



DIRECTORATE OF AYUSH HARYANA

(AYURVEDA, YOGA & NATUROPATHY, UNANI, SIDDHA AND HOMOEOPATHY)

AYUSH BHAWAN, NEAR YOUTH HOSTEL, SECTOR-3, PANCHKULA

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1. SCHEDULE OF REQUIREMENTS AND TECHNICAL SPECIFICATIONS

	EQUIPMENTS	Count	Justification	Specification	Bid Security
1.	Volatile oil determination apparatus.	01	Quantitative estimation of Volatile oil in Plant Drugs and Formulation.	Good Quality of Borosilicate (Cleavenger Apparatus) One 100 ml capacity flask and with One 1000 ml of capacity .	300/-
2.	Refracto-meter	01	Determination of Refractive Index	<ol style="list-style-type: none"> 1. Light source : LED Lamp. 2. Measurement Range : 3. Refractive index (nD) from 1.32422 to 170000, Brix 0.00 to 100.00%. 4. Minimum Indication: 5. Refractive Index (nD)0.0001(0.0001), Brix 0.01%(0.1%), Temp0.01 Deg C 6. Measurement Accuracy: Refractive Index (nD)\pm0.0001* 7. Measurement Temperature: 10.00 to 75.00 Deg C 8. Temperature accuracy : \pm0.05 Deg C 9. Temperature Operating range : 10 to 40 degree C. 10. Temperature controller : Built-in Peltier Thermo- module. 11. Output: Printer and PC(RS-232 port), Computer-USB. 12. Printer: Dot matrix printer(ordinary Paper): 1No.) 13. Self-Diagnosis Scale: The instrument can detect irregularities with intensity of light. 	700/-
3.	Polari meter	01	Determination of optical rotation	<p>Measurement Scale: Angle of Rotation, International Sugar Scale (with/without temperature compensation), Specific Rotation, Concentration, Purity and Angle of Rotation (Temperature Compensation of Quartz Plate)</p> <p>Measurement Range: Angle of Rotation -89.999 to +90.000°</p> <p>Resolution: Angle of Rotation 0.001°</p> <p>Measurement Accuracy: Angle of Rotation Displayed Value + 0.005 o (-45 + 45 o)</p> <p>Sensitivity: up to OD2</p> <p>Measurement wavelength: 589nm (D-line)</p> <p>Display method – minimum 5 inch color LCD + touch screen</p> <p>Sleep and timer feature</p>	10000/-

4.	Moisture determination apparatus (IC filtrator.).	02	Moisture determination in drugs, powder drugs.	<ol style="list-style-type: none"> 1. Weighing capacity (Max) 35 g Accuracy of the weighing system 1 mg 2. Repeatability (average) from about 1 g initial sample: ± 0.2 % from about 5 g initial sample: ± 0.05 % 3. Readability 0.01 % 4. Display of results % moisture % dry weight % ratio g residual weight 5. Shutoff criteria Fully automatic Timer mode: 0.1 to 99 min 6. Sample heating :- Halogen Heating source 7. Access to sample chamber Flip-open cover with wide-angle opening 8. For conformity with FDA/HACCP regulations Aluminum panels (in place of glass panels) 9. Operating temperature range and setting: 40°C to 160°C (104°F to 320°F), adjustable in 1°C increments 10. Operator guidance Symbols 11. Program memory capacity 1 program 12. Measured value memory capacity Final value stored until subsequent measurement begins 13. Printout of measured values Short printout GLP-compliant record in German, English, French, Italian, Spanish or Russian 14. Interface port RS-232C, 25-pin connector for transfer of values to a printer or computer. 	5000/-
5.	Sieves 10 to 120 (set)	01	To measure Particle size of	Complete Set (Yellow Metal) (pittal) with shaker.	300/-
6.	G.L.C. with F.I. detector.	01	To separate and identify the compounds in a mixture	<p>Microprocessor controlled Gas Chromatograph with packed injector, capillary injector, EPC/PPC pneumatics control for all the gases, data station based on computer and printer system with the following technical specification: -</p> <p>I. OVEN <u>Temp. Range</u> - Ambient to 450°C with accuracy of ± 0.1 °C in steps of 1 °C <u>Capacity</u> - Large oven with minimum 10 Liters capacity and with two injector ports (one packed and one capillary) should be installed simultaneously. <u>Column Facility</u> - All type of columns including packed (stainless steel, Glass) wide bore or capillary column (maximum two different types of column) can be installed simultaneously. <u>Temp. Programming Rate</u> - 0.1°C to 120°C/min in steps of 0.1°C increments <u>Auto Cooling</u> - Without door opening from 450 °C to 50 °C in approx. 5 min. <u>Programme steps</u> - Min. 10 programme steps and 9 programme ramps</p> <p>II. INJECTOR PORT Total 02 Nos.</p>	18000/-

