



Government of Jammu & Kashmir
INDUSTRIAL TRAINING INSTITUTE
KISHTWAR

District HQ.Kishtwar

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RETENDER NOTICE

Industrial Training Institute intends to purchase different machinery equipment, hand tools, under **“Reforms and Improvement in Vocational Training Services Rendered by the Central & State Governments” Vocational Training Improvement Project** Credit No.- IDA 4319-IN for ITI Kishtwar.

The items in the tender notice were already tendered out but are retendered on account of poor response for the said groups. Detailed terms & conditions of the tender are mentioned in the Tender document, which will be made available to the interested Registered Reputed Manufacturers/ Authorized dealers/Suppliers against a payment of Rs 300/=through bearer INDIAN POSTAL ORDER in the name of Principal Industrial Training Institute Kishtwar from 17-11-2011 to 02-12-2011 during office working hours at ITI Kishtwar. The tender document can also be downloaded from our official Web site:- www.jkdte.org.

The tenders will be received back in the office of the undersigned by or before 03-12-2011 up to 12.00 noon .The tenders will be opened on 03-12-2011 at 2.00pm in presence of bidders who wish to be present. If the last date happens to be an off day the tenders will be opened on next working day at scheduled time.

Sd/=
Principal
Industrial Training Institute
Kishtwar

ITI/Kwr/pur/vtip/43/965-67

Dated:-16 -11-2011

Copy to:-

- 1) Director Technical Education , Jammu & Kashmir, Jammu with the request that the same be got displayed on the official website of Directorate.
- 2) Joint Director Information J&K, Jammu with the request to kindly get the notice published in two leading dailies of Jammu as well as Srinagar and one National daily.
- 3) Chairman IMC,ITI Kishtwar.

Government of Jammu & Kashmir
Industrial Training institute
Kishtwar.

Notice Inviting Tenders

For & on behalf of Governor of Jammu & Kashmir State, sealed tenders duly affixed with Five Rupees Revenue stamps are invited from the Registered Firms/ Manufacturers & their Authorized Dealers for supply of Machinery Equipments, Tools etc for use in ITI Kishtwar under “**Reforms and Improvement in Vocational Training Services Rendered by the Central & State Governments**” **Vocational Training Improvement Project** Credit No.- IDA 4319-IN. as per terms & conditions given below. The detail of the items are enclosed in groups viz 01 to 06.

The bidder/Tenderer shall submit their bid in two cover system I,e

a) **Cover I will contain “technical qualification & CDR as prescribed.**

b) **Cover II will contain price bid.**

Terms & conditions:-

- 1 Rates should be quoted strictly inclusive of all Taxes (VAT, Entry Tax, Other taxes ,Packing etc). The rates quoted should be F.O.R ITI Kishtwar.
- 2 Bidder should mention clearly the maximum possible warranty period of the tendered item & shall provide free after sale service during the warranty period.
- 3 Bidder shall have to produce Sales Tax/VAT clearance certificate for the preceding year.
- 4 The successful bidder shall compulsorily write “**make**” for each item & provide Demonstration of various functions of equipment where applicable to the identified officials of the Institute at ITI Kishtwar.
- 5 The rates which are quoted should be attached with the price list of the Principal manufacturer wherever available/demanded by the committee.
- 6 In case Bidder is not a manufacturer himself, he should submit the original /Zerox letter from manufacturer/ Distributor/Dealer/authorizing him to quote rates on his behalf.
- 7 Bid/offer of any Sub-standard item will be treated as rejection of the tender.
- 8 Offers shall be supported by relevant literature, pamphlets. Samples will be sought if & where felt necessary, & same should be kept in state of readiness, so that the same can be provided to the purchase committee, when asked within a period of seven days.
- 9 The bidder is at liberty to bid for either group or for whole.
- 10 Each offer/Tender shall be accompanied with a Call Deposit Receipt (CDR) as indicated against each group. The same will be returned in case of un-successful bidders.The condition shall not be waived off except where machinery / Equipment asked for are exempted by Industries Department of the state / National Small Industries (NSIC) New Delhi.

Group 01	Rs 2000/=	Group 02	Rs 4000/=
Group 03	Rs 3000/=	Group 04	Rs 3000/=
Group 05	Rs 2000/=	Group 06	Rs 4000/=

- 11 The rates should be quoted clearly both in words & figures, without any/ cutting/ correction /erasing/overwriting. No such rates wherein any cutting/Erasing/overwriting is /are found will be considered for comparison.
- 12 Rates shall remain valid up to 31- 12-2012.
- 13 In case of any doubt, dispute, difference, question arising between Tenderer & Tendering authority regarding incorporation of any of the terms & conditions of the NIT or any other matter related to right & responsibility of the parties, the same shall be referred to Director Technical Education J&K for arbitration. His decision in the matter shall be final, conclusive, & binding upon the parties.
- 14 The Bids should be sent either under sealed registered cover or deposited in the office of undersigned i.e Principal Industrial Training Institute, Kishtwar Jammu & Kashmir State on or before 03-12-2011 up to 12.00 noon against proper receipt on the working days only. In case last day being a holiday the same shall be accepted on next working day up to 12.00 noon, the tenders will be opened on the same day at 2.00 pm.
- 15 Bidders who downloaded from our official web-site shall have to append with Rs 300/= as cost of tender document at the time of deposit in shape of Indian Postal Order in the name of Principal Industrial Training Institute Kishtwar.
- 16 The tender must be completed in all respects. All the terms & conditions of tender including Technical specifications should be carefully studied for the sake of complete & comprehensive offer.
- 17 Bidder should quote each item of the group.
- 18 In case the successful bidder fails to execute the supply of ordered equipment in full. Penalty @ 2%(Two percent) of the total cost of order shall be imposed upon him /them.
- 19 In case the ordered equipment is not supplied within the stipulated time, penalty will be imposed upon the defaulter & contract terminated.
- 20 At the time of procurement, if DGS&D rates are available for any of the item the Undersigned reserves the exclusive right to procure the same on the rate contract & exclude the item from the tender. In that case no bidder has any claim whatsoever over the said item.
- 21 The quantity mentioned in the Annexure is subjected to minor variations depending upon the actual requirement at the time of placing the order.
- 22 The undersigned reserves the right to accept or reject any tender or part thereof without assigning any reason thereof.
- 23 The payment will be released after due inspection /verification of the equipment & its satisfactory report by the verification committee.

24 The order for the approved items will be subjected to availability of funds & procurement will be prioritized as per requirement.

Sd/=

(Sajad Hussain)

Principal

Industrial Training Institute

Kishtwar.

