Schedule of Quantity

S. No.	Description of Equipment	Quantity	Make & Full Specifications of items	Rates F.O.R. Destination		Taxes if any	Remarks
				In words	In figures		
1.	**Specification for Soymilk & Tofu Processing Plant and Extruder:**	01 No.					
	Soy milk Processing Plant-capacity 80-120 kg/hour or its equivalent, along with batch type Tofu processing unit of matching capacity. **Soy Milk Plant should include:-** • Soybean soaking vessel with water metering provision • Wet grinder with hopper & rotary valve. • Sterilizer with slurry feed pump, steam purifier & holding vat. • Soymilk deodorization system with vapour remover, condenser receiver & vacuum pump with motor. • Okara separator centrifuge. • Soymilk plate type chiller with balance tank, centrifugal pump & chilled milk storage tank. • SS pipe, Valves, fittings. • Motor control system & control pane. • Refrigeration unit to cool soymilk including cooling tower & pump **Tofu Processing unit should include:-** • Plate type heat exchanger • Curd making tank • Tofu press • Chilling tank & other accessories like SS pipes, valves & fittings.						

2.	**Extruder** Twin screw type, capacity 6-12 kg/hour or its equivalent, made up of stainless steel and capable to produce extruded food products from cereals, pulses and soybean. **The Extruder should include:** • Complete system with mechanical drive. • Facilities to change screw profile, screw speed of main shaft, feed rate and die cutter speed; die heating and cutter assembly, and different shaped dies. • Degassing / de-volatizing system • Temperature sensing and control system, inching device and other accessories	01 No.					

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S. No.	Description of Equipment			Quantity	Make & Full Specifications of items	Rates F.O.R. Destination		Taxes if any	Remarks
						In words	In figures		
1.	**Specification for FT-NIR:**			01 No.					
	1	Specstral range	800-2500 nm (12500-4000 cm^{-1})						
	2	Type of interferometer	Polarization interferometer/Michelson						
	3	FT-NIR source/life	Tungsten halogen lamp with twin lamp module/12000 h with automatic switch over in case of lamp failure.						
	4	Internal standard check	The instrument must have internal standard to automatically measure wavelength accuracy, signal to noise ratio and linearity check.						
	5	Sample rotation	Easy-spin drive, a magnetic spinner is included for high performance measurement of in homogeneous sample.						
	6	Detector	InGaAs detectors must be software controlled and selectable for each measurement.						
	7	Sample container	Vials, Petri dish						
	8	Measurement mode	Diffuse Reflectance/Transmittance						
	9	Wave number accuracy	0.05 cm^{-1}						
	10	Signal to noise ratio	10000						
	11	Relative humidity	<80% for T≤31ºC						
	12	Resolution	8 cm^{-1} (2-8 cm^{-1})						
	13	Number of scans/ second	2-4						
	14	Ambient temperature	5-35ºC						

	15	Electric power supply	100-240 VAC ± 10% 50/60Hz						
	16	Computer	H.P.PC with Pentium-V Processor , 500 GB free hard drive space , 18" TFT Monitor and Laser printer with windows operating system						
	17	Housing material	Food grade PMMA						
	18	Protection class	IP 54 or better						
	19	Software (Operator & Management)	Database oriented software includes all software modules or measurements with the FT-NIR spectrometer. The NIRW and operator for data acquisition. Application designer for the complete definition on the routine application and the setup of the operator interface including SOP. Sample Manager for the administration of samples (weighing 2-5g), batches and reference values with ready to use library backup for quantification of oil, protein, fibre, erucic acid, glucosinolate, etc. in rapeseed –mustard seeds. Security Designer for the administration of users and user groups. Administrative Tools include import and export functions for calibrations and application.						
	20	Accessories	i. Online UPS 2KVA ii. Air Conditioner (Split type, 1.5 ton capacity with capable stabilizer) – Two Nos.						
	21	Optional	Accessories for liquid handling and analysis.						