				<p>A) Packed injector port- 01 No. Temp. Range:- Ambient to 450 °C with accuracy of +/- 0.1 °C in steps of 1°C Capability:- Should accept glass packed column, stainless steel column or wide-bore capillary columns</p> <p><u>B) Capillary injector port- with split /splitless facility</u> 01 No. Temp. Range:- Ambient to 400 °C with accuracy of +/- 0.1 °C in steps of 1°C Capability:- Should accept all capillary column up to 100 meter length Pressure range : 0-100 psig (for 0.20 mm column) and 0-150 psig (for < 0.20mm column)</p> <p>III. FLAME IONIZATION DETECTOR — (FID Detector) 02 Nos. Temp. Range- 450 °C maximum operating temp. with accuracy of +/- 0.1 °C in steps of 1°C Sensitivity- > 0.015 coulombs/g C Linearity- 1x10⁷ min. Minimum Detectable level for Tridecane - <1.8 pg C/S</p> <p>Standard EPC/ PPC for three gases (H₂, N₂, Air) Detector adaptable for packed and capillary column installed and operated simultaneously with independent temperature and pneumatic control. Temp. Control:- All the temperature and gas flow of injector, Detector and Oven should be controlled through key board of the computer as well as dedicated key board of instrument. Pressure Control :- Three-ramps pressure program. Automatic leak testing with EPC/PPC. EPC/PPC pneumatics — four software configurable modes: programmed flow, programmed pressure, programmed velocity or constant flow. Vacuum compensation software selectable. EPC/PPC pneumatics including automatic control of split vent by split flow or split ratio. Developing and storage of unlimited methods/ Programmes. Long-term battery backup of GC methods, flow and temperature-calibration data</p> <p><u>Software calibration o oven tem • erature and carrier as low with EPC/PPC and conventional pneumatics.</u></p> <p>IV Data station based on computer and Printer and dual channel window based software:- Full instrument control via external computer. Data station based on dual channel chromatography software serve as a Data manager for the overall system compatible with all</p>	
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				<p>commercial LC's and GC's and capable of tracing chromatogram, printing RT, peak area, peak height etc., with facility to perform quantitative " analysis using internal standard and external standard area percentage, normalized percentage giving the final results in term of percentage of active ingredient in the sample confirming to the following specifications.</p> <p>Computer Configuration :- (Internationally reputed branded computer, HP Compaq)</p> <p>Computer with printer (latest for office)</p> <p>ACCESSORIES:- Essential accessories consisting of following:-</p> <p>Columns:-</p> <p>Packed Column (2 each):</p> <ol style="list-style-type: none"> 1. SS Column, length 1 M packed with chromosorb W (AW-DMCS treated) particles size 80/100 mesh packed with 5% OV-101. 2. SS Column, length 1.5 M packed with chromosorb W (AW-DMCS treated) particles size 80/100 mesh packed with 5% SE-30. 3. SS Column, length 1 M packed with chromosorb W (AW-DMCS treated) particles size 80/100 mesh packed with 3% Dexil-300. 4. Glass Column 100 cm. length packed with 3% OV — 225 on chromosorb WHP mesh 80/100 size. 5. Glass Column 50 cm. length packed with 5% DC — 200 on chromosorb WHP mesh 80/100 size 6. Glass Column 150 cm. length packed with 5% Apizone-L on chromosorb WHP mesh 80/100 size 7. Glass Column 100 cm. length packed with 5% OV-17 on chromosorb WHP mesh 80/100 size. <p>Fused Silica Capillary Column :-</p> <ol style="list-style-type: none"> 1. Fused Silica Capillary Column BP-5, 30 M length x 0.53 mm x 0.25 um film thickness or equivalent <p>Note:- The columns should be pre conditioned.</p> <p>Gas Purifier Station :-</p> <ol style="list-style-type: none"> 1. Gas Purifier Station complete with
