**Maharana Pratap University of Agriculture and Technology,**
**UDAIPUR – 313 001**
**महाराणा प्रताप कृषि एवं प्रौद्योगिकी विश्वविद्यालय,**
**उदयपुर – 313 001**

No. F. 81/MPUAT/Tender/Gr.V/CTAE/2007/ Date:

**Category –'CTAE'**

M/s. _____

_____

_____

_____

Sub: Tender form for supply of **Equipments**

Ref: Your No. _____

Dear Sir,

With reference to your letter cited above, please find enclosed herewith the following:

1. Tender form for supply of **Equipments**.
2. Special Terms and Conditions of the tender.
3. General terms and conditions of tender.
4. Custom Duty/Excise Duty exemption certificate.

The tender form alongwith terms and conditions duly completed and signed must accompany a demand draft towards earnest money and be submitted to this office by **30.11.2007** up to **11.30 AM** and opened on the same day to **at 12.10 PM.**

**Please Note:**

1. No tenders will be entertained without earnest money
2. On envelop, the category of tender (i.e. tender for supply of **Equipments-Category-CTAE** due date on **30.11.2007** etc. must have been explicitly mentioned.
3. Tenders must be submitted in **Sealed** cover.
4. If the tender form, special and general terms & conditions are down loaded from the University website, the tenderer has to enclose a demand draft of **Rs. 500/- (Rs. Five Hundred Only)** as tender form fee (Non-refundable) in favour of the Comptroller, MPUAT, Udaipur payable at Udaipur failing which the tender shall not be considered.
5. **The tenderer or his authorized representative should come prepared for technical presentation and demonstration on the date of opening of the tender and may be required to stay for next day.**

Yours faithfully,

***COMPTROLLER***

**Encl: as quoted above**

**Maharana Pratap University of Agriculture and Technology,**
**UDAIPUR – 313 001**
**महाराणा प्रताप कृषि एवं प्रौद्योगिकी विश्वविद्यालय,**
**उदयपुर – 313 001**

**Category – 'CTAE'**

## TENDER FORM FOR SUPPLY OF EQUIPMENTS IN REFERENCE TO NIT NO. F. 81/MPUAT/Tender/Equip/2007/1892 Dated 29.10.2007

**Note:** Tender must be submitted strictly in accordance with all the terms & conditions of the Tender-Notice and in the tender form issued by the University, otherwise the tender shall not be considered and shall be rejected outright. Counter conditions shall not be accepted. Tenderers should read these conditions very carefully and comply strictly before submitting their tender. If a tenderer has any doubts regarding the interpretation of any of the conditions or specifications mentioned in these documents he should refer the same to the Comptroller and obtain clarification before submitting the tender. The decision of the Comptroller regarding interpretation of the conditions and specifications shall be final and binding on the tenderers.

**There are two sets of tender forms containing the following documents:-**

1. Tender Notice No. F. 81/MPUAT/Tender/Equip/2007/1892 dated29.10.2007.
2. Tender Form for quoting the rates.
3. Special terms and conditions of the tender.
4. General Terms and conditions of the tender.
5. Custom Duty/Excise Duty exemption certificate.

**Please retain one set for your record and submit one complete set duly filled in, signed and stamped on every page alongwith the earnest money remittance evidence, failing which, the tender will be rejected.**

Encl: As above.

**COMPTROLLER**

Details about the tenderer: To be filled in by the tenderer:

1. Name & complete postal address and contact telephone number of the Tenderer:

   _____

   _____

2. Earnest Money deposited in form of :_____

   Bank Draft/Pay Order No. _____dated _____ for

   **Rs. _____(Cheques/FDR's are not acceptable) issued by_____**

   **_____(Name of Bank).**

*3. Tender form fee of Rs. 500/- in form of Bank Draft/Pay order No._____

   dated_____ issued by_____ (**Name of Bank**)

   (Cheques/FDR's are not acceptable).

***Note:- Applicable when down loaded from website/copied.**

**I/We declare that I/we have read all the terms and conditions & specifications of the work mentioned in all the above documents of the tender-form and I/we agree to confirm to these.**

Dated:

**SIGNATURE OF THE TENDERER**
**(With Stamp)**

**Maharana Pratap University of Agriculture and Technology,**
**UDAIPUR – 313 001**
महाराणा प्रताप कृषि एवं प्रौद्योगिकी विश्वविद्यालय,
उदयपुर – 313 001

**Category – 'CTAE'**

## SPECIAL TERMS & CONDITION FOR SUPPLY OF EQUIPMENTS WITH REFERENCE TO TENDER NOTICE NO. F. 81/MPUAT/Tender/Equip/2007/ 1892 Dated 29.10.2007

1. Tenders should be submitted on prescribed tender form to the Comptroller, Maharana Pratap University of Agricultural and Technology, Udaipur and should reach on or before **30.11.2007** upto **11.30 AM**. Postal delays are no justification for the acceptance of the tender.
2. Tender should be in the name of **COMPTROLLER, MPUAT, Udaipur**, in a sealed cover duly superscribed as "Tender for supply of **Equipments-Category-CTAE** to be opened on **30.11.2007.**
3. Rates quoted in the tender should remain valid for a period of **4 months** from the date of opening of tenders.
4. **Earnest Money** Deposit shall be **2%** of the estimated value of each item, in the form of DD/Pay Order drawn in favour of "**Comptroller, MPUAT, Udaipur**". Exemption shall be allowed to **SSI Units** duly registered, as per prevailing rules in Govt. of Rajasthan. Tender without earnest money would be rejected.
5. **Specification brochures/catalogue should be enclosed with the tender form.**
6. Equipment to be supplied must have specific warranty period not less than **12 months** after installation.
7. If the material/equipment supplied is not as per prescribed specifications, then the same shall be rejected at the cost of the supplier.
8. The rates should be quoted in the prescribed tender form (enclosed) only. The rates should be quoted as all Tax (Custom duty charges, Excise duty charges, Octroi and VAT etc.) paid, if extra then mention separately.
9. **Tenderer must quote his rates for the items in the column 4 of the tender form. The tendered amount should be in Indian Currency i.e. in Rupees only. If equipment is imported, university may open L.C. in favour of the Principal but all the other formalities relating to import (clearing, etc) are to be completed by the successful tenderer at his cost.**
10. **Tenderer must quote his rate FOR destination (mentioned in supply order) including clearing charges, transport and handling charges etc.**
11. **The tenderer should have Custom Bonded Warehouse facilities against our custom exemption certificate for destination at FOR.**
12. **For the tender for supply of equipment/implements, the tenderer should be either a manufacturer or an authorized dealer. In case of authorized dealers he should enclose dealership certificate valid during the period of tender/supply.**

**Contd., … 2/-**

13. The quantity mentioned in the tender for items can be increased or decreased at the discretion of the University.
14. **The tenderer should enclose user list alongwith their postal address and telephone number and should also furnished details of after Sales Service if any provided by the tenderer.**
15. **The rate quoted should be inclusive of all requisite accessories. The details of accessories are to be clearly mentioned in tender form by the tenderer. The rates of option accessories if any be quoted separately.**
16. **The tenderer can avail facilities against our Excise/Custom Exemption certificate.**
17. **The order will be placed by the Dean, CTAE, Udaipur. Other unit officers of the university may also place the order & the supply is to made at FOR Indentor Office or as specified in the supply order within the area of MPUAT, Udaipur. Payment will be made by indenting officer after satisfactory supply/installation of the equipment/implement etc.**
18. **Vice Chancellor, MPUAT, Udaipur reserves the right to reject any tender in part or full without assigning any reason.**
19. **Any dispute arising out of this contact shall be subject to the courts having jurisdiction at Udaipur only.**
20. The rate tendered for every items/equipment/unit mentioned in tender form at **Col. 4** will be evaluated separately and tenderer should quote accordingly.
21. Tendered amount should be mentioned in words & figures.
22. The successful tenderer will have to deposit @ 5% of the order value as security within seven days, which will be refunded after the end of guarantee warranty period.
23. Equipments/implements which are governed by Dangerous Machinery Regulations Act should be necessarily 'I.S.I.' marked (attach certificate with the Tender) and for other equipments 'I.S.I.' quality certification is desirable. For quality certification in case of equipments the certificate be enclosed.
24. The tenderer should give on the site demonstration at the desire of the Indentor.
25. **Please enclosed details specification with the photographs & literature of the equipment to be supplied.**
26. **The tenderer or his authorized representative should come prepared for technical presentation and demonstration on the date of opening of the tender and may be required to stay for next day.**
27. **Liability on the part of University will arise only when the supply order is issued by the Intending Officer of the University.**

**COMPTROLLER**
**M.P.U.A.T., UDAIPUR**

I/We hereby declare that I / We have read carefully all the above mentioned Special Terms & Conditions and I/We agree to confirm these.

