

 GOVT. ENGINEERING COLLEGE, AJMER (An Autonomous Institute of Govt. of Rajasthan) Badliya Chouraha, N. H. – 8, Near Nareli Jain Temple, Ajmer, Rajasthan - 305025 www.ecajmer.ac.in E-mail:tesip.ecajmer@gmail.com							
S.No	Name of equipment	Detailed Specifications	Procured for which laboratory	Vendor Name and Address	Unit Rate	Date of Delivery	Date of Installation
1	8085 Microprocessor Trainer	Diagrammatic representation of full system (a) -On board Timer/Counter using 8253 (b) On board 24 I/O lines provided through 8255 © -On board HEX key pad (d) -On board Serial mode (e) -Battery Backup for RAM (f) -On board Seven Segment Display	ECE - Microprocessor Lab	M/s Excel Technologies, C - 92, Sector - 63, Noida, Uttar Pradesh - 201309, Noida, Uttar Pradesh, 201309	79650	25.08.2018	05.09.2018
	Stepper Motor Controller card compatible with 8085/8086	compatible with 8085/8086 Trainer kit ; ace : 26 Pin FRC					
	DC Motor Controller card	compatible with 8085/8086 Trainer kit ; Interface : 26 Pin FRC					
	Traffic Light Controller card compatible with 8085/8086	compatible with 8085/8086 Trainer kit ; Interface : 26 Pin FRC					
	Relay &opto coupler card compatible with 8085/8086	compatible with 8085/8086 Trainer kit ; Interface : 26 Pin FRC					
2	Microstrip trainer kit	The complete system should comprise of: (1) Microstrip ring resonator (2) Power meter (3) Microstrip 3dB branchline coupler (4) Backward wave stripline coupler (5) Microstrip 3dB power divider (6) Rat race hybrid ring (7) Low pass and band pass microstrip filters (8) Microwave amplifier Te system should also comprise of microwave source, short, termination, VSWR meter, detector, attenuators, cable and connectors etc.	ECE - Microwave Lab	M/s Technilab Instrument, No. 10/8, 3rd Cross, Maruthi Seva nagar, Banaswadi Main Road, Banaswadi Main Road, Bengaluru-560083	506220	08.09.2018	28.09.208
3	Buck-Boost regulators	Input Voltage : 180-270 Volt Ac, Outputvoltage : 200-240 Volt Ac, Frequency : 50 Hz, Output Current : 1.1 Amp., Capacity : 250 Watt.	ECE - Industrial Electronics Lab	M/s Technozon Solutions, Level 4, Tower - A, Godrej Eternia, Plot No. 70, Industrial Area - 1, Chandigarh - 160002	474714	18.09.2018	24.09.2018
	Motor control- open loop and closed loop	Motor Description : 1/25 Hp Ac/Dc Motor Coupled With 12V Dc Generator. Neatly Enclosed In A Powder Coated Metal Box,Isolated 230 V/50 Hz,40 W Ac Power Supply, +/- 12 V/500 Ma Dc Power Supply.					
	SCR TRIGGERING CIRCUIT	Onboard AC source : 18 V - 0 V - 18 V, Power Supply (Mains) : 110V - 260V AC, 50/60Hz, Operating Conditions : 0-40°C.					
	Single Phase bridge converter	230V A.C. Isolated Transformer, Power 50 watt, 9V D.C. at 100mA Zener Regulated Power Supply, Two UJT, Four SCR's, Two Pulse transformer 1:1:1, Two Potentiometers for controlling UJT firing angle, Bulb 40W, 230V A.C., The unit is operative on 230V ±10% at 50Hz A.C. Mains.					
	Single Phase Cycloconverter	Firing angle variation; 0-180, SCR assembly: 4SCRs 2P4M, 400V/2A, Main supply:220V/110V,50Hz/60Hz, Load :279E 5W.					
	Single phase dual converter- speed control of DC motor using Single phase dual converter- speed control of DC motor using single phase dual converter	Built in power supply+/-12V/500mA, Built in AC power supply 0-18V/2A, SCR TYN612-8 Nos , Diodes- 30 Nos, Transistors,CL100-8 Nos,BD115-3 Nos,2N222-4 Nos,ICs TL084-2 Nos,741-1 No,755- 4 Nos ,4011-2 Nos ,Resistors- 54 Nos,Potentiometers-1 No,Tapped chock,20-0-20 mH-2 Nos,Set of Patch Chords & Manual.					
	Single phase PWM inverter	IGBT PWM Controller & 3 Phase IGBT Power Circuit, RL Load & DC Power supply, Digital IC (Dspic4011) based Single phase & 3 Phase PWM generation, 6 Numbers of PWM Outputs with Frequency & Modulation index variation.					
	Speed control of DC motor using chopper	Input-230V, 50Hz AC If,Output-Variable DC (0 – 12V) Chopped output,Circuitry-Square wave generator, Square to triangle wave generator, Comparator, isolation & driver circuit,Power Circuit- Using power transistor,Loads-1) 12V / 1.5 A DC Motor (L-load), 2) 12V / 2A Lamp load (R load).					