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				<p>regulator pressure gauge, on/off valve and Molecular Sieve Filter (3 Nos.), Charcoal Filter (3Nos.), Oxygen Trap (1No.)</p> <p>UPS system (5 KVA) should be quoted.</p> <p>Gas Cylinders :-</p> <p><i>Nitrogen Gas cylinder-</i> 47 Liter water capacity filled with ultra high purity gas with double stage pressure regulator with Stainless steel Diaphragm (01 No.)</p> <p><i>Hydrogen Gas cylinder-</i> 47 Liter water capacity filled with ultra high purity gas with double stage pressure regulator with Stainless steel Diaphragm (01 No.)</p> <p><i>Air Gas cylinder-</i> 47 Liter water capacity filled with ultra high purity gas with double stage pressure regulator with Stainless steel Diaphragm (01 No.)</p> <p>Spares:-</p> <p>Syringe Hamilton syringe (10 [11 capacity]) (6 Nos.)</p> <p>Spike filter (1 Nos.)</p> <p>Inlet liners (10 Nos.)</p> <p>Silicone Septa (100 Nos.)</p> <p>Ferrules & Nuts (1/8" & 1/4" OD Packed Columns and fused silica capillary column) (10 No.each)</p> <p>The GLC System should be complete in all respect including Nuts and Ferrules, Tool Kit, Tubing, Connectors, Fittings, Adaptors etc. necessary to install and demonstrate analysis of Pesticide Samples. Supplier should also arrange free training to our 2 or 3 chemists for at least three days after installation. Also the GLC system should have complete warranty of three Years from the date of installation. The tender must indicate maintenance-based (not visit-based) AMC charges for the quoted model for a period of three years after the warranty period. Consolidated price as per the above specification (inclusive of all taxes) should also be quoted at the end even if price for individual items are quoted.</p> <p>Optional: Auto-sampler and Head Space (its price should not be included in the consolidated price).</p> <p>Service Facilities: The equipment is to be installed at Govt ayurvedic State Drug Testing Laboratory</p>	
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				Kurukshetra, Haryana . The supplier should have service centre available at site/nearby station authenticated by a certificate from the manufacturer giving clearly name and address. He should also have factory trained service engineer to attend the equipment/ installation at site.	
7.	Dehumidifier.	One	Humidity Control	Dehumidifier Specs- Digital system, Silent unit, Area Coverage- 25 x 12 ft. With Humidity controller, Range-30% RH - 40% RH CFC free compressor, Water Tank full indicator, pre filter for removing dust. Easy movement facility. Backward air outlet, proper drainage facility.	2000/-
8.	Viscometer (Ostwald's, Red Viscometer.)	One	Determination of Viscosity of any liquid Dosage form	<ol style="list-style-type: none"> 1. Measurement range : suitable for viscosity range 1 - 60,00,000 cps with low viscosity adaptor. 2. Speed : At least 54 variable speeds . 3. Temperature range : 0°c to 100°c. 4. Accuracy : ± 1% of full scale range in use. 5. Repeatability : ± 0.2% of full scale range in use. 6. Display should include selected speed, spindle, reading, % of full scale, sample temperature, Shear rate, Shear stress, density (to be introduced by user). 7. It should have 10 memories or better. 8. Main instrument should be offered with 9. Laboratory stand 10. High and low viscosity attachment/ stand with necessary spindles set to cover the entire range. 11. Small sample adaptor with minimum sample volume 8ml, with temperature bath assembly (water jacket and Pt 100 probe etc.) 12. Probe for temperature check. 13. Guard leg 14. Carrying case 15. Factor finder 16. Standard spindle set to cover the entire range with Ez –lock spindle/ Push plug and release. 17. Standard spindle set for small sample adaptor to cover the entire range with Ez –lock spindle/ Push plug and release. 18. Normal silicone standard viscosity fluids with NIST traceable certificate of following Viscosity - 50, 500, 5000, 60000, 100000 cp 19. Water bath for temperature control. <p>SOFTWARE WITH P.C. AND PRINTER</p> <ol style="list-style-type: none"> 20. Suitable software 21 CFR PART 11 compliance with compatible PC, Printer and UPS. 	10000/-

