

DR PANJABRAO DESHMUKH KIRHSI VIDYAPEETH  
AKOLA – 444 104

TENDER NOTICE

For Laboratory /Field Equipments/Instruments

---

No.PHTS/NR/TN/09-10/ 558

Dated 17/12/2009

1. Sealed tenders are invited for and on behalf of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola by the Dean., Faculty of Agril. Engineering, Dr. PDKV, Akola from intending suppliers/firms/registered authorised dealers for supply of various laboratory/field equipments/instruments with estimated cost of Rs. 31,18,000/-.
2. The Tender form, terms and conditions, details specifications and other details governing supply of Laboratory/Field equipments/instruments shall be available on website <http://www.pdkv.ac.in/> or from office of Assistant Registrar, College of Agril. Engg. & Technology, Dr. PDKV, Akola during office hours (11.00 A.M. to 5-00 P.M.) on all working days upto 19/01/2010 on payment of Rs. 500/- (Rs. Five hundred only ) in cash or if downloaded from website send the sealed tender along with DD of Rs. 500/- ( Rs. Five hundred only) in favour of Assistant Registrar, College of Agricultural Engineering & Technology , Dr. PDKV, Akola . The cost of documents are non-refundable and Dr. PDKV, Akola will not be responsible for any postal loss.
3. Sealed tenders duly subscribed as “Tender for Laboratory/Field Equipments/Instruments” should reach in the Office of Assistant Registrar, College of Agril. Engg. & Technology, Dr., PDKV, Akola 444 104 on or before 19/01/2010 upto 02.00 pm positively.

The rights are reserved to accept/reject whole or part of the tender or all of it without assigning any reason.

Dean  
Faculty of Agril.Engineering  
Dr. PDKV, Akola

## TENDER FOR SUPPLY OF LABORATORY INSTRUMENTS/EQUIPMENTS

Tender Sr.No.

Price: Rs. 500.00

Issued to \_\_\_\_\_

Money receipt / DD No. \_\_\_\_\_

Date \_\_\_\_\_

## TENDER FORM FOR SUPPLY OF LABORATORY INSTRUMENTS/EQUIPMENTS FOR THE FINANCIAL YEAR 2009-10

To,

Chairman, Equipment Purchase Committee &  
Dean, Faculty of Agricultural Engineering,  
Dr, Panjabrao Deshmukh Krishi Vidyapeeth,  
P.O. Krishi Nagar  
Akola 444 104 (MS.)

Dear Sir,

1. In response to the tender notice published in the daily newspaper \_\_\_\_\_ dated \_\_\_\_\_ or at web site <http://www.pdkv.ac.in/>. I/ We submit herewith the tender form for the supply of laboratory instruments/Equipments.
2. I/We have thoroughly examined and understood the terms and condition of the tender mentioned in Appendix-I and I/We agreed to abide by them in full.
3. I/We offer to undertake the supply of laboratory instruments/equipments and quoted the rates inclusive of all taxes. Freight etc. as given in Appendix-II. It is agreed that no addition charges other than those mentioned in Appendix-II would be payable to me/us.
4. I/We accept that the rates offered shall remain valid **for the period up to 31/03/2010 from the date of execution of agreement.** I/We further agreed that if the date up to which the offer would remain open be declared as holiday for office, then offer will be remain open for acceptance till next working day.
5. I/We shall be bound by communication of acceptance of the offer, dispatched within prescribed time.
6. I/We accept that the right to accept or reject whole or part of the tender without assigned any reason is reserved with the university. The decision of the university will be final and shall be binding on me/us.
7. As required by the term and condition of tender as amount of Rs. \_\_\_\_\_ (1% of the estimated cost of Equipment for the item tender) of Appendix-II paid by me/us as Eastern money deposit (E.M.D.) through demand draft (DD) of any nationalized bank payable at State Bank of India, Dr. P. D. K. V., Akola Branch No. 2171, Akola Bearing No. \_\_\_\_\_ dated \_\_\_\_\_ in **favour of Assistant Registrar, College of Agricultural Engineering, Dr. PDKV, Akola. Payment of EMD in any other form will be not accepted.**

