

## Financial Bid

**(TO BE PLACED SEPERATELY IN FINANCIAL BID SEALED AND LABELED ENVELOPE)**

Specifications and tender cost **(including all applicable tax and transportation to the site)** for Supply, Erection, testing and commissioning of COE on protected cultivation of Horticultural crops at ICAR-IIHR, Bengaluru.

S.No.	Technical Details of component	Units	Price (Lakh Rs.)
<b>1</b>	Automated machine assembly for V type/plug type seedling production with machine housing, preparation yard, input store room and conveyer system.		XXXXXXX XXXXXXX XXXXXXX
<b>1.1</b>	Automated machine assembly for V type seedling production	One Comple e set	
<b>A</b>	Diffuser & Mixer: Diffuse growing medium bricks and other material by means of built in electrical driven pivot system equipped with fluffing mechanism to homogenous substrates. Size: 2438 x 1219 x 1828mm (LxWxH)mm Capacity: 1.4 cubic meters (brick size capacity) Diffuser time: 4 to 5 minutes		
<b>B</b>	Automatic tray filling and Level Control Mechanism: It is fixed between mixer and auto Seeder, control level of material to filled in so that material should not over flow permit only homogenous even material for tray filling.		
<b>C</b>	Trays Dispenser Machine: De stacker machine completely electrical & mechanical. Dispense automatically as program dispensing of fresh and reused trays. It should handle variety of trays. Technical Specifications: Size (L x W x H): 1040mm x 700mm x 1314mm Capacity : 260 trays per hour Operating voltage: 220 volt, 3 Phase.		
<b>D</b>	Auto Seeder: Variable seed elevator conveyer vibration system, selection system, control microprocessor touch screen human interface system with software. Roller chain with emergency stop switches. Drum type seeder with vacuum system to pick up the seeds & released in trays. Electronically control pick& release system on conveyer. Control with infra-red beam/alternative mechanism. Machine should be capable to handle different size of seeds tomato to pumpkin. Capacity : approximately 50,555 seed/hour		

<b>E</b>	Topping Machine: It is used when tray released by auto seeder it will do topping on the seed and also level.		
<b>F</b>	Watering Station:It is used in the line for as auto-watering to the seed tray with control microprocessor.		
<b>G</b>	Stacking unit with Roller Conveyer: For lifting and collection of trays and unloading trays on roller conveyer		
<b>1.2</b>	Conveyer Belt: Conveyer for transportation of pro trays these specially designed conveyer will be used between machine house to greenhouse/hardening chamber. Sizes (L x W x H) 5.5mx0.5m x 0.76m Operation : Operating on 220 volts, AC single phase, 50 Hz. +/-8%	2 units	
<b>1.3</b>	Support Conveyer: This conveyer is used with special electro mechanism which used to shift lane automatically	2 units	
<b>1.4</b>	Housing Facility for the auto seeding machine equipment (pre-fabricated Structure): Size : L x W x Hc:s 30'x 20'X 15': 10' Structure made by: 80mmX50mm, 50mm x 50mm &38mmx38 mm hot dip galvanized pipe. Complete Pre-machined Structure flange based and cladding with puff panel 63mm with inner & outer pre quoted GI sheet 0.5 mm thick. Window: made by Aluminium frame with Polycarbonate sheet 6mm thick multiwall and accessories, window size : 4'x4' Qty. 04 Door: lockable sliding door made by Aluminium frame with Polycarbonate sheet 6mm thick multiwall and accessories, door size 7'x7' qty. 02 nos. Control panels are housed and with lighting. Floor : PCC and tiles flooring	1 unit	
<b>1.5</b>	Preparation yard and tray washing area- Cemented platform open type of size 6mx6m, 0.3m raised above ground level with 02 number cemented pit size: 2.4m x1.5mx0.5m. Both pit including water inlet and drain outlet provision.	1 unit	
<b>1.6</b>	Input Store Room for nursery unit: Store room size:- 12mx6mx2.6m:3.8m. Structure made of Galvanized steel with all side and roof covered with PPGI sheet (0.5mm) profile shape. Room having provision with window-04 nos. of size: 1.2m x0.8m, Electric wiring for Light points, fan points and plug points 2 each one lockable door. Civil Foundation: - wide based 2ft below earths surface. 2ft above earths surface foundation wall 9"wide dully plastered and painted, Frame base block height 3'X9"x9" each. Plinth protection of 3ft wide and 6 inch thick. Floor: made by PCC (1:5:10) 100mm thick then CC (1:2:4) 100mm thick and then duly plastered. Floor height will be approx. 1ft above natural ground level.	1 unit	
<b>1.7</b>	Charges for technical supervision, operation and maintenance of all machineries, gadgets, equipments, implements, tools etc provided by the firm like seeding machineries, climate control system, weather data acquisition system, automated irrigation and	One job	