9.	Boiling point determination apparatus	One	Determination of Boiling Point	<p>Facility to select Melting Point or Boiling Point test type</p> <p>Validation Program for Standard samples.</p> <p>04 Operator names can be stored</p> <p>Different levels of Password protection</p> <p>Temperature range: Room temperature + 2 °C - 300 °C.</p> <p>Accuracy: 0.3 – 0.5 °C.</p> <p>Temperature resolution: 0.1 °C.</p> <p>Heating rate: 1 °C/minute (Starts from set temperature – 10 °C).</p> <p>No of capillary tubes: 1 for Melting Point/ 1 for Boiling Point.</p> <p>Temperature sensor: Pt – 100.</p> <p>Heater: Immersion Type.</p> <p>Power Supply: 230V, 50Hz, 500 W.</p> <p>Capillary: length -75 mm; Diameter: 1.4 – 1.6 mm.</p> <p>Display: 240 x 64 Graphic LCD.</p> <p>Input: 4 x 4 Tactile Keyboard + PS - 2 keyboard</p>	3500/-
10.	Silica crucible.	Fifteen	For total Ash and Acid Insoluble Ash .	<p>Silica 50 gm Capacity (5)</p> <p>Silica 100 gm capacity (5)</p> <p>Silica 200 gm Capacity (5)</p>	300/-