ITI/Kwr/pur/vtip/43/965-67

Dated:-16 -11-2011

Computer

Sno	Name of item with specification	Quantity	Rate per unit	VAT	Entry Tax	Other taxes	Total	Make/Brand
1	Bar code reader	3 pc						
2	CD ROM Drives (52X and above)	10 pc						
3	CD Writer	10 pc						
4	Computer Microphone Head set	10 pc						
5	DVD with media	5						
6	HUB 16 port/Layer 2 Switch	2						
7	Interface cards for 8255, 8251, 8257, 8253, 8279 compatible to microprocessor training kit	2 each						
8	Memory modules of PCs, 128, 256, 512 etc. , DIMM or latest	5 each						
9	MOD drive with media(2 Nos)	1						
10	Modem external 64 Mbps with interface connectors.	4						
11	Monitors (VGA mono 2 no , SVGA color 3 Nos)	5						
12	Refilling Kit for inkjet print	1						
13	Dentist mirror	5						
14	Spare Mother boards,512 Mb and latest capacity of latest ROM type	5						
15	Specific connectors and cables required for internal PC wiring and for external ports (serial and parallel)	5 sets						
16	Splash stick	5						
17	Touch screen monitors	4						
18	Typist keyboards, Types of Mouse (including one optical/cordless mouse)	5						
19	Web Camera	4						
20	ZIP drives (100Mb /250 Mb) Internet -2 Nos. External -2 Nos. with media .	4						
21	Crimping tool for RJ 45 Connections for use in networking	6						
22	Crimping tool s for to prepare different types of connectors (UTP cable and flat cable connectors)	6						

ELECTRICIAN

Sno	Name of item with specification	Quantity	Rate per unit	VAT	Entry Tax	Other taxes	Total	Make/Brand
1	A.C. Motor -1Phase capacitor start induction run a) 1H.P b) 2 H.P	2 2						
2	A.C Motor 3-phase –synchronous type with pannel 2-HP	2						
3	DOL Starter 3 phase	1						
4	Function Generator ,0.1HZ to 20 MHZ, Wave form output sine square ,Triangular ,ramp pulse ,saw tooth,TTL pulse.Mod-int./Ext.	1						
5	Transformer Trainer Single phase 300 VA, 1-Phase Primary 230 Vac / 1.3A ,50HZ— Secondary 200Vac /1.5 Amp 3 Phase 300VA,3Phase 0-415/0.24 A at 50HZ---Secondary Isolated Winding groups main 110V/0.5 A, Zigzag 110/0.5 A Tertary 220V/0.25 A Suitable panel should be provided with minimum following accessories :- Input 3 phase DOL starter Panel ,A.C Secondary Voltmeter panel ,A.C Primary Voltmeter Panel. Dual range primary side AC ammeter panel , Dual range Secondary side AC ammeter panel, FWD-OFF –Rev switch panel ,Milliohmmeter (V-I method) /Rec-cap load panel, Resistive load panel , Dimmer panel ,3 pole ON OFF panel 230 V/1Phase Transformer panel ,415 V/3 phase Transformer primary panel, 415V/3 phase Transformer secondary panel, 1-phase MCB isolator panel Integrated AC (1-phase) measurement panel. Additional accessories (1) Wattmeter 2.5 /5 Amp. 50/100 V -1,(2) 3- phase Deemer 1-Amp-1 (3) Additional EMT 20 F (Parellingl Phase) - 1.							
6	DC Ammeter (0-10 mA), (0-50mA), (0-100mA)	6 no each						
7	Electrical Machine Trainer Suitable for demonstrating the construction & functioning of different							

<p>types of DCMachines & AC Mahines(Single phase & three phase).Should be completed with friction brake dynamometer ,instrument panel & power supply units.</p> <p>Electrical Machine trainer should be provided with specially designed integrated machines of nominal 0.5 HP rating .Panel containing power supplies ,Drives, loading arrangements, electronic & digital instruments will also be provided alongwith the machine The training system should be suitable to study a wide range of electrical machine syllabus .Starting from basic principle & operation of simple DC & AC machines .Detailed study of characteristics of different types of AC & DC machines should also be done .</p> <p>The Machine Trainer should consist following Machines & Control panel sets.</p> <p>SET-1</p> <p>1)Machine</p> <p>0.5HP DC Integrated Machine, coupled with 0.5 HP 3 Phase AC Integrated Machine with base & coupling. DC should be dynamometer type .It should run as DC shunt ,series,Compound Motor /Generator. 3 Phase MC should run as 3 phase slip-ring Induction motor, Synchronous induction Alternator & Synchronous Induction motor,</p> <p>2)Control Panel:</p> <p>Should be made of sheet metal with poly carbonate facia with poly carbonate facia with Mimic Diagram of components ,consisting of Digital DC Ammeter -3 nos Digital AC Ammeter 1 no Digital ACVoltmeter 1 no, Digital DC Voltmeter 3 nos ,3 phase AC comb meter 1 no ,Digital RPM meter 1 no with sensor single phased DC Thyrister power supply 3 nos, 1 phase resistive load bank , 3 phase resistive load banks , DOL starter,star delta starter ,field regulator ,field diverter fix resistance ,3 phase variac(external) Necessary indicators & switches ,MCB etc...with all terminals on facia for easy connections.</p> <p>SET-2</p> <p>1)Machine:-</p> <p>0.5 HP 1 phase AC Repulsion Motor complete with mechanical loading arrangement having 2 no linear springs balance & friction belt for torque measurement should be provided .</p> <p>2) Control Pannel:</p> <p>-should be made of sheet metal with poly carbonates face with mimic diagram of components ,consisting of Digital AC Ammeter.-1 no .Digital AC Voltmeter 1 no, 1 phase Digital Wattmeter 1no,Digital RPM Meter 1 no with sensor, single phase variac(External) Necessary indicators & switches etc... with all terminals on face for easy connections.</p> <p>SET-3</p> <p>1) Machine:-</p> <p>0.5 HP 1 phase AC SQ.cage induction integrated Motor complete with mechanical loading arrangement having 2 no Round Dial springs balance & friction belt for torque measurement should be provided.This motor should run as 1 phase CSCR,CSIR,Split phase Motor.</p>	1 no						
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<p>2) Contro Pannel:- should be made of sheet metal with poly carbonates face with mimic diagram of components ,consisting of Digital AC Ammeter.-1 no .Digital AC Voltmeter 1 no, 1 phase Digital Wattmeter 1no,Digital RPM Meter 1 no with sensor,DOL startor 1 No. Necessary indicators & switches etc... with all terminals on face for easy connections.</p> <p>SET-4</p> <p>1) Machine:- 0.5 HP 3 phase SQ.cage induction Motor complete with mechanical loading arrangement having 2 no Round Dial springs balance & friction belt for torque measurement should be provided.This motor should run on 2 Pole-4 Pole configuration.</p> <p>2) Contro Pannel:-should be made of sheet metal with poly carbonates face with mimic diagram of components ,consisting of Digital AC Ammeter.-1no. Digital AC Voltmeter 1 no, 3 phase Digital Wattmeter 1no,Digital RPM Meter 1 no with sensor, 3 phase DOL startor 1 No. Necessary indicators & switches etc... with all terminals on face for easy connections</p> <p>SET-5</p> <p>1) Machine:- 0.5 HP Universal Motor complete with mechanical loading arrangement having 2 no Round Dial springs balance & friction belt for torque measurement should be provided.This motor should run as AC Series Motor also.</p> <p>2) Control Pannel: -should be made of sheet metal with poly carbonates face with mimic diagram of components ,consisting of Digital AC Ammeter.-1no. Digital AC Voltmeter 1 no. Digital DC Ammeter-1 No, Digital DC Voltmeter 1 No,1 phase Digital AC Wattmeter 1 No. Digital RPM meter 1 No. with sensor.Single phase Variac (External) I phase rectifier Necessary indicators & switches etc... with all terminals on face for easy connections.</p> <p>Salient features The control panel should contain all safety & tripping measures All panels should have polycarbonate face with mimic diagram of components with all terminals brought outside for easy & shock ree connections Should have easy & safe wiring with proper color coded & electrically insulated terminals on top. Acrylic viewing window should be provided to observe internal structure of machine like commutator, Slipring ,brush holder, carbon brush, stator, rotor ,switches etc. Should have digital indication of electrical parameters</p>							
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	Should have separate machines with individual control panels to enable five batches of students to conduct practical's simultaneously. Should be provided with suitable literature/ catalogue. The trainer unit should cover a wide range of machine syllabus with at least 50 experiments should be performed. Performance should conform to IS 4722.							
8	Synchronous motor ,1 phase ,1 HP,1500 RPM with complete control panel & DC excitation.	1						
9	Single phase alternator ,250 V,1 KVA,	1						
10	Rotary converter with input AC Single phase 250 V & output DC 220 V, 20 Amp. with complete control panel	1						
11	Stepper motor with digital control (Permanent magnet, unipolar) 220v,1/4 HP	1						
12	AM /FM signal Generator	2						
13	Auto Transformer 5kva ,220v oil imersed	3						
14	Electric blower (portable) ½ hp 220 V	2						
15	Battery charger suitable to charge secondary batteries 48 v -10 Amp	4						
16	Bench type Multimeter (for callibration)	2						
17	3-phase induction motor speed control Trainer 1/2 HP motor with digital speed measurement assembly	1						
18	Brushless DC Motor Trainer 24 V 200w,2500rpm	1						
19	DC Voltmeter (0-1V),(0-10V),(0-30V)	6 no						
20	De- Soldering pump (hand operated)	6 each						
21	Depth micrometer 0-100mm	6						
22	Regulated DC power supply,0-30V 5-Amp	2						
23	Mini transformer winding machine	2						
24	Transformer Trainer single phase 300VA,1-phase,primary 230v/1.3 A & secondary 200V/1.5 A,3 secodaries on 3x3x3 sockets.	1						
25	3-phase- induction Motor fault simulator ½ HP,4-pole 1500 rpm,6 terminal	1						