	fertigation system, fan and pad cooling and fog cooling system solenoid valves, controllers, etc for 2 months. During this period onsite training to IIHR staff also to be imparted about the plant operation and maintenance (labour assistance is from IIHR, crop growing is from IIHR).		
S.No.	Technical Details of component	Units	Price (Lakh Rs.)
2	<b>Computerized Climate controlled Polycarbonate nursery unit for primary hardening;</b> 768sq.m with benching system, boom irrigation, PAR lighting, heating, motorized shadenet and side vent, fan and pad cooling, auto weather station.	One Complete set	
<b>A</b>	<p><b>Polycarbonate structure</b>  Total Area: 806 sq.m; Type: <u>Flange based technology</u>. Facility should be 100% welding free.  Bay width: 9.6 m; No. of bays: 3nos; Greenhouse length=28.8m; Greenhouse width= 28m=gutter length;  Gutter height: 4 m; Ridge height: 6 m; Grid size : 9.6m x4 m;  Shape: Gothic; Gutter slope : 1-2 % provided in civil work;  Double Door entry Room: 3m x 3m.x2.43m. (LxWxH); Seedlings production capacity: approximately 3,00,000 seedlings/cycle;  <u>Main features:</u></p> <ol style="list-style-type: none"> <li>Complete Pre-machined Structure and cladding with Polycarbonate sheet 6 mm thick multiwall UV stabilized material on top and sides;</li> <li>All Structures, Rafters, Purlins, Trusses are hot dip galvanized iii) And designed to take a wind load up to 120 km/hr.</li> <li>Design Loads: i) Wind Load Resistance: 100 km/hour. ii) Accessory Load Resistance: 10 kg/sq. m</li> </ol> <p><u>Frame Works Structure:</u> Its assembly style without any welding point. All main parts are hot dip galvanized steel tube with zinc cover 275g/m<sup>2</sup>.;</p> <p>Will be having following components: Columns: (Rectangular Profile), Corner Columns: (Double Column, Rectangular Profiles), GI Gutters, Arches (Pipes), Arch Column Clamp (Galvanized Steel Sheet), Crop Bar ( Galvanized Pipe), Corner Reinforcement (Rectangular Profile), Column-Arch Reinforcement (Galvanized Pipes), Column-Column Reinforcement (Galvanized Pipes), H – Reinforcement Galvanized Rectangular Profile), X-Reinforcement (Galvanized Pipes), Crop Bar-Arch Reinforcement (Galvanized Pipes).</p> <p>Pipe sections to be used for different Structural Member or equivalent will be as below, given structure size in OD:</p> <ol style="list-style-type: none"> <li>Pillar: 80mm × 50mm × 2mm thickness hot galvanized rectangular tubes. Distance between pillars to pillars 4m. Arc to Arc spacing: 2m.</li> <li>Arc: 50mm × 50mm × 2mm thickness.</li> </ol>		

	<ul style="list-style-type: none"> <li>c) Ridge: 50mmx50x2mm thickness.</li> <li>d) Roof purlins 38mmx38mmx2mm thick, purlin to purlin spacing 1.6m</li> <li>e) Trusses bottom member: 42mmX2mm</li> <li>f) Crop bar: 42mmX2mm thickness</li> <li>g) Trusses tie: 32mm tube structural member fitted with Zn plated nuts and bolt.</li> <li>h) Gutter: 4m. Long, 248mm wide and 1.5mm thick molding hot galvanized steel plate</li> <li>i) Roof beam: 40x30x2mm hot galvanized rectangular tubes</li> <li>j) Bolts and Nuts: DIN Steel</li> <li>k) Fasteners and other metallic parts: Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).</li> </ul>		
<b>B</b>	<p><u>Pre Entry Room &amp; Doors:</u></p> <ul style="list-style-type: none"> <li>a) Ante Room/Vestibule: The hardening chamber will have a specific Pre Entry Room of size- 3m. × 3 m. × 2.43m. (L×W×H), made by polycarbonate sheet 6mm and galvanized tubular frame, PCC flooring.</li> <li>b) <u>Sliding Doors:</u> 1.5 m. wide &amp; 2m. tall single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware.</li> <li>c) <u>Air curtain:</u> auto on/off when door opening/closing.</li> </ul>		
<b>C</b>	<p><b>COMPUTERIZED CLIMATE CONTROL SYSTEM, INTERNET BASED :</b>Computerized control system to sense, control, record and monitoring the following parameters- Light (photoperiodic control), Temp, R.H., Thermal Screen inside and Boomer etc. Computer hardware / Software with accessories. Housed in Pre-fabricated Structure 4mX3m and cladding panel 63mm with inner &amp; outer pre quoted GI sheet 0.5 mm thick adjoining to primary hardening polyhouse.</p> <p><b>CLIMATE CONTROL SOFTWARE:</b> Climate compartment with multi-day average radiation sum program to achieve an average ambient temperature during one or more 24-hour periods; Measuring and controlling of temperature and humidity,</p> <ul style="list-style-type: none"> <li>a) Control heating system, Control of side vent motor based on running time,</li> <li>b) Control program with temperature settings to start the fan system;</li> <li>c) On/off control of exhaust fan step</li> <li>d) On/off switching air inlet control with input for safety contact to release the exhaust fan step</li> <li>e) Inside curtain control with shading/energy functions</li> <li>f) Control of misting pump</li> </ul>		

