same make as PC)
17	Operating System	Preinstalled: Genuine Windows 10 & Linux (32-bit 64-bit)
19	Security	Trusted Platform Module (TPM) 1.2(Common Criteria EAL4+Certified); SATA port Disablement (via BIOS); Removable Media write/boot Control ; Power-on Password (Via BIOS); Administrator Password (via BIOS); Support for chassis padlocks and Cable lock Devices; Drive lock (via BIOS)
20	Compliance And Certification	For PC : UL, FCC and Win certification & Linux (Redhat/SuSe Certification)
21	Dimension	16.5 x 34 x 35.5 Cm
22	Warranty	3-3-3 years
23	OEM Authorization Letter	To Be Enclosed

10 – KVA UPS -03 No.s

Item	Qty
10 – KVA UPS	03
UPS Technical Specifications	
S. No	
1	Online UPS Rating: 10KVA
2	Back-up time: 1 Hour on full load
3	INPUT
3a	Voltage Rang:
i.	Low Line Transfer: 160VAC for 100% load & 110VAC for 60% load.
ii.	Low Line Comeback : 185VAC for 100% load & 135VAC for 60% load.
iii.	High Line Transfer: 300VAC +/- 5%
iv.	High Line Come back: 290VAC +/- 5%
3b	Frequency Range: 46 - 54 Hz
3c	Phase: Single Phase with Ground
3d	Power Factor: >= 0.99 at 100% load.
4	OUTPUT
4a	Output Voltage : 230VAC Phase: Single Phase.
4b	AC Voltage Regulation: +/- 1%
4c	Frequency Range: 46 - 54 Hz
4d	Frequency Range on battery mode: 50Hz +/-0.1 Hz
4e	Overload: 105% to 110% upto 3 mins
4f	Current Crest Factor: 3:01
4g	Harmonic Distortion: <= 3% THD (Linear Load) <=5% THD (Non Linear Load)
4h	Transfer Time: AC to Battery mode: Zero milli secs. Inverter to Bypass : Zero milli secs.
4i	Wave Form (Battery Mode) Pure Sine Wave
5	BATTERY
5a	Capacity & number of batteries
i.	For 10KVA UPS---65AH-20Nos
Note: If any single battery fails then UPS should be adjustable to work with existing number of batteries. It should work on 16, 17, 18, 19 & 20 batteries. So UPS should work on 192VDC to 240VDC.	
5b	Battery Make: Exide/Quanta/Numeric/Panasonic
6	ENVIRONMENT
6a	Operational Humidity: <95% non condensing.
6b	Noise Level
i	For 2KVA UPS: <50dB @ 1 meter distance

ii For 5KVA UPS: <55dB @ 1 meter distance
iii For 10KVA UPS: < 58dB @ 1 meter distance

7 MANAGEMENT

Smart RS-232 or USB: Support Windows 2000/2003/XP/VISTA/2008/7, Linux, Unix and MAC

8 ISOLATION TRANSFORMER: All UPS must contain Inbuilt Isolation Transformer.

Note: Vendors are requested to quote with in-built isolation transformer only.

Providing Isolation transformer externally to UPS will not be accepted

9 GENERAL TERMS

9a. Service support: Vendors should depute at least one resident service engineer at Narasaraopeta/
Guntur & Companies Authorized service centre should be at Guntur.

~~9b. Companies turn over should be above 400Cr./Annum.~~

~~9c. At least 1500 & above UPS should be installed at Narasaraopeta / Guntur.~~

Taxes : All Inclusive

Warranty: One Year for non-specified items

Delivery: Within 2 Weeks from the receipt of P.O

Item No: 4

Department of Civil Engg.

Specifications of

Equipment for the Surveying Field Work-I Laboratory

S.No	Item	Qty. No.s
1.	30m-Chains & 30m-Metallic Tapes	10
2.	3m-Ranging Rod & Cross Staff	10
3.	Arrows	100
4.	Prismatic Compass (half degree)	15
5.	Surveyor's Compass with Tripod Stand	02
6.	Optical Square & Offset Rod	10
7.	Plane Table Station	08
8.	3m-Leveling Staff & Dumpy Level (with straight image) With stand	08
9.	2m-Ranging Rods	20
10.	Miscellaneous- Models, charts & Maps-RS&GIS	-

Surveying Field Work-I Laboratory Specifications

Item No: 5

Department of Mechanical Engg.