8. **In case equipments are available in foreign currency, the prices should be quoted in respective foreign currency. If desired, The University would like to enter into the matter of Letter of Credit (L. C.).**
9. I/We agreed to undertake to supply the equipments of office mentioned in final supply order and as per the specification of the final orders within six weeks from the dated of supply order or the date specified in the supply order.
10. **As per the terms and condition Part-I of Appendix-I, I/We are submitting my/our offer in two sealed envelops enclosed in envelop No. 3. Envelop No. 1 contents documents as per the condition Sr. No. 9 of Part-I OF Appendix-I. Envelop No. 2 includes rate quoted by me/us in Appendix-II.**
11. I/We also agreed the University has full write to open / consider the second envelop if and only of University satisfied with information contents in envelop No. 1. The decision of the university regarding this will be final and will be binding on me/us.
12. I/We hereby declared that the entries made in this tender form, i.e. in Part-II of Appendix-I and Appendix-II are binding on me/us. I/We shall be bound by the act to my/our authorized representative duly constituted Attorney Shri \_\_\_\_\_ whose signature is appended hereto in the place specified for the purpose and of any other person who in future may be appointed by me/us in his place to carry on the business of the concern/agency/firm. The intimation of such change will be given to the chairman, Equipment Purchase Committee & Dean, Faculty of Agricultural Engineering, Dr, PDKV, Akola.
13. I/We hereby take the responsibility of maintaining the equipments at their locations at free of cost in warranty period. I/we hereby take the responsibility to provide the service under AMC after expiry of warranty periods.

The following documents duly filled in and signed are enclosed along with tender. The part 1 of Appendix-I being the terms and conditions is retained by me/us for my/our information and record.

Place:

Yours faithfully,

Date:

Signature of the supplier

Capacity in which signing: \_\_\_\_\_

Name and address of the firm/supplier/tenderer: \_\_\_\_\_

Registration No. of supplier/tenderer: \_\_\_\_\_

List of documents (Checklist)

- i) Tender form
- ii) Demand draft (for EMD)
- iii) Sales Tax Registration certificate/ Sale tax return certificate
- iv) Original catalogue, pamphlets/pictures of the appliances offered

- v) Copy of certificate as Manufacturer / Authorized supplier
- vi) Photocopy of exemption certificate of EMD (if applicable )
- vii) Part II of Appendix-

Bank Draft No. \_\_\_\_\_ Date \_\_\_\_\_ Rs. \_\_\_\_\_

Signature of constituted attorney/  
authorized representative

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Name & Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

## APPENDIX-I

Terms and conditions governing “Supply of laboratory instruments/ equipments”