**SIGNATURE OF THE TENDERER**
**WITH HIS FIRM'S RUBBER STAMP**

**TENDER FORM**

**Cost**
By **Cash Rs. 500/-**By **Post Rs. 600/-**
**Category – 'CTAE'**

To,

**The Comptroller,**

Maharana Pratap University of Agri. & Technology,

**Udaipur**

Sub: TENDER FORM for supply of **EQUIPMENTS.**

Ref Your tender notice No. F.81/MPUAT/Tender/Equip/2007/1892 Dated 29.10.2007

Dear Sir,

In response to the above-referred Tender Notice, we are submitting our offer for supply of equipments. The details are as under**:**

1. Name of the Tenderer _____
2. (a) Address of the Tenderer _____

   _____

   (b) Phone No._____

   (c) Fax No._____
3. The proposed tendered amount for supply of equipments are as under:

| **S. No.** | **Particulars** | **Estimated Quantity** | **Tendered rate (in Rs. figures & words per unit)** |
|---|---|---|---|
| **1.** | **2.** | **3.** | **4.** |
| 1. | **Water Bath**<br>Type: Re-circulating, Capacity: 4-5 Lit, Temperature range: 5-80 degree C or better (user selectable), Temperature Accuracy: +/-0.1 degree C or better, Temperature Control and display: Digital, Flow rate: controllable, Power: 230 V AC, 50 Hz should be compatible to water activity meter model GBX, Fast lab | **1** | |

**Cont…..2**

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| 2. | **Microprocessor Training Kit**<br>Based on 8085 microprocessor operating at 6.144 MHz crystal.16K bytes of EPROM loaded with powerful monitor program, available to the user. Total on board memory. Six seven segment Hexadecimal display. 28 Computer graded keys: 16 hexadecimal keys and10 for programming, editing, debugging, execution etc., Reset key and 1 key for vector interrupt. Lines using two nos. of 8255(PPI) using 8253.For 27 series EPROMs. For RAM using 3.6V rechargeable battery. For CRT using SID/SOD lines. Using 8251. Using 8259. 8 Channel using ADC-0809.1 output.1 Channel using DAC 0800.8085 CPU, 8/16K byte of RAM expansion upto 64K bytes.Printer Interface, 48 programmable I/O 3 nos. of 16 bit programmable timer/counter, EPROM Programmer,Battery backup,RS-232C interface, Additional serial port, Interrupt Controller, 8 bit ADC, Relay, 8 bit DAC, Hex Key Mode, Serial Mode, Powerful Software Commands like etc. Onboard Single Line. Facility for files from/to PC. Power Supply requirement: 5V/1.2A,±12V/250mA, 24V/21V/100mA (Inbuilt). User's Manual. Examine/Modify memory, Examine register, Relocate, String, Fill, Insert, Delete, Block move, Memory compare, Assembler/Disassembler Downloading/Uploading. | **25** | |

**Cont…..3**

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| 3. | **Microprocessor Interfacing Cards**<br>**(a) ADC 0809 Interface**<br>Specifications:-<br>8 bit ADC-0809 monolithic CMOS device with in-built 8 channel multiplexer. Digital Display of the input, analog signal This card should possess the features to demonstrate the complete operation of A/D converter on a chip. Compatible with 8085 microprocessor.<br>**(b) Dual DAC Interface Card**<br>Specifications:-<br>This card should comprise two independent 8-bit digital to analog converter along with a stable regulated voltage source using 723 regulator. The current output of DAC be converted to voltage using operation amplifier. 26 Pin FRC Cables. Compatible with 8085 microprocessor.<br>**(c) Stepper Motor Controller Interface Card**<br>Specifications:-<br>This module should demonstrate the control of Stepper Motor in three parameters such as direction, speed & number of steps. Complete with stepper motor: Torque Kg-cm: 0.25,Max. speed RPM: 100,Steps/Degree: 7.5,Volts/Amps : 5V/250mA. Appropriate no. of 26 Pin FRC Cables. Compatible with 8085 microprocessor.<br>**(d) Traffic Light Controller Card**<br>Specifications:-<br>The traffic light controller card should be capable to demonstrate the use of Microprocessor in controlling the traffic movement under the control of program. 26 Pin FRC Cables. Compatible with 8085 microprocessor.<br>**(e) D.C. Motor Controller Card**<br>Specifications:-<br>The card should demonstrate the control of the speed of DC motor along with its direction under the Control of the software program. 26 Pin FRC Cables. Compatible with 8085 microprocessor. | **2** | |

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| 4. | **Microwave Training Kit**<br>The training kit should be capable of performing the following Experiments:<br>To study the characteristics of reflex, klystron<br>To study frequency, guide wavelength and free space wavelength.<br>To measure SWR & reflection coefficient.<br>To measure impedance of a load.<br>To measure the polar pattern and gain of the antennas<br>(Pyramid horn, Pick up horn, Slot antenna, Sectoral horn and parabolic disc).<br>To study magic tee, directional coupler, Isolators & Circulators.<br>To measure the characteristics of detector diode.<br>To study attenuation measurements.<br>To study the return loss measurement.<br>Consisting of following components:<br>Klystron power supply Digital, Klystron mount and tube, Isolator, Frequency meter direct reading, Variable attenuator, Slotted section, Tunable probe, Detector mount, Movable short<br>Matched termination, VSWR meter solid state, Stand, SS, Tuner, BNC cable, Cooling fan, Fixed short, Standard gain horn, Pyramidal horn, Pick up horn, Slot antenna broad wall, Slot antenna broad wall, Sectoral horn – E plane, Sectoral horn –H plane, Parabolic disc, Circulator, Coaxial to W/g adaptor, Twist, Movable short precision, Stand, Bends, Tripod stand, Fixed attenuator (3,6, 10dB), Magic tee, M H D Coupler, Circulator, E-Plane Tee, H- Plane Tee | **2** | |

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| 5. | **Microwave Test Bench**<br>The training kit should be capable of performing the following Experiments:<br>1. Introduction to wave guide components.<br>2. Gunn oscillator<br>i) Measurement of current vs. voltage characteristic of Gunn diode. (ii) Measurement of Gunn oscillator output power and supply voltage. (iii) Measurement of Gunn oscillator output frequency and supply voltage.<br>3. Modulator and crystal detector<br>i) Operation of PIN diode modulator. (ii) Operation of crystal detector. (iii) Measurement of square law characteristic of crystal detector.<br>4. Propagation modes, wavelength and phase velocity in a wave guide.(i) Measurement of frequency of source. (ii) Measurement of free space & guide wavelength and verify waveguide law.<br>5. Q and bandwidth of resonance cavity.<br>i) Measurement of Q using power meter technique.<br>ii) Measurement of Q using SWR method.<br>6. Power Measurement<br>i) Direct Power Measurement<br>ii) Measurement of Power using Directional Coupler.<br>iii) Measurement of conjugate and Zo power.<br>iv) Measurement of power of modulated signal.<br>7. VSWR and Reflection Coefficient by Standing wave and Double Minimum Method<br>i) Measurement of low and medium range SWR.<br>ii) Measurement of high range SWR.<br>iii) Measurement of high range SWR using a calibrated attenuator.<br>8. Impedance Measurement<br>i) Measurement of unknown Impedance of a load using smith chart.<br>ii) To match an unknown impedance.<br>9. Waveguide Hybrid( Magic) Tee<br>i) Measurement of Power division or Decoupling between H-arm and E- arm of a Magic Tee.<br>ii) Measurement of Insertion loss of a Magic Tee.<br>iii) Measurement of Return Loss of H arm of a Magic Tee. (vi) Measurement of VSWR of ports of Hybrid (Magic) Tee<br>10. Properties of Directional Coupler<br>i) Measurement of coupling factor. (ii) Measurement of directivity. (iii) Measurement of return loss of a load.(iv) Measurement of Main line insertion loss.<br>v) Measurement of VSWR of ports.<br>11. Fixed and Variable Attenuator<br>i) Measurement of attenuation using the Power Ratio method. (ii) Measurement of attenuation using the RF substitution method. (iii) Measurement of low values of attenuation. (iv) Measurement of VSWR and Insertion Loss. (v) Measurement of Insertion Loss of attenuator. | **1** | **Cont…6** |

12. To study a cavity resonator type frequency counter.
13. To study wave guide to coax transition.
14. Radiation pattern and Gain
i) To study polar patterns and measure gain for the pyramidal horn antenna.
19. To establish a Microwave communication link.

