Sher-e-Kashmir
University of Agricultural Sciences & Technology of Jammu
Chatha, Jammu (J&K)- 180009

Notice Inviting e-tender

On behalf of SKUAST-Jammu, tenders are hereby invited through e-tendering mode from the manufacturers, reputed and authorized distributors/ dealers/suppliers for purchase of Lab. Equipment as per details/specifications given in Annexure-I

Item No.	Name of the item with brief description	Qty.	Budgetary Provision (in *lakhs*)	Earnest Money Deposit (CDR/FDR)	Cost of Tender Document (in Rs.)
1.	Honeybee colonies (*Apis mellifera*) (Complete Hive)	180	9.00	Rs. 18000/-	Rs 1000/-
2.	UV-Visible Spectrophotometer	01	6.00	Rs. 12000/-	Rs. 1000/-
3	Piezo Sensor based Smoke Meter for IC Engines	01	2.50	Rs. 5000/-	Rs 1000/-
4	Computerized Universal Testing Machine	01	3.50	Rs. 7000/-	Rs 1000/-
5	Performance and Endurance test rig for Knapsack sprayer/ Hand pump sprayer	01	2.50	Rs. 5000/-	Rs 1000/-
6	Performance and Endurance Test Rig for Foot and Rocker Sprayer	01	3.00	Rs. 6000/-	Rs 1000/-
7	Strap Drop and Tank Impact Test rig	01	2.10	Rs. 4200/-	Rs 1000/-
8	Reciprocating Pump Test Bench	01	2.40	Rs. 4800/-	Rs 1000/-
9	Test rig for Leakage Test For Delivery Line of agriculture sprayer	01	2.30	Rs. 4600/-	Rs 1000/-
10	Test Rig for Fatigue on Compression Sprayer	01	2.50	Rs. 5000/-	Rs 1000/-
11	Test Rig for Trigger Type cut off device	01	2.10	Rs. 4200/-	Rs 1000/-
12	Test rig for Spray Launce Pressure Test Rig	01	2.25	Rs. 4600/-	Rs 1000/-
13	Test Set Up of Mist Blower	01	2.15	Rs. 4300/-	Rs 1000/-
14	Test Rig for Spray pimp for Centrifugal Pump	01	2.05	Rs. 4200/-	Rs 1000/-
15	Hand Arm & Whole Body Human Vibration Meter	01	2.02	Rs. 4200/-	Rs 1000/-
16	Multi CCD Spectrometer for Soil engaging tools	01	18.00	Rs. 36000/-	Rs 1000/-
17	Computerized engine test set-up fortesting of engines of self-propelledmachines	01	18.00	Rs. 36000/-	Rs 1000/-
18	Fork Lift	01	10.00	Rs. 20000/-	Rs 1000/-
19	Super seeder	02	6.00	Rs. 12000/-	Rs 1000/-
20	Laser land leveler	01	4.50	Rs. 9000/-	Rs 1000/-
21	Honey processing machine	01	6.50	Rs. 13000/-	Rs 1000/-
22	SomaScope- Somatic Cell Counter	01	38.00	Rs. 76000/-	Rs 1000/-
23	Milk Analyser	01	4.00	Rs. 8000/-	Rs 1000/-

The Bidding documents/NIT can be downloaded from the website **http://jktenders.gov** in from **25-02-2022 (10:00 AM) to 17-03-2022 upto2:00 P.M**. Bid document contains qualifying criteria for bidder, specifications, bill of quantities, conditions and other details.

1. The bids shall be deposited in electronic format on the website **http://jktenders.gov.in** from **25-02-2022 (10:00 AM) to 17-03-2022 Upto2:00 P.M.** The technical bids received will be opened on or after 17-03-2022 at 02:30 P.M. online. Financial bids of only those bidders will be opened online who are found technically responsive by the evaluation committee.