### Part-I

- 1) Sealed tenders are invited from manufacturers authorized dealers of manufacturers/authorized suppliers/dealers of overseas who are willing to undertake supply of equipments as per as the specifications mentioned in appendix-II during 11:00 hrs to 17:00 hrs on working days and upto **14:00 hrs on last date 19/01/2010**. The tenders will be opened on **19/01/2010 at 1500 hrs** in the presence of intending suppliers/representatives who desire to attend.
- 2) The rates in both in words and in figures without any corrections or over writing should be quoted in Appendix-II for each individual item separately. Any over writing or rewriting should be duly countersigned. **The rates must be valid up to March 31, 2010.**
- 3) the intending suppliers shall also have to mention, detailed specifications, name of manufacturer/make, model of the article and has to enclose the only original catalogs, pamphlets/pictures of the appliances offered, for which the rates are quoted. The photocopies/Xerox/fax of these documents will not be considered. In absence of above original documents, the item(s) offered will not be considered.
- 4) **The preference will be given to the items bearing ISI/ISO quality control make for the laboratory instruments/equipments.**
- 5) The tenderer must enclose adequate documents to prove their authorization claim, **the authority letter should include the details of principle supplier/manufacturer regarding their full address, contact person, e-mail address, fax no. and address of the website** and if not enclosed this, University reserves the rights to accept or reject tenders of these agencies. The decision of the university regarding this will be final and shall be binding on tenderers.
- 6) Tenderers will have to supply instruments/ equipments as per the Appendix-II. University will not accept the assembled equipments.
- 7) The tenderer should quote the rates inclusive of essential/optional accessories of all charges in Appendix-II only of the tender form issued by this office and not on any other form.
- 8) **Installation, successful demonstration of the equipment in the respective places is compulsory.**
- 9) The tenderer should submit his offers in separate two envelopes i.e. first envelope with superscription **“TENDER FOR SUPPLY OF LABORATORY INSTRUMENTS/EQUIPMENTS” (TECHNICAL INFORMATION ) ENVELOPE NO. 1”**
  - i) *D.D. for E.M.D. (should be 1 % of the cost of Total Tendered Item(s). In case of E.M.D exemption relevant certificates be enclosed )*
  - ii) *Sale Tax (VAT No. Registration certificate/ Sale tax Return Certificate/ TIN No.)*
  - iii) *Original catalogs Pamphlets/pictures of the appliances offered. Documents in support to reveal capacity to provide services after sale.*
  - iv) *Certificate of the Sole manufacturers/authorized dealers of the manufacturer/authorized suppliers of the overseas.*
  - v) *Part-II of the Appendix-I dully filled.*

**(Important: Above (a) to (e) documents if not enclosed the Envelope No.2 will not be opened)**
- 10) **The tenderer should provide the rate quoted only in the Appendix-II in second envelope with superscription “ TENDER FOR SUPPLY OF LABORATORU INSTRUMENTS/EQUIPMENTS” (RATES) ENVELOP NO.2\**

- 11) Enclose sealed envelope No.1 and 2 in envelope No.3 with superscription “Tender for supply of laboratory instruments/equipments” and be submitted to undersigned.
- 12) The intending suppliers should quote the rates inclusive of all expenses, charges, taxes, duties, transportation, packing and forwarding, insurance etc. i.e. All “Inclusive” (in the prescribed format enclosed with this tender form) with free delivery as mentioned in Appendix-II at respective office /laboratory of the university. However, the Octroi will be over and above this, is applicable. The laboratory instruments/equipments will have to be supplied as per the specifications within **SIX WEEKS** or as per the last date mentioned in the supply order. In case of tender requires more time than as stipulated above for effecting actual supply of a particular item shall specifically mentioned in tender form.
- 13) Undersigned will reserve full rights to open/ consider the second envelop if and only if University is satisfied with information contents in envelop No.1. the decision of the university regarding this will be final and shall be binding on tenderer.
- 14) The supplier will have to supply, in full the article as per the order to different offices/laboratories of the University located any where in Vidarbha region till date of validity of the rates.
- 15) This university do have the exemption in Octroi & excise duty, the certificate will be provided along with the supply order if necessary.
- 16) The tenderer shall have to deposit the Earnest Money Deposit(**E.M.D.**) 1 % of the cost tendered through **Demand Draft (Nationalized Bank only)** drawn on State Bank of India, Dr.PDKV, Akola(Branch No.2171), payable to **Assistant Registrar, College of Agricultural Engineering, Dr. PDKV, Akola** and the same should be enclosed in Envelope No-1 of the tender. The tender E.M.D. or less E.M.D wilol not be considered. If the tenderer having exemption for EMD, he should enclose the copy of the certificate and be produce original for verification on the date of opening of the tender. The amount of EMD will be refunded in case of unsuccessful tenderer on submission of application with Money Receipt in original soon after the final decision. In case of successful tender it will be refunded on production of original receipt after completion of the validity period of the agreement to be between the tenderer and Dean Faculty Agriculture Engineering, Dr. PDKV, Akola. The university will not make any payment towards interest on such deposit.
- 17) The specimen of “Agreement Bond” will be provided along with letter of acceptance to the tenderer whose rates are accepted by university. The tenderer shall have to execute agreement in the form of Stamp Paper costing Rs.100/- or fixing court fee stamp on agreement paper, which should be submitted to this office ordering supply within specified time. The agreement received under seal and signature of tenderer will become legal agreement between the tenderer and the University, which will be binding on tender within Akola jurisdiction.
- 18) Tenderer at the time of order/ agreement will have to furnish **security deposit@ 3 % of total cost** of the items accepted and ordered for supply by the University as offered in the tender through demand draft **in favour of the concerned office, Dr. P.D.K.V., AKOLA.**
- 19) The amount of security deposit without any interest there on will be returned to the tenderer after 12 months or the expiry of the warranty period whichever is later from the date of supply, subject to the surrender of money receipt in original in respective office.
- 20) If the tenderer fail to comply with the supply order within the specified period his order will be cancelled and EMD will be forfeited.
- 21) The quantity mentioned in Appendix –II of this tender is subject to variation according to actual requirement of this University . The quantity may vary in case of competitive market rates. The right to enhance or reduce the quantity of any tendered items(s) and right to accept/reject whole or part of the tender, without assigning any reason,