**Consisting of following components:**

1. Digital Gunn Power supply
It should comprise a regulated DC Power supply and a square wave generator, to operate Gunn oscillator and PIN modulator.
Gunn Bias Voltage 0-10 V, Current 0-750mA, Modulation Frequency 900-1100Hz, Modulation Amplitude 0-10V
2. VSWR meter
It should be a calibrated high gain tuned amplifier for
measurement of VSWR and relative Power levels. It is
calibrated in VSWR and dB for square law of detector .
Frequency 1KHz
Bandwidth 100Hz
Sensitivity 2uV
3. Gunn Oscillator
A Gunn oscillator to generate microwave frequencies (X-band) using a Gunn diode. It should be supplied with calibration giving frequency Vs. micrometer reading. Frequency range: X band, Power output 10dBm
4. PIN-diode modulator, PIN diode modulator should produce amplitude modulation of
the CW output of Gunn oscillator for detection by VSWR meter. It should comprise a PIN diode mounted inside a section of waveguide, Amplitude modulation 50%, Insertion loss 2dB.
5. Variable attenuator
A variable attenuator should provide attenuation by varying the degree of insertion of a matched resistive strip into a wave guide. The variable attenuator is used to control a power level or to isolate a source from a load. Attenuation 0 to 20dB variable.
6. Slotted line with matched Probe
A slotted line is to be provided to measure the amplitude and the phase of the standing wave pattern to determine the wavelength, standing wave ratio and the impedance of the waveguide transmission line. It should have a built in detector. Residual SWR 1.1
7. Waveguide matched detector
It should be a high sensitivity schottky diode mounted inside a wave guide. It is to be used for detection/demodulation of microwave signals.

**Cont…7**

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| | 8. Matched termination<br>It should be a non-reflective and absorptive termination matched to the waveguide. Return<br>Loss >25dB<br>9. Slide screw tuner precision micrometer type<br>It is to be used to match loads, detectors, or antennas to the characteristic impedance of the waveguide. The combination of the depth and the position of the probe causes reflection in the wave guide at a specific amplitude and phase.<br>10. Wave guide Stands/Antenna rotator<br>To support the microwave components for setting up waveguide Test bench. One of the stands should have antenna rotator with angle measuring facility.<br>11. Shorting plate<br>To measure the wavelength inside of a wave<br>guide. a shorting plate is to be used to create a short (zero impedance) at the open end of a wave-guide.<br>12. Fixed attenuator.<br>The purpose of the fixed attenuator is to provide a fixed attenuation, isolation, padding etc. Attenuation 3dB<br>13. Magic-Tee (or Hybrid-Tee)<br>A magic-Tee should be a four port device where power incident on any arm splits equally between the two adjacent<br>arms, but there is no power coupled to the opposite arm.<br>14. Directional coupler<br>Coupling 10dB, Directivity 30dB<br>15. Wave guide rigid rectangular straight section.<br>It should be a straight section of wave guide used in measurements of the wavelength and the phase velocity inside a wave guide.<br>16. Wave guide to Coaxial Adapter<br>It should provide a transition between a wave guide and a 50 ohm coaxial cable. It should have low SWR with flat frequency response and low loss.<br>17. Pyramidal Horn Antenna<br>Gain 16dB<br>18. Reflecting Panel<br>Accessories Mains Lead, BNC-BNC lead, BNC cables | | |

**Cont…..8**

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| 6. | **PCB Fabrication System**<br>It should comprise the following processing units for the fabrication of printed circuit board.<br>*PCB Drilling Machine:*<br>A compact tabletop high speed drilling machine with a quick change chuck. Drill holding by precision chuck with lapped jaws. Main operated AC/DC motor. Motor speed : upto 9000, 20,000 rpm (as per requirement) . Range : 0.6 to 3.0mm.<br>*U.V. Exposure Machine S/D:*<br>A table top double sided exposure unit for high resolution exposure of PCB's. Maximum size : 10"x12". Type : Single or Double sided. Timer 0-15 minutes. Chemical resist acrylic body. Safety micro switch to prevent any damage to eye.<br>*PCB Etching Machine:*<br>For Single and Double sided PCB etching. Useful etching area : 250mm. x 300mm. (10"x12"). Tank Capacity : 20 liters. Full construction : Corrosion free. Heater : Included.<br>*PCB Curing / Oven Machine:*<br>Table top unit for curing of liquid photoresist or drying of PCB's. Timer controlled system allows fast and efficient PCB curing. PCB Size : 10"x12". Timers : 0-30 minutes. Temperature : 0-90℃. Chemical resist body of PP sheet.<br>PCB Shearing Machine:<br>A Bench top hand operated shearing machine for PCB's and laminators. Structure with central handle allows ease of cutting. Width : 300mm. Table size : 400mmx350mm. Foot operated model also available.<br>*Photoresist DIP Coating Machine:*<br>Tabletop and compact. A single operation unit designed for coating of laminates with photoresis. The machine ensures uniform controlled thickness of photoresist. Maximum board size : 250mm x 300mm. Tank capacity : 2.5 liters. Motorirsed screw driven system. Micro switch to avoid motor damage. Steel container for photo resist.<br>*Roller Tinning Machine:*<br>It should be a tabletop unit for Tin/solder coating of PCB's. A hand operated flywheel allows easy manual coating of boards. Maximum PCB width 10". Maximum PCB thickness : 6mm.<br>Solder bath capacity : 6-10 kgs.<br>*Film Making Unit:*<br>The proto contact tabletop unit which serves a negative making printer for Film negatives. To make negative from 1x1Scale networks. Working area : 10"x12" with diffused light. Timer : 0-99 sec. digital<br>*Art Work Table (Illuminated)*<br>Size : 20"x24". For PCB artworks design. For film and PCB inspection. Electronics chokes. Diffused light. | **1** | |

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| | *Ammonical Etching Machine:*<br>Tabletop compact spray etching unit for processing of signal or PTH PCBs. Two bar oscillating system evenly spraying etchant on the board. Non corrosive construction with chemical pump and timer. Maximum board size : 250mm x 300mm. (10"x12"). Capacity : 10 liters. Pump : Magnetic coupled. Heater : Titanium with thermocouple control. Timer : 0-4 min. Nozzle : 2x3 oscillating fan spray.Filter : 3 layer nylon removable.<br>*Proto Dye / Developer (2 in 1 unit):*<br>Table unit which gives convenience of dying and developing both in one machine.Diaphragm pump agitates the dye solution chamber. Maximum PCB size : 250mm x 300mm (10"x12").Tank Capacity : 2 liters for developer solution 2 liters for dye solution. Air pump : Diaphragm type compressor pump. Mechanical timer : 0-4 min. to operate air pump.Electrical power : 230V/50Hz, 5A socket required. | | |
| 7. | **Soldering Station**<br>It should consist of a Control unit, Ultra light weight, Dual element soldering iron with Bit cellulose tip, Cleaning sponge, stand, spare bit 4 Nos.<br>Input voltage : 230V AC ± 10% 50Hz. Output voltage & power : 24V AC, 50W.Temperature range : 50° to 450°C.Temperature setting resolution : ± 1°C.Temperature control accuracy : ± 1°C.Tip leakage current : < 50µA.Tip to ground resistance : < 2Ω.Tip to ground leakage voltage : < 0.5mV | **5** | |
| 8. | **De-soldering Station**<br>It should consist of Control unit, Dual element PTH Desoldering gun with nozzle cellulose tip, Cleaning sponge, stand, power cord, foot switch, tool box, spare nozzle (7 Nos.), solder,Collecting glass tube, Silicon washers 2 Nos., Teflon tape, Spanner, Nozzle cleaning wire, Filters 10 Nos., Solder collecting strip.<br>Input voltage : 230V AC ± 10% 50Hz.<br>Output voltage & power : 24V AC, 65WTemperature range : 50° to 450°C. Temperature setting resolution : ± 1°C. Temperature control accuracy : ± 1°C. Vacuum : 600mm/Hg self contained diaphragm type. Tip leakage current : < 50µA. Tip to ground resistance : < Ω. Tip to ground leakage voltage: < 0.5mV | **2** | |