Bidders who have already applied vide e-NIT No: AUJ/CPC/21-22/Equip./542-544dated 07- 01-2022 for the items mentioned above at S. No. (19 to 23) need not to send the EMD, cost of tender and other documents document. However, they need to apply again from the website **http://jktenders.gov.in** within the stipulated dates**.**

Pre-eligibility/Technical Conditions:

Pre-eligibility/Technical bid which should contain the following documents:

i. Copy of GST certificate.

ii. Copy of PAN/TIN Card of the firm/ Authorized Dealer.
iii. Undertaking of not being blacklisted by any Govt. Agency/ department.
iv. List of clients presently being served (Agricultural Universities/ Educational Institutes/National Institutes/others separately in the last three years) with Contact name & address with mobile no.
v. Certificate for successful completion of similar nature of work at any other organization.
vi. Bank Details on letter head along with cancelled cheque.
vii. Offers should be accompanied by a DD of Rs.1000/- (non-refundable) in favour of "**Comptroller, SKUAST-Jammu**" payable at Jammu towards the Tender fee.
viii. EMD in the shape of CDR/FDR payable to Comptroller, SKUAST-Jammu.
ix. Tenderers must state categorically whether or not their offer/equipment/machinery is exact to tendered specifications and indicate deviations, if any, failing which their offer will be ignored. (Company should provide supporting literature viz., brochure/catalogue/website link).

Terms & Conditions

1. No tender without earnest money in the shape of CDR/FDR shall be entertained. The CDR/FDR of tenderers shall be released within one month after the purchase process is finalized.
2. Conditional tenders shall be rejected out rightly.
3. The envelop in which tender is submitted must be superscribed as **"Procurement of Laboratory Equipments with Item No. and name of the item(s) for which tenders have been submitted"**.
4. The specifications of the Laboratory Equipment should conform to the highest standards as per relevant BIS/ISO specifications.
6. Tenderers must state categorically whether or not their offer is exact to tendered specifications and indicate deviations, if any, failing which their offer will be ignored.
7. Tenderers shall enumerate the operational experience in similar environment of the equipment offered along with the names, addresses and other references of user's installations.
8. The competent authority i.e., SKUAST - Jammu reserves the right to revise or alter the specifications of the equipment before the acceptance of the tender.
9. Late, delayed and incomplete tenders and amendments and additions to the tender after opening of the same will not be accepted.
10. The Tenderers should include in their tender, provision for tools and initial stock of maintenance spares as are essential for proper operation and maintenance of the equipment. Full particulars of the spare parts should be provided separately.
11. The successful tenderer shall be responsible for erection and installation of the equipment at destination sites and for making it fully operational.
12. The tenderers must provide complete details of space and all infrastructural needs of the equipment which SKUAST-J should arrange before the arrival of the equipment in SKUAST-J to ensure its early installation and smooth operation thereafter.
13. The tenderer shall be fully responsible for the manufacture's warranty in respect of proper design, quality and workmanship of the equipment (s) accessories etc. covered by the tender for a period of 12 months from the date of satisfactory installation/commissioning of the system. The provision for extended warranty with terms and conditions thereof, if any, may also be specifically mentioned.
14. The tenderers shall make provision for imparting training to our scientists/ maintenance staff on operation and use of Laboratory Equipments, its accessories and trouble shooting repair and maintenance. Cost, if any, of such training and the details regarding the course covered and its duration should be specified.
15. The tenderer should enclose a certificate with the tender stating that
    i) The equipment is of the latest technology.
    ii) The equipment may be upgraded as and when required by SKUAST-J and
    iii) The equipment shall be promptly and properly serviced by them whenever desired and such service will remain available to SKUAST-J for 05 years from the date of its installation.
16. Prices quoted by the bidder should be inclusive of transit insurance, freight, installation and commissioning at destination sites. Discount, if any, should be shown separately. Additional charges on account of Excise Duty, GST, VAT, Entry Tax or any other charge / levy must be specifically quoted.
17. The offer should be valid for a period of 180 days from the specified date of opening of the tenders.
18. 100% payment shall be made on installation and commissioning of the equipment. However, the tenderer shall have to furnish a bank guarantee equal to 10% of the total cost of the equipment towards performance guarantee for one year which shall be released on successful completion of the warranty period.
19. The Tenders/hard copies of the DD and EMD must reach in the office of the **Member Secretary (Equipments), Central Purchase Committee, School of Biotechnology, SKUAST-Jammu, Main Campus, Chatha, Jammu-180009 (UT of J&K)** not later than the specified time as stipulated in the NIT, if the date on which the tenders are to be received / opened is declared as a public holiday, the tenders shall be received and opened on the next working day.