Understanding characteristics of DIAC, TRIAC, SCR	"Mains power supply : 90 - 270V ±10%, 50Hz, Fixed DC power supply : +15V, Regulated +35V, Regulated -35V, Voltmeter Range : 0V to 99V Ammeter Range : 0mA to 20mA. "						

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4	Digital Podium	The podium shall be wheel mounted capable of moving in all directions with a facility of lock them while the Electronic podium is in use. The enclosure shall be made of Polymer Powder Coated Steel Body with wooden top panels, designed to work in suitable environmental conditions. The wooden top shall have lock and key and should have a sliding cover for opening/closing easily. The Podium should have housing and connectivity for Visual Presenter while the visualiser is in use and not in use. At the time of using the Visualiser ,drawer can be opened and Visualiser can be used. The construction of the podium should be such that,while the podium is locked and not in use, there should not be any port exposed/ visible on the outer body for breakage/mishandling.	QEEE-QEEE LAB	M/s Electronics (India), B 131-A Parshawnath colony, nirman nagar, ajmer road jaipur, jaipur, Rajasthan, 302019	486750	09.10.2019	04.02.2019
	Interactive Board(DTS)	Wall Mounted Lockable Enclosure, CRCA Steel Sheet, Computer should be of 2 liters Volume or less, Intel Core i3 (7th Gen with minimum 3.5 GHz Processing Speed), 4 GB (Upgradable upto 8 / 16 GB), 1 TB or better, Should have a inbuilt Wi-Fi / Wireless LAN Card					
5	Soldering desoldering station	The instrument should have following features: • Accurate and Advanced temperature Control with micro controller technology; • User-friendly operation; • Set / Read of temperature	ECE - Electronic Instrument Workshop	M/sVinytics Peripherals Pvt. Ltd. WB-10, Shakarpur, Delhi, 110092	328158	17.09.2018	28.09.2018
	PCB Fabrication setup	(1) PCB Curing machine (Oven) (2) PHOTO RESIST DIP COATING MACHINE (3) DOUBLE SIDED U.V.EXPOSURE UNIT					
	Opto-Electronic devices Characteristics Trainer kit	Technical Specifications : Inbuilt Variable DC regulated power supply • Output Voltage : 0-3VDC; • On Board Digital Meters • Voltmeter : 0-3VDC; • Ammeter : 0-50MicroADC/0-5mA (Dual Range).					
	Transistor radio AM kit	Construction : Superhetrodyne Frequency Range : 980 KHz to 2060 KHz Intermediate Frequency : 455 KHz					
	Transistor radio FM kit	Audio Construction : Superheterodyne; FM Frequency Band : 88 MHz to 108 MHz; Tuning Range : 96 MHz to 120 MHz; IF Frequency : 10.7 MHz					
	Public address System	Trainer should have following features: • Superior quality 100W high power Public Address System • Bass and Treble tone controls with Master control • Complete block diagram of a Public Address System on-board • The different circuit boards of Public Address System should be exposed on a PCB; • 3 Speaker outputs (4 /8 /16 Ohm) • 5 Mic and 2 Aux Inputs • Easy identification of different parts and components of the system at a glance • Easy measurement of voltages and observation of waveforms on test points • Soldering free Fault creation and troubleshooting					
	DVD Player Demonstration kit	• Manual and Remote Control Operation • DVD/ VCD/ CD/ MP3/ JPEG/ WMA Playback • PAL/ NTSC video formats • USB reader (2.0) • Composite video output					
	LCD TV Demonstration kit	• Superior quality 21-inch HD LCD Color Television/ PC Monitor • Manual and Remote control operation • PAL/ NTSC video formats • Composite video input/ VGA input					
LED TV Demonstration kit	• Superior quality 20-inch full HD LED Color Television/ PC Monitor • Manual and Remote control operation • PAL/ NTSC video formats • Composite video input/ VGA input						

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6	MICROCONTROLLER 8051	Devices : 80C51(Intel)Operating Frequency : 10MHz crystal 40-pin IC base 40pin-ZIF Socket (optional) for MCU 32KB-SRAM for user Data 32KB-EEPROM for Monitor Program	EIC- Microprocessor & Microcontroller Lab	M/sVinytics Peripherals Pvt. Ltd. WB-10, Shakarpur, Delhi, 110092	79945	27.12.2018	07.02.2019
	8085 MICROPROCESSOR KIT	SID/SOD Lines withAuto baud rate. Two modes of commands: - Hex Key pad mode & - Serial mode All address, data & control lines are buffered and made available at the edge connector as per STD bus configuration. 25/28 key hexadecimal keyboard and six seven segment displays through 8279 Powerful software commands like Relocate, String,					
	" Series and Shunt voltage regulators	"Product Description: On panel 3 combinations of C, & R On panel circuit diagram for charging & discharging SPDT switch for charge & discharge operation Fixed power supply 9 V @ 500 mA On panel 10 V digital meter"					
	" UJT and UJT as relaxation experimental kit	"Product Description: DC supply 12 V @ 500 mA On panel circuit diagram Required numbers of patch cords and operating manual. D. Required numbers of patch cords and operating manual. Features: High Quality Highly Efficient Safest"					
	" Zener diode and study of zener diode as voltage regulator.	"Variable DC regulated power supply of 0-12V at 250mA On board different valued three Zener diodes On board Different valued three resistors Dual Range DC Voltmeter of 1.5V/15V Dual Range DC Ammeter of 250uA/20mA Required number of patch cords"					
	"Two stage RC coupled amplifier experimental trainer	"Power ON switch & indicator. • Set Of Resistance. • RC arrangement. • Sin wave input. • complete manual . • Connecting wires and Patch cords. • Thick metallic cabinet."					
	ANALOG AMETER	0- 50 MA					
	ANALOG AMMETER	0-500 MICRO AMP					
	ANALOG VOLTMETER	0-20V					
	ANNALOG AMMETER	0-100 MICRO AMP.					