	<p>g) Control of misting valve for humidification</p> <p>h) On/off control of air circulation fans</p> <p>i) Sensors to record temperature and RH at 4 location in greenhouse and record continuously in the computer.</p>		
<b>D</b>	Horticulture PAR lamp:-Gavita Pro 600 W Electronic HPS E40. -- Philips Master GreenPower 600W EL Plus. L, Special light for plants for providing essential photosynthesis wave length of 400-700nm to the plants for optimum growth & production. Qty-24Nos.		
<b>E</b>	Forced Cooling System: Axial Flow Fan 1250mm, 06 numbers, Three phase, with damper mechanism, HD motor fixtures and a 3000 litre water tank to distribute and collect water from pad, standard PCC base for water tank, shelter for wetting pad pump if not submersible, cel-pads complete 6" thick 38.4m long, 5' height with Cooling pad , 6"size, frame made of Aluminium channel with male female extruded hinge, back openable for easy pad servicing and maintenance.		
<b>F</b>	Trolley for grown up seedling handling 04 numbers		
<b>G</b>	Complete Electrification		
<b>H</b>	Air circulation fan:- Horizontal air circulation fan 230V, 50HZ, 6500cfm capacity with SS housing and fixture- qty. 6nos.		
<b>I</b>	Pest Monitoring System.		
<b>J</b>	Water Applicator: for irrigating the plants one boomer with 3 ways nozzle, holding span rail/rod in a bay, with trolley, automation panel, sensors, movable track and transfer track, Water boomer nozzles span is adjustable height-wise. Adjustable range of water applicator span: From Lowest 1.67 m. (up to a normal human eye height) to nearly 4.5m.1 No.		
<b>K</b>	Internal Screen:- Motorized Internal 50% aluminet Screen mechanism using Gear Motor with Inbuilt limit switch for smooth control, Rack & Pinion, Support Aero wheel, Handspike driving shaft, Rolling axes, Pull Rod Clamp, Directing clamp, aluminium pipe, polyester wire having with high abrasion strength- which results smooth operation & long durability,		
<b>L</b>	Side wall & Ventilation: - motorized operated sensor based , driving shaft, Rack Arc & Pinion, Shaft support plate, covered with 40x40mesh Nylon net with UV stabilized from inside to prevent insect Entry inside the chamber generally used during power failure. Window lift up to 1m wide & length as per chamber's length. Remaining part polycarbonate wall. 02 numbers.		
<b>M</b>	Nursery Tray Holding Station: for accommodation of seedlings trays (size 29"x18") LxW), nursery tray holding station by zero balance levelling technique made by GI frame 32x32mm 3mm thick with aluminium frame 72mm x42mm x 2.5 mm thick : complete set for entire greenhouse.		