Specifications of

**Equipment for the Engineering Workshop
Laboratory**

S.No	Item	Qty. No.s
1.	Metal jack plane 6"	06
2.	Hand saw 12"	12
3.	Hand saw 18"	06
4.	Carpentry Try Square 6"	12
5.	Mortise chisel ½"	12
6.	Steel rule 12"	30
7.	Half round wood rasp file 12"	06
8.	Half round wood rasp file 10"	06
9.	Marking guage GS	06
10.	Hand saw 18"	06
11.	Carpentry vice 6"	06
12.	Taper saw file 4"	06
13.	Firmer chisel 25 mm	06
14.	Hack saw frame 300 mm	12
15.	Ball peen hammer 500 gm	06
16.	Flat file - rough 250 mm	06
17.	Flat file – smooth 10"	06
18.	Square file 250 mm	06

**Engineering
g
Workshop
Laboratory
Specifications**

19.	Square file 150 mm	06
20.	Triangular file 150 mm	06
21.	Round file 250 mm	06
22.	Round file 150 mm	06
23.	Half round file 150 mm	06
24.	Bench vice 4"	10
25.	Number punch set 1 to 9	01
26.	Letter punch set A to Z	01
27.	Dot punch 5"	06
28.	File card 6"	06
29.	Screw driver set All Sizes	01
30.	Hand drilling machine Medium	01
31.	Scriber GS	06
32.	Tin cutter 6"	06
33.	Cross peen hammer 50lbs	03
34.	PVC mallets 2"	06
35.	Nose plier 6"	02
36.	Curved snips 6"	02
37.	Divider 6"	06
38.	Cutting plier 8"	06
39.	Tester	06
40.	Electric hand gloves GS	06
41.	Screw driver 12"	06
42.	Electric blower GS	01
43.	Round bit tongs GS	02
44.	Square bit tongs GS	02
45.	Pick up tongs GS	02
46.	Big hammers with handles 6 lb	01
47.	Swage block 12"x12"x4"	01
48.	Flatters GS	02
49.	Sledge hammers 2 lb	01
50.	Flat tongs	02
51.	Anvil	01

Item No: 6

Department of Mechanical Engg.

Specifications of

**Equipment for the Mechanics of Solids &
Metallurgy Laboratory**

Mechanics of Solids Laboratory Specifications

S.No	Item	Qty. No.s	Specifications
1	Bending Test on Simple Supported & Cantilever Beam	01	<p>Simply Supported Beam specimen resting on flexible Supports to vary spacing. Including set of weights</p> <p>Length of beams -1m, Type of materials - Brass, steel, Aluminum, Alloy steel, Thickness-5mm.</p>
2	Rockwell Cum Brinell Hardness Tester Analog model	01	<p>Rock well Scales – A,B,C Brinell Hardness Hardness resolution-1.0 of a Rockwell unit Test Loads : Rockwell – 10kgf Pre Load/60,100,150 kgf Main load. Brinell - 10 kgf Pre load/187.5 kgm Main load, Display: Analog. Accuracy must confirm to IS 1586 -2000 92006) Specimen accommodation : Vertical space-230mm Horizontal space (from central line) -155mm Suitable for operation on 230 V single phase power supply. For performing brinells and Rockwell Hardness tester diamond indenter 1200 For performing brinells and Rockwell Hardness tester Max load 187.5 kgf Load range 60100,150kgf Initial load 10 kgf Max test height 216 mm Depth of throat 113 mm Size of base 171 mm*445mm Machine height 635mm Net weight 98.77kg The supplier must deliver the equipment at the laboratory install and demonstrate the equipment without any additional cost.</p>
3	Spring Testing Machine	01	<p>Maximum load-2500N, Clearance between cross heads-250mm, Least count for length – 0.01m, least count for load – 0.1N The supplier must deliver the equipment at the laboratory install and demonstrate the equipment without any additional cost.</p>
4	Universal Testing Machine	01	<p>Capacity-100 T Load range - 0-1000KN* 2 KN 0-500KN*1 KN 0-250KN*0.5 KN 0-100KN*0.2 KN Analog Model with 4 measuring ranges Max clearance: 50-850 mm for Tensile test For compression test 0-850mm Clearance between columns 750mm</p>