	Application of Diode as clipper & clamper	"Features: Built-in 1KHz Sine Wave Generator Good quality, reliable sockets and test points are provided Strongly supported by systematic operating instructions A low cost training system including many experiments 2 Years warranty Specifications: Mains Supply: 230 V ±10%, 50 Hz Sine Wave Generator: 1 KHz, 15V Vpp (approx.) DC Power Supply (2No.) : 0 - 5 V (vary through rotary switch for specific voltage level) Weight: 1.7 Kgs. (approx.) Dimensions (mm.): W 260 X D 355 X H 125"					
	BJT amplifier with and without feedback	"Power Supply ±8V Amplifier Circuit Using BC 108 With Load Wood Box (Closed Type)"					
	BJT in CB, CC and CE trainer	Features : Instrument comprises of fixed output. DC Regulated Power Supply ±12V, Circuit diagram is printed and Components mounted on the front panel & connections of important points brought out at Sockets.					
	Bridge rectifier experimental trainer	Bridge Rectifier Trainer Kit is a complete set consists of a step down transformer of different taping with four diode fitted on board for bridge connection with necessary terminals. All terminals are special Push to Open Hole type and circuit can be connect with hair Hook up wire a filter section provided with one Inductor and two electrolytic capacitors. Complete with variable load resistance and one AC voltmeter in dual range for measuring input AC supply voltage and ripple voltage. One DC voltmeter and one current meter is also provided on panel					
	Design Fabrication and Testing of k-derived filters (LP/HP).	"Built in power supply : no need Dimension : 27CMS X 17CMS [metal cabinet] Weight : 2KGS APPX"					
	Digital storage CRO (Study and Store a transient on it)	"Digital storage CRO (Study and Store a transient on it), DSO 100/200 MHZ OR OTHER HIGHER FREQUENCY."					

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7	Emitter follower experimental trainer	"Power Supply $\pm 8V$ Amplifier Circuit Using BC 108 With Load Wood Box (Closed Type)"	EIC- Electronic Device Lab	M/sVinytics Peripherals Pvt. Ltd. WB-10, Shakarpur, Delhi, 110092	164704.4	14.03.2019	
	Half wave rectifier experimental trainer	Half Wave Rectification. Fitted with three meters & transformer with no. of tappings. Variable load is also provided near there output terminals. All connections brought out on 4mm color coded banana sockets & used to study ripple factor & relation between r.m.s & average value.					
	Kit for P N Junction diode (V-I Characteristics, cut in voltage, reverse saturation current and static and dynamic resistance)	PERFORM LAB EXPERIMENT for P N Junction diode (V-I Characteristics, cut in voltage, reverse saturation current and static and dynamic resistance)					
	Kit for Plot and study the characteristics of small signal amplifier using FET	To perform lab Experiment of Plot and study the characteristics of small signal amplifier using FET					
	Kit for Plot drain current, drain voltage and drain current-gate bias characteristics of FET measure I_{dss} & V_p	PERFORM LAB EXPERIMENT for Plot drain current, drain voltage and drain current-gate bias characteristics of FET measure I_{dss} & V_p					
	Kit for Plot Gain frequency Characteristic of 2 stage RC couple Amplifier and calculate its bandwidth and compare it with theoretical value	perform lab experiment on Plot Gain frequency Characteristic of 2 stage RC couple Amplifier and calculate its bandwidth and compare it with theoretical value					
	Kit for Plot gain frequency Characteristic of Emitter follower	Perform Lab experiment on Plot gain frequency Characteristic of Emitter follower					
	Kit for study of push - pull amplifier to measure variation of output power and distortion with load	To perform lab experiment for study of push - pull amplifier to measure variation of output power and distortion with load					
	Kit for Study of series and shunt voltage regulator and measurement of line regulation and ripple factor	To perform lab experiment of series and shunt voltage regulator and measurement of line regulation and ripple factor (Line regulation and load regulation)					
	Kit for Zener diode (V-I characteristics)	PERFORM LAB EXPERIMENT on Zener diode (V-I characteristics)					
	Kit of Hartley oscillators observe the effect of variation of C on oscillator frequency.	To perform Lab experiment of Hartley oscillators observe the effect of variation of C on oscillator frequency.					
	Kit of UJT (Plot the characteristics and relaxation)	PERFORM LAB EXPERIMENT on UJT (Plot the characteristics and relaxation)					
	Oscillators: (a) Hartley (b) Colpitts experimental kit	"Features: Exclusive and compact design Straight forward representation of Hartley and Colpitt Oscillators +12V SMPS Adaptor provided with the trainer for power supply Designed by considering all the safety standards Low cost trainer including illustration of Oscillator's design using passive elements Online Product Tutorial 2 Year Warranty Specifications: Biasing Voltage: +12V DC Dimensions (mm): 240 W x 345 D x 110 H Weight: 1kg (approximate)"					
	PN Junction diode trainer kit	"Instrument comprises of the following: Two Continuously Variable DC Regulated Power Supply 0-3V, 0-30V able through a toggle switch. One Round MO65 dual range voltmeter. One Round MO65 dual range ammeter. Different type of Resistances and Capacitors Two PN Junction Diodes connected behind the front panel. One ON/OFF Switch with jewel light is provided on the front panel. Made of Heavy duty metal box construction."					
Push pull amplifier experimental trainer	"Built in Regulated Power supply DC +15V/300 mA Power supply Voltage range : AC 100V - 230 V Frequency range : 50 - 60Hz Housing It is mounted in an elegant ABS Plastic cabinet for better viewing and portability Dimension 29cm x 20cm x 11cm Weight 1.5kgs"						
Single stage amplifier experimental trainer	"Power ON switch & indicator. • Set Of Resistance. • RC arrangement. • Sin wave input. • complete manual . • Connecting wires and Patch cords. • Thick metallic cabinet"						
Small signal amplifier using FET.	Features : Instrument comprises of DC Regulated Power Supply, Circuit diagram is printed, components mounted on the front panel.						