20. The tenderers and their authorized representatives are at liberty to be present at the time of opening of the tenders.
21. The competent authority of SKUAST-J does not bind itself/himself to accept the lowest or any tender & reserve the right of accepting the whole or any part of the tender or portion of the quantity offered and the bidders shall supply the same at the rate quoted.
22. The equipment to be supplied shall not pass to the SKUAST-J unless and until the equipment has been delivered, installed / commissioned and accepted, in accordance with the conditions of the contract and to the entire satisfaction of the competent authority of SKUAST-J.
23. The University shall not be responsible for any theft or loss sustained by the tenderer during the period of commissioning/installation. In the event of injury or mishap or illness to any of his worker, the University will not be responsible for any compensation.
24. The tenderer shall be fully responsible for any damage to the University property/ furniture, if any provided to them by the University.
25. All questions, disputes, or difference arising under and out of, in connection with the contract shall be subject to the Courts at Jammu (J&K).

--sd--
Member Secretary (Equipments)
Central Purchase Committee

No: AUJ/CPC/21-22/Equip./743-745
Date: 24-02-2022

- Chairman CPC, SKUAST-J, Main Campus Chatha.
- SVC for timely Publishing of e-NIT publication in one national daily and two local newspapers for wider publicity.
- Incharge Data Centre for uploading on University Website

Annexure-I

Item No.	Name of the item with brief description	Qty.	Product Specification
1.	Honeybee colonies	180	Honeybee colonies (*Apismellifera*) with Langstroth hive (Complete hive)
2.	**Double Beam UV-Visible Spectrophotometer**	01	Microprocessor based UV-Vis Spectrophotometer with the following specifications:
	Photometric System : Double beam optics Photometric range : Absorbance: -4 to +4.0 Abs, Transmittance: 0.0 to 400% Photometric Accuracy : +/- 0.0025 Abs. at 1.0 Abs & +/- 0.0015 Abs. at 0.5 Abs Wavelength Range : 190 to 1100 nm or better Wavelength Display & Setting : 0.1 nm increment Wavelength Accuracy : ± 0.05 nm at D2 peak 656.1 nm, Wavelength Repeatability : +/- 0.1nm or better Photometric Repeatability : +/- 0.0001 Abs or better Scanning speed : Up to 25,000 nm/min or better Spectral Bandwidth : 1 nm or better Stray light : Less than 0.004% at 340 nm or better Baseline Stability : less than 0.0003 Abs/H Baseline Flatness : less than 0.0006 Abs/H Noise Level : Less than 0.00003 Abs Monochromator : Czerny Turner blazed holographic grating Detector : Silicone photodiode USB Port connectivity : 2-3 USB ports for data Transfer, PC, Printer Light source : Tungsten and Deuterium lamp. Quartz Cuvette : 3.5 ml capacity with pathlength of 10mm (01 Pair) Spectrophotometer should have built in hardware validation for Wavelength accuracy, wavelength repeatability, resolution, stray light, photometric accuracy, photometric repeatability, baseline flatness, baseline stability, noise level and validation software alongwith optical filter for wavelength calibration. *Windows based Operating software should have built in features like real time concentration display, Photometric mode Single / multi-wavelength, Enzyme Kinetics calculation, event recording such as Addition of reagents during measurement, DNA/protein quantification etc.* Tungsten and Deuterium lamp. 1 Nos. Warranty: One Year Optional Items Suitable online UPS with batteries, batteries stand, Branded i5 PC with original windows 10 and laser Printer.		
3	Piezo Sensor based Smoke Meter for IC Engines	01	Smoke meter to measure the Opacity of Smoke with RPM measured by Piezo method, RS 232, Probe and standard accessories. Specification : Measurement: Smoke density in HSU & K ; RPM & Oil Temperature, Range : HSU : 0 – 99.9, RPM : 0 – 6000, Oil Temperature : 0 – 150°C