11.	Tablet disintegration apparatus.	One	To test the disintegration Time of Ayurvedic tablets.	Dip Speed	30, \pm 1DPM	2000/-
				Stroke Length	5.5, + 0.1cm	
				Water bath temperature range	Ambient +5 to 50°C	
				Water bath temperature accuracy	\pm 0.2°C	
				Water bath circulation	Immersion Pump	
				Beaker volume	1000ml	
				Basket	2x6 test positions (10mesh) USP type A	
				Fluted Disk	6 numbers in each basket USP type A	
				Test Mode	Programmable Time up to 99.59 (hh:mm:)	
				Display	20x2 line back lighted LCD display	
				Keyboard	Alphanumeric splash water proof polyester soft keys	
				Output	Parallel port , PC connectivity for data downloading.	
				Power requirement	230VAC / 50 Hz,	
				Environmental operating conditions	Operation : Indoor Temp. : Ambient to 45°C Humidity : 20% to 80%	
FEATURES:						
<ul style="list-style-type: none"> • Meets Current Specification of USP, IP and other Pharmacopoeias. • Programmable Temperature & Time • Molded clear acrylic water bath with illumination for better visibility. • Capability for dual buffer disintegration test • External temperature sensors available for individual beaker 						

12.	Tablet friability tester.	One	To test the friability of Ayurvedic tablets	Operating Modes	Count or Time, user selectable	2500/-
				Test Mode	Programmable count 1 to 9999 or Programmable Time up to 99:59 (hh:mm) Display Format 99:59:59	
				Display	20x2 line back lighted LCD display	
				Rotation Speed	25, ± 1 RPM - fixed 20-50 RPM, programmable (optional)	
				Count model accuracy	Actual setting ± 1 rotation	
				Standard drum types	2 drum, Roche type or Abrasion type (optional)	
				Drum material	Acrylic – USP	
				Keyboard	Alphanumeric, splash water proof polyester soft keys	
				Out put Printer RS232C	Parallel port, PC connectivity for data downloading.	
				Environmental operating conditions	Operation indoor Temperature Ambient to 45°C Humidity 20% to 80%	
				FEATURES : <ul style="list-style-type: none"> • Meets Current Specification of USP, IP and other Pharmacopoeias.. • Offers a count and time mode • Automatic discharge of the sample into individual sample tray after completion of each cycle • 10° tilting of drums as per USP recommendation • Easy from loading system • Supports friability drum and abrasion drum • Calculation of friability – percentage weight – loss. • Balance interface for sample weight transfer 		

13.	TLC apparatus with all accessories and TLC sprayer	One	Chromatographic Identification For spraying TLC plates	<p>1. Spreader (applicator) made of electroplated brass. 2. Perspex base to support glass plates. 3. Plate rack alluminium, anodised for ten 20x20cm or 20x10cm plates. 4. Spotting template made of perspex. 5. TLC plates set of five 20x20cm. and two 20x5cm, or set of ten 20x10cm and two 20x5cm 6 Glass sprayer with rubber bellow, cap. 100ml 7 Micro-pipette 8. Subscriber for marking lines made of stainless steel 9. Instruction manual. Accessories for T.L.C. Apparatus :- Brass Applicator Aluminium Applicator Spare Spotting template made of perspex. Plate rack made of anodised aluminium to take ten plates. Plate rack made of stainless steel to take plates of 20x20cm vertically for developing. Glass plates all sides ground for T.L.C Size 20x20 cm Size 20x10 cm Size 20x5 cm Chromatography tank with cover for plates of different sizes Size 20x5 cm Size 20x10 cm Size 20x20 cm</p>	1000/-
14.	Water supply demineralised exchange equipment/distillation equipment	One	Distillation of water for cleaning of Glassware and other apparatus of Lab , ultra pure water for the Use In HPTLC and other equipments.	<p>Specification of Complete Lab Ultra Pure Water Purification System directly from tap</p> <p>Prefilter: Should be customized based on feed water quality test report. It should come with integrated booster pump and should produce water that qualifies feed water requirement of the main system to ensure minimum recurring cost down the line. The Complete Ultrapure Water system must give ASTM Type III pure and Type I ultrapure water from a single system. Water purification methods: Adsorption by means of spherical activated carbon, catalyst, reverse osmosis, ion exchange, optional UV irradiation, and end-position particle or sterile filtration</p> <ul style="list-style-type: none"> • The system should handle Conductivity < 1500 µS/cm, TOC < 2000 ppb, Free chlorine < 4 ppm, Fouling Index (SDI) < 10. • The unit should be ideal for a daily consumption of up to 10 liters of ultrapure water with 8l/hr. pure water production rate. • Pretreatment Cartridge should be a combination 	15000/-