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| 9. | **CRO Demonstration Kit**<br>This trainer should be designed with a view to provide theoretical and practical knowledge of a general 10 MHz Cathode Ray Oscilloscope (C.R.O.) on SINGLE board with fault creating facilities.<br>Operating Modes : CH I & II Alternate or Chopped (at 100Khz). X-Y peration : 1:1 Vertical Deflection: - (Both channels) Band width : DC-20 MHz (-3Db) Rise Time : 17.5 ns Deflection Coefficient : 12 Steps, 5 mV/cm to 20V/cm in 1-2-5 sequence Accuracy : + 3 %. Input impedance : 1M parallel 30 pf. Input coupling : DC-AC-GND. Maximum Input : 350V ( DC+ peak AC )<br>Time Base:- Time Coefficients : 18 steps, 0.5 ûs/cm to 0.2 s/cm in 1-2-5 Sequence with Magnified x 5 to 100ns/cm with variable to 40 ns/cm Accuracy : + 3 %. Sweep output : 5 Vpp<br>Horizontal Deflection:-<br>Band width : DC-2Mhz (-3 Db), XY mode : Phase shift < 5° 50 KHz, Deflection Coefficient : 12, calibrated steps, 5mV/cm to 20V/cm, Input impedance : 1M parallel 30 pf. Display:- Cathode ray tube : 140 mm rectangular tube with internal, gratitude, P31 phosphor,<br>Accelerating Voltage : 2KV., Display : 8 x 10 cms.<br>Trace Rotation : Adjustable | **1** | |
| 10. | **TV Demonstration Kit**<br>The complete circuit of Remote Colour T.V is printed on single PCB. All parts are soldered on single pin tag for easy replacement and fault creation. Fault creation facilities are provided by removing jumpers, by rotating presets, by tuning coils, by adjusting trimmers and by changing parts.<br>System: CCIR-B-PAL-G, 625 lines.<br>2. Power supply: 230V ± 15% AC, 50 Hz.<br>3. Regulation range: 195V AC to 265V AC.<br>4. Power consumption: 70 watts.<br>5. Gain Limited sensitivity**:** 60 Db for Video. 30 Db for Audio. 6. Sound output: 2.0 watts maximum.<br>7. Picture Tube size: 20" (Diagonal)<br>8. Tuner Channel: VHF 2 to 12, UHF 21 to 68, S-band and Hyper-band.<br>9. Tuner Channel Position: 106 Channel positions.<br>10. Program Memory: 90 programs.<br>11. On Screen display for setting of all controls e.g. Volume, Brightness, Contrast, Colour, Channel and band selection, Tuning.<br>12. Remote Controller is in trainer form.<br>13. Audio- Video In and Out sockets.<br>14. Sections: Operating unit and Tuner, Remote Receiver, Video I.F., Sound I.F., Colour decoder, Video amplifier, Horizontal oscillator, Horizontal driver and output, S.M.P.S, Vertical Oscillator, Picture tube, Remote transmitter.<br>15. Controls: Volume, Brightness, Contrast, Colour, Channel and band selection, Tuning. | **1** | |

**Cont…..11**

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| 11. | **Analog Oscilloscope-30 MHz**<br>Dual Channel four trace with 1mV sensitivity., Dc to 30 MHz, 1mV/div, Invert facility in both channels. Time base 20 nS-0.2s, variable hold-off, X10 Magnification. Sweep delay, Two channel four trace display. Vertical deflection: 1mV to 20V/div, 12 calibrated steps 5mV/div to 20V/div in 1-2-5 sequence. Digital frequency readout. Triggering DC-60 MHz, Active TV Sync Separator. Time base: 18 calibrated steps in 1-2-5 sequence 0.5 micro sec/div to 0.2 S/div. Alternate triggering. Dual Frequency triggering. Component tester, two level calibrator. X-Y mode with same sensitivity in both directions. Triggering mode: Auto or Normal with indication of stable triggering. Input voltage maximum 400V (DC+AC peak). Component Testing facility. Display: CRT. Z-Modulation: Positive TTL level. Square wave calibrator. Overscan and uncal. Indicators | **10** | |
| 12. | **Function Generator-3MHz**<br>It should be a micro controller based 3MHz function generator with AM,FM,PAM,PWM,Pulse, and Ramp outputs. Frequency counter display.<br>Frequency Range: 0.3 Hz to 3 MHz. Frequency stability: better than 0.5% per hour. Output waveforms: Sine, Square, Triangle, Pulse, TTL. Output voltage: 10 V p-p to 20 Vp-p. Attenuation up to 60 dB in steps. | **10** | |
| 13. | **DC Power Supply**<br>It should be a DC laboratory power supply.<br>Output Range regulation : 0-3, Line $\leq$ 0.01% + 3mV for 10% change in line, Load : $\leq$ 0.01% +3mV for load change from zero to Full load. Ripple & Noise : $\leq$ 1mV rms max. Indication : CV mode LED. Output Range : 0-2Amp. Regulation : Line $\leq$ 0.1% ± 1mA for 10% change in line Load $\leq$ 0.1% ± 1mA for load change in output voltage from Zero to max. Ripple & Noise : $\leq$ 2mA rms max. Indication : CC mode LED red. Transient Response : < 100µSec to within 0.1V for load change from 10% to 90% Protections : Automatic overload and short circuit protection. Digital Standard : Two output meters to read V/A of each output with a selector Analog option in case of dual o/p vertical P/S single DPM with V/A selector switch (Moving coil, Accuracy ± 2% of fsd). Output Voltage : 2.8V to 5.5V. Output Current : 2A max. Line Regulation : $\leq$ 5mVLoad Regulation : $\leq$ 15mV Ripple & Noise : <2mV rms.<br>Input Line Voltage : Switch selected 115V/230V AC ± 10% 47 or 63Hz | **10** | |

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| 14. | **Distortion & Level Meter**<br>Technical Specifications :<br>Distortion Meter<br>Range : from 0.3% to 100% full scale in six ranges of 0.3, 1, 3, 10, 30 & 100%.<br>Frequency range : 30Hz to 300KHz in eight ranges.<br>Input level : 300mV to 10V max.<br>Input impedance : Approx. 600 Ω or 10K Ω (HI) unbalanced.<br>Filter Characteristics (Second Harmonic Accuracy) : Better than -0.6dB for<br>Fundamental freq.Range of 30Hz to 300Hz.Better than -0.8dB for fundamental Freq. range of 300Hz to 3KHz. Better than -1dB for fundamental Freq. range of 3KHz to 30KHz. Better than -2dB for fundamental Freq. range of 30KHz to 100KHz. Better than -3dB for fundamental Freq. range of 100KHz to 300KHz.<br>Distortion Introduced : < 0.05%Meter indication : Proportional to average value of the waveform. Dial Calibration accuracy : Better than ± 3% from 300Hz to 300KHz Better than ± 5% from 30Hz to 300Hz.<br>Level Measurement<br>Voltage Range : From 1mV to 300V full scale in twelve ranges in 1-3-10 sequence. dB Range : +50dBm to -60dBm in 12 ranges of 10dB steps. Accuracy of Indication : Within ± 3% of f.s.d. at 10KHz.Frequency Range : 20Hz to 3MHz | **2** | |
| 15. | **Auto Compute LCRQ Meter**<br>Microprocessor based Fully Automatic L, C, R & Q Measurement<br>Auto ranging with Direct Digital Readout.4 Terminal Measurement Technique<br>Series and parallel equivalent measurement.<br>Variable Measured : LCRQ & D.Measurement Modes : Series or Parallel Equivalent.Measurement 100Hz or 1KHz.FrequencyMax. Voltage Across 0.285V rms.ComponentUpdate Rate 2 per second.Display 4 digit, 0.5" LED.<br>Connection 4 Terminal.Measurement Ranges Inductance 0.1µH to 9999H.<br>Capacitance 0.3pF to 9999µF. Resistance 0.001 ohms to 100M. `Q' factor : 0.1 to 99. Basic Accuracy ±0.25% of rdg ±1 digit.(for LCR)Basic Range Freq. 100Hz 1KHz Inductance (Q > 10) 1H - 2000H 200µH - 1H (series mode) (series mode)Capacitance (Q > 10) 1µF - 2000µF 200pF - 1µF (series mode) (parallel mode)Resistance (Q < 0.1) 1 ohm - 2M ohm (upto 10K seriesmode & >10K parallel mode).'Q' Factor 0.25 to 4. | **2** | |