			Resolution: HSU : 0.1%, K : 0.01m RPM : 1 (for piezo), 10 (for Battery), Oil Temperature : 1°C Light Source & Detector: LED & Photocell. Display: 16x2 Alphanumeric LCD display with backlight. Warm up Time : < 20 minutes (smoke column heating), Electronics (< 2min). Temperature Sensor : RTD (PT 100) & Thermocouple. Data Communication RS 232 Interface for Computer connectivity. Printer: 24 Column Dot Matrix type Printer. Operating Temperature: 0 to 50°C. Measuring Chamber Temperature : 80°C INSTRUCTION MANUAL: Technical manual which describes the equipment and experimental procedure
4	Computerized Universal Testing Machine It should be able to perform the:- (a)Tensile (b) Compression (c) Shear (d)Flexural, and (e) Low Cyclic Test, for a wide variety of materials and components.	01	Measuring capacity: 100 Kn, measuring range: 0-100 Kn, Least count: 5 N, Load range in Kn Resolution of piston movement 0.01 mm, Maximum tensile clearance at fully descended piston position: 50-700 mm, Maximum clearance for compression test: 0-700 mm, Distance between columns: 450 mm, Piston stroke: 150 mm, Max. training speed at no load: 300 mm/min, Power supply: 3 Phase, 415 V, 50 Hz, AC., HP(Total): 1.5, Standard accessories: Pair for compression plate dia: 120 mm, Tension Test jaws (For round specimen dia: 10-20 mm, For flat specimen thickness dia:0-10 mm), Transverse Test (Adjustable roller support width: 150 mm, diameter: 30 mm, With maximum adjustable clearance: 450 mm, Punch top radius: 6-12 mm Set of foundation bolts and levelling screws. Electronic Extensometer for Computerized version Data Acquisition Panel 1. A Microcontroller based data acquisition system for data acquisition & indication. 2. LCD displays for displaying load & crosshead travel value. 3. Tare load & reset elongation facilities available. Operation Unit: The operation unit shall have the following function: Test Force Calibration Function Break Detection Function Automatic Read Function For Load Cell Characteristic Value Peak/Break Value Display Function Cycle Figure Display Function : Test Condition File Function, minimum 15 files. Real Time S-S Curve Display. Software: The software shall have the following features: The software shall support latest window based operating system. The software shall comprise with the tests:- Tension, Compression, Three-point Bending, Four-point Bending, Peel, Friction. The software shall have real time curve plot. The software shall have data analysis mode. Processing Unit A set of computerized data processing and recording system interfaced with the controller consisting of: Desktop (Windows 10 Home 64, 6th Generation Intel® Core™ i5 processor, 8 GB memory; 1 TB HDD storage, Intel® HD Graphics 530), 2 USB 3.0; 4 USB 2.0, USB optical mouse, USB black keyboard Printer :Colour Laser Jet (Print speed upto 38 ppm) Installation: Installation, Mounting & Erection, Wiring, Commissioning and necessary civil work Etc. will be done by the supplier. INSTRUCTION MANUAL: Technical manual which

