**Department of Biotechnology**

**KAKATIYA UNIVERSITY**

**Warangal – 506009**

**Tender for purchase of scientific equipment in Biotechnology Project of DBT**

**SCHEDULE FOR PURCHASE OF EQUIPMENT**

Please quote the lowest for the items listed below. The sealed quotations should reach to **"The Head, Department of Biotechnology, Kakatiya University, Warangal – 506009"** on or before 24th March, 2016 by 5 PM . The University will not be responsible for any postal or other delay in the delivery of tenders.
The tender is subjected to the following conditions:

1. The bidder has to quote basic price. The prices should be for destination. Sales tax, Customs and Import duties if any, Packing and forwarding charges if any, freight charges, any other taxes and charges should be quoted in terms of percentage on basic cost or fixed amount. Any vague statements such as 'Etcetera (etc.)' are not accepted.
2. The payment will be made within a reasonable time after the receipt of goods in a good condition and successful installation and demonstration.
3. The company invoice with all supported vouchers should be submitted.
4. Items of rate contract, if any, together with supporting documents should be furnished.
5. The equipment should comply with the description, particulars and specifications offered by the bidder, which are accepted by the institution. Any deviation is reliable for rejection of the tender (or) rejection of the equipment even after supply.
6. The period of delivery from the date of placement of order should be clearly mentioned.
7. The time of installation should be clearly mentioned and any delay on the part of suppliers for supplying equipment, installation and demonstration will be penalized.
8. Copies of the manufacturers test report and quality control cell clearance report should be made available along with the equipment when it is supplied.
9. The quotation must accompany the list of reputed organizations, laboratories and educational institutions having at least 5 years standing for which the equipment is supplied.
10. Performance certificates about the performance of the similar type of equipments from the heads of at least three reputed organizations should be submitted along with the tender.

11. The companies must be ready to demonstrate the equipment in front of a Purchase/Expert committee at the Kakatiya University, Warangal at their own cost if required. The decision of Purchase/Expert committee is final.

12. It is not binding on the institution to accept the lowest of the tenders.

13. The institution reserves the right to place order for individual items with different tenders. The quantities indicated herein can be modified without any intimation. The University reserves the right to differ the purchase of any item/all items without any intimation.

14. All the tenders must be sent in registered post, acknowledgment due. The university will not be responsible for any postal delay or loss of tenders.

15. The purchaser will not pay separately for transit insurance and the supplier will be responsible till the entire items/equipment contracted for are delivered and installed in good condition at various destinations. The list of which will be provided by the University.

16. If the equipment delivered at the site is rejected, the University is not responsible for paying any charges and the supplier is solely responsible for removing the equipment. If such equipment is not removed from the site within a period of two weeks, the University reserves the right to remove it from the site and the risk has to borne by the supplier. The institution reserves the right to cover handling and storing charges in case of such event.

17. In the case of a dispute between the institution and the supplier, the dispute shall be referred to Indian arbitration. Venue of arbitration shall be at Warangal.

18. The supplier has to give a guarantee for the equipment and its performance as per specifications for a minimum period of Thirty six months or the duration agreed upon by both the parties, from the date of installation and commission. If during the above said period, it is found that the performance is not up to the mark, the decision of the purchaser in that behalf is final and is binding on the supplier. The supplier has to rectify/replace such defective equipment at his own cost. Otherwise, supplier has to pay compensation.

19. The supplier shall provide servicing facilities throughout the warranty period by trained people at his own cost.

20. The tenders should be valid for acceptance up to a period of six months.

21. The quotations with overriding condition will be summarily rejected.

22. Only those firms should respond who are the manufacturers or authorized dealers. A certificate to this effect duly signed by the manufacturer should be attached by tenderer(s).

23. Bidder should enclose the bid, income tax and commercial/sales tax clearance certificates issued by competent authorities for the last financial year for which the assessment exercise has been completed by the relevant tax authorities.