**Cont…..13**

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| 16. | **Digital Signal Processing Training Modules**<br>MAIN BOARD TMS 320C5XX CPU with Crystal Oscillator of 40.00MHz Enhanced TMS320C50 architectural design for increased performance and versatility Modular architectural design for fast development of spin off devices. Advanced IC processing technology for increased performance. Downward source-code compatibility with 'C1x and 'C2xDSPs for fast and easy performance upgrades. Enhanced TMS320 instruction set for faster algorithms and for optimized high-level language operation. New Static design techniques for minimizing power consumption and maximizing radiation hardness 64 KB RAM and 32 KB Monitor. 14 Bit codec single channels, input/output voice quality analog interface. 1 single chip D/A and A/D conversion with 14 bits of dynamic range 12 bit 8 channel high speed ADC is available to user 16x2 LCD display with backlit IBM Keyboard interface Variable sampling rate and filtering 2's complement data format Single 5V supply Serial port interface Terminal I/O port is RS 232 compatible 60 pin Bus containing address/data and control signal to option to connect experimental board and for future expansion. Operating Temperature: +25℃ Storage Temperature: -40 to +85℃ Relative Humidity: 0 to 90% (non condensing) Dimensions: 4.050" (10,287 cm) Width & 4.925" (12.510 cm) Length. EXPERIMENTAL BOARD: 3 Seven Segment Display Onboard mike interface & speaker interface. With keyboard interface and key pad 3 x 4 matrix Onboard DTMF generator With Main Board & Lab board, user can do following experiments: Add two (64 bit signed) numbers and store result Multiply two (32 bit) numbers and store result Echo out an audio signal Add two numbers and store result Add "echo" to audio signal Generates a sinusoidal signal A-Law compandor Generate a pseudo random binary sequence 80 tap FIR low pass filter 10th order IIR filter Generate DTMF tons DTMF detection Speech ("vowel") recognition Data that corresponds to a 941Hz sinusoidal signal Data that corresponds to a 1477Hz sinusoidal signal. With descriptive manual specifying various steps in the form of lessons to follow to learn about DSP and its application with programmes. Debugger Software With On Line Simulation along with following Fetures Manager Software: The Manager software is used to communicate (through a host computer or terminal's serial port) with TMS320C5XX CPU microprocessor board (which utilizes a Texas Instruments TMS320BC5XX microprocessor). The software allows to: modify and display on-board user data/program memory, disassemble program memory (to the screen or dump to a file), assemble source code, download corresponding hex files, execute user programs, set breakpoints display "watch" variables, modify and display CPU register contents display the contents of user memory "graphically" on the screen | **5** | |

**Cont…..14**

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| 17. | **Circuit Simulation & PCB Design Software-5 Users**<br>**Schematic Entry and Schematic Design**<br>Graphical flat and hierarchical design page editor<br>Design archiving and project management process flow system, Standard windows user interface and functions including cut/copy/paste, Floatable / dockable tool bars and palettes for common editor functions, Macro recorder for play of complex schematic edits and customization, Text/VHDL editor<br>On line design rule check for data flow, packaging and connectivity, Import/Export for property data and reusable circuitry blocks, Unlimited, user defined property for parts, nets, pins and title blocks<br>Support for multi-gate logic and distributed-pin and relay-type devices, True Type fonts for display and printing, Adjustable color pallets for display and plotting, Print offset and scaling controls, Forward and back-annotation of PCB Layout properties or pin or gate swaps, Graphical Schematic part and library editor, Cross-probing with simulation " plug-ins" and Orcad Layout, Over 44,000 library parts including IEEE & IEC standard styles, EDIF graphics and EDIF netlist interface, MicroSim Schematic translation interface, 30+ PCB layout netlist interfaces includes including Cadence Allegro & PADS, Popular HDL and Simulation interfaces including Spice, Verilog & VHDL Imperial or metric Unit support, Automatic Schematic backup and recovery, Award winning interactive tutorial and online help system<br>**Component Information Systems**<br>ODBC-compliant component databse and MRP, ERP, PDM integration, Internet accessible and actionable IC Part library. One year subscription to Aspect Development /EDN Icselector, Online distributor pricing from Marshall and Digi-J\Key, Browsable manufacturers specification data sheets ( URL, UNC)<br>Centralized part number and part information management system, Graphical preview of schematic pats and PCB footprints, Database query for part selection and parametric property annotation, Schematic to database linking for property and schematic part replacement, Schematic part and PCB footprint alterative pick lists, Management utility for schematic property validation, Temporary part tracking system, Automatic part number allocation for approved temporary parts, Report preview/ print, and save in word, Excel, Access or delimited formats<br>Report output containing both Schematic & linked database properties, Report with sorting, subtotaling and selection criteria formulas, Centralised and shareable templates for report standardization, Built-in Seagate Crystal Report Print Engine, Integration with company e-mail and Louts Notes, HTML Interface for internet and internet report publishing, | | |

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**Key features of PSpice A/D**

Graphical design entry (with OrCAD Capture/Capture CIS), Simulation setup with easy to use dialogs, Hierarchical net-listing, Cross-probing (with OrCAD Capture/Capture CIS), Plot window templates, Probe Windows waveform: viewer and analyzer, Symbols from models, Multiple-named simulation profiles, Notable PSpice analysis and simulation features, DC sweep, AC sweep, and transient analysis, Noise, Fourier, and temperature analysis, Parametric analysis (STEP), Monte Carlo and sensitivity/worst case analysis, Preemptive simulation, Interactive simulation control, Analog behavioral modeling, Propagation delay modeling for digital gates N/A, Constraint checking (e.g. setup-and-hold timing) N/A
Digital worst-case timing N/A, Charge storage on digital nets, Stimulus editor (STIMULUS and STIMLIB) Model Editor for device characterization, Measurements and Performance Analysis, Save/load bias point (.SAVEBIAS/.LOADBIAS), Power measurement with crossprobing, Performance Package, Parameterized models

**Notable PSpice devices and model libraries**

GaAsFETs: Curtice, Statz, TriQuint, Parker-Skellern All All Statz, MOSFETs: SPICE3 (1-3 with charge conservation), MOSFETs: BSIM1, BSIM3 (versions 2 and 3.2.4), EKV 2.6, IGBTs, Darlingtons, DACs and ADCs, JFETs, BJTs Resistor, capacitor, and inductor .MODEL support, Ideal and non-ideal lossy transmission lines All Ideal Coupled transmission lines Coupled inductors, Nonlinear magnetics, Voltage and current-controlled switches, Analog model library 22,500, Digital primitives All Digital model library 2,000

**PSpice Advanced Analysis:** The PSPICE STUDIO with Advanced Analysis Option brings together several features that can help engineers improve design performance, cost-effectiveness, and reliability. The New feature includes sensitivity and Monte Carlo analyses and an entirely redesigned optimizer with multiple engines and Smoke (Stress) analysis. Earlier these features were available on Unix platform that too for Analog Workbench only. Now the same features are available on Desktop environment for PSpice users.

**Major features in Advanced Analysis:**

**Sensitivity Analysis**: Sensitivity analysis is used to identify the critical components in the design. These critical components would be specified with tighter tolerances & for optimization.

**Monte Carlo Analysis:** Is used to predict yield and statistical performance of a design. The new Advanced Monte Carlo Analysis is also based on Monte Carlo Analysis; each component parameter is randomly varied based on its probability distribution and tolerance range.

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**Optimizer**: It is the industry's most advanced automated optimizer. The new Optimizer in Advanced Analysis is a major improvement. It allows an unlimited number of parameters and specification while optimizing Analog / Digital Circuits & Mixed Analog Circuits. With these you can simultaneously tune multiple parameters and thus multiple simulations while practical value to examine circuit behavior. It discovers parameters value that increases circuit performance.

**Smoke:** Smoke analysis provides information on component stress during circuit operation. It uses the transient analysis simulation results to calculate measurements that correspond to specified safe operating limits, then compares the measurements against the limits and displays the results in a table that can easily be ordered to show the biggest violations first.

**PSPICE MATLAB SLPS** Interface: It is designers utilize PSpice simulation solutions for accurate analog and mixed-signal simulations supported by a wide range of board level models. MATLAB SIMULINK is a platform for multi-domain simulation and model-based design of dynamic systems. Together, designers now have the ability to perform system level simulations that include realistic electrical models of actual components. Design and integration problems can now be found much earlier in the design process.