			<p>Ram stroke: 250 mm Straining or piston speed at no load 0-80 mm per minute Electric supply 2.6Kw Piston speed at no load: 0 to80mm. The following accessories must be supplied along with the basic equipment : Clamping Jaws for round specimens for conducting the tensile test : 10 to 25 mm 1set, 25-45mm 1set, 45-70 mm 1set Clamping jaws for flat specimens thickness for conducting the tensile test: 0 to 22 mm 1set, 22 -44mm 1set, 44-65mm 1set, 70 mm 1set 1 Pair of 160 mm plates for conducting the Compression Test 1 Table with adjustable rollers for conducting the transverse test , the width of the rollers 160 mm, the diameter of the rollers 50mm, Maximum clearance between supports 800mm, Radius of punch tops 16mm, 22mm. Suitable for operation on 440 Volts, 3 Phase, 50Hz Power supply. To be supplied with the manufacturers calibration certificates with traceability certificates to NABL standards. The supplier must deliver the equipment at the laboratory install and demonstrate the equipment without any additional cost.</p>
5	Impact Test for both Izod & Charpy	01	<p>ASI Make suitable both Izod and Charpy Width 18mm for Charpy test and 10 deg Horizontal and Vertical relief 5deg for Charpy test Pendulum drop angle- Izod-85, Charpy-140 Pendulum effective weight- Izod-21.24kg Charpy-20.59 Pendulum speed- Izod-3.884m\sec Charpy-5.3465 m\sec Pendulum Impact energy: 30kg-m for Charpy Test 16.52kg-m for Izod test. Striking edge angle: 30 deg for Charpy test and 75deg for Izod test Radius of curvature: 2.25mm for Charpy test and 0.75mm for Izod test Minute Graduations Izod-0.2kgm Charpy-0.2kgm Distance of axis of hammer rotation and centre of test piece point hit by hammer- Izod-825 mm Charpy-825 mm Max permissible loss by friction and windage 0.5% of max impact energy. The supplier must deliver the equipment at the laboratory install and demonstrate the equipment without any additional cost.</p>
6	Torsion Test Machine	01	Maximum Torque- 1000Nm,

			<p>Least Count : 0.01Nm</p> <p>Maximum Clearance between grips :500 mm</p> <p>Grips for square specimens : 5 to 15 mm</p> <p>Grips for Flat specimens : 5-12 x40mm</p> <p>Torque Ranges- 1000, 500, 250, 100 Nm, No.of divisions on Scale -500, Torsion speed- 1.5 rpm reverse.</p> <p>Suitable for operation on 440 Volts, 3 Phase 50 Hz Power supply.</p> <p>The supplier must deliver the equipment at the laboratory install and demonstrate the equipment without any additional cost.</p>
7	Miscellaneous- Models, Charts & Specimens	01	-

Metallurgy Laboratory Specifications

S.No	Item	Qty. No.s	Specifications
1	Disc Polishing Machine	01	Disc: Double Disc Variable speed:400 to1400 RPM Motor rating: ¼ AC motor single phase 230V,50Hz
2	Belt Grinding Machine	01	V – type belt, maximum speed – 4000 rpm, Height of machine – 200mm
3	Abrasive Cutting Machine	01	Maximum speed – 15,000 rpm, Diameter of wheel – 300 mm, clearance between wheel and ground – 500 mm
4	Optical Microscope	04	Objective: plan M-10X, Plan M-20X,Plan M-40X,100X(oil) Eyepieces: Wide field WF-10X Magnification Range: 100-1000X(standard) Mechanical stage: Coaxial mechanical square stage size:200mmX152mm Camera Adopter :C-Mount lens adaptor Coarse motion range 35mm,Fine focuse range 1.4mm
5	Mounting Press Machine		1200 watts heater Provision to accommodate 1 1/2’’ and 2’’ Dia Digital temperature indicator Hydraulic operator
6	Specimens, Fe, Cu, Al, Steel etc.	LS	-
7	Models, Charts and Consumables	-	-

Item No: 7

Department of Mechanical Engg.