Annexure to tender document issued vide No: ITI/ Kwr/Pur/VTIP/ 43/965-67
Machinery Equipment Group “03”
General Machinery

Dated:- 16-11--2011

Sno	Name of item with specification	Quantity	Rate per unit	VAT	Entry Tax	Other taxes	Total	Make/Brand
1	Servo transformer 15 KVA single phase,input AC: 90-270 V, output:230+-1%,frequency 47-51 HZ, phase:single, Volt correction 32 v/sec, Line regulation +- 1%, Load regulation +- 1%.	1						
2	Multimedia Projector Resolution: 800 X 600 SVGA,ANSI Lumen:200 Gen Specification:- 1. Image Size Diagonal: 762mm diagonal or better (For 200/300 ANSI Lumen). 2. Projection lamp: LED. 3. Lamp Life: 20000-30000 hrs. 4. Lamp hour counter: Built-in integral with the system. 5. Lamp Warranty: Free replacement up to five years from the date Supply. 6. Brightness: As applicable for each item. 7. Audio System: 1.0 Watt with built in speaker. 8. Remote Control: Full Function remote control unit for projector Standard features for all the items. 9. Terminal Ports with: DVI and/or Analog RGB in connectors 10. Contrast ratio: To be indicated by the tenderer for each item. 11. Power supply: 210-240V, 50 Hz./AC DC Adaptor. 12. Operating conditions: 10 Degree to 35 Degree C, 80% RH. 13. Cables, connectors and other: The Projector shall include power cable and VGA cable (1.5 m, for connecting to PC. For all other cables Including power cable and VGA cable.	1						
3	Multimedia speakers	4 sets						
4	Over Head projector	1						
5	V.C.R.	1						
6	Vacuum Cleaner	1						
7	VCD Player	1						

8	Power Generator set 2800VA. Max 220 V +/- 5% Kerosene run , Petrol Start (Silent Type).	1						
9	UPS Off line /On line 2 KVA	2						
10	UPS on line 3 KVA.	2						
11	Voltage stabilizer / CVT(2 KVA)	3						
12	Voltage stabilizer / CVT (5KVA - No.)	3						
13	Slide Projector	1						
14	Battery 12 V,180 Amp-hr	2						
15	Plotter inkjet Type color size A2-A4,Resolution in dpi 2400x1200,Memory in MB :64,Ports :1 USB & Ethernet.	1						

ELECTRONICS

Sno	Name of item with specification	Quantity	Rate per unit	VAT	Entry Tax	Other taxes	Total	Make/Brand
1	Digital IC tester	2						
2	<p>Digital IC Trainer The Digital IC Trainer kit should be a modular comprehensive & self-contained system suitable for students to perform experiments on Digital IC's. All necessary equipments for Digital circuit experiments such as Power supply ,standard Frequency outputs ,Clock Signal Generator, Hi/Lo inputs, Output indicators ,Pulsar Switches, Line Signal generator ,BCD coded thumbwheel switch ,Seven segment displays, Logic probe, Wave form capture & display unit should be provided on the main unit. All the necessary components /circuits required for the practical's should be provided on the panels. 8 bit DIP switch be provided for fault insertion. The trainer should be housed in a suitable metal cabinet for safe keeping</p> <p>Tech Specifications:-</p> <p>IC based DC Regulated power supply</p> <p>a) +/- 5 V/DC/0.3 A b) + 12 V DC/0.3 A c) 0 to + 15 V DC/0.5 A continuously variable.</p> <p>Waveform capture & Display unit Wave form capture & display unit should have two inputs. The two inputs should be sampled at 50 MS/s with vertical resolution of 8 bits. The input signal should be displayed on a PC using the universal serial Bus interface. The window based software should be provided which can display the input signal on the PC screen & display its various parameters .the window should be compatible to latest window/ME/XP/VISTA based system.</p> <p>Signal Generator should have independent & simultaneous TTL & CMOS level output terminals range 0 to +15 V. 'Standard Frequency generator frequency 1MHZ,50 HZ,1HZ, Fan out 10 TTL load.</p> <p>Clock Signal generator:-frequency 1HZ to 1 MHZ in six ranges.</p> <p>Line signal generator 50 HZ output voltage 6Vrms</p> <p>Data switches</p> <p>1) 2x8 bit DIP switch,16 bit TTL Level output. 2) 4x toggle switch each with debounce circuit.</p>	5						