24. The tenders should be addressed to The Head, Department of Biotechnology, Kakatiya University, Warangal – 506009.

25. The envelope must be super-scribed with Group and Item code for which quotations are being submitted.

26. Separate tender for each Group has to be submitted.

**I. GREEN HOUSE : STRUCTURE – TECHNICAL SPECIFICATION**

**Total Area: 475 sft**.

| PARTCULARS OF AREA | DIMENSIONS | UNITS |
|---|---|---|
| Total covered area of facility | 475 sft | One |
| Controlled Area | 450 sft | |
| Size | 25' x 18' x 9' : 12' (LXWXSH:CH) = 450 sft | 1 No. |
| No. of bays | | One |
| Bay width | 18' | |
| Green House length | 25' | |
| Green House width | 18' | |
| Side height | 9' | |
| Ridge height | 12' | |
| Production of crop | Nursery plants | |
| Purpose | | |
| Shape | | |
| Doors | Hinged Door : 6.5' H x 3.5' W Main entry | 1 No |

**PRODUCT TECHNICAL DETAILS**

**I) SUPER STRUCTURE:**

**A**) All Structures, Rafters, Perlins, Trusses SHOULD be hot dip galvanized and designed to take a wind load up to 120 km/h.

**SPECIFICATION:**

**Frame:** All galvanized steel to be used and designed as per IS875 fore end wall and side wall framing. Aluminum corner trims, aluminum ridge bar and Galvanized gutter trim Brackets & Fasteners as required to assemble frame.

**Pipe:** The GI 50x50mm, 42mm, 32mm thickness with min. 2mm +/- 1 mm.

**1 Complete Set**

**B) Nuts and other metallic parts:** Should include all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).

**C) Each Door Size:** 6.5' wide x 3.5' tall & wide hinged door lockable, complete clear 6 mm polycarbonate glazing, top & bottom tracks, jambs, Lashings & installation hardware. It should be positioned at centre or side wall of buffer room as per the suitability of user.

**1 No**

**3) CLADDING**

**Cladding with polycarbonate sheet:** 6mm thick multi walled, UV stabilized with geeignet gaskets for all sides & roof, set of greenhouse. Roof, end walls & side walls for the greenhouse-set along with buffer room for rigid covering. 6 mm thick clear multiwall Lexan polycarbonate sheet, Aluminum Profile, EPDM gasket, Geeignet gaskets, Silicon sealant, and accessories. Roof and Side wall covers by 6 mm, UV stabilized clear polycarbonate sheet (make GE Lexan) details are giving below:

1. Sheet thickness 6 mm,
2. Structure 2 TS
3. Approx. Weight g/m2 1300,
4. Light Transmission 87%
5. K Valve 3.5

**Detail of Lexan Thermo clear sheet**: 2TS 1300 87 3.5 impact resistant, energy saving, multi wall polycarbonate sheet, which features a propriety surface treatment which provide almost total resistant against degradation caused by UV radiation in sunlight. The entire Lexan Thermo clear sheet range carrying a Ten year limited warranty against discolorations, loss of light transmission, and / or loss of strength due to weathering.

**Impact Strength:** Sheet must have outstanding impact performance over wide temperature range -40°C + 120°C and also after prolonged outdoor exposure.

**Hail simulation:** As a roof and side glazing material polycarbonate sheet is subjected to the extremes of weathers storms, hail stones, wind, and snow fall and ice formation. Under these conditions the product should be virtually unbreakable and should be able to accommodate the subsequent temperature changes to conditions without breaking or buckling**.**

**1 Complete Set**

**Light Transmission:** The sunlight which reaches the surface of the earth has wavelength range between 295-2140nm. This optical window should be divided into the following section.

UVB Middle ultra violet region 280-315nm 0 UVA near ultra violet region 215-380nm 0 Visible light region 380-780nm 82% Near Infra red region 780-1400nm 82-20% Middle Infra

via region 1400-3000 62-0%. Polycarbonate sheet should be treated with exclusively antifungal treatment to enhance the life of sheet.