			describes the equipment and experimental procedure
5	Performance and Endurance test rig for Knapsack sprayer/ Hand pump sprayer (As Per BIS Standard)	01	Mounted on M.S. Structure dully powder coated. Unit Comprises of M.S. Frame Stand, Pressure gauge accumulator for reducing damping effect of pressure gauge, Suction &discharge pipe, Sump Tank & measuring Tank, ½ HP Gear motor for constant stroke speed, Digital counter for stroke measurement, Arrangement for attaching pressure assembly to Knapsack/ Hand Sprayer Tank Sprayer Pump Pressure Gauge Main Switch
6	Performance and Endurance Test Rig for Foot and Rocker Sprayer as Per BIS Standard	01	Mounted on M.S. Structure dully powder coated. The Unit should comprise of Foot or Rocker pump mounted on MS Frame for Testing, Pressure gauge accumulator for reducing damping effect of pressure gauge, Suction pipe & discharge pipe, ½ HP Gear motor for constant stroke speed, Hand valve arrangement for changing pump, Sump & Measuring Tank, Main Switch, Stop clock
7	Strap Drop and Tank Impact Test rig as per BIS Standard	01	Mounted on M.S. Structure dully powder coated. Unit should Comprises of M. S. Metallic Fabricated Frame, Double Acting pneumatic Cylinder's 3 No., Canti Leaver Assembly, Belt Assembly, Test Tank Assembly, Limit switch, Pressure gauge, Flow Control Valve, Electro Pneumatic Solenoid Valve Air Compressor
8	Reciprocating Pump Test Bench (as per BIS Standard)	01	Mounted on M.S. Structure dully powder coated. The Unit should Comprises of Reciprocating Pump of 1 HP single phase 1500 rpm with a 4A dimmer stat, Vacuum Gauge at suction line, Pressure Gauge at Discharge line, Measuring input to elect Motor by Energy meter, Output of Pump performance can be estimated at three different speed by using pulley, Recirculation type unit, M. S. Stand Assembly, Measuring Tank of Size : 500 x 400 x 400mm with FRP Coated, M.S. sump Tank 900 x 600 x 600mm
9	Test rig for Leakage Test For Delivery Line of agriculture sprayer as per BIS	01	Mounted on M.S. Structure dully powder coated comprises of : 1 HP HTP Pump, • 3 phase 1500 rpm Motor with starter, Air compressor assembly, Air filter, Pressure gauge, regulator with pressure gauge, Pneumatic cylinder, Solenoid Valve, limit switch, Nozzle sprayer assembly, Sum Tank, Hand valve, Separate line for leakage purpose
10	Test Rig for Fatigue on Compression Sprayer	01	Mounted on M.S. Structure dully powder coated. The Unit should Comprise of M.S. Fabricated Stand, Air Compressor single cylinder single phase, Air filter, Solenoid Valve, Three way valve, Limit switch, Pneumatic cylinder, Digital counter for stroke measurement with timer, Pressure Gauge, Three separate line for three Nozzle
11	Test Rig for Trigger Type cut off device (As Per BIS Standard)	01	Mounted on M.S. Structure dully powder coated. The Unit should Comprise of M.S. Fabricated Frame 1000 X 700 X 1500 approx., Air Compressor Single Cylinder Single Ph , Single acting Pragmatic Cylinder, Pressure Regulator, Pressure Gauge, Limit Switch, Electrical Cut Out (6A) Solenoid Switch, Spray Nozzle, Unit Will Powder Coated, STP Pump with Pipe Assembly
12	Test rig for Spray Launce Pressure Test Rig (as per BIS Standard)	01	Mounted on M.S. Structure dully powder coated. The Unit should Comprises of M. S. Fabricated Stand Assembly, 1 HP DC Motor, 4 A, DC Dimmer Assembly, Cam and Flange Assembly, Connecting rod Assembly, Electrical Switch, Air Foot Pump
13	Test Set Up of Mist Blower as per BIS standard	01	Mounted on M.S. Structure dully powder coated Round type duct, Pitot Tube, U Tube manometer, Blower switch, Single phase 3/4 HP centrifugal blower, Orifice meter
14	Test Rig for Spray pimp for Centrifugal Pump as per BIS standards	01	Mounted on MS Structure duly powder coated. The unit should consist of Multi stage Centrifugal pump, Vacuum gauge at suction line, Pressure gauge at discharge

			line, Input measured by three phase energy meter, Output of pump performance can be estimated at 3 difference speed by using V belt pulley, Three HP AC Motor with starter, MS tank of size : 1000 x 800 x 600mm with FRP Coated, Measuring Tank of size : 600 x 500 x 400mm with FRP Coated
15	Hand Arm & Whole Body Human Vibration Meter	01	Including 1/1 & 1/3 Octave Analysis Includes: SC 56 USB cable, 4 x AA batteries, SC 118 integrated connector, 1/1 & 1/3 Octave Analysis, SV 105 Hand-Arm adapter with triaxial accelerometer, SV 38V Whole-Body seat accelerometer, Micro SD card 2GB, CD with instruction and Software and Carrying Case.
16	Multi CCD Spectrometer for Soil engaging tools	01	Spectra Analytical Resolution: 3600 lines/mm and above Focal length: 300mm or above Number of detectors (CCD): 5 or above. Calibration required: Fe base MS/C/LAS & CI/SG iron alloys, SUS Samples Included Online Service Support: Java.net online service Standardization: Single sample, Power Consumption: 30W Standby 800W Sparking or equivalent Items to be included: Grinder for Spectrometer, Argon Regulator, Online UPS 2KVA with 1 Hr Backup and Core i5 complete desktop with suitable OS, 4GB RAM, DVD Writer, 1TB HDD,DVD, Monitor: 21" wide LED TFT, Keyboards, optical mouse, Windows 7/8/8.1 Professional pre-loaded, Preloaded software, Antivirus (latest version), online UPS 2KVA with 1 Hr Backup suitable Licensed Windows 7 or above Software. **Ink jet colour printer** **USB 2.0/3.0 Port** **Cooling System:** 1.5 Ton split AC dual cooling and hot with Installation and 4 KVA Stabilizer
17	Computerized engine test set-up for testing of engines of self propelled machines	01	**Computer based engine test rig for test of various engines used in self propelled agricultural machinery 5-6 hp capacity** Engine : 4 stroke single cylinder diesel engine 5 hp and 2 stoke petrol engine Dynamometer : The Engine is coupled with matching Eddy current dynamometer and capable to couple with 4 stroke diesel engine and 2 stroke petrol engine with required accessories. Torque Measurement: With Load Cell. **1. Eddy Current Dynamometer (Water Cooled)** • Rated absorption Power = 5 KW / 6.7 HP • Maximum torque = 15 Nm or More. • Maximum Torque at Speed = 2500 RPM • Maximum speed = 12000 RPM • Torque measurement precision = ± 0.25 FS%, 0.1 Nm resolution • Speed measurement precision = ± 0.5 FS %, 1RPM resolution • The direction of rotation both Clockwise & Anti Clockwise. • Reaction type Torque Sensor to measure Torque, having 2 mV/V output. • 60 - Tooth wheel with magnetic pick up sensor to measure speed. • Torque calibrating arms and weights • Electro-less Nickel plating on water passages (groove side) of loss plates to ensure that corrosion does not