	<p>Pulsar switch 2 sets of independent control with Q,Q – Debounce circuit each.</p> <p>Thumb wheel switch 2 digit BCD code output common point input.</p> <p>Display Logic indicator 16 sets of independent LED. Digital display 4 set of independent 7 –segment LED display with BCD ,7 segment decoder/driver & dp input terminal.Input with 8-4-2-1 code.</p> <p>Logic probe TTL & CMOS level.3 mm LED display low & high .</p> <p>Speaker 8 ohms 0.5 watt with drive circuit.</p> <p>Breadboard module 1680 tie point</p> <p>Patch cards set of 25 assorted colored with 2mm stackable termination at both ends.</p> <p>Power requirement 230V +/-10% single phase AC. Instruction manual involving procedures for conducting of practices be provided</p>							
3	Digital /analogue hand held -multimeter	21						
4	Fire extinguisher.(portable) suitable for class room	12						
5	Logic probe TTL & CMOS indicating logic states by “0” or “1” using 7-segment display.	4						
6	Logic Pulsar TTL & CMOS indicating logic states by “0” or “1” using 7-segment display.	4						
7	Fiber optic Networking trainer Should be able to offer comprehensive experiment set up	1						
8	Cables for networking of computers	200m tr						
9	Iron soldering	12						
10	De-soldering station of latest type with kit for IC extraction	4						
11	<p>Analog Oscilloscopes Bandwidth: 30 MHz, No. of Channels :Two, Display: Mono, Computer Interface.</p> <ol style="list-style-type: none"> General : Portable, rugged including features of component tester and sweep delay. Bandwidth : DC- 30 MHz (-3d B) No. of Channels: Two Channels/ four Trace Deflection Coefficient : In calibrated steps from 5 mV to 5 V/cm Rise Time : 11.6 ns Variable Hold off : For stable triggering Input impedance : 1 Mohm //25 pF Time Base coefficients : 18 calibrated steps 0.5 microsec /cm to 0.2 sec/div with X10 magnifier to 20ns/cm Trigger system : Automatic and normal (level adjustable) 	5						

	<p>10. Source : CH I,CH II,ALT,LINE,EXTERNAL 11. Slope : Positive / negative 12. Coupling : AC/DC/GND 13. Sensitivity : 0.5 V/div. 14. Trigger Bandwidth : 40 MHz 15. Horizontal Deflection : DC-3MHz (-3dB) Bandwidth 16. X-Y mode : Phase shift <3 degree up to 100 kHz 17. Max Input voltage : 300 V rms (CAT II) 18. Computer Interface : USB (where applicable) 19. Display : Mono 20. Calibrator Operator : 1kHz square wave (0.2 Vpp) for probe compensation 21. Z modulation : TTL level. 22. Power Supply : 230 V +/- 10%, 50 Hz. AC Supply 23. Component Tester : Built in single touch 24. Continuity Tester : With Beeper 25. Operating Conditions : 10 to 40 degree C and 80% RH at 30 degree C 26. Accessories : Two 10X Probes , Two BNC-BNC Cables, Power Cord, Manual, Calibration Certificates 27. Applications : Design and Debug Education and training Service and repair.</p>							
12	Digital/analog hand held multi-meter	12						
13	Intercom 16 line along with installation.	1 syste						
14	8085 Microprocessor Trainer :- inbuilt power supply, display, c p u- clock frequency 6.144 MHZ or higher ,ROM-4 Kb or higher, RAM -64 Kb or higher 1/0 lines, Serial communication through RS 232 C channel.	1 set						
15	<p>Linear IC Trainer. Should be able to impart both elementary as well as advanced training of analog circuits covering both passive & active components .The analog IC Trainer should be modularly designed & should be a self contained system .The trainer should cover almost all regular discrete & IC based circuits of Analog electronics.All the terminations should be provided on 4mm sturdy brass terminals fitted on heavy duty aluminum anodized front panel with powder coated metal enclosure for longer life . Speciications The trainer should include five application modules.A detailed instruction manual with experiment details should be provided.The</p>	1 no						

<p>trainer should be self- contained to perform various experiments as mentioned below</p> <ol style="list-style-type: none"> 1 Ohms law 2 RC-High pass & low pass circuits 3 RL- High pass & low pass circuits 4 RLC series & parallel resonance circuits 5 Kirchoffs current & voltage laws 6 Transformers turn ratio ,efficiency of a transformer 7 Relay characteristics 8 Relay as a switch 9 Diode characteristics 10 Clipping & clamping circuits 11 Half wave & full wave rectifier 12 Zener diode characteristics (for different value zeners) 13 Regulators (line& load) 14 Diode logic gates 15 Transistor(s) characteristics of CB,CE,&CC configuration (for different NPN & PNP transistors). 16 Transistor(s) amplifiers(CB,CE&CC) configuration (for different NPN & PNP transistors). 17 Power amplifiers . 18 Differential amplifiers 19 Feed back amplifier series & current shunt 20 RC phase shift oscillator 21 Bistable ,Monostable & Astable 22 Schmitt Trigger 23 Transistor logic gates 24 FET characteristic 25 FET as asource follower 26 FET as avoltage resistor 27 MOSFET characteristic and itsapplication 28UJT characteristic 29 UJT as relaxation oscillator 30 PUT characteristics and its application 31 Traic/Diac characteristic 32 Power control using Diac and Triac 33 SCR characteristics. 34 Phase control using SCR 35 LDR characteristic and its application 36 study of operational amplifier characteristic such as open loop again,output rrsistance,unity gain bandwidth,rated ouput full power response,slewing rate,input offset voltage,input bias current,inputrise current,CMRR,common mode input resistance,etc. 37 study of operational amplifier amplification,inverting amplifier,,non-inverting amplifier,difference amplifier inverting summing amplifier,voltage follower,log amplifier. 38 study of operational amplifier as differentiator,integrator,limiter,AC-DC converter,Schmitt trigger 							
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<p>etc.</p> <p>39 verification of regulator characteristics.</p> <p>40 Study of pulse width modulator</p> <p>41 Application of timers in system and circuit.</p> <p>Dedicated application modules are provided as follows:</p> <p>a. Multivibrators modules for astable, monostable, bistable multivibrator.</p> <p>b. Instrumentation amplifier module.</p> <p>c. Audio amplifier module.</p> <p>d. Twilight switch module</p> <p>e. OP-amp as staircase generator.</p> <p>A detailed instruction manual with experiments detail should be provided. All the necessary modules, including supplies, patch panel, patch cords</p> <p>Etc, should be provided as follows:</p> <p>1. Power Supplies:</p> <p>The following output voltage should be available on the front panel from the built-in power supplies:</p> <p>Output voltage and current:</p> <p>1. +5V/250mA.</p> <p>2. +12V/250mA.</p> <p>3. -12V/250mA.</p> <p>4. 0-30V/1A variable.</p> <p>5. 0-70/500mA variable.</p> <p>All the power supplies should be regulated and short circuit protected.</p> <p>Load Regulation to full load). 1% (NO load</p> <p>Line Regulation variation in line voltage). : 1% (for +10%</p> <p>Ripple : <12m V rms.</p> <p>2. Transformer:</p> <p>a. Audio Transformer (2:4)</p> <p>b. Power transformer with center-tap (12-0-12).</p> <p>3. Speaker: 8ohms/0.5W.</p> <p>4. 5 logic input switches with LED indication.</p> <p>5. 5 output indicator</p> <p>6. Breadboard Terminal strip with 1000 tie point.</p> <p>7. digital voltmeter (Dual range)</p> <p>8. Current meter (Dual range)</p> <p>All terminations should be provided on 4mm stuggy brass terminals, fitted on heavy duty Aluminum Anodised front panel with powder coated metal enclosure for longer life.</p> <p>The following standard accessories should be provided:</p> <p>1. Set of patch cord consists of</p> <p>a. 20 stackable patch cord with spring loaded 4mm plugs as terminations on both side and of 0.5 meter length.</p> <p>b. 20 patch cord with spring loaded 4mm plugs as terminations on both sides and of 0.5 meter length</p> <p>c. 5 patch cord with crocodile clip as termination on both sides</p>													
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	<p>and of 0.5 meter length.</p> <p>2.An analog software featuring Interactive laboratories,Complete circuit smulation based On SPICE 3f4,Full audio commentary ,supervisor’ notes and worksheet included, Links to electronic workbench circuit included ,works with both ANSIandDIN symbol System,Working on win98/ME/2K/NT/XP,HTML Browser required.(internet Explorer 5.0 or later recommended).The software should comprehensively cover topic of analog Fundamentals ,transistor ,op-amps.,filter ,oscillators and analog systems</p> <p>3.The detailed instruction manual should cover detailed theory ,experiment diagram, Application modules, notes and circuit diagrams.</p>							
16	<p>Basic Electronic Trainer</p> <p>a) In-built power supplies ,with facility of performing various experiments on basic electronics including diode/tranistor characteristics ,ohms law ,KCL,etc.</p> <p>b) Analog Trainer Kit-Solderless tie points 2520, DC power supply 0-15 V 200MA variable 5v,-15v,+15v fixed -1 Amp AC Voltage 10 v,15,20,25V Sine wave generator amplitude 0-10 Volt Variable, Frequency 1 KHZ -10 KHZ Variable ,fixed 100Hz ,1KHZ,10 KHZ,100KHZ,with frequency course.</p>	1 no						
17	UPS Trainer off line input range 170-270 V output 230 V 200 watt with battery 12 volt 7.5 AH	1 no						