whatsoever, is reserved by the undersigned. The decision of the undersigned shall be final and it shall be binding on the tenderer.

- 22) On acceptance of the rates as per the approved tender, the supply order will be placed by respective head of the Office of University.
- 23) As soon as the tenderer delivers the tender in the office of the undersigned, it shall be binding on him and shall not be able to withdraw or amend the offer.
- 24) The respective head of the office also reserves the right to accept or reject the supplies in full which do not strictly stick up the specifications.
- 25) The tenderer are bound to supply only genuine equipment of the make/model/specification etc tendered by him/it and ordered for supply by the University /office under it shall be liberty to ask for production of sufficient proof that the manufacturer is rendering adequate business support to the tenderer /supplier or University will have the right to get satisfied approaching the manufacturer without noticing to the tenderer for genuinity of instrument and authority to supplier.
- 26) The undersigned reserves the rights to accept or reject higher version of instrument /equipment etc or any other items under the same terms and conditions and same price quoted by tenderer in Appendix-II.
- 27) In case of poor response from the suppliers, from the first call, the items of poor response will be retendered if necessary.
- 28) Final payment of instrument/ equipment will be only after installation and successful demonstration at the respective department of the University.
- 29) The credit bill should be presented in triplicate in the name of respective authority as quoted in final supply order. For any delay in payment (interest or any other kind of compensation) the University will not make any extra payments. This contract will be governed as per items and conditions mentioned above, agreement made and the provisions contained in M.A.U. Account code 1991. Delay in supply within the prescribed time limit or the extended time limit, making of supplies not up to standard specification and performance or non observance or non acceptance of these terms and conditions by the tenderers shall constitute breach of contract and the security deposit or any other deposit of the tenderer shall be forfeited by the University besides other actions or reduction bills of supplies and /or other legal actions and finally the decision of University shall be binding on the tenderer.
- 30) Every page to tender should be numbered and signed with seal by the tenderer.
- 31) The right to accept or reject whole or part of the tender or all tenders without assigning any reasons thereof reserved by the University.

- Encl: 1) Part-II of Appendix-I  
2) Schedule of supplies in Appendix-II

Place: AKOLA  
Date:

Chairman, Equipment Purchase Committee  
and Dean, Faculty of Agriculture Engg.,  
Dr. PDKV, AKOLA.