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Schedule of Quantity

S. No.	Description of Equipment	Quantity	Make & Full Specifications of items	Rates F.O.R. Destination		Taxes if any	Remarks
				In words	In figures		
1.	**Specification for Semi- Preparative (Purifications) HPLC System:**	01 No.					
	Pump:-						
	Should have dual piston reciprocating pump						
	Should have Flow accuracy +/-1%						
	Should have flow range Set points form 0.001 to 20ml/min, in 0.001 ml/min increments; recommended: 1 to 20 ml/min.						
	Should have operating pressure range 100-6000 psi						
	Should have binary gradient formation with high pressure using two pumps						
	Should have delay volume around 1.5 ml.						
	Diode Array Detector (with preparative flow cell):-						
	Wavelength Rang 190-800 nm						
	Wavelength Accuracy ± 1nm						
	Base line Noise 0.8 x 10^{-5} AU or less at 254 nm						
	Drift less than 5 x 10^{-4} AU/hr or less at 254 nm						
	Programmable slit width 1.2 nm						
	Light Source: Should have Deuterium lamp or other						
	Should have electronic records of maintenance and errors						
	Fraction Collector:-						
	Trigger modes, Time slices, Peak (threshold, up-/ down slope), Timetable (combination of time intervals and peak) and manual trigger.						
	Should have Operating modes discrete fractions: default mode for all vessels. The flow is diverted to waste, while moving form one vessel position to the next vessel position.						
	Fraction Collector with Collection vessels to collect 64 fractions, and it should be capable of withstanding approx. 25mL/min (water) or more and the fraction modes are time program mode are elution time mode.						
	Automated peak detection and collection						
	Should have delay calibration sensor						
	Should have diverter valve, allow collection of peaks						
	Should have GLP features, electronic records of maintenance and errors						

	Chromatography Software:-						
	Single Keyboard control of entire system						
	Parameter validation management						
	Compatibility with diode array, UV/Vis, RI and fluorescence detectors						
	Compatibility to import and export the data.						
	Ability to acquire and analyze and store spectral library.						
	Flexible report publisher to make report in desired format.						
	Maintain security and regulatory compliance.						
	Columns:- Should quote Semi-preparative columns C18/C8 (10µm, 19mm i.d. X 300mm) with Guard column and holder.						
	Computer and Printer:- System should come with a compatible higher version branded window based computer and HP Laser Jet Printer with suitable load online UPS with 60 minute backup.						
	Optional:-						
	Auto Injector:-						
	System should have auto injector with 0.1ul – 100 ul standard Loops with RSD 0.3% max.						
	Cross contamination: 0.1% max.						
	No. of repeated injections: 30 minimum per sample with operating pH range: pH1 to pH14						
	It should accommodate different vials.						
	Or manual injector:- With manual loops 5, 20, 50, and 100 µl capacity.						
	7 or 10 liter bath sonicator and concentrator.						
	Suitable UV detector equivalent specs of PDA and RI detector.						
	Suitable Column Oven.						
	Accessories:- Necessary spares like nuts, ferrules, tubing, gaskets, piston seals, sample and solvent filtration kit etc.						
	Note:- All machines should have two year warranty and quote for optional three year AMC.						

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Schedule of Quantity

S. No.	Description of Equipment	Quantity	Make & Full Specifications of items	Rates F.O.R. Destination		Taxes if any	Remarks
				In words	In figures		
1.	**Specification for Zeta Sizer:** 1. System work on Dynamic Light Scattering Technique for the measurement of Nanoparticle size and Zeta potential. 2. The system should be based on Backscattering technology or Avalanche photo diode (APD). 3. Angle of Measurement should be 90 or 180 degree. 4. Particle size range should be 1 nm to ≥ 1000 nm 5. Sample Temperature should be 10 to 80ºC. 6. Temperature accuracy should be +/-0.3ºC. 7. Solid state laser of 658 or 780 nm should be light source. 8. Cell of analysis should be either built in cell or replaceable cells. 9. The System should be supplied with window based operation and control software. 10. System should come with a compatible higher version branded window based computer with suitable load online UPS with 60 minute backup. 11. Should have good features, electronic records of maintenance and errors. 12. A standard warranty of two years should be offered for the total system. **Optional Item for Auto titration attachment:** 13. The system should have provision to upgrade and connect with Auto-titration system to measure zeta potential as a function of pH and additive concentration. 14. Zeta Potential range: -125 to +125mV. 15. Zeta Potential Accuracy: +/-3.8 mV. 16. Concentration range: 0.01% min. to 40% max.	01 No.					