Annexure to tender document issued vide No:ITI/Kwr/Pur/VTIP/
Machinery Equipment Group “05”
PLUMBER/HEALTH AND SANITARY INSPECTOR

Dated:-- 16-11-2011

Sno	Name of item with specification	Quan tity	Rate per unit	VAT	Entry Tax	Other taxes	Total	Make/Brand
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1	Hydraulic pressure machines for testing leakage in GI pipe fittings etc.	1						
2	Sanitary Latrine (Model)	1						
3	Sewerage system and Treatment Plant (Model)	1						
4	Water Coolers portable	4						
5	Autoclave (laboratory size)	1						
6	Bath tub standard size.	2						
7	P.V.C Welding plant	1						
8	Pipe bender Hydraulic Type capacity to bend pipes from ½ “ to 2”	1						
9	Pipe bender Manual Type capacity to bend pipes from ½ “ to 2”	1						
10	Pipe bender Spool Type capacity to bend pipes from ½ “ to 2”	4						
11	Chain Pipe wrench 90mm to 650 mm	1						
12	Pipe cutter 6mm to 50mm Wheel type.	1						
13	Water heater 25 ltrs 250V/2000W(Geyser) ISO specified.	1						
14	Water coolers portable with necessary fittings.	2						
15	Water Meter	1						
16	Electric pump 1 HP Single phase (Mono Block)	1						
17	<p>Tool Kit for Plumber Trade containing following items (ISO specified)</p> <ul style="list-style-type: none"> a) Rule steel 300 mm both in inch & mm b) Rule four fold 690 mm c) Hacksaw frame adjustable for 250 to 300. d) Scriber 200 mm. e) Centre punch 100 mm. f) Chisel cold flat 20 x250 mm. g) Hammer ballpeen 800gm. h) Hammer ball peen 300 gm i) File flat rough 300 mm. j) Sprit level wooden 300mm. k) Plumb bob 50 gm. l) Trowel 125 	16 Kits						

m) Stilson wrench 200 & 350mm n) Screw driver 250mm o) Wooden mallet small. p) Cutting plier 200mm. q) Steel tape (All the items should be in a tin box with key)								
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Annexure to tender document issued vide No:ITI/Kwr/Pur/VTIP/43/965-67
 Machinery Equipment Group "06"

Dated:- 16-11--2011

HAND TOOLS

Sn o	Name of item with specification	Qua ntity	Rate per unit	VAT	Entry Tax	Other taxes	Total	Make/Brand
1	G' clamp 250 mm. ISO certified	4						
2	"T" bar cramp 1.75 meter. ISO CERTIFIED	2						
3	"Apollo" box spanner set in mm 3x4,6x7,9x11,12x14,15x19,22x25 set of 6 ISO Ceertified	6 set						
4	Adjustable saw sharpener ISO certified	6						
5	Adze 1.5 kg ISO certified	4						
6	G' clamp 250 mm. ISO certified	6						
7	"T" bar cramp 1.75 meter. ISO certified	3						
8	"Apollo" box spanner set in mm 3x4,6x7,9x11,12x14,15x19,22x25 set of 6 ISO certified	4 set						
9	Adjustable saw sharpener ISO certified	3						
10	Adze 15 kg ISO certified	6						
11	Allen Key Sets ISO certified	5						
12	Ball pain hammer 600 grms	10						
13	Carpenter mortise gauge	20						
14	Carpenter Square,200mm.	20						
15	Carpenter vice 250 mm jaws	12						
16	Carpenter Marking Gauge ISO certified	18						
17	Carving tools set. ISO certified	4						
18	Center punch 100 mm ISO certified	16						
19	Clamp "c" 10cm ISO certified	6						
20	Clamp "C" 5 cm ISO certified	6						
21	Clamp tool maker 5cm and 7.5cm set of 2 ISO certified	6						
22	Claw hammer ISO certified	6						
23	Compass saw 350mm ISO certified	6						
24	Cross pain hammer 600 grms ISO certified	20						