**We have accepted above terms and condition agreed to abide by them.**

**Signature with seal of tenderer:**

**Capacity in which signing:**

**Name and address of the firm/supplier/tenderer:**

**Registration No. of firm/tenderer**

## Appendix II

Supply of Laboratory instruments/ equipments to AICRP on (A) PHT, (B) FIM and (C) RES, Faculty of Agril. Engg., Dr. PDKV, Akola

Item No.	Name of the Item	Detailed Specifications, Make, Model, etc required	Appr. Quantity required	Specifications/ Make/ Model given by the firm	All inclusive rates per unit, given by the supplier, Rs	Total value, Rs. (In fig. & words)
1	BOD incubator	<p>Make REMI, Material: Construction Inside Stainless Steel and Outside Mild Steel Powder Coated Insulation: 3” Thick PUF Insulation. Air Circulation: Motor and blower arrangement to have uniformity of condition under chamber loaded condition. Heating System: U shaped S.S. Nichrome wire air heaters. Control System Electronic temperature indicator controller with digital display and PT 100 sensor. ( ±1° C accuracy ). Refrigeration System: CFC Free Kirloskar Compressor with R 134 A (Eco Friendly) refrigerant having state of art. By pass system for continues run of compressor. Observation: Door Inside observation glass door with Silicon rubber gasket. Trays: 2 Nos. Stainless Steel perforated trays. Finish: Internal Mirror Polish, External Powder Coated. Temperature Range: 5 °C to 60 °C. Temperature Accuracy: ± 1°C OR ± 0.2 °C. Controls: Microprocessor based PID controller (Auto Tuning Type) with digital display of temperature in deg. Centigrade giving accuracy of ± 0.2 °C. Safety: Alarm system (Jumo German Thermostat) to cut off the supply in case of overshoot. Internal Size: 60 x 60 x 90</p>	01			
2	Extruder	<p>Single screw hot air extrusion cooking system, capacity of grain processing: 50 to 100 kg/h, suitable for grains like maize, wheat, rice, etc. The provision for applying/ blending oil/ spices with extruded material be given separately and oil spray system be supplied, extrusion screw be made up of stainless steel of chromium coated steel</p>	01			
3	Flour mill	<p>Useful for dry food grain and dry masala and neem product grinding, Plate size: 300 x 75 mm i.e. 12” sizes, operated using single phase 2 HP electric motor, output 25-30 kg/h,</p>	01			

4	Hammer mill with cyclone (Water cooling)	8" dia, with 2 HP single phase motor, min 10 to 15 kg/h capacity, with varied sieve size, provided with cyclone separator to collect ground powder, suitable for fine grinding applications of food stuffs, spices, masala, herbals, pigments etc., Multi-stage grinding for ultra-fine product, Provision of jacket for water cooling. , Stainless steel construction.	01			
5	Digital micrometer	Make- Mitutoyo, Japan, LC- 0.001 mm, Accuracy- 0.01 %, digital indicator, Range from 0 to 50 mm, LED display, battery operated with battery SR44 x2, battery life minimum 1.8 yrs	01			
6	Screw type expeller with Boiler unit	Screw type oil expeller, crushing capacity min 40 kg/h, screw and barrel should made up of stainless steel, 7.5 HP motor, along with amenable boiler	01			
7	Texture analyzer	<ul style="list-style-type: none"> <li>a) Texture analyzer of 250 kg load frame, connecting leads and probe adapter,</li> <li>b) 5 kg load cell,</li> <li>c) 50 kg load cell,</li> <li>d) appropriate software to enable computer inter phase,</li> <li>e) Needle probe,</li> <li>f) 2 mm dia cylindrical probe,</li> <li>g) 5 mm dia cylindrical probe,</li> <li>h) 25 mm dia cylindrical probe,</li> <li>i) 45 degree conical probe,</li> <li>j) 5 mm dia spherical probe,</li> <li>k) crisp fracture support rig,</li> <li>l) blade set,</li> <li>m) back extrusion rig,</li> <li>n) forward extrusion rig,</li> <li>o) TTC spreadability rig,</li> <li>p) Kramer shear cell with 5 blades,</li> <li>q) 36 mm AACC probe for bread firmness,</li> <li>r) standard probe for testing gels,</li> <li>s) tensile grip,</li> <li>t) 75 mm dia compression plate for grain hardness,</li> <li>u) dough stickiness rig, heavy duty platform</li> </ul> <p><b>(quote the cost item wise separately)</b></p>	01			