				<p>of spherical, catalytic-effective, activated carbon, a catalyst and a downstream reverse osmosis membrane.</p> <ul style="list-style-type: none"> • The system should come with closed bag system of 5 liter inbuilt to store consistently high quality pure water for prolonged period and prevent Contamination by ambient air. Should have technology to avoid time consuming cleaning process as well as use of chemicals. • System should have a horizontally mounted integrated UV lamp with dual wavelength 185 and 254nm for optimized temperature gradient and reliable results. • Deionization cartridge should consist of spherical, catalytic activated carbon with ultrapure mixed bed ion exchange resin in semiconductor quality to deliver long lasting performance and low-maintenance operation. The flow inside the cartridge should be top-down to produces ideal purification kinetics and prevents any mixing of cleaning media. • Final Filter should be 0.45+ 0.2µm pleated double layered sterile grade PESU membrane and should be validated according to HIMA & ASTM F-838-83 guidelines. • System should have touch screen display with intuitive menu navigation facility for easy operation. • Re-circulation feature in standby mode to maintain the purity of the water. • The system should have the volume-controlled dispensing function from 50 ml to 5 l (in 50-ml-increments) to obtain accurate results. • System should be Designed, Developed and Produced under DIN/ISO 9001 certificate Quality Management system. Also ISO-9001 company. <p>Product Water Quality-Type-III Production output: Up to 8 l/h Typical Conductivity: < 20 µS/cm Typical ion retention: Up to 98% Retention of dissolved organic substances: > 99 % (MW > 300 Dalton) Particle and microorganism retention: > 99 %</p> <p>Product Water Quality-Type-I Water dispensing flow rate: Up to 1.0 l/min Conductivity: 0.055 µS/cm compensated to 25°C Resistivity: 18.2 MΩ* cm compensated to 25°C TOC content (system with UV lamp) < 5 ppb Microorganism content < 1 CFU/1,000 ml Particle content (> 0.2 µm) < 1/ml</p>	
15.	Refrigerator (Deep Freeze vertical)	One	To preserve Chemicals and reagents of Lab.	<p>Horizontal Deep Freezer capacity: Capacity Ltr : 260 to 500 ltrs Insulation Thickness : 100 mm</p>	10000/-

PHARMACOGONOSY SECTION

	EQUIPMENTS	Count	Justification	Specification	Bid Security
1.	Hot plates.	Ten	Heating of the Material	Rectangular 18" x 24" Energy Regulator watt 3000	1000/-
2.	Aluminium slide trays.	Fifteen	To preserve Slides	Anodized aluminium fabrication. To hold 75x25mm. glass slide in horizontal position. Capacity 20 slides.	800/-
3.	Trinocular Microscope	One	Microscopic identification of crude drug and Powder drug	Optical System Color Corrected Infinity Optical System [CCIS] Observation Tube Widefield binocular 30° [F.N.20] Interpupillary distance - 55-75mm (48-75mm optional) Nosepiece Reversed quadruple Objectives CCIS® EC Plan 4X, 10X, 20X (optional), 40X, 60X (optional) and 100X-Oil Rackless Stage- 150 x 150 mm surface, 80 x 30mm movement, coaxial controls Condenser N.A. -- 1.25 Abbe condenser with slider slot Focusing Block - Brass gears. Z-Axis movement with 25mm stroke; Fine focus with 2µm minimum increments, coarse focus with torque adjustment. Illumination Built -in transmitted 6V/30W Halogen Fixed Koehler illumination.	1000/-
4.	Micro-slide cabinet.	One	Storage and keeping of Slides	Usual size of the tray is 350 X 210 X 35mm. 500 Slides storage cabinet. (Body make Steel)	500/-
5.	Ocular Micrometer.	One	Drawing of Microscopic Structure	19mm round , 10 mm linear scale (100 division) permanently Attached Scale	1000/-
6.	Stage Micrometer.	One	Measurement of cell Size.	Calibrated glass slide with 1 mm scale length divided into 100 parts	1000/-

7.	Camera Lucida Prism type and mirror type.	One	Macroscopic drawing of plants	<p>(Prismatic) Lemon optical glass prism specially designed hangs over the eye-piece of the microscope. The pencil on the &nbsp;graph is visible &nbsp;moving on the image is drawn on the graph, very compact in design, Prism will be silver coated one side and it will be packed in velvet box.&nbsp;</p> <p>b) Mirror Type : with this unit it is possible to draw the image seen in the microscope. The mirror reflects the pencil point image into an abbe prism clamped over the eye-piece and superimposes it up on the specimen image. The prism box is hinged for quick change of eye-piece for normal observation complete in velvet box.</p>	1000/-
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Deputy Director AYUSH Haryana