25	Crow bar 3 cm dia. 1.5.lag ISO certified	6						
26	Doormat, Pickaxe, Spade, Grimily ISO certified	6 ech						
27	Engineer's try square (Knife-wedge) ISO certified	6						
28	Frame wooden for measuring aggregates	6						
29	Jack plane 18" (Iron) ISO certified	10						
30	Joining cramp ISO certified	10						
31	Key hole saw 250mm.(ISO certified)	10						
32	Mallet Medium size ISO certified	12						
33	Mandrel (ISO certified)	12						
34	Mason's plumb rule with spirit level.(ISO certified	12						
35	Mason's square 30 cm * 30cm.(ISO certified)	12						
36	Molding plane set (Steel) Machine.(ISO certified)	4						
37	Nail punch. .(ISO certified)	4						
38	Pickaxe.(ISO certified)	6						
39	Pincer 50 mm.(ISO certified)	16						
40	Plane adjustable circular 250mm.(ISO certified)	4						
41	Plane rivet adjustable 250 mm x meter x 9mm cutter. .(ISO certified)	2						
42	Plane, jack metal 335 mm x 50 mm cutter. .(ISO certified)	16						
43	Plane, smoothing, metal 200 mm.*50 mm cutter, .(ISO certified)	16						
44	Print Trimmer cutting edge 100 cm .(ISO certified)	16						
45	Plough plane with set of 8 cutter up to 12 mm. width.(ISO certified)	4						
46	Plumb bob 50 gms.(ISO certified)	12						
47	Portable disc sander 200mm dia .(ISO certified).	2						
48	Rip saw 600mm.....(ISO certified)	6						
49	Round crow bar with chisel and claw end 1070*25mm. .(ISO certified)	6						
50	Router plane (electric 220v) .(ISO certified)	3						
51	Rule Six 1 meter (inch &mm,) .(ISO certified)	10						
52	Rule fold wooden 60 cms.(ISO certified)	20						
53	Rule wooden 4 fold 690 mm .(ISO certified)	16						
54	Saw Hand 450mm. .(ISO certified)	16						
55	Saw sharpening vice 250jaws. .(ISO certified)	16						
56	Saw tenon 300mm. .(ISO certified)	20						
57	Shovel.(ISO certified)	20						
58	Sieve for sand 1 mm/100x60 cm .(ISO certified)	6						
59	Sieve for sand 22 mm/100*60 cms.(ISO certified)	6 sets						
60	Spade.(ISO certified)	6						
61	Spoke shaves 50 mm cutter .(ISO certified)	12						
62	Square, bevel 50mm. .(ISO certified)	20						

63	Stone Oil 15cm x 5cm x 2.5cm .(ISO certified)	6					
64	Straight edge 45 cm steel .(ISO certified)	6					
65	Tenon saw .(ISO certified)	6					
66	Trammel.....(ISO certified)	6					
67	Trowel 25 cm * 10 cm.(ISO certified)	6					
68	Try square 200 mm .(ISO certified)	6					
69	Trying plane metal)450mm *60mm cutter .(ISO certified)	4					
70	Wooden float .(ISO certified)	4					
71	Measuring tape 3 meter .(ISO certified)	12					
72	Cross cut saw 600mm.....(ISO certified)	6					

73	Calculator Scientific .(ISO certified)	4					
74	Rule steel 15 cm with metric grade .(ISO certified)	16					
75	Rule steel 30 cm to read metric .(ISO certified)	16					
76	Rule steel 300 mm both in inch and mm.(ISO certified)	16					
77	Rule steel 60 cm .(ISO certified)	16					
78	Scale metric set of eight A to H In a box 1:1, 1:2, 1:2:5, 1:10, 1:20, 1:50, 1:100, 1:200, 1:500, 1:1000, 1:2000, 1:1250, 1:6000, 1:38 1/3, 1:66 2/3 .(ISO certified)	32					
79	Knob Screw Driver Insulated 10 Cm .(ISO certified)	32					
80	Long Nose Insulated Pliers 15 Cm .(ISO certified)	32					
81	Marking Knife, 200mm,Length. .(ISO certified)	32					
82	Moisture Meter .(ISO certified)	2					
83	Neon Line Tester .(ISO certified)	21					
84	Philips alignment kit .(ISO certified)	6					
85	Sine bar 125mm .(ISO certified)	6					
86	Sine bar 250mm .(ISO certified)	6					
87	Soldering Station .(ISO certified)	6					
88	Tweezers 10 Cm Insulated.(ISO certified)	21					
89	Goggles pair.	5					
90	Hand brush for bench cleaning 450 mm	20					
91	Light pen (with interface if required) .(ISO certified)	8					
92	Soldering Iron(25W)	20					
93	Speakers of different ohms and wattage ratings .(ISO certified)	10					
94	Katehel break with post ad clamp flat drill 15 to 50mm by 0.2mm .(ISO certified)	1					
95	Iron clad Triple main switch .(ISO certified)	40					
96	DOL startor 3-phase .(ISO certified)	50					
97	Single phase DOL .(ISO certified)	20					
98	I.C.D.P (iron clad double pole) .(ISO certified)	50					
99	Change over switch single phase.(ISO certified)	10					
100	MCB 3 phase set.(ISO certified)	40					
101	MCB 1-phase 32 Amp.(ISO certified)	40					

102	Arm strong type tool bit holder R.H	2						
103	Block-vee pair 7 cm and 15 cm with clamps .(ISO certified)	1						
104	Brace ratchet with pillar .(ISO certified)	4						
105	Branch gimlets .(ISO certified)	6						
106	Cabinet scraper 100mm. .(ISO certified)	6						
107	Caliper outside 150 mm .(ISO certified)	6						
108	Caliper 15 cm hermaphrodite Divider 15cm spring .(ISO certified)	16						
109	Caliper inside 15 cm spring .(ISO certified)	16						
110	Caliper outside 15 cm spring.(ISO certified)	16						
111	Calling bells of different types/makes .(ISO certified)	6						
112	Carbide Wear block 1mm-2mm.(ISO certified)	6						
113	Card file (steel) wire brush for file.(ISO certified)	6						
114	Centre bits 6,8,10,12. .(ISO certified)	6						
115	Centre punch 5.(ISO certified)	16						
116	Centre Punch 10cm.(ISO certified)	15						
117	Chipping knife.(ISO certified)	6						
117	Chisel 5 cm hammer headed.(ISO certified)	6						
118	Chisel cold 10.(ISO certified)	6						
119	Chisel cold 19mm flat.(ISO certified)	6						
120	Chisel cold 9mm cross cut 9mm diamond .(ISO certified)	6						
121	Chisel cold 9mm round nose .(ISO certified)	6						
122	Chisel cold flat 20*250 mm	6no.						
123	Chisel cross cut 6*150 mm IS: 402 .(ISO certified)	6						
124	Chisel diamond point 6*150 mm.(ISO certified)	6						
125	Chisel round nose 3*150 mm IS; 402.(ISO certified)	6						
126	Chisel, firmer (bevel)edge 6mm. 10, 15, 20 &25mm . Width.(5 nos.) .(ISO certified)	16						
127	Chisel, mortise 6,10, 15. mm.(3 nos.) .(ISO certified)	8						
128	Combination Pliers 15 Cm Insulated.(ISO certified)	21						
129	Comparator stand with dial indication .(ISO certified)	1						
130	Counter sink bit rose type 12mm. .(ISO certified)	6						
131	Country drill with bow (Ball bearing type) .(ISO certified)	6						
132	Cutter, pipe wheel type 6 mm to 25 mm.(ISO certified)	6						
133	Cutting Pliers 200 IS: 3650.(ISO certified)	6						
134	D.E. spanners 7*8,10*11,13*17,19*22,24*27 IS .(ISO certified)	6						
135	Dial venire clipper 0-130mm L.O.C 0.05 mm (Universal Type) .(ISO certified)	1						
136	Dot slot punch.(ISO certified)	6						
137	Double face hammers.(ISO certified)	6						
138	Dresser lead 350*50 mm.(ISO certified)	6						
139	Drill chuck 12mm capacity.(ISO certified)	6						
140	Drill bit set.(ISO certified)	10						