8	Vacuum oven	Vacuum upto 760 mm of Hg, Chamber 30x 30 x 30 cm, two shelves, vacuum release provision, temperature- room temp. to 200 °C, oil free vacuum pump of standard company, variable vacuum provision, digital temperature indicator, dial type vacuum indicator, good insulated body.	01			
9	Vacuum packaging machine with N <sub>2</sub> flushing	Provision for nitrogen flushing and sealing, type: pneumatic, No. Of cycle per sec-900 max, input voltage 240 V AC, 50 Hz, type of sealing- impulse, sealing with 5 mm, sealing length-400 mm, max. Power consumption- 300 W, vacuum 700 mm Hg, displacement- 75 Lit/min, flushing pressure-10 to 25 psi, Air press- 15 to 25 psi	01			
10	High speed cold centrifuge	Refrigerated Centrifuge 5810 R Without Rotor Power Supply: 230 V 50-60 Hz, Maximum Rotational Speed: 14,000 min <sup>-1</sup> , Maximum Centrifugal Force: 20,800 x g, Maximum Capacity: 4 x 250 ml, Standby refrigeration, Vibration free centrifugation – minimize disturbance of sample formulation., Sensitive Sample, Motorised lid latch, Fast cool : from room temperature to 4° C in max. 16 min. & short spin option, Parameters can be changed during run. Very Low Noise level < 56 dB. Over speed cut-off protection. CFC free cooling gas refrigeration agent. Brushless motor and Maintenance free drive, Time pre-selection: 0-99 min. Temp. control -20 to -40 °C.	01			
11	Variable speed electric motor	2 H.P. single phase motor with controlling panel, inbuilt provision to vary speed of motor, AC to DC convertor if AC motor is provided, 400 – 3000 rpm, with rpm indicator, voltage/current indicator, with ON/OFF switch	01			
12	Shrink wrapping machine	Job Maximum size (WxHxL, mm) 100x125x No limit. Power operated, single phase, 220V, AC 50Hz, Machine dimensions (WxHxL) 1100x450x1000 mm, Heater 4 kW, Max. temp. 250 °C, Motor 0.25 HP, fixed travel time- 13 sec.	01			

13	Deep freeze	Make: Operon, South Korea, DFU-374CE upright ultra-low temp. Freezer, abricated under ISO QC procedure. 4 inner compartment doors. Dimension: Inside : W600x D520x H1200mm. Outside: W860x D750x H1950mm Capacity: 374 litre. Max Temperature performance: -86 °C. Operating Temperature range: -20 to -80 °C. Temperature display: +99 to -199 °C, Refrigeration: Two stage cascade system. Insulation: High density Polyurethane foam 130 mm, Compressor: Hermetic Compressor 1.5 HP x 2, Condenser: Air cold condenser. Security Door Lock set included, inbuilt holding cap. For 24 h after power failure is desirable, inbuilt power stabilizer	01			
14	Non-contact IR thermometer	Suitable for measuring surface temperature of product in hot air flowing with vel. of 0 to 10 m/s, temperature range 30 to 300 °C, accuracy $\pm 1.5$ °C, Repeatability $\pm 0.5$ % of readings, emissivity- preset 0.95, response time 500 milli Sec, Display resolution 0.2 °C, typical distance to target upto 2 m, battery of 9 volt with 12 h backup	01			
15	Digital Temperature indicator	Temperature- room temperature to 600 °C with 12 channel, digital display and Input: Pt-100 / all type of thermocouple, 12 thermo couples each 2 meter long, digital display, resolution of 0.1 °C, Built in automatic cold junction compensation circuitry, indication response time- 200 milli seconds, Power Supply: 230VAC $\pm 10\%$ , 50Hz and 9 V battery, alongwith extra 20 m copper constant bi-metallic thermo couple wire	01			
16	Microwave oven	Bajaj Make, Cap. 20 lit, electronic controls, turn table arrangement, varied power mode, wave leak proof, timer.	01			
17	D. C. Motor	2 HP, single phase, with inbuilt AC to DC converter, speed regulator, speed 300 to 5000 rpm	01			
18	Hand blender	For blending sample taken in any open pot, suitable for liquid and powder samples, variable speed, handy, electrical operated	01			
19	Distillation plant	Steel body, with immersion type heater, inbuilt condensation provision, cap. 2 L/h of distilled water.	01			