			detract from performance. • Magnetic heavy duty water strainer - filter. • Water Inlet Pressure Switch. 2. **Dynamometer Controller:(**Control Panel mounting stand on ground floor), Consisting of: • Dynamometer Multi Mode Control Unit • Pot for variable loading of Engine. • Multi-mode operation push buttons facilitating • Constant Speed • Constant Torque & • Open Loop modes of operation. • Size of rack: 19" Rack type. • The controller would be provided with SET OVERSPEED • facility, SET RUN MODE Selection and RESET / START & STOP switch. • Analogue/Digital Speed Indicator & Digital Torque Indicator Rack • Accuracy: Analogue speed: ± 1.5% of FSD • Digital torque: ±0.25% of FSD ; Digital speed: ± 1 rpm • An Isolator Switch Panel • 2 Nos. Blind Temps. Controllers as inbuilt safety against overheating of loss plates of the dynamometer • PID Temperature Indicator Controller to indicate Engine Lub Oil Temp. &Air Intake Temp, Fuel Temperature, Dynamometer Water Outlet Temp (All 0 - 200ºC) with Temp Sensors PT 100: Qty. 4 Nos. • Exhaust Gas Temp (0 - 1000ºC) – 1 No. Temp Indicators with CRALsensors. • Air Intake Pressure Indicator with Sensor (0 to 70 mbar) :Qty. 1 No. • Engine Exhaust Back Pressure Indicator with Sensor (0 to 70 mbar) Qty. 1 No. • Digital Time Totalizer - 1 No. **3. Data Logging Facility:** PC Based, Data Acquisition &Control system. **Consisting of:** **Computer:** Intel core i5 processor, 3.00 GHz or more, Intel stable image platform program (SIPP), Memory: 8 GB, Hard disk drive: 1 TB HDD, Monitor: 21" wide LED TFT, Keyboards, optical mouse, Windows 7/8/8.1 Professional pre-loaded, Preloaded software, Antivirus (latest version), 3 years comprehensive H/W warranty, complete with HP inkjet Color Printer. PCI Card with necessary Digital & Analogue inputs & outputs. Facility to View / Print observation table and save the acquired data . • Software package for logging the engine test results. **4. Cable loom with conduit of 10Mtr length**: Cable loom consist Shielded Control cables for Torque sensor, Speed sensor, Temp & Pressure sensors & Dynamometer Control, with Male-female round type connectors with flexible conduit of length of 10Mtr. **5. Suitable Engine Mounting Stand on Common Base Frame for Engine & Dyno.** **6. Torsion Coupling:** Between Engine & Dynamometer with Guard. **7. Volumetric Fuel Consumption unit along with Calibration Set Up:** Glass tube assembly (5 + 10 cc) is housed in MS fabricated enclosure with top and bottom supports. Photo sensors are fitted on Glass tube, to regulate specific volume of fuel