**4) SHADING SYSTEM**

**Roof Screen:** External Shading System: 50°/0/75% UV Stabilized Shading net should be provided for roof covering with rolling arrangement (manual) connecting pipe etc. can be rolled when not required.

**1 Complete Set**

**5)EVAPORATIVE**

**Cooling System Details of water pad cooling system should be like this :**

**A)** 3'tall x 9' long x 100 mm thick **Anti fungal treated cellulose CELDEC** evaporative cooling pad complete with 3T-WMC technology. – All necessary framing material of aluminium required supporting distribution and return piping – Gutters, down spout end caps and drip pan, plumbing kit, pump 220 volt – 1 phase 50 cycles, drilled PVC piping cap, pad retainer, all suspension hard ware – Metal flashings as required to seal pad to vent opening, 4" thick evaporative cooling material.

**Pad Area**: 12' x 3' x 100mm (I x h x Thickness)

**Construction Material**: GI Profiles: Tray Sides, Top Etc. Plastic Profiles: Water Distribution tray, Cooling Media: 100mm thick celdek 7090/500 At velocities of 1 to 3 M/s to give efficiency from 60 to 95% Filtration: 25 to 55 mm viscous filter for 30 m efficiency-. Miscellaneous: Fasteners, Galvanized, Rivet- Aluminum, Water storage Tank: **PVC Tank 500 litres (Syntax).** Pump: 1 HP Mono block (CR1 or approved equivalent)

**1 Complete Set**

By this system temperature lowers by 10°C + 2°C principally from outside when outside maximum humidity 62% of low and temperature 35°C or above whole cooling system based on CT 5000 Technology. For Telangana Climate Conditions: During peak summers inside temp will be maintained up to 30°C & in rainy days it can be maintained mini from 32°C to 33°C.

**B)Slow Speed Axial Flow Fan**- 18" single speed exhaust fan l.5 hp, 220V, 50 cycles, 1 phase, 24000 CFM

**2 nos.**

**6) Mesh** - Stainless Steel 40 Mesh: for extra protection from dust, fitted before the exhaust fans and behind the pad.

**1 Complete Set**

**7) Civil Work A) Foundation/Curtain wall** for all sides of greenhouse, where the structure will be raised. WIDE Based l' below earth's surface, l' above earth's surface, as kickboard 9" wide brick wall. Frame base block height 2'. *(Actually, we need to buildup CC Columns with curtain wall of minimum ift. height to raise the structure: GI Pipes. And the Cooling pad will he accommodating on this curtain wall. Polycarbonaie sh eet can not touch the floor it is always accumulating on the foundation/brick and hack side at cooling pad frame, so this is the basic demand of work).*

**B) Floor:** As it is (Existing cemented floor). And Open Sail

**C) Drainage**: Proper drainage system for water outlet.

**8) Light for visibility**

CFI/Fluorescent tube light 40W, Philips Make with proper fitting and fixtures should be provided inside the greenhouse- 2nos.

**2nos**

**9) Water Tap** A water tap should be fitted with all connecting water pipes, waste pipe and drain etc. inside greenhouse.

**2nos**

**10) Electrical Fittings:**

Complete Wire: ISI Marked/any reputed make with copper wire and insulation with desired load switches / ISI marked of desired load with switches as required MCB: Reputed make/ lSl marked.

**Complete Set**

**11) Humidity System**

Fogging (Misting) unit heavy duty motor with nozzles, filter, pipes etc (PVC Pipes are the best solution, the secan be clean-up or replaced by new also), to raise R.H. up to 70%+/-5%. PVC tank 500 ltrs. (An additional tank for misting unit) provided humidity created is not expelled from the greenhouse etc.