Transistor phase shift oscillator experimental trainer	"Built in fixed power supply of 12V at 250mA On board transistor with filters Input and output sockets onboard Required number of patch cords"						
Wein bridge oscillator experimental trainer	"Features: Exclusive and compact design Straight forward representation of Wein Bridge Oscillator +12V, -12V inbuilt SMPS provided with the trainer for power supply Designed with considering all the safety standards Online product tutorial Low cost trainer including illustration of Oscillator design using passive elements 2 Year Warranty Specifications: Biasing Voltage: +12V, -12V DC Dimensions(mm) 240 W x 345 D x 110 H Weight: 1kg (approximate)"						

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	Jar Test Flocculator	High visibility LED displays for speed and time Illuminated back panel to simplify sample observation Construction material :-epoxy painted metal structure Back panel :- Disconnect able illuminated Stainless steel stirring rod adjustable in height by a self blocking chuck, DC gear motor Monoor same speed for each rod Power: 15-20W Dimensions (WxHxD) 935x347x260 mm Weight 17 kg (37.4 lb) Electronic speed control:- from 10 to 300 rpm Speed setting interval :-1 rpm Microprocessor controlled timer (0 to 100 minutes or continuous) (With all the required accessories and 3 set of consumables, if any required)					
	Microprocessor Based pH Meter	Large Backlit graphic display which shows Electrode Status, time, date, sample ID, User ID and Calibration Points •5 Point pH Calibration with automatic recognition of buffers (for US/NIST and DIN) •Calibration edit facility to fix calibration errors without full recalibration •Non volatile memory holds up to 2000 data points with time and date stamp. •Transfer of data with USB and RS232 ports and complimentary data analysis software •Power as well as battery operated TECHNICAL SPECIFICATIONS: pH Range : -2.00 to 20.000 Resolution : 0.1, 0.01, 0.001 Relative Accuracy: ±0.002 pH Calibration Points: Up to 5 Calibration Editing: Yes mV Range-mV : ± 2000.0 mV Resolution : 0.1 Relative Accuracy: ±0.2 mV or ±0.05% of reading whichever is greater EH ORP Mode : Yes Temperature Range : -5 to 105°C, 23 to 221°F Resolution : 0.1 Relative Accuracy: ±0.1 offset Calibration: 1 Point Data logging : 2000 Data Points with time & 2date stamp Output : RS232, USB Power AC Adapter: Included-universal, 100-240 VAC Battery Power: Optional- 4 AAs and With All other Accessories required for the Test					
	Bench conductivity/Tds/ Temp. Meter	Large screen that displays Conductivity or TDS readings with Temperature in °C or °F, Ready indicator let you know when readings are stable able cell constant, Auto-ranging across 5 Conductivity and TDS ranges, Integral electrode holder, Conductivity Range 0.01 to 200.0 mS/cm Resolution 0.01 µS; 0.1 µS ; 1 µS ; 0.01 mS ; 0.1 mS * Accuracy ±1% Full scale TDS Range 0.01 to 100 ppt @ 0.5 TDS factor (to 200 ppt @ 1.0 TDS factor) Resolution 0.01 ppm; 0.1 ppm ; 1 ppm ; 0.01 ppt ; 0.1 ppt Accuracy ± 1% Full scale + 1 digit Calibration Points (Cond. / TDS) :-5 points Temperature Range 0.0 to 100.0 OC Resolution/Accuracy: 0.10 C / 0.1 OF ; ± 0.5 OC /± 0.9 OF Built-in Electrode Arm: Yes Temperature Coefficient: 0.00 to 10.00 % Temperature Normalization: 15 to 30 OC Memory 100 Data sets Electrode Included, ulem body CONSENS9501D, cell constant 1.0, minimum 1 m cable Power Requirement Included, 100 /240VAC SMPS Power Adapter with ,9V,6W, CENTRE +ve (0 to 100 minutes or continuous) (With all the required accessories and 3 set of consumables, if any required)					
	Multi parameter Photometer	Instrument should be able measure hardness, alkanity, concentration of chlorides etc. USB connectivity to download up to 500 results, method upload for User Defined Tests, new application s and remote control – maintains the IP67 waterproof rating when the USB cable is connected! Designed for the Palin test System – tablet reagents, liquid reagents and the Tube test range of nutrients, heavy metals and COD testing reagents. Large backlit LCD screen, automatic test prompts, dilution correction and choice of result units Dual light source photometer offering direct-reading of pre-programmed test calibrations, Absorbance and Transmittance Peak Wavelengths 450nm, 500nm, 550nm, 570nm, 600nm, 650nm Accuracy ± 1.0% T Display 320 x 240 pixel LCD with backlight and contrast adjustment User Interface On-screen prompts available in English Size (W x L x H) and weight:- 150 x 250 x 70mm, 975g Power Supply 3 x 1.5v 'AA' batteries ,mains power delivered by USB port Connectivity Palin test Bluetooth SMART (4.0) profile and USB for data download User Defined Methods Up to 30 additional methods Memory Capacity Up to 500 data sets. Each data set includes date, time, Sample ID, Operator ID, method number, method name, result,					
	Thermo reactor COD Analysis	Construction material:- Epoxy painted metal structure Holes number and diameter:- 14 pos. (Ø 16 mm) and 2 pos. (Ø 22 mm) Set temperature:- display visualization Countdown:- display visualization End of the cycle acoustic signal with automatic switch-off Power 550 W Weight: 3.8 Kg (8.4 lb) Dimensions (WxHxD) 188x110x269 mm (6.4x4.3x10.6 in) able working temperatures from room temperature to 160 °C, resolution 1 °C able working times from 0 to 199 minutes or continuous operation HEATING BLOCK TECHNICAL DATA Temperature stability ± 0.5 °C Temperature homogeneity ± 0.5 °C Temperature precision ± 1 °C Over temperature safety SIGNALS Reaching of set temperature visual signal Countdown visual signal End of cycle acoustic and visual signal Probe interruption acoustic and visual signal Broken probe acoustic and visual signal Exceed temperature range acoustic and visual signal (With all the required accessories and 3 set of consumables, if any required)					