**Schematic Entry and Schematic Design:**

Graphical flat and hierarchical design page editor Design archiving and project management process flow system, Standard windows user interface and functions including cut/copy/paste Unlimited Undo and redo Floatable/dockable tool bars and palettes for common editor functions, Macro recorder for play of complex schematic edits and customization Text/VHDL/Verilog editor, On line design rule check for data flow, packaging and connectivity Import/Export for property data and reusable circuitry blocks Unlimited, user defined property for parts, nets, pins and title blocks, Support for multi-gate logic and distributed-pin and relay-type devices True Type fonts for display and printing Print offset and scaling controls Forward and back-annotation of PCB Layout properties or pin or gate swaps, Graphical Schematic part and library editor Cross-probing with simulation " plug-ins" and PCB Layout Over 44,000 library parts including IEEE & IEC standard styles, EDIF graphics and EDIF netlist interface MicroSim Schematic translation interface Popular HDL and Simulation interfaces including Spice, Verilog & VHDL Imperial or metric Unit support Automatic Schematic backup and recovery interactive tutorial and online help system Can Export different type of netlist include: Allegro, Layout Plus, PADS, portal, EDIF, INF, SPICE, VHDL, Verilog, Pspice

**Cont…17**

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| | **Specifications for PCB Design**<br>**PCB Editor Features**<br>Direct netlist input from Allegro Design Entry (HDL or CIS) Multiple drill-in-pad, slot support, and automated legends Board geometry and library creation Multiple via sizes, blind/buried vias support Autoplacement/ Quick place Floor planner Dynamic shapes with real-time plowing and healing for copper areas Automatic line smoothing 2-D drafting and dimensioning Gerber 274X, 274D artwork output generation Multiple undo/redo Valor ODB++, ODB++ (X) file output and Universal Viewer HTML-based reports Stroke editor IntelliUSE interactive etch editing Automatic silkscreen generation Split plane support SKILL runtime, macro, and script support Variant Editor for defining different variants of the design (Design Entry HDL) Assembly drawing creation for each variant Bill-of-materials generation for each variant Agilent EEsof™ integration Length, parallelism, and differential pairs rule support Pin-pair multi/matched nested group support Real-time DRC and routing of differential pairs and length rules Interactive delay tuning Complex physical design rule checking (no electrical) Group routing Measure parasitic Advanced trace glossing Database-driven design reuse modules Technology files Design for assembly rule checking Test Prep for testability access Allegro Constraint Manager (routing constraints) Allegro PCB Router high-speed routing alignment (6U)<br>**PCB & CAD INTERFACES**<br>AutoCAD® DXF bi-directional interface (Version 14)<br>IDF bi-directional interface (Version 2 and 3)<br>PADS® translator (Version 4 and 6), PowerPCB (Version 5)P-CAD database-in translator (Version 8) | | |
| 18. | **Spectrum Analyzer-3GHz**<br>Frequency Range 9kHz to 3GHz, Frequency Resolution, 0.1Hz, Reference Frequency 10MHz, Nominal Aging 2 X $10^{-6}$ / year, Temperature drift (5℃ to 30℃)1 X $10^{-6,}$Frequency Counter Resolution1Hz, 10Hz,Frequency span; Accuracy 1kHz to 3GHz, 0Hz; <1%,SSB phase noise (10kHz carrier offset) < -90dBc (1Hz), typ. 95dBc,Residual FM (1kHz resolution bandwidth) < 100Hz. Sweep time (Span > 1kHz) 30ms to 1000s, Sweep time (Span = 0kHz) 5µs to 10s,Sweep Resolution 20ns, Resolution Bandwidth 200Hz to 20MHz Video Bandwidth10Hz to 20MHz, Shape Factor (60dB / 3dB)< 4.6:1 Display Range DANL to +33dBm, Display scaling 80dB, 40dB, 16dB, 8dB, linear Display units dBm, dBµV, dBmV, V, W,Maximum input DC Voltage 30V,Harmonics< -60dBc,Displayed Average Noise Level < -110dBm, typ. –115dBm,Inherent Spurious< -85dBm. Setting range of reference level: Resolution -110dBm to +36dBm 0.1dB, RF attenuation Range, Resolution 0dB to 70dB 2dB | **1** | |

**Cont…18**

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| | Trace detectors<br>Max Peak, Min peak, sample, average, RMS Audio Demodulation AM & FM, Interface USB Host / Device; Connector for VGA monitor; Display type, 5.4" active TFT color display; 320X240 pixels, Electromagnetic compatibility, Tracking Generator: Frequency Range9kHz to 3GHz, Setting Range 0Hz to 3GHz, Resolution 0.1Hz, SSB phase Noise< -90dBc (1Hz), Level Setting Range 0dBm to –50dBm, Resolution0.1dB, Harmonics< -20dBc, Non-Harmonics< -30dBm | | |
| 19. | **RADIO FFEQUENCY TRAINING SYSTEM**<br>Features:<br>The system should have the following features:<br>S11/S21 Measurements Sweep/CW Mode signal generators Single frequency power measurements<br>Radio frequency counter RF Basic design experiments<br>Specifications:<br>Four sets of frequency bands: (50-1000MHz) 60 dB measurement range X-Y Output terminal design Sweep/Single frequency output ability S21/S11 Output measurements Spectrum measurements<br>Built in frequency counter: 20GHz LCD display with backlight. RS 232 control Power measurements<br>Experiments:<br>To understand:- basic theory and design of transmission line; microstrip line type for RF and microwave applications; characteristics of micrstrip line with OPEN/SHORT/THROUGH terminations.<br>Design understanding and characteristics of Impedance transformer, Power Attenuator, Power splitter, Directional coupler, Filter, RF amplifiers.<br>The training system should comprise the following:<br>**EZ-RF Analyzer, Individual experiment modules for all the mentioned experiments, BNC cables and adaptors-8 each, terminators-8, User Manuals** | | |

I/We certify that above rates have been quoted after perusing all the general and special terms & conditions of the tender. I/We agree to confirm these conditions & signed on all the terms & conditions in token of confirmation & acceptance. I/We also bear the responsibility for installation, commissioning, demonstration and training will be given to user at my/our cost.

**SIGNATURE OF THE TENDERER**
**WITH FIRM'S RUBBER STAMP**

# Maharana Pratap University of Agriculture and Technology, UDAIPUR

## GENERAL TERMS AND CONDITIONS OF TENDER

***NOTE:-*** Tenderers should carefully read these conditions and comply strictly while submitting their tenders. If a tenderer has any doubt regarding the interpretation of any of the conditions or specifications mentioned in the Tender Form/Notice, he should refer these to the Comptroller and obtain clarification before submitting the tender. Decision of University regarding the interpretation of the conditions and specifications shall be final and binding on the tenderer.

**1. DEFINITIONS:**

(i) The term **'the contract'** shall mean the invitation to tender, the instructions to the tenderers, acceptance of tender hereinafter defined and those general conditions and special conditions related to the tender.

(ii) The term **'the contractor'** shall mean the person, firm, company or any body to whom the order for the supply is placed. In the case of person, it shall be deemed to include his successors, heir and legal representatives where the context so requires.

(iii) The term **'delivery'** shall mean delivery by the stipulated dates and the places specified in these conditions or special terms and conditions and/or supply order issued in this regard

(iv) The term **'Central Stores Purchase Committee'** shall mean the Stores Purchase Committee constituted by the Maharana Pratap University of Agriculture & Technology, Udaipur.

2. The tenders should be sent to the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur under a Registered & Cover in a double envelope duly sealed and marked "Tender for……(specify) due on……. so as to reach Comptroller office before the due date and time. If tenders are delivered by hand, a receipt should be obtained. Any tender received after prescribed time shall not be considered.

   The tenders will be opened on ……..at…….. before the Committee constituted for the purpose by the University in the office of the Comptroller or as specified in the NIT/special terms & conditions. Tenderers may be present in person or may authorize one representative to be present at the time of opening of the tenders.

3. Tenderer who is not registered under the Sales Tax Act prevalent in the State where his business is located shall not be eligible to participate in the tender. The Sales Tax Registration Number should be quoted and a Sales Tax Clearance

Certificate from the Commercial/Sales Tax Officer of the Circle concerned should be submitted without which the tender is liable to be rejected.