20	Toasting/ roasting oven	Bajaj Make, 2000 W, temperature 30 to 300 °C, timer from 0 to 1 h, min. 2 pans, min 20 L capacity chamber, transparent door to see inside the oven.	01			
21	Pipe cutter machine	With cut-off wheel of 14", ½ HP, suitable for PVC, MS 4" pipes and having 18 gauge pipe thickness	01			
22	Bench vice	6" jaw length	01			
23	Machine vice	8" Jaw length	01			
24	Angle grinder	5" wheel with standard specifications	01			
25	Tractor operated Air Sleeve Boom Sprayer	Makes:Gursukh Agro Works, Ludhiana/ ASPEE group of Cos., Mumbai/ Birar equipments, Nashik/ Kisan Blower Udyog Nashik Specifications:Boom and Atomizers: Folding type boom suitable for spraying row crop likes cotton, soybean, grams, sunflower, safflower etc, Tank: 450 Liters and should be made up of fiber/polyethylene, Pump :3 Piston, Boom height should be adjustable, Suitable for working with tractor of 45 to 55 HP	01			
26.	Groundnut digger-cum- elevator	Specifications: Working width:- Blade length 68", Suitable for working with Tractor of 35-45 Hp.	01			
27	Tractor operated multipurpos e harrow- cum-leveller	Specifications: Working width: 7 feet, cultivating depth: 4"to 5",cultivating distance 1" approx., Suitable for working with Tractor of 35-45 Hp.	01			
28	Self- propelled reaper binder-cum- fodder harvester	Specifications: Cutting Width: 4 feet , Height of Cut: 5 to 7 cm, Rope Requirement: 1 Spool /acre, Engine: 10.2 hp Diesel, Air cooled, Gear: 4 Forward & 1 Reverse, suitable for Harvesting and binding of grains crops of height upto 85 to 110 cm.	01			

29	Tractor operated trencher	Specifications: Trench size, Top width : 60cm, depth: 45cm suitable for 45- 50 HP Tractor.	01			
30	(a) Vernier caliper	Make- Mitutoyo, Japan, LC- 0.01 mm, Accuracy- 0.01 %, digital indicator, Range from 0 to 50 mm, LED display, battery operated with battery SR44 x2, battery life minimum 1.8 yrs	01			
	(b)Measuring Tape	Maximum length:30 meter,	01			
	(c)Measuring cylinder	Made up of Glass, size range from 0.5 liters to 2 liters,	01			
	(d)Stop watch	Digital, battery operated, LED display, LC-0.1 seconds,	01			
	(e)Temperature indicator	Suitable for use in room as well as field conditions, temperature upto 100 °C, digital display, display in both centigrade as well as fahrenheit ,resolution of 0.1 °C,	01			
31	Pyranometer with recorder	Calibration: Calibrated against an Eppley Precision Spectral Pyranometer (PSP) under natural day light conditions. Typical error under these conditions is $\pm 5\%$ . Sensitivity: Typically $90\mu\text{A}$ per $100\text{ Wm}^{-2}$ . Linearity: Maximum deviation of 1% up to $3000\text{ Wm}^{-2}$ . Stability: $< \pm 2\%$ change over a 1 year period. Response Time: $10\mu\text{s}$ . Temp. Dependence: 0.15 % per °C maximum. Cosine correction: cosine corrected up to $80^\circ$ angle of incidence. Azimuth: $< \pm 1\%$ error over $360^\circ$ at $45^\circ$ elevation. Tilt: No error induced from orientation. Operating temperature: - 40 to $65^\circ\text{C}$ . Relative humidity: 0 to 100%. Detector: High stability silicon photovoltaic detector (blue enhanced). Sensor housing: Weather proof anodized aluminium case with acrylic diffuser and stainless steel hardware. Size: 2.38 Dia. X 2.54 cm H (0.94" x 1.0") Weight : 28 g (1 oz). Cable length: 3.0 m.	01			