**10) Control panel for Automation:**

Light, Temperature & Humidity Control and monitoring system;

**a)** Technical feature of Photoperiodic Timer for light

Cycle: 24hrs minimum ON/OFF Period 30Min

Accuracy 10sec/day, ambient: +-5 to 45 RH 85% normally

**b)** Technical feature of Temperature Control System

Temp range 0.1 to 59.9, with sensor probe pt-100 (or) Tc cord 5 meters, single phase input power 200-240VAC. accuracy +-I, ambient 5 to 45 d RH up to 85%

**c)** Humidity Control System it maintains RH in range of 4% range 30%-90%

Real RH +- 2% at 45% RI I up to 95%

**II. STEREO BINOCULOR MICROSCOPE WITH LCD ATTACHMENT 9.0**

**NIKON TRINOCULAR STEREOSCOPIC ZOOMMICROSCOPE MODEL SMZ-18 WITH ACCESSORIESMAIN BODY**

MNA53000 SMZ1S Zooming Body **1No**.

**Zooming Range: 0.75-13.5x**

**Zooming Ratio: 18:1**

**Total Magnifications: 3.75-270x (Using 10x eyepieces)**

**EYEPIECE TUBE**

MNB53560 P2-TL100 Trinocular Tube 100 **1No**.

**EYEPIECE LENS**

MMK30102 C-W10XB EYEPIECE LENS 10 X(F.N.22mm) with Dopter Adjuster. **2No**.

**(Adjustment in both the Right and Left Eye Pieces)**

Rubber Eye-shield, reticle lead

MAK99000 Rubber Eyeguard for C-W 10X/15X/20X

**OBJECTIVE LENS**

MNH55100 P2-SHR Plan Apo 1X (NA: 0.15, W.D.: 60mm) **1No**.

**NOSEPIECE**

MND54020 P2-FM Focus Mount Adapter **1No**.

**FOCUS UNIT**

MND52020 P2-FU Focus Unit **1No**.

**FIBER DIASCOPIC UNIT**

MND51610 P2-DBF Fiber Diascopic Illumination **1No**.

MNF52760 C-FLED2 LED Light source for fiber illuminator **1No**.

MQF52055 AC ADAPTER 2 **1No**.

MBF11300 Power Cord BE (220-240V) **1No**.

**NIKON COLOR UNCOOLED DIGITAL FIRE WIRE CAMERA (5 Million Pixels)**

MQA11020 Digital Camera Head DS-Fi2 2/3" high-density CCD; **1No**.
Total number of pixels: 5.24 Megapixels
(effective 5.07 megapixels)

Recordable pixels : 2560 x 1920, 1280 x 960, 640 x 480

Exposure time: 1/1000 to 60sec

MQA25020 **Camera Control Unit DS-U3** **1No**.

NIS--ELEMENTS F PACKAGE included
IEEE1394b card and IEEE1394b cable .
Exposure Control : Program AE, Shutter – Priority AE, FocusAE, Manual with AE lock function, Exposure Correction : 13 steps.
Digital Zoom : 5 to 2400%.
Interval Shooting : 5 Sec – 12 hr. intervals.
Exposure metering : Average metering, Peak hold metering.

Exposure metering range : Position / Size adjustable.

Image adjustements : Gamma Correction, Shading adjustment, black

level adjustment, hue adjustment, color saturation adjustment.

Storage format : BMP, TIFF, JPEG, JPEG2000.

Interface : IEEE1394b(computer control connection).

| | |
|---|---|
| MQF11010 DSCamera I/F cable20/26 | **1No.** |
| MQF52055 AC Adapter 2 | **1No.** |
| MBF11300 Power Cord BE (220-240V) | **1No.** |
| MBB63435 LV-TV Tube adapter | **1No.** |
| MQD42000 C- Mount TV Adapter A | **1No.** |

**Episcopic White LED Illuminator**

| | |
|---|---|
| MNE42700 P2-FIRL LED Ring Illumination Unit. | **1No.** |
| MNE82203 AZLED-PCE Power Cord E (220-240V) | **1No.** |

**Image analysis of software documentatiom.**

| | |
|---|---|
| MQS33000 NIS – Elements D. | **1No.** |

Documentation software, Measurement acquisition, 3D Capability, Image acquisition, Time lapse imaging, Z Stack, Anantations, ND Viewer, Large Format, Macro, Report Generator, Vector layer and Multi Dimensional File Format (ND Format)

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