4. The tender should be filled in ink or typed. Tender filled by pencil shall not be considered.
5. (i) Rates must be written both in words and figures. If there is any variation in words & figures, the lower of the two shall be considered. There should be no erasure, alteration or overwriting in the tender. Where any alteration is made, it should be initialed with date by the tenderer failing which such tender may be rejected. No paper shall be detached from the tender document.
   (ii) Rates must be quoted F.O.R. Destination at the Indentor Office or at specified places mentioned in the special terms & conditions and should include all charges and taxes except Central/Rajasthan Sales Tax/VAT. However, effective rate of tax at the time of filling of the tender be shown separately.
6. The tenderer is not expected to quote for more than one product where the specifications are fairly clear and not more than two in any case. If any tenderer will quote for more than two products, his offer may not be considered in respect of those items.
7. (i) Tenders shall be valid for a period of four months from the date of opening of the tender for the purpose of communicating the acceptance of tender offer.
   (ii) After a tender has been accepted, the rates shall remain valid throughout the period for which tenders are invited.
   (iii) If at any time during the period of contract the contractor reduces the sale price of Tendered items/equipment to any other purchaser at a price lower than the price approved under the contract, he shall forthwith inform such reduction or sale to the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur and the price payable under the contract for the Tendered items/equipment supplied after the date of coming into force of such reduction in sale shall stand correspondingly reduced. The successful tenderer has to furnish certificate to the effect that the provision of this clause has been fully complied with in respect of supplies made or billed for upto the date of certificate. The successful tenderers shall furnish this certificate to the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur at the beginning and at the end of each six monthly period thereafter during the currency of the contract and at the end of the contract period that they had complied with this clause of the contract. In case of breach of this condition the tenderer may be black listed and debarred in future.
8. (i) Tenderers shall specifically mention their capacity while submitting the tender.

a) Whether signing as a "Sole Proprietor".
b) Whether signing as a "Partner" of the firm.
c) Whether signing as Secretary, Manager, Director etc. in the case of Companies Authorization of this effect be submitted with the tender.

(ii) Tenderers should sign the tender form at the end of each page as a token of his acceptance of all the terms and conditions of the tender and should also sign the page on which rates are quoted.

(iii) If the tenderer resiles from his offers or add new terms & conditions after opening of the tender, his earnest money is liable to be forfeited.

(iv) The submission of more than one tender for the one and same category and under different names is prohibited. If it is discovered at any time that this conditions has been violated, the tender submitted by such firms shall be rejected or contract(s) shall be cancelled and the earnest money or security deposit(s) shall be forfeited.

9. The tender must be accompanied by Earnest Money as per the NIT, without which tender will not be considered and rejected outright. The earnest money shall be in form of Demand Draft/Banker Cheque of a scheduled bank.

10. Successful tenderer has to deposit security @ **5%** of the ordered value in addition to earnest money submitted at the time of tender. The amount is to be deposited in the office of indentor in the form of **Demand Draft, Bankers Cheque of a scheduled bank**. However, in lieu of Bank Draft/ Banker Cheque, Bank guarantee may be considered where the value of total ordered value exceeds Rs. 10.00 Lacs. Cheque and FDR are not acceptable for earnest money and security deposit.

11. It is emphasized that no tender will be considered without earnest money. Request for adjustment of previous security/earnest money or deduction of earnest money amount from pending bills shall not be considered.

12. The earnest money will be refunded to all unsuccessful tenderer after finalization of the tender. Earnest money of successful tenderer will be retained as security for the full period of contract and it will be refunded within six months after the expiry of contract period provided there is no complaint from any of the indenting (purchasing) officers.

13. Successful tenderers will have to execute an agreement in the prescribed form with Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur on a non-judicial stamp of Rs. 100/- which will be purchased by the successful Tenderer in his name and at his cost, within a period of seven days from the date on which the acceptance of the tender is communicated to him. The acceptance shall be treated as complete on positing the letter of acceptance in the post office (U.P.C.) by the University.

14. The contractor shall be responsible for goods being sufficiently and properly packed for transport by rail or road transport so as to ensure their being free from loss and breakage till the delivery of goods at the stores of the indenting (Purchasing) Officer. If the contractor so desires, he may insure valuable goods. For loss or damage, breakage, leakage or shortage discovered by the Intendor,

the contractor shall be liable to make good the same at his own cost. The tenderer may present himself or depute any of his representatives to watch any damage or loss discovered at the destination to verify the same if desired.

15. The successful tender shall not assign or sub-let the contract or any part thereof to any other party.

16. (i) Two sets of the samples of items of the various categories of tenders should be submitted on or before the due date and time of receipt of the tender, **WHERE SAMPLE IS REQUIRED** alongwith separate challan in duplicate in the proforma mentioned below, in the office of the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur. Without samples the tender will not be considered for such items. The samples submitted in the past shall not be considered. The samples sent should be of the same quantity as asked for.

**FORM OF CHALLAN FOR SAMPLES**

Name & address of firm…… Tender Notice No……category (if any)…….. Due date…….

| Item No. | Brief Description of the sample | Quality of samples | Number of samples submitted against each quality |
|---|---|---|---|

(ii) Samples must be submitted fully sealed and should bear label with the particulars as mentioned below:-
   (a) Name and full address of the firm.
   (b) Tender Notice No., Tender Code, Item Number and due date of the tender
   (c) Brief description of the sample.

(iii) Samples without challans in triplicate will not be accepted.

(iv) Outside firms are requested to send form of challan in duplicate alongwith the samples and Railway parcel should be sent as "Fully Paid Home Delivery Parcel", so that the samples are received in the office of the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur on or before the due date of receipt of tender. The consignee is in no way responsible for getting the parcels from the Railway Premises.

(v) In case the samples are sent by Railway parcel the R.R. should be posted by Registered post to the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur.

(vi) Approved samples will be retained by the University without payment of cost upto a period of six months after the expiry of contract period. The University shall not be responsible for any damage, wear and tear or loss during testing, examination etc. during the period these samples are retained. The samples shall be collected by the contractor on the expiry of stipulated period. The University shall in no way make arrangements to return the samples thereafter by Railway or other mode of transport even if

the contractor agrees to pay the cost of such transport. The samples not collected within 3 months after the stipulated date shall be forfeited by the University and no claim for their cost etc. shall be entertained.

(vii) Samples of unapproved items shall be collected by the tenderer (if any) to the extent samples are not destroyed or consumed during testing and examination. The University shall in no way make arrangement to return the samples by Railway or other mode of transport.

(viii) Samples should be strictly according to the specification given in the tender form otherwise they will not be considered.

(ix) No change in marking on samples will be allowed after submission of the sample.

17. (i) All goods (approved supplies) must be sent freight paid. If goods are sent freight to pay, the freight together with an administration change of 10% of the freight charges will be recovered from the supplier's bills.

(ii) RRs or GRs should be sent under a Registered cover. No. RR or GR will be accepted if it is sent by V.P.P. or through bank.

(iii) Each bale or package shall contain a packing note quoting the acceptance order or supply order no. date and details of contents.

(iv) In case the supply is called for by the Purchasing Officer by Railway Passenger train, half of the Railway Freight will be borne by the Purchasing Officer.

(v) Payment for the supply shall be due and payable by the Purchasing Officer to whom supply is made when the goods are delivered strictly in accordance with the supply order and is found to be having required standard quality or tallys with the sample.

(vi) All the goods supplied should be of the best quality as per the specification, trade mark laid down for them and in strict accordance with the approved standard samples. The decision of the Purchasing Officer of University shall be final as to the quality of the goods and binding upon the approved supplier. In case, any of the articles supplied are not approved these shall be liable to be rejected and any expenses incurred or loss caused the University or to the supplier as a result of rejection of supplies, shall be entirely on approved suppliers account.

(vii) The rejected articles must be removed by the tenderer, from the destination where they lie within a period of 30 days from the date of rejection notice. The officials will take reasonable care of such materials but will not be responsible for any loss or damage that may occur to these articles while it is on their premises.

18. (i) The material ordered will have to be supplied within a period as specified or of 4 weeks from the receipt of supply order. The material will have to be delivered at the Premises of Indenting Officer at the cost & risk of approved supplier. If the ordered goods are not supplied in the stipulated

period, the intending officers may extend the time of delivery with liquidated damages as per general terms and conditions.

**The rate of liquidated damages for delayed supply are as under:-**

| S.No. | Period of delay | Rate of liquidated damages on the value of the stores/equipments failed to supply in the prescribed delivery period |
|---|---|---|
| 1. | Delay upto one fourth period of the prescribed delivery period | 2.5% |
| 2. | Delay exceeding one fourth but not exceeding half of the prescribed delivery period | 5.0% |
| 3. | Delay exceeding half but not exceeding three fourth of the prescribed delivery period | 7.5% |
| 4. | Delay exceeding three fourth but not exceeding the period equal to the prescribed delivery period | 10% |

However, if the reason for the delay is beyond the control of the approved supplier, the issue may be referred through Intending Officer to the University for granting extension without liquidated damages. The approved supplier has to ensure that the ordered goods/items have been delivered at FOR destination i.e. at the office of intending officer or at the placed mentioned in supply order. Approved supplier is also responsible for proper packaging and mode of requisite transport. Packaging cost, transportation cost and transit risk (upto delivery) is to be borne by the approved supplier. For valuable goods insurance and other charges are also to be borne by the approved supplier.