			required during testing. Digital timer (with suitable interface to connect with PC based system) is provided for indication time in seconds for the selected volume of fuel. Least count of timer is 0.1 second. Measurement Accuracy: 0.5% of selected volume whichever is more quantity. ***3 years hardware and service warranty at SKUAST-J, Jammu*** **Installation:** Installation, Mounting & Erection, Wiring, Commissioning and necessary civil work etc. will be done by the supplier. **INSTRUCTION MANUAL:** Technical manual which describes the equipment and experimental procedure
18	**Fork Lift**	01	Capacity 3000Kg, 4 Cylinder diesel engine operated, 45-50 bhp, lift height 3 to 3.8 metres fitted with pneumatic tyres, Twin Speed Transmission (2 forward, 2 reverse)
19	**Super Seeder**	01	Specifications given below:

Descriptions	**Super Seeder-8**
Overall Length	2813 MM
Overall Width	-
Overall Height	-
Tilling Width (mm/inch)	2336/92
Tractor Power	65-75 (HP)
3-Point Hitch Type	-
Frame Off-set	17/0.7 (mm/inch)
No. of Tines	60 (JLF Type) (nos)
No. of Disc (nos)	13
Pto Input Speed (rpm)	-
Rotor Shaft Speed (rpm)@540	184/259 (Spare)
Standard Tine Construction	-
Transmission Type	Gear
Max. Working Depth	86/3.38
Rotor Tube Diameter (mm/inch)	-
Rotor Swing Diameter (mm/inch)	-
Driveline Safety Device	Slip Clutch/Shear Blot
Weight (kg/ibs)	1201/2647

20	**Laser land leveler**	**01**	**Specification given below**

Specification: Laser Land Leveler

Provision for adjusting tilt angle of blade:Yes
Specified accuracy of laser transmitter::3 mm @ 30 m
Working range diameter of transmitter in meter::600-700
Power source for transmitter Rechargeable battery: (12V ,7A)
Number of tyre& wheel provided: 4
Number of Hydraulic cylinder: 2
Warranty in years: 2
Main frame material MS
Bucket and side support sheet material MS
Working width in mm (with ± 50 mm tolerances): 2100
Scraping Blade thickness in mm:10-12
Side blade thickness in mm:10-12
ISO certification of manufacturer ISO 9001 2015

Purpose	It is used for leveling the field within certain degree of desired slope using a guided laser beam throughout the field in one or both the directions
Power source	Tractor operated

Tractor PTO power required in hp	55-60
Type of Hitch	3 point linkage/CAT-I/CAT-II/Draw bar hitch
Provision for adjusting tilt angle of blade	Yes
Type of joint of scraping blade to bucket body	Nut bolt joint
Laser transmitter provided	Yes
Make and model of laser transmitter	DASMESH
Specified accuracy of laser transmitter	3 mm @ 30 m
Working range diameter of transmitter in meter	600
Power source for transmitter	Rechargeable battery (12V ,7A)
Number of dry battery cell supplied	4
Number of rechargeable battery supplied	2
Laser receiver provided	yes
Electrical control panel provided	Yes
Twin solenoid hydraulic control valve provided	Yes
Remote control type	Full 2 way communication
Number of tyre& wheel provided	4
Type of Hydraulic cylinder	Double acting Hydraulic Cylinder
Number of Hydraulic cylinder	1
Capacity of hydraulic cylinder in ton	2
Provision for Height adjustment of Rigid mast with arms	Yes
All hydraulic hose pipe,valves fitting should be in good quality and no leakage occurs during operation	Yes

21	**Honey processing machine**	**01**	**Specifications given below**

S.No.	Particulars	Capacity	Quantity
1.)	Tank 200 Kg (Double Jacket) (i)Round shape, (ii) S.S. 304 Grade, (iii) Section input output 25mm,	200 Kgs	1 No

		(iv)Heater 5 Kw, (v)Agitator 0.5 hp (40rpm).		
	2.)	S.S. 304 Tank 200 Kgs (i)Shape = Round (ii)Bottom = Cone type, (iii)Section input output 25mm (iv)High Polish (v) Gage Glass, (vi) Joint Finished,	200 Kgs	1 No
	3.)	Evaporator (i)S.S. 304 Grade, (ii)Height, Plant Suitable, (iii)Evaporator Structure.	100 Kg/Hrs	1 Nos
	4.)	Cooling Condenser (i)SS 304 Grade, (ii)Length = 1mm, Flange Type, (iii)Temp - 20 degree.		1 Nos
	5.)	SS 304 Filter – Section 25mm		1 Nos
	6.)	Honey Pump (i)Section = 25mm.	25 LPM	2 Nos
	7.)	Pipe line fitting with accessories,		
	8.)	Electrical fitting with accessories.		
	9.)	S.S. Plant Structure.		
	10)	Water Pump		1 Nos
	11)	Vacuum Pump		1 Nos
	12)	Temp meter		2 Nos
	13)	Small Cooling Tower		1 Nos
	14)	Sealing machine (for sealing of bottles)		01 Nos