8	BOD Analysis	Innovative, mercury-free and extremely reliable solution for BOD analysis (Biochemical Oxygen Demand) Precise Control, Measurement on scales of 90, 250, 600 and 999 ppm BOD . Automatically stores 5 BOD values at 24-hour intervals, Enables analysis to continue over the weekend, Results directly readable at any time, even after five days, Direct readout in mg/l (ppm), Compact stirring stations Construction material: Techno polymer Power: BOD Sensor System 6 2 W Power supply: BOD Sensor System 6 230 V / 50-60 Hz Dimensions (WxHxD): BOD Sensor System 6 270x300x185 mm (10.6x11.8x7.3 in) Weight: BOD Sensor System 6 2,3 Kg (5.1 lb) Reading value: mg/l (ppm) directly on the display Measurement by electronic pressure probe Bottle total capacity: 500 ml Stored data: 5 BOD values at 24h intervals BOD values: directly on the display at any time also after the standard 5 days period BOD last determination: Possible Scales: 90, 250, 600, 999 ppm BOD. Higher values after dilution Display: digits 3 LED Safety class: 3 IEC 1010 (With all the required accessories and 3 set of consumables, if any required)	Environmental Engineering Lab	M/S Electronics India , B 131-A Parshawnath Colony,Nirman Nagar ajmer, Road Jaipur, Jaipur, Rajasthan-302019	1585374.84	09.05.2019	

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	Cooled Incubator	able incubation temperature from 3 to 50 °C Internal sockets to power devices Total volume of 200 liters Total volume 200 liters Electronic thermoregulation system AUTO - TUNING Number of shelves included 2 Number of sockets 2 Internal electrical current sockets Power 120 W Power supply 230 V / 50-60 Hz Weight 36.0 kg (79.4 lb) Dimensions (WxHxD) 540x912x550 mm (21.3x49.7x21.7 in) Temperature range from 3.0 to 50.0 °C Internal temperature stability ± 0.5 °C Internal temperature homogeneity ± 0.5 °C Digital display 3-digit, 0.1 °C resolution					
	Hand-Held Dissolved Oxygen Meter	Microprocessor based dissolved oxygen meter. Reads in mg/l, ppm and % Saturation, Barometric Pressure and Salinity Compensation, Calibration can be performed at 100% and or 0% solution, Rugged rubber boot for additional protection Galvanic DO probe which allows instantaneous measurements since no time for polarization is required Dissolved Oxygen Range 0.00 to 19.99 mg/l or ppm Resolution/ Accuracy 0.01 mg/l or ppm; ±1.5% of Full scale % Saturation of Oxygen 0.0 - 199.9% Resolution/ Accuracy 0.1 % ; ± 1.5% of Full scale Temperature Range 0 to 50.00 C. Resolution/ Accuracy 0.10 C ; +0.5 0C Barometric Pressure Correction 500 to 1499 mm Hg or 66.6 to 199.9 kPa Resolution 1 mm Hg or 0.1 kPa Method Automatic correction after manual input Salinity Correction 0.0 to 50.0 ppt * Resolution 0.1 ppt Method Automatic correction after manual input Probe Included, galvanic probe with 3 meter cable (ECDO6HANDY3M) Temp. Compensation Automatic /Manual (0 to 50.0 0 C) Operating Range 0 to 50 0C Display Custom single 4 digit LCD Power Requirement 4 x 1.5V 'AAA' batteries, battery life > 100 hours. Mains operation not possible Carrying Case-Yes (With all the required accessories and 3 set of consumables, if any required)					
	Sound level meter	Frequency range: 31.5Hz-8KHz Measuring level range: 35-130dB Microphone: 1/2 inch electrets condenser microphone Calibration: Electrical calibration with the internal oscillator (1kHz sine wave) Display: LCD Digital display: 4 digits Resolution: 0.1dB, Display Up data: 0.5 sec. Accuracy: + 1.5dB (under reference conditions) Dynamic range: 65dB Alarm function: "OVER" is show when input is out of range Operation temperature: 0 - 40°C Operation humidity: 10 to 90%RH					
	Nephelo-turbidity meter	Meter should s features complete GLP (Good Laboratory Practice) Functions that allow traceability of the calibration conditions. The last calibration, date and time can be checked at the touch of a button. Up to 200 measurements along with it's associated locations can be stored in the internal memory and recalled at any time. Data can be transferred to a PC via RS232 or USB interface. • EPA Compliant • High accuracy at low ranges (below 0.05 NTU) • GLP Features • One, two or three-point calibration • Log up to 200 Records • USB and RS232 PC connectivity • Battery % Indicator on startup • Continuous current time on display • User friendly, backlit display with guidance codes Range 0.00 to 9.99; 10.0 to 99.9 and 100 to 1000 NTU Range ion automatic Resolution 0.01 NTU from 0.00 to 9.99 NTU; 0.1 NTU from 10.0 to 99.9 NTU; 1 NTU from 100 to 1000 NTU Accuracy @25°C/77°F ±2% of reading plus 0.02 NTU Repeatability ±1% of reading or 0.02 NTU, whichever is greater Stray Light < 0.02 NTU Light Detector silicon photocell Light Source tungsten filament lamp Lamp Life greater than 100,000 readings Measuring mode normal, average, continuous Turbidity Standards <15, 100 and 750 NTU Calibration three point calibration Environment 0° to 50°C					
	Hot air oven 95 liter	Temperature range 5°C above ambient to 250°C with accuracy of ±2°C. Each hot air oven is produced with double walled construction and made of 304 grades stainless steel with insulation of mineral wool for efficient thermal loss. Doors are double walled, made of stainless steel and also fully insulated with mineral wool, fitted on heavy hinges. Sturdy handle provides comfortable opening and closing. For efficient heating, our hot air ovens are fitted with branded heating elements, nickel / chrome plated nichrome wire, kept inside the beads and placed at the bottom and both sides of the chamber. For safe removal of hot gases and fumes air ventilators are provided near the top of the both sides.					