141	Drill brace hand 0-12 mm.(ISO certified)	6						
142	Drill Chuck 12mm.(ISO certified)	6						
143	Drill Twist S/S 1.5mm to 12mm by 0.4mm.(ISO certified)	6						
144	Drill Twist S/S 8mm to 15mm by 1/2mm.(ISO certified)	6						
145	Drill twist T/S 6mm to 25mmx 1.5mm.(ISO certified)	6						
146	Drill twist(straight shank) 3 mm to 6 mm.(ISO certified)	6						
147	Can Oil .(ISO certified)	4						
148	Expansion bit sets. .(ISO certified)	6						
149	Extractor stud EZY-out .(ISO certified)	6						
150	Feeler gauge 10 blades .(ISO certified)	6 set						
151	File Flat 30cm bastard.(ISO certified)	12						
152	File half round 2nd cut 250mm: .(ISO certified)	12						
153	File half round wood rasp bastard 300mm.(ISO certified)	12						
154	File slim taper 100mm.(ISO certified)	12						
155	File slim taper 150mm.(ISO certified)	12						
156	File cut saw 15 cm smooth.(ISO certified)	12						
157	File feather edge 15 cm smooth.(ISO certified)	12						
158	File flat rasp 250 mm.(ISO certified)	12						
159	File flat rough 300 mm.(ISO certified)	1 2						
160	File flat smooth 200 mm.(ISO certified)	12						
161	File flat 20cm bastard .(ISO certified)	12						
162	File flat 25 cm second cut.(ISO certified)	16						
163	File fate 25 cm smooth.(ISO certified)	15						
164	File Half round 25cm bastard.(ISO certified)	15						
165	File Half round 25cm second cut.(ISO certified)	15						
166	File half round rough 100 mm.(ISO certified)	15						
167	File hand 15cm second cut .(ISO certified)	15						
168	File Knife edge 15 cm smooth.(ISO certified)	12						
169	File round 15 cm second cut.(ISO certified)	12						
170	File round 20 cm second cut.(ISO certified)	12						
171	File round 30cm bastard.(ISO certified)	12						
172	File square 25 cm second cut.(ISO certified)	12						
173	File square rough 250 mm.(ISO certified)	12						
174	File square smooth 200.(ISO certified)	12						
175	File Swiss type needle set of 12.(ISO certified)	12 sets						
176	File triangular rough 250 mm.(ISO certified)	12						
177	File Triangular smooth 200 mm.(ISO certified)	12						
178	File triangular 15 cm smooth.(ISO certified)	12						
179	File triangular 20 cm second cut.(ISO certified)	12						
180	File warding 15 cm smooth.(ISO certified)	12						
181	fire buckets. .(ISO certified)	24						
182	Firmer Chisel.(ISO certified)	12						

183	Flat smithy tong.(ISO certified)	12						
184	Flat surface 45 cm x 45 cm.(ISO certified)	1						
185	Hack saw frame 150mm.(ISO certified)	12						
186	File flat 30cm second cut.(ISO certified)	12						
187	G' clamp 100. .(ISO certified)	12						
188	G' clamp 150mm. .(ISO certified)	12						
189	Gauge chisel, finner, 6,10,12,16,20mm. .(ISO certified)	12						
190	Gauge Plug single 3 ended 5 to 55 by 1mm .(ISO certified)	1 set						
191	Gauge slip of Johnson metric set.(ISO certified)	1 set						
192	Gauge snap go and 25 to 50 mm by 5mm.(ISO certified)	1 set						
193	Gauge Telescopic .(ISO certified)	1						
194	Glass cutter.(ISO certified)	3						
195	Glass Magnifying 7 cm.(ISO certified)	3						
196	Grease gum.(ISO certified)	6						
197	Gauge chisel seriating 6, 10,12 16,20mm. .(ISO certified)	8						
198	Hacksaw frame adjustable 20-30 cm.(ISO certified)	12						
199	Hacksaw frame adjustable for 250 to300.(ISO certified)	12						
200	Hammer 250 gms.(ISO certified)	12						
201	Hammer Bal pain 0.22 kg with handle .(ISO certified)	16						
202	Hammer Bal pain 0.45 kg with handle.(ISO certified)	12						
203	Hammer ball peen 300 gms.(ISO certified)	12						
204	Hammer ball peen 800 gms .(ISO certified)	12						
205	Hammer, Claw (500gr) .(ISO certified)	12						
206	Hand Auger 10,12,14,16,18,20,22,25,mm.(ISO certified)	12						
207	Pan M.S. 25 cms. Dia.(ISO certified)	6						
208	Pipe face to grip pipe up to 50mm.(ISO certified)	2						
209	Hand Hammer 1kg with handle .(ISO certified)	12						
210	Hand Reamer adjustable max .9mm , 12mm,19mm -set of 3 .(ISO certified)	1						
211	Hand Reamer taper 4mm to 9mm set of 6 .(ISO certified)	1						
212	Hand vice jaw 50 mm .(ISO certified)	6						
213	Handsaw 18" .(ISO certified)	12						
214	Heat Sink pliers .(ISO certified)	21						
215	I.C Tweezers/ Puller .(ISO certified)	21						
216	Inside caliper 150 mm .(ISO certified)	12						
217	Interchangeable ratchet socket set with a 12 mm driver-Socket Range 4mm set of 8.(ISO certified)	1						
218	Lathe tools bit 6 mm x 75mm.(ISO certified)	12						
219	Lathe tools bit 6 mm x 75mm.(ISO certified)	12						
220	Lathe tools bit 7 mm x 75mm.(ISO certified)	12						
221	Lathe tools bit 9 mm x 85mm.(ISO certified)	12						
222	Lathe tools H.S.S tipped set.(ISO certified)	12						
223	Machine vice 20cm.(ISO certified)	6						