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Schedule of Quantity

S. No.	Description of Equipment	Quantity	Make & Full Specifications of items	Rates F.O.R. Destination		Taxes if any	Remarks
				In words	In figures		
1.	**Specification for Milking Parlor (Computerized Automatic 2 x 6 Herringbone or Equivalent type) Machine:** (Milking Machine herring bone type multiple unit suitable for milking 12 Cows at a time along with all needed accessories and fitting etc on turnkey project basis) a) Advance Vacuum System b) Vacuum regulator c) Vacuum pipe line d) Milking Unit - 12 Nos. e) Milk measuring system – 12 Nos. f) Control panel - 12 Nos. g) Milk receiving system h) Milk receiver i) Milk line j) Milk transport line upto milk chiller k) Cleaning system complete l) Wash line m) Installation component n) Electrical control panel & cabling complete o) other needed accessories/parts as per required for this machine	01 Unit					

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Schedule of Quantity

S. No.	Description of Equipment		Quantity	Make & Full Specifications of items	Rates F.O.R. Destination		Taxes if any	Remarks
					In words	In figures		
1.	**Specification for water reservoir tanks and water supply for recirculatory system under RKVY:**							
	1 **Large reservoir tank:**	800m^2 with 1.0 m depth and partition in the middle, CC with water proofing, fully drainable with drain inside width 0.3 m and length upto existing river, structure with enough strength to raise the height upto 1.5 m.	1 No.					
	2 **Water Supply:**							
	a. Tubewell to reservoir tank	6" GI Pipe	(Approx) 150 m					
	b. Reservoir tank to overhead tank with electric pump	4" GI Pipe	60 m					
	c. Overhead tank to Recirculatory system	3" GI Pipe	80 m					
	d. Cemented water drainage from recirculatory system to the site for disposal of rejected water and excretory discharge.	Cemented open drain with inner dimension 1.5' x 1'	Upto existing river (50 m approx.)					
	Terms and conditions:- 1. All rates, inclusive of cost of bearing strength evaluation of the site and design preparation of the structures, are to be quoted for GBPUAT, Pantnagar and in terms of units (per m^3 or m). 2. All structures should be seismic proof. 3. Bearing strength evaluation report and design of the structure with specification for construction work to be submitted by the tenderer with their bids. 4. For item no. 2 the payment shall be made as per actual measurement on quoted rates. 5. Payment shall be made as per university rules for civil work/ as decided by competent authority. 6. All tenderers to give technical presentation in front of Technical Committee. 7. Completion period of the work -60 days from the date of order. 8. Minimum experience for such construction work -5 years. 9. Guarantee of Structure-10 years. 10. Annual turn over -100 lakh..							

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Schedule of Quantity

S. No.	Description of Equipment		Quantity	Make & Full Specifications of items	Rates F.O.R. Destination		Taxes if any	Remarks
					In words	In figures		
1.	**Specification for water reservoir tanks and overhead tank and water supply for recirculatory system under Institution of Excellence:**							
	1 **Reservoir tank:**	$400m^2$ with 1.0 m depth and partition in the middle, CC with water proofing, fully drainable with drain inside width 0.3 m and length upto existing river, structure with enough strength to raise the height upto 1.5 m.	1 No.					
	2 **Water Supply:**		(Approx)					
	a. Tubewell to reservoir tank	6" GI Pipe	50 m					
	b. Reservoir tank to overhead tank with electric pump	4" GI Pipe	30 m					
	c. Overhead tank to Recirculatory system	3" GI Pipe	50 m					
	d. Recirculatory System to reservoir tank	4" GI Pipe	90 m					
	e. Cemented water drainage from recirculatory system to the site for disposal of rejected water and excretory discharge.	Cemented open drain with inner dimension 1.5' x 1'	Upto existing river (50 m approx.)					
	3 Overhead tank	50000 L height 15'						
	Terms and conditions:- 1. All rates, inclusive of cost of bearing strength evaluation of the site and design preparation of the structures, are to be quoted for GBPUAT, Pantnagar and in terms of units (per m^3 or m). 2. All structures should be seismic proof. 3. Bearing strength evaluation report and design of the structure with specification for construction work to be submitted by the tenderer with their bids. 4. For item no. 2 the payment shall be made as per actual measurement on quoted rates. 5. Payment shall be made as per university rules for civil work/ as decided by competent authority. 6. All tenderers to give technical presentation in front of Technical Committee. 7. Completion period of the work -60 days from the date of order. 8. Minimum experience for such construction work -5 years. 9. Guarantee of Structure-10 years. 10. Annual turn over -100 lakh..							

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