	Imhoff Cone	Graduated from 0 to 1 ml in 0.1 ml divisions, 1 to 10 ml in 0.5 ml and 10 to 40 ml in 1 ml. also marked at 1000 ml. with sharp tip (set of 2 imhoff cones with stand)					
	Water Distillation Unit	• provides 4 liters/hr of distilled water produced through a power input of 3 KW by a chromium plated heater housed in a horizontal Glass Boiler Distilled output is cool ensured by a high efficiency condenser. Temperature of distillate 25.0Å°C - 40.0Å°C tested for ambient room temperature of 30.0Å°C. • Temperature of distillate 25.0Å°C - 40.0Å°C tested for ambient room temperature of 30.0Å°C. • Output: 4lit/hr • Distillate quality: Progeny free					
	Glassware-I	Laboratory borosilicate Flask set of 5 (Size-1000 ml, 500 ml, 250 ml, 100 ml,50 ml					
	Glassware-II	Test Tube(Size-100 ml, 200ml, 50 ml) made of borosilicate					
	Glassware-III	Laboratory borosilicate beaker set of 5 (Size-1000 ml, 500 ml, 250 ml, 100 ml,50 ml					
	Evaporating Dish	Made of porcelain, flat form with spout, glazes inside and outside , set of 3 (50 ml, 100ml,250ml)					
	Apparatus for Verification of Clarke's Maxwell Reciprocal Theorem	1.Apparatus should consist of a mild steel beam 100cm long and 1.25cm x 4mm in cross section with graduation at every 10cm along the length. 2. It should be supported on two knife edge metallic supports 70cm apart with a 30cm overhang on one side. 3. Reciprocal theorem can be verified by direct measurements of the deflections of various points with the help of a dial gauge due to a load placed at the reciprocal points.					

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9		4. Instead of dial gauge, One LVDT and One Load cell with digital indicator will be affixed one supplied with the apparatus. 5. Apparatus to be supplied should be complete with a supporting metal stand with strong base and a set of required weights.	Structural Engineering Lab	M/s D. D. R. International, 982-B, 1st Floor, Housing Board, Near Ram Darbar Mandir, Ambala Cantt, Punjab-133001 M/s D. D. R. International, 982-B, 1st Floor, Housing Board, Near Ram Darbar Mandir, Ambala Cantt, Punjab-133001	674346.4	30.05.2019	
	Two hinged arch apparatus	1.The mild steel model have a span of 100cm and rise 25cm. Both ends should have hinge but one of the ends should also be free to move longitudinally. 2. A lever arrangement may be fitted at this end for the application of known horizontal inward force for measuring the horizontal thrust. Along the horizontal span of the arch various points are marked at equidistant for the application of load. This being a statically indeterminate structure of the first degree. 3.Instead of dial gauge, One LVDT and One Load cell with digital indicator will be affixed should be supplied with the apparatus.This model is complete with a supporting stand and a set of weights.					
	Three Hinged Arch Apparatus	1.The mild steel model has a span of 100cm and rise 25cm with hinges at supports and crown. One of the ends should rests on rollers. Along the horizontal span of the arch various points are marked at equidistant for the application of load. 2. This being a statically determinate structure, the horizontal thrust developed under the action of any load system can be theoretically calculated and will also be measured directly by neutralizing the outward movement of the roller end. 3.Instead of dial gauge, One Load cell with digital indicator will be affixed be supplied with the apparatus. Apparatus is complete with a supporting metal stand with strong base and a set of weights.					
	Deflection of Truss Apparatus	1. Apparatus consists of 4 panels of a PRATT truss, each panel being 40cm in horizontal direction and 30cm in vertical direction. 2. Load can be applied on each panel point. All tension members are provided with detachable springs so as to obtain appreciable deformation of the member. 3.Direction of the diagonal members may be changed. Apparatus can be used to illustrate visually the nature of forces set up in various members of the Truss. 4.Instead of dial gauge, Three LVDT with digital indicator will be affixed one with the apparatus. Apparatus is supplied complete with a supporting stand and a set of weights.					
	Curved Member Apparatus	1. The apparatus consists of a steel bar which is used to make the different curved members Viz. circle, semicircle with straight arm, a quadrant of a circle and quadrant of a circle with straight arm. The bottom ends of the members are fixed to the base. Under the application of load at free end, its horizontal and vertical deflection can be measured with the help of dial gauges. 2. Apparatus is supplied with a supporting metal stand and One LVDT and One Load cell with digital indicator will be affixed.					
	Behaviour of Column and Struts Apparatus	1. The apparatus consists of four high quality spring steel columns which are put along a vertical wooden board. 2.These four columns have different end conditions as below: Both ends pinned; Both ends fixed; One end pinned and other fixed; One end fixed and other end free. 3. Apparatus should supplied complete with a supporting metal stand and a set of weights. 4.A digital Weighing Balance of 6 kg capacity					
	Unsymmetrical Bending Apparatus	1. The apparatus consists of a mild steel angle of size 1" x 1" x 1/8" or in equivalent metric units of length 80cm is tied as a cantilever beam. 2. The beam should be fixed at one end such that the rotation of 450 intervals can be given and clamped such that the principal axis of its cross-section may be inclined at any angle with the horizontal and vertical planes. Also arrangement may be provided to apply vertical load at the free end of the cantilever and to measure horizontal and vertical deflection of the free end. 3. Instead of dial gauge, Two LVDT with digital indicator will be supplied with the apparatus. 4. Apparatus should supplied complete with a supporting stand and a set of weights.					