224	Machine vice 15cm.(ISO certified)	6						
225	Machine vice 10cm.(ISO certified)	6						
226	Micrometer, for measuring wire Digital-(ISO certified)	6						
227	Micrometer 0-2.5 cm out side Digital-(ISO certified)	6						
228	Micrometer 0-25 mm outside Digital-(ISO certified)	6						
229	Micrometer 25-50 mm outside Digital-(ISO certified)	6						
230	Micrometer 50-75mm outside Digital-(ISO certified)	6						
231	Micrometer inside 25mm to 50mm with extension rods (ISO certified)	6						
232	Monkey Plier (Gas placers) .(ISO certified)	6						
233	Metric chisel .(ISO certified)	6						
234	Number punch 12mm. (set of 10pcs) .(ISO certified)	6						
235	Odd leg caliper 200 mm .(ISO certified)	6						
236	Out side Micrometer 0-25 mm.(ISO certified)	6						
237	Portable electric Drill 6mm. Capacity (Wolf type) (ISO certified)	4						
238	Portable Hand drill (Electric) 0-6mm .(ISO certified)	4						
239	Punch letter 3 mm set .(ISO certified)	6						
240	Punch letter set .(ISO certified)	6						
241	Punch number set .(ISO certified)	6						
242	Punch round 3mm x 4mm set of 2 .(ISO certified)	6						
243	Scraper 3 core 15cm .(ISO certified)	7						
244	Scraper flat 15cm .(ISO certified)	7						
245	screw driver 150mm.(ISO certified)	20						
246	Screw driver 250mm .(ISO certified)	20						
247	Screw Driver 300mm (cabinet maker) .(ISO certified)	20						
248	Screw driver 450mm.(ISO certified)	20						
249	Screw Driver Set Of 6.(ISO certified)	20						
250	Screw driver set with replicable bits.(ISO certified)	20						
251	Screw driver star head.(ISO certified)	20						
252	Screw driver3” .(ISO certified)	20						
253	Screw pitch gauge .(ISO certified)	20						
254	Screw thread micrometer with interchangeable 0-.4-1.75 mm pitch anvils for checking metric threads 60.(ISO certified)	1						
255	Scriber 15 cm.(ISO certified)	15						
256	Scriber 200 mm.(ISO certified)	12						
257	Scribing block universal 300 mm.(ISO certified)	2						
258	Set of wood turning tools for lathe machine. .(ISO certified) .(ISO certified)	3						
259	Sleeve drill Morse 0-1,1-2,2-3.(ISO certified)	6						
260	Slip stone 100mm. .(ISO certified)	8						
261	Small adjustable spanners.(ISO certified)	20						
262	Small file set.(ISO certified)	16						
263	Snip straight 200mm. .(ISO certified)	6						

264	Snip straight 250 mm& snip bend.(ISO certified)	6					
265	Soldering iron, copper fit fire heated, Hatched, straight 500 gms.(ISO certified)	20					
256	Spanner double ended set of 14. .(ISO certified)	12					
267	Spanner Adjustable 15cm.(ISO certified)	12					
268	Spanner monkey up to 5mm.(ISO certified)	12					
269	Spanner monkey up to 50 mm.(ISO certified)	12					
270	Spanner whit-wroth D.E 6cm to 25mm . .(ISO certified)	12					
271	Spirit level 300mm.....(ISO certified)	12					
272	Spring caliper inside 150mm. .(ISO certified)	12					
273	Spring caliper outside .(ISO certified)	12					
274	Spring divider.(ISO certified)	12					
275	Square adjustable 15 cm blade.(ISO certified)	2					
276	Square try 10 Cm Blade.(ISO certified)	17					
277	Scraper half round 15cm.(ISO certified)	12					
278	Standard Wire Gauge.(ISO certified)	12					
279	Steel float.(ISO certified)	12					
280	Steel tape.(ISO certified)	12					
281	Stilson pattern pipe wrenches 320 mm to take pipe up to 20 mm to 32 mm. .(ISO certified)	6					
282	Stilson pattern pipe wrenches 450 mm to take pipe up to 52 mm dia IS:4003.(ISO certified)	6					
283	Stilson wrench 200&350 mm.(ISO certified)	6.					
284	Surface plate 600*600mm.(ISO certified)	1					
285	Surface roughness comparison plates"Ruberts".(ISO certified)	1					
286	T' bar camp 0.6 meter. .(ISO certified)	8					
287	T' bar cramp 1.25 meter. .(ISO certified)	4					
288	Universal scribing block 22 cm.(ISO certified)	1					
289	Vernier bevel protector .(ISO certified)	2					
290	Vernier Caliper 250 mm.(ISO certified)	1					
291	Vernier Cliper 20 cm.(ISO certified)	1					
292	Vernier cliper with thumb block0-130mm LCO 2 mm.(ISO certified)	1					
293	Vernier Height gauge 30 cm.(ISO certified)	nil					
294	Vice bench 12cm.(ISO certified)	12					
295	Vice leg 10cm jaw.(ISO certified)	6					
296	Vice leg 75 mm, jaw on stand IS:2588 .(ISO certified)	6					
297	Washer cutter.(ISO certified)	3					
298	Watch maker screw driver set.(ISO certified)	5					
299	Wheel dresser 2(One fo 4 units) .(ISO certified)	3					
300	Wing compass 300mm.(ISO certified)	1					
301	Wing Compass 25.4 cm or 30cm.(ISO certified)	3					
302	Wire brush.(ISO certified)	6					
303	Wire Gauge ,metric standard.(ISO certified)	4					

304	Wire stripper .(ISO certified)	6						
305	Forge portable hand blower 38cm to 45cm.(ISO certified)	1						
306	Diagonal Cutter 15 Cm Insulated.(ISO certified)	21						
307	Dial Test indicator .01mm on stand.(ISO certified)	1						
308	Adjustable pipe chain tongue 22cm long to take pipes from 3 cm to 63cm.(ISO certified)	10						
309	Adjustable pipe die 0-205 cm cap.(ISO certified)	1						
310	Adjustable spanner 38cm long.(ISO certified)	1						
311	Adjustable spanner A 375 IS: 1649.(ISO certified)	1						
312	Adjustable pipe chain tongue 22cm long to take pipes from 3 cm to 63cm.(ISO certified)	2						
313	Adjustable pipe die 0-205 cm cap.(ISO certified)	1						
314	Adjustable spanner 38cm long.(ISO certified)	1						
315	Adjustable spanner A 375 IS: 1649.(ISO certified)	1						
316	Blow lamp 500 milliliter.(ISO certified)	4						
317	Bobbin and follower.(ISO certified)	5						
318	Bolster.(ISO certified)	4						
319	Brick hammer with handle.(ISO certified)	6						
320	Bucket G.I. 35 cm. Dia.(ISO certified)	6						
322	Chase wedge 50 mm.(ISO certified)	6						
323	Lamp blow 0.55 liters.(ISO certified)	6						
324	Level sprit 15 cm metal.(ISO certified)	12						
325	Oil can 500 ml. .(ISO certified)	12						
326	Oil stone 150 mm*50 mm*25 mm.(ISO certified)	12						