Specifications of

**Equipment for the Thermal Engineering and
Hydro Prime Movers Laboratory**

Thermal Engineering and Hydro Prime Movers Laboratory

S.No	Item	Qty. No.s
1.	I.C. Engines valve / port timing diagrams	01
2.	I.C. Engines performance test on 4 -stroke Diesel engine	01
3.	I.C. Engines performance test on 2-stroke petrol engine	01
4.	Evaluation of engine friction by conducting Morse test on 4-stroke multi cylinder petrol engine	01
5.	Determination of FHP by retardation and motoring test on IC engine	01
6.	I.C. Engines heat balance on petrol / Diesel engines	01
7.	Economical speed test of an IC engine	01
8.	Study of boilers	01
9.	Impact of jets on Vanes	01
10.	Performance Test on Pelton Wheel	01
11.	Performance Test on Francis Turbine	01
12.	Performance Test on Kaplan Turbine	01
13.	Performance Test on Single Stage Centrifugal Pump	01
14.	Performance Test on Reciprocating Pump	01
15.	Calibration of Venturimeter & Orifice meter	01
16.	Determination of loss of head due to sudden contraction in a pipeline	01

Item No: 8

Department of BS&H.

Specifications of
**Equipment for the
Engineering Physics/Applied Physics
Laboratory**

Engineering Physics/Applied Physics Laboratory Specifications

S.No.	Item	Quantity
1	Sonometer & Digital Noise Level (Db) Meter	03
2	Newton's Rings- Diffraction Grating - Wavelengths of Spectral Lines Thin Film	03
3	Zener Diode & Thermistor	03
4	Compound Pendulum & Magnetic Field along the axis of a Circular Coil	03
5	Melde's Experiment & Torsional Pendulum	03
6	Viscosity Meter	03
7	Weather Station for Compass Wind Speed, Wind Vane, Anemometer, Humidity, Rainfall, Temperature, Collecting Tank (1mx1mx1m) Lux Meter	01

Item No: 9

Department of BS&H.

Specifications of
**Equipment for the
Engineering Chemistry /Applied Chemistry
Laboratory**

Engineering Chemistry/Applied Chemistry Laboratory Specifications

S.No	Item	Quantity
1	Glassware-Borosil Make	LS
2	Chemicals-AR Grade	LS
3	PH Meters	02
4	Conductivity Meter	02
5	Nephlo-Turbidity Meter	01
6	Electrical Balance	01
8	Refrigerator for storage of chemicals- Double Door	01
9	Colorimeter	01
10	Potentiometer	02

Item No: 10

Department of BS&H.

Specifications of
**Equipment for the
English Communication Laboratory**

English Communication Laboratory Specifications

S.No	Item
1	Globerena / K-van Solutions software for 65 systems in English communication Lab

Item No: 11

Infrastructure

Specifications of
Internet Leased Line Connectivity

Internet Leased Line Connectivity Specifications

S.No	Item	Bandwidth
1.	Internet Leased Line (1:1) Connectivity provided by BSNL Service Provider	10MBPS

Item No: 12

Infrastructure

Specifications of

LCD PROJECTORS

LCD Projector Specifications

<u>Item</u>	<u>Qty.</u>
LCD Projectors	06 No.s
LCD Projector Specifications	
TECHNOLOGY	
Projection System	3LCD Technology
LCD Panel	0.55 inch with MLA (D9)
IMAGE	
Colour Light Output	3,200 lumen- 2,240 lumen (economy) In accordance with IDMS15.4
White Light Output	3,200 lumen - 2,240 lumen (economy) In accordance with ISO 21118:2012
Resolution	XGA, 1024 x 768, 4:3
Contrast Ratio	15,000 : 1
Lamp UHE	UHE, 200 W, 5,000 h durability, 10,000 h durability (economy mode)
Keystone Correction	Auto vertical: $\pm 30^\circ$, Manual horizontal $\pm 30^\circ$
Colour Reproduction	Upto 1.07 billion colours
Aspect Ratio	4:3
Light source	Lamp
Colour Processing	10 Bits
2D Vertical Refresh Rate	100 Hz - 120 Hz
OPTICAL	
Projection Ratio	1.48 - 1.77:1
Zoom	Manual, Factor: 1.2
Image Size	30 inches - 300 inches
Projection Distance Wide/Tele	1.8 m - 2.17 m (60 inch screen)
Projection Lens F Number	1.58 - 1.72
Focal Distance	16.9 mm - 20.28 mm
Focus	Manual
Offset	8 : 1
CONNECTIVITY	
USB Display Function	3 in 1: Image / Mouse / Sound
Interfaces	USB 2.0 Type A, USB 2.0 Type B, Wireless LAN IEEE 802.11b/g/n (optional), VGA in, HDMI in, Composite in, S-Video in, Cinch audio in
GENERAL	
Energy Use	277 W, 207 W (economy), 0.26 W (standby)
Product dimensions	297 x 234 x 77 mm (Width x Depth x Height)
Product weight	2.4 kg
Noise Level	Normal: 37 dB (A) - Economy: 28 dB (A)
Included Software	EasyMP Network Monitor, EasyMP Multi PC Projection, EasyMP Network Projection
Loudspeaker	2 W
Colour	White
Supply Voltage	AC 100 V - 240 V, 50 Hz - 60 Hz
Taxes : All Inclusive	
Warranty: 24 months Carry in, Lamp: 12 months or 1,000 h Optional warranty extension available	
Delivery: Within 2 Weeks from the receipt of P.O	