32	Microprocessor based datalogger	<p>Data Logger with Real Time Clock (RTC), Printer output port &amp; serial com.port and Extra 128 kB memory bank for data storage (XX = 04, 12, 16)</p> <p>16- 24 Channel /process data logger. Designed for continuous monitoring and logging of temperature or process variables at 2-32 different location with indicating accuracy 0.1°C or 1 °C</p> <p>Design: Microprocessor based (8 bit) with 12 bit ADC and 8 bit DAC</p> <p>No. of Channels:16 -32, Input: J, K, R, S,B, C, D RTD (PT-100), RTD(PT-1000)/2 or 3 wire, (4-20)mA, (0-1) mA V etc. (each channel can be of different input type), Range: -200 to 20000C subjected to the specified input. Resolution: 0.1 °C, 1 ° C Display: 4 digit each 0.5” 7 –segment red LED to d for channel no, 6 digit 0.5” 7 –segment g LED isplay process and set values, 2 digit 0.5” 7 –segment green LED for real time clock, Open sensor indication: Display shows Flt-1 or Flt-2 and relays will be turned OFF, Scan rate 1 -99 sec (programmable through front panel keyboard), Skip/hold facility: Available though key board in configuration mode, Key board: 6 x 1 soft membrane key pad for data entry, Common relay outputs: 2 Nos. Potential free change over contact available (1 each for high and low output but common for all the channels), Individual alarm outputs: 2 per channel i.e. open collector outputs to drive external relay card. Can be provided as LL, HH, LH, HL alarm &amp; trip logic, LED indication: 32 LED’s in the front indicating status of each alarm output, Data logging: Real time with programmable log time and storage time, Serial /parallel interface: Parallel Centronics printer output port for Printer and Serial (RS232/RS485) for PC with window based software on Modbus ASCII Protocol, Data Storage: 2 K to 128 K memory bank, Size: 192 x 96 x 200 mm (DATALOG-16/H) or 96 x 200 mm. (DATALOG-16/V), Pannel Cut out: 186 x 92 mm., or 92 x 186 mm ± 0.5 mm, Supply: 230 VAC/110 VAC± 10% (10VA), 50/60 Hz or 24 VDC @ 500mA, Enclosure: Metallic with ABS bezel and polycarbonate front fascia.</p>	01			
----	---------------------------------	--	----	--	--	--

33	Flow meters for gas and liquid	<p>(A) For gas flow- Direct flow measurement - fully Electronic, Handy &amp; battery operated model, Flow Range : 50 ml/min. to 2000 ml/min with least count of 0.1 ml/min (Auotorange)</p> <p>(B) For liquid flow - Direct flow measurement, fully Electronic, Handy &amp; battery operated model, Flow Range : 50 ml/min. to 10,000 ml/min with least count of 0.1 ml/min (Auotorange)</p>	01			
<b>Total</b>		-	<b>38</b>			