	Redundant joint apparatus	1. The apparatus consists of three suspension members (spring balances) of different stiffness which are jointed at a point to form the redundant joint. The upper end of the suspension members being tied in a position to a vertical wooden board. 2. Arrangement is provided to apply a vertical load at the joint and to measure its horizontal and vertical displacement on a paper and also elongations and forces in the suspension members by the help of dial gauges. 3. Instead of dial gauge, Two LVDT and One Load cell with digital indicator will be affixed with a supporting metal stand and a set of weights.					
	Elastic Properties of Deflected Beam Apparatus	1. The apparatus consists of a rust proof mild steel beam 2.5cm x 3mm in cross section and 100cm long, pinned to two supports 70cm apart situated symmetrically. 2. One of the ends can be fixed or given a known slope by applying a known moment at the end with the help of suspended loads. At the other end also a known moment can be applied. 3. Vertical loads can be applied at various points along the span of the beam. 4. Instead of dial gauge, Two LVDT with digital indicator will be affixed with the apparatus. 5. Apparatus should be supplied complete with a supporting strong metal stand with thick base and a set of required weights.					

S.No	Name of equipment	Detailed Specifications	Procured for which laboratory	Vendor Name and Address	Unit Rate	Date of Delivery	Date of Installation
	"Deflection of beam	Working model with dial gauge and magnetic base of weight set, complete all accessories with operating manual. One Set Dial gauge (Mercer-Make) 25mm travel & Magnetic Base					
	"Portal Frame	1.Working model with dial gauge and magnetic base of weight set, complete all accessories with operating Manual. 2.Model should demonstrate the behavior of portal frame under vertical loading placed at different points of this span. Under a central point load, the deflected form of the portal should illustrate the presence of hogging moment near the top corner and sagging moment under 3. Load as well as in the two legs of portal. There shall be no side sway. If the load is placed eccentrically the frame sways to the opposite side and there will be some change in curvature of the members indicating changes in the size of the moment. One Set Dial gauge (Mercer-Make) 25mm travel & Magnetic Base.					
	"Suspension Bridge	1 Apparatus should consists of two mild steel cables 0.5 cm diameter in cross section and 150cm long, pinned to two supports 90cm apart situated Symmetrically. 2. One of the ends can be converted to a roller by applying a known load at the end with the help of suspended pulley system. Vertical loads can be applied at various points along the span of the beam. 3. A dial gauge (Mercer-Make) with 25mm travel (with a magnetic base) may be supplied with the apparatus. 4. Apparatus to be supplied should be complete with a Supporting stand and a set of weights. 5. One Set Dial gauge (Mercer-Make) 25mm travel & Magnetic Base.					
	Data Logger with Software and PC	Any equipment connected with LVDT and Load cell can be connecting through data logger and the data can be transfer to the PC with suitable software (window base). Software is capable to store the data/calculate the data and draw the graph as the requirement of experiment thus charges of software will be extra.					
	Digital table top Weighing machine	1. Weighing machine which can measure 100 kg maximum weight with 5-gram precision. It should consist a rechargeable battery for best in minimum 48 hours of battery backup and directly plug-in 220 V power cord. Size of weighing platform should be minimum 300mm x 300mm 2. Machine should be crafted with a durable heavy duty mild steel with rust proof coating or stainless steel 3. A large LED display with wide 180 degree viewing angle.					
	Steel bar cut off / chop saw machine	A powerful 14" cutting machine with chop saw design, useful for heavy duty industrial cutting of metal bars and angles with motor of 220V and 2000-2200 watt					
10	Capstan Lathe Machine	<p>a. Max. Collet Capacity = 50 mm</p> <p>b. Range of Spindle speed = 90-1000rpm</p> <p>c. Effective Stroke of Turret Slide = 175 mm</p> <p>d. Cross slide transverse travel = 150 mm</p> <p>e. Cross slide longitudinal travel = 300 mm</p> <p>f. Length of bed = 1350 mm</p> <p>g. Width of bed = 220 mm</p> <p>h. Height of centre above bed = 190 mm</p> <p>i. Drive motor Capacity:-</p> <p>1. Spindle = 2.5/5.0 KW</p> <p>2. Coolant = 0.07 KW Standard Equipments:-</p> <p>a. Switchable electric 3 Phase 440 Volts motor with starter and fittings.</p> <p>b. Splash Guard</p> <p>c. Min 3 Collets</p> <p>d. Bar Stopper</p> <p>e. Spanner Set</p> <p>f. Coolant pump with assembly</p> <p>g. Bar feeding attachment</p> <p>h. Tool Holder</p> <p>i. True chuck with chuck plate</p>	Production Engg. Lab 1	M/s Micro Mech Instruments, No. 1, 2nd Cross Street, Thendral Nagar, Karapakkam, Karapakkam, Chennai-600097	527460	15.07.2019	16.07.2019
11	Dynamometer Drill	<p>Force – Torque and thrust</p> <p>Range – Minimum 200 kg thrust and 10 kg – m torque</p> <p>Sensor – 4 arm bonded strain gauge bridge for each force</p> <p>Bridge Resistance: 350 O (ohms) Excitation Voltage : 12 Volts DC Linearity:- ± 1% of full scale</p> <p>Accuracy :- ± 1% of full scale</p> <p>With 3 inch self centering vice to hold the specimen</p>					