Item No: 13

Infrastructure

Specifications of **Air Conditioner Units**

Air Conditioner Units Specifications

S.No	Item	Qty. No.s
1.	1.5 Ton 3 Star Split Air Conditioner with 1 Indoor Unit, 1 Outdoor Unit, 3 m Copper Wire, Drain Pipe, User Manual Taxes : All Inclusive the Stabilizer and installation charges Warranty: 12 months to 24 months 5 Years	12

Item No: 14

Infrastructure

Specifications of
Audio System

Audio System Specifications


S.No	Item	Qty. No.s
1	Audio System With amplifier (Public Addressing System) for Addressing 1000 members Outdoor	01
2	Collar Mikes	02
3	Chord less Mikes	04
4	Podium	01

Item No: 15

Furniture

Specifications of **Plastic Chairs with Arms**

Plastic Chairs Specifications

S.No	Item	Qty. No.s
1.	Plastic  Chair with arms	200

Item No: 16

Furniture

Specifications of **Wooden Experimental Benches and Stools**

Wooden Experimental Benches and Stools Specifications

S.No.	Name of the Furniture	Qty. No.s	Specifications
1	Wooden Experimental Benches	70	<p>Table Size 4'(L)X3'(W)-33''(H) with four legs of wood with Salwood leg 3''X3''X33'', Top frame is 6''X3/4'' Salwood and footrest is 2''X1/2'' Salwood Top frame 18mm PLB covered with take wood beading, Top side 3 sides closing with 18mm PLB with take wood beading. Top frame 4'X16'' with back side 3'' holes with neat polishing. Drawer 15''X22''X5'' of Salwood with coated metal handle.</p> <p>Taxes : All Inclusive</p>
2	Wooden Stools for Labs	200	<p>Stool size 15''(L) X15''(W) X 20''(H) with Leg and foot rest are 1'' round. Round pipe with 16 gages thickness. Top frame is 1''X1''X2.3 Angular frame. Total M.S Structure will be welded good painting process. Bottom legs are P.V.C bushes are provided. Top plane is Take wood plastic size is 15''(L) X 15''(W) X20mm thickness with neat polishing.</p> <p>Taxes : All Inclusive</p>

Item No: 17

Furniture

Specifications of
S-Type **make Chairs and Tables**

S-Type make Chairs and Tables Specifications

S.No	Item	Qty. No.s
1	S-Type make Chairs	75
2 make Double Shelf Table	12
3 make Single Shelf Table	36
4 make Almirah with Locker	15

Item No: 18

Library Books

Library Books Requirements

S.No	Item	Qty. No.s
1	Prescribed Text Books of II B.Tech I Semester of R16 Regulation of JNTUK of CE, EEE, ME, ECE and CSE branches of Engineering	10-20 of each Title
2	Prescribed Reference Books of II B.Tech I Semester of R16 Regulation of JNTUK of CE, EEE, ME, ECE and CSE branches of Engineering	02 of each Title
3	General Books of repute- Personality Development, Fiction, Epics, Historical, Encyclopedia, Competitive Exams, GK, Autobiographies, etc	01 each of 7000-8000 Titles

Item No: 19
Almirah and Racks
for
Library Books

Almirah and Racks for Library Book

S.No	Item	Qty. No.s
1	Almirah with Glass doors and locks – 6 foot Height	10
2	Open Racks-6 foot Height	20