22	**SomaScope- Somatic Cell Counter**	01	Specifications as given below:

Technology:	Fluorescence flow Cytometer
Milk samples:	For fresh or preserved cow, sheep, goat, buffalo, and camel milk
Measuring range:	From 0 to 1 x 10^7 cells/ml
Measuring speed:	>100 samples per hour
Repeatability (CV*):	<7 to 3.5% at 1 x 10^5cells/ml <5 to <2.5% at 3 x 10^5 cells/ml < 4 to <2% between 0.5 x 10^6 cells/ml
Accuracy (CV*):	< 10% relative to Direct Microscopic Somatic Cells Count
Linearity:	Up to 1 x 107 cells/ml
Sample volume:	<10 ml
Sample temperature:	+40°C ± 2°C (+104°F ± 35°F)
Carry-over:	< 1%
Configuration	• Integrated flow cytometer unit • Integrated sample preparation unit • Automatic cleaning system • Double photo detector multiplier system • Computer with Somatic cell count software • Reagent bottles • Ethernet communication port • Spare part kit for first 6 month • User manual
Power supply:	110 V-240V, 50 to 60 Hz, 150 VA incl. PC
Light source:	LED
Consumables*:	Cleaning liquid Measuring liquid Staining solution Somatic cell count pilot kit

	Somatic cell count calibration kit **Cost per sample analysis:** **Standards/ approvals:** Complies with ISO 13366/IDF 148-2 and international standards		
23	**Milk Analyser**	01	Specifications as given below:
	1. Range for FAT, SNF and Protein in Raw unhomogenised Cow, Buffalo as well as mixed Milk Samples. Values of each Milk Parameters should be independent. a. 0-13% Fat; b. 0-8% Protein; c. 0-15% SNF 2. Accuracy of the Instrument a. Fat: 0.10 SD – (Ref method Rose-Gottlieb) b. Protein: 0.08 SD – (Ref method Kjeldahl) c. SNF: 0.14 SD – (Ref method Oven drying minus Fat) 3. Repeatability a. Fat: 0.04 SD ; b. Protein: 0.04 SD ; c. SNF: 0.08 SD 4. Instrument should able to detect five specific adulterations with their name and able to identify difference between pure and non – pure milk spectrum 5. Adulteration in Milk should not affect the result of SNF value 6. Analysis speed required: 70 – 80 Samples per hours 7. Sample Quality: Raw Milk in a temperature range of 5□C – 40□C 8. Sample Volume: Should be minimal around 5 ml 9. Display: LCD, Graphical Display 10. Data Interface: SD Card and RS 232 11. Conformance: IP41 12. Electrical Interface: 12V DC, Power Consumption <40 W 13. Built-in Diagnostics: Interferometer test Cuvette test, Stability test, Cleaning Message display, Error Message display. 14. Milk Analyzer should be based on the Advanced FTIR Technology i.e. approved by global bodies like AOAC INTERNATIONAL (Association of Official Analytical Chemists), IDF (International Dairy Federation) 141:2013(E) and ISO (International Standards Organization) ISO 9622:2013(E), which recommends the application of FTIR Technology for Liquid Milk Analysis. It should use the recommended FTIR technology for Milk Parameter analysis like Fat, SNF and Protein. 15. Instruments should be operated in field conditions of Chilling Centres, Bulk Milk Coolers and Village Level Milk Collection Centres. The instrument should be fully functional and installed at minimum 1000 locations including reputed Co-operative Milk Societies and Private Dairies anywhere in India. Installation certificates of important locations to be provided. 16. Training and Installation services should be offered along with the Instrument at site and should be supplied with one year on warranty.		

-sd-
Member Secy. (Equipments)
Central Purchase Committee