	Dynamometer Lathe	<p>Force:- In X,Y, and Z direction</p> <p>Range:- Minimum 200 Kg</p> <p>Sensor:-4 Arm bonded strain gauge bridge for each force</p> <p>Bridge Resistance: 350 O (ohms)</p> <p>Excitation Voltage : 12 Volts DC</p> <p>Linearity:- ± 1% of full scale</p> <p>Accuracy :- ± 1% of full scale</p> <p>Tool post diameter :- 20 mm</p>	Production Engg. Lab 2	M/S Roorkee Equipment & Models Pvt. Ltd., C-18, Ramnagar Industrial Area, Roorkee, Uttarakhand-247667	91450	28.04.2019	10.05.2019

S.No	Name of equipment	Detailed Specifications	Procured for which laboratory	Vendor Name and Address	Unit Rate	Date of Delivery	Date of Installation
	Dynamometer Mill	Force:- In X,Y, and Z direction Range- Min 200 kgf force Sensor – 4 arm bonded strain gauge bridge for each force Bridge Resistance: 350 O (ohms) Excitation Voltage : 12 Volts DC Linearity:- ± 1% of full scale Accuracy :- ± 1% of full scale With slots provided on base plate for mounting and with self centering vice (3") to hold the specimen					
12	Surface roughness tester	"Make:- Mitutoyo Model:- SJ-210 Drive unit type :- Retractable Measuring range : X axis- 0.69", Y axis-14200 μ inch Measuring speed Measuring : 0.01,0.02,0.03 in/s Returning : 0.04 in/s Stylus tip radius :- 200μ in/5μ m Measured Profile :- Primary, roughness Sampling length :- 0.003, 0.01, 0.03, 0.1 in Digital filter : 2CR75/PC75/ Gaussian Measurement result display :- Vertical, horizontal, curve, graph, value Standard accessories Connecting cable Roughness specimen Carrying case Calibration stage Protective sheets for display AC Adapter Operation manual Quick reference manual Warranty "	Production Engg. Lab 3	M/s Electronics India, B 131-A Parshawnath Colony,Nirman Nagarajmer Road Jaipur, Jaipur, Rajasthan-302019	143960	20.05.2019	27.05.2019
13	Databases Searched	1 Billion Student Papers 228 Million journal articles, periodicals and books (leading	Turnitin Originality check Software		548319.45	26.07.2019	30.07.2019
	Similarity Index	Similarity Index is generated using Originality Check.					
	Users	Majorly used by the Universities/Institutes in order to generate originality reports and to enhance the writing skills of the					
	Comprehensive Report Capability	A similarity report shows matches within the submitted document to the documents in the Turnitin database or the indexed current or archived webpages. Similarity report includes: • Direct-source comparisons of matched word to matched documents • Pattern-recognition matching of both word-for-word & paraphrased materials. • Ability to view all underlying matched words that have been obscured by overlapping matches. • Multiple report manipulations for optimum usability					
	Translational Matches	Availability of Translational Matches					
	File Size Permitted	40 MB					
	Types Supported	MS Word, Word XML, WordPerfect, PostScript, PDF, HTML, RTF, HWP, Open					
	Integration	LTI Integration					
English Testing Service (ETS)	Grammar Checking with e-Rater Facility						

S.No	Name of equipment	Detailed Specifications	Procured for which laboratory	Vendor Name and Address	Unit Rate	Date of Delivery	Date of Installation
14	Master CAM	<p>Mastercam Educational Suite (10 User) Includes the following software modules: Design Lathe Mastercam for SOLIDWORKS (Mill & Lathe) Mill Level 3 (includes Rotary 4-axis) Router Wire EDM Data Translators: ASCII, CADL, DWG, EPS, IGES, Inventor, Parasolids, SOLIDWORKS, Solid Edge, STEP, STL, VDA, PRO/E (read only) Simultaneous 4 and 5 axis machining capability 1st year Maintenance to avail online support + New updates</p>	Master CAM	M/s Mastercam India Pvt. Ltd., 303- Tower1 World Trade Center Kharadi Pune, Pune, Maharashtra-411014	599994.6	12.07.2019	30.07.2019
15	DIG Silent Power Factory Software (PF4E) Education Version.	<p>Educational License- 25 users- Plus Research License- Single User- infinite nodes DigSILENT Power Factory PF4E V15 License consisting of following modules:- Base Package consisting of: - Network Models Data Management Power Equipment Models Network Diagrams and Graphic Capabilities Results and Reporting External Data format support Overhead Line and Cable Parameter calculation. Distribution Network Analysis Scripting and Automation Load Flow Analysis (Balanced & Unbalanced), AC/DC Systems Short circuit Analysis Contingency Analysis. Network Reduction. Voltage Stability Analysis Quasi Dynamic Simulation Load Flow sensitivities Basic LV/MV network Analysis Techno-Economical Calculation Asynchronous Machine Parameter Identification DGS Interface (File formats supported: ASCII Text (CSV), XML, MS- Excel and MS Access). Add-on modules like :- Protection Functions (Over current-time & Distance) Distribution Network Optimization Harmonic Analysis Optimal Power Flow II (Reactive Power Optimization & Economic Dispatch) Reliability Analysis State Estimation (SE) Stability Analysis Functions(RMS) incl. Transient Motor Starting Electromagnetic Transients (EMT) Small Signal Stability (Eigenvalue Analysis) Dynamic Parameter Identification*(Research License)</p>	DIG Silent Power Factory Software	Dell Soft Technologies Pvt. Ltd, #WZ-29, 1st Floor, Uggrasain market, Ashok Nagar, New Delhi-110018,	944000	29.07.2019	29.07.2019