(ii) The supply against an order marked **URGENT** will be made immediately and will be completed in full by the contractor within 30 days or time indicated whichever is less from the date of issue of order.

(iii) In case the supply is not made according to the supply order in full within a period specified from the date of order, the earnest money will be forfeited.

(iv) When the tenderer is unable to complete the supply within the specified period or the extended period (when supply period is extended) the Purchasing Officer shall be entitled to purchase the goods from open market at the risk and cost of the approved supplier without any notice to the tenderer. The goods in full or any part thereof which the tenderer has failed to supply, the tenderer shall be liable to pay the loss or damage which the Purchasing Officer may suffer by reasons of such failures on the part of tenderer. But the tenderer shall not be entitled to any gain on such purchase made against default. The recovery of such loss of damage shall be made from any sums payable to the tenderer under this or any other contract within the University. If recovery is not possible from the bill and tenderer fails to pay the loss or damage within one month of the demand, the recovery shall be made under the Rajasthan Public Demand Recovery Act, 1952 or any other law for the time being in force.

While making the risk purchasing the Purchasing Officer may exercise his own discretion. In all cases, where orders are cancelled due to non-supply of goods, it will be treated as a breach of the contract and the Purchasing Officer shall take action accordingly. In all such cases tenderer will be black listed & debarred from future dealing with the University.

**Note:** It is clarified that Purchasing Officer may resort to risk purchase without granting any extension as provided in Condition No. 18 (i)

(v) When the supplier is unable to complete the supply within the specified or extended period, the University shall forfeit the Earnest Money/Security Money in full or in part as it may deem fit.

When the Earnest Money/Security Money in full or in part is proposed to be forfeited, a show cause notice for a period of 10 days will be given to the supplier for not making the supplies in time and why not the Earnest Money/Security Money in full or part thereof as specified in the notice be forfeited.

19 (i) The quantities for the various items in the tender are approximate and subject to variation. The supplies will have to be made according to requirements as and when supply orders are placed throughout the contract period.

(ii) If supply orders are placed in excess of the quantities shown in the tender form, the contractor will be bound to meet the required excess supply upto 50% of the tendered quantity besides that notified in the tender on the same rates and conditions. If the contractor fails to do so, the security deposit shall be forfeited & ban on future business shall be imposed. If the supplier does not communicate within 7 days of the receipt of the supply order for the excess quantity, it will be presumed that the supplier agrees to supply the ordered quantity on the approved rates.

(iii) If the purchases of the items approved are not made at all or purchases are made for lesser quantity than that indicated in the tender, the supplier will not be entitled to claim any compensation whatsoever on this account.

20. (i) All articles supplied shall strictly conform to the specifications laid down in the tender form. The supply of articles marked with asterisk or words **"SAMPLES REQUIRED"** shall in conform to the approved samples. The decision of the Purchasing Officer/Comptroller/Central Stores Purchase Committee (Whether the articles supplied conform to the specifications and are in accordance with the samples) shall be final and binding on the supplier.

(ii) If even a small percentage of supplies or any unit drawn randomly from bulk supplies does not conform to the standard of the tendered sample, than the entire supply is liable to be rejected and no excuse whatsoever (viz. manufacturing difficulties, non-availability of raw materials etc. shall be entertained) for deviation in quality will be entertained.

(iii) If the goods or articles fail in comparison with the samples or in test they will be rejected and will have to be replaced by the supplier at his own cost & risk within the prescribed limit.

(iv) If, however, due to exigencies of University works, such replacement either in whole or in part, is not considered feasible, the Comptroller or the Purchasing Officer (after giving an opportunity to the contractor of being heard) shall for reasons to be recorded in writing deduct suitable amount from the bill of supply. The deduction so made will be final and binding on the supplier. If the supplier fails to appear for hearing the decision of the indenting officer without hearing the supplier shall be final & binding on the supplier.

(v) Articles which are prima facie defective or not in accordance with the accepted tendered sample shall not be stored in the University Stores or indenting officers, stores and if kept they shall be at the risk and responsibility of the supplier. The rejected articles must be removed by the supplier within a period of **3 days** of the date of receipt of information of rejection after which the Purchasing Officer or the Comptroller shall have the right to dispose off such articles as deemed proper at the contractor's risk and on his account. The Purchasing Officer shall also have the right to charge rent for storage of such rejected articles from the contractor at the rate to be fixed by him. His decision regarding rent will be final and binding on the supplier.

(vi) The contract for the supply can be repudiated at any time by the Comptroller, if the supplies are not made to his satisfaction after giving an opportunity to the contractor of being heard and the reasons of repudiation shall be recorded by the Comptroller.

21. Any increase in Excise Duty or other similar tax if imposed by the Central or state Government after due date of Tender will be paid extra. Similarly any reduction in them after the due date will be paid less to the approved supplier.
22. Remittance charges on payment made to the firms will be borne by the approved supplier/contractor.
23. Tenderers are requested to send printed descriptive literature, catalogue, photo literature of the articles if any with their tenders offers for convincing about the quality and usage of the articles but direct/indirect convassing on the part of tenderers or their representatives after the submission of the tender shall disqualify them.
24. The University reserves the right to accept any tender not necessary the lowest, reject any tender without assigning any reason and accept any tender for all or any one or more items or the articles for which tender has been invited.
25. It is made clear that the tender must be submitted accurately in accordance with the condition of the tender and that necessary documents must invariably be enclosed wherever demanded. In the event of non-submission of these essential documents, the tender shall not be considered and shall be treated as rejected without notice or any reference.

The following documents when furnished must hold good for the entire period of the tender, failing which these will be considered as invalid documents:

(a) Documents to prove the capacity of the tenderer as: Manager/Proprietor/Partner/Managing Partner/Director/Secretary/Sole Distributor / Manufacturer.

(b) Documents to prove the tenderer as registered with the Director General of Supplies & Disposals, New Delhi or National Small Scale Industries Corporation.

(c) Sales Tax Clearance Certificates.

All the documents be submitted in original or copies of the original documents can be acceptable only if these are attested by the "Govt. Gazetted Officer". Self attested or unattested copies of such documents will not be considered valid.

26. The tenderers should not quote their own conditions while submitting the tenderers. Any counter conditions or counter proposals submitted by the tenderers will not be considered at all. If a tenderer imposes conditions which are in addition to or conflicting with the conditions mentioned herein, the tender is liable to be rejected.
27. Legal proceedings, if any arising out of this tender shall have to be lodged in Courts situated in Udaipur and not elsewhere.
28. Tenderers are expected to satisfy themselves that they will be able to supply the articles tendered by them in full if their tenders are accepted. No plea that the manufacturer has either stopped the manufacturing or manufacturer has increased the prices of the tendered items or the items is not being imported due to certain restrictions shall not be considered. Successful tenders will be bound to supply the ordered articles in all circumstances and on the approved rates only.
29. Tender must be submitted on the prescribed tender forms only which can be obtained from the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur on payment as specified in the NIT. The cost of tender forms sent or deposited in the University shall neither be refunded nor adjusted towards any subsequent tender in any case. The whole set of tender form should be submitted after quoting the prices of each item in the space provided. If the tenderer does not wish to quote for some items, words "NO QUOTATION" against such items should be mentioned. Tenderer should keep one copy of the tender form, out of the two supplied to him as his office copy.
30. Where a particular make or size is stated in the tender form, no alternative should be suggested. The alternatives suggested will be ignored and the tenderer shall be assumed to have quoted for the tendered items with specifications as mentioned in the tender form.
31. Separate covering letter or communication should be sent for separate category of tenders and tenders should be submitted separately for each category. Tenders received in mixed with more than one category may not be considered.
32. The decision of the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur in all matters relating to the tender will be final and binding upon the tenderers.

33. The Earnest Money deposited at the time of submission of tender will be automatically converted into Security Money and if the amount of Security Money is more than the earnest money deposited, then the remaining amount of Security Money will have to be remitted by the contractor.
34. The tender shall on intimation of acceptance of the tender offer from the Comptroller, Maharana Pratap University of Agriculture & Technology, Udaipur shall submit an agreement bond on non-judicial stamp of Rs. 100/- within period specified in the letter and also deposit the amount of Security Money if required as per conditions No. …..alongwith the agreement bond, failing which the earnest money deposited, with the tender offer will be forfeited.

**COMPTROLLER**
**MAHARANA PRATAP UNIVERSITY OF AGRICULTURE & TECHNOLOGY, UDAIPUR**

I/We certify that I/We have read the General Terms and Conditions of the tender and that I/We agree to abide by General Terms and Conditions.

**SIGNATURE OF TENDERER**
WITH STAM