N	<u>Civil work for PC greenhouse:</u> a) Wide based brick/solid concrete block 2' below earth's surface and 2' above earth's surface, as kick-board 9" wide. b) <u>Frame base block height:</u> 3'x9"x9"each with plinth protection 6'wide 6" thick. c) <u>Floor:</u> made by PCC (1:6:8)100 mm thick then PCC (1:2:4) 100 mm thick and over that tiled white color, anti-slippery hard material. Total Floor area : 806 sq. m d) <u>Frame base column:</u> Galvanized channel 12mmX42mmX72mmX42mmX12mm and 3mm thick, C channel with Grouting CC (1:2:4) block, each block size 3'X1'X1' e) <u>Plinth protection:-</u> 2'wide 6"high cemented (PCC) plinth protection around the climate controlled Greenhouse.		
O	Weather Station:- with Rain sensor, Temperature and RH Sensor, wind speed, wind direction sensor, Light sensor. All parameter to be continuously recorded in the computer.		
2.1	Thermal trays 198 cell and portrays 99 cell 2000 & 4000 no. each to run the units for two cycles		
S.No.	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
3	<b>Naturally ventilated polyhouse for secondary hardening of seedling: 1536sq.m. with boom irrigation, benching system, fogging system.</b>	One Complete set	
3.1	<u>Naturally ventilated Polyhouse: Area: 1536 Sq. m.</u> Bay width: 9.6 m., No. of bays: 4nos., G.H. width: 38.4m., G.H. length: 40 m, Gutter height: 4m, Ridge height: 6 m, Grid size : 9.6 m x4m, Top Vent: 40m length, x 1m, opening- 04 nos., <u>Hardening capacity:</u> Approximately 6,50,000 seedlings per cycle, <u>Structure detail:</u> Type: <u>Flange based technology.</u> All Structures, Rafters, Purlins, Trusses are hot dip galvanized steel and design to take a wind load up to 120 km/h. Without balcony, the structure to be stable with reinforcements and brazing. <u>Specification:</u> Hot dip galvanized GI Steel Structure: Using galvanized tubular structure or equivalent sections. <u>Pipe sections:</u> To be used for different Structural Member will be as below or equivalent : Columns: 80 mm × 50 mm x2mm; Trusses: Bottom cord 50 mm x 2mm; Truss Members 48mm x 48mmx2mm, Bracing 32 mmx2mm, Structural member will be fitted with zinc plated nuts & bolts without welding. Purlins: using profile 32 mm ×2mm thick. <u>Fasteners and other metallic parts:</u> Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).		
A	<u>Cladding:</u>		

	Cladding on roof by Ginegar 200 micron UV stabilized 5 layer poly film having 85% light transmission fixed to profile with spring.		
<b>B</b>	<u>Internal Screen:-</u> Motorized Internal 50% Aluminet Screen retraction mechanism using Gear Motor with Inbuilt limit switch for smooth control, Rack & Pinion, Support Aero wheel, Handspike driving shaft, Rolling axes, Pull Rod Clamp, Directing clamp, Aluminium pipe, polyester wire having with high abrasion strength- which results smooth operation & long durability.		
<b>C</b>	<p><u>Side wall &amp; Ventilation:-</u> All 4 side wall are to be covered by 45cm high parapet wall from ground level and 40x40 mesh (polysack/garware; 120gsm) insect net from parapet wall to gutter level (3.55m height)</p> <p><u>Insect net:</u>Above the parapet wall, the remaining height of side wall to be covered with the single width 40x40 mesh 120gsm monofilament nylon insect net.</p> <p><u>Rollable polyfilm:</u></p> <ol style="list-style-type: none"> <li>Outer side to the nylon net, rollable 200 micron UV stabilized standard poly film have to be provided with GI rolling pipe shaft.</li> <li>For easy and complete manual roll up and down, suitable manual roll up unit with chain arrangement is to be fixed to one end of rolling pipe with a guiding GI vertical pipe. Vertical gourd pipe has to be fixed to other end of the rolling shaft to prevent the oscillation/wobbling due to wind.</li> <li>Rolling pipe shaft section can be maximum of 20m.</li> <li>Polyfilm and insect net are attached to the structure by the spring &amp; aluminium profile. Later on, the spring can be clipped out in order to fit new plastic. The profile does not get distorted and the profile can also be used again.</li> </ol> <p><u>Top Ventilation:-</u> Top ventilation fixed type 1m height covered with 40x40 mesh nylon net. Top vent area 40m x 1m -04 Nos.</p>		
<b>D</b>	<u>Fogging System:</u> Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm <sup>2</sup> pressure rating of various sizes, 10kg/m <sup>2</sup> pressure rating fittings, PVC ball valves, Flush valves for flushing of sub main, suitable overhead lateral pipe supported by wire grid, with pressure gauge, Plastic storage tank 2000L placed on 6" PCC floor, with auto filling of RO water arrangement, high head suitable motor, starter, timer based operation, control panel complete, all weather protection enclosure for motor if not submersible motor.		
<b>E</b>	<p><u>Pre Entry Room &amp; Doors:</u></p> <ol style="list-style-type: none"> <li>Ante Room/Vestibule: The polyhouse will have a specific Pre Entry Room of size- 3m. × 3 m. × 2.43m. (L×W×H), made by polycarbonate sheet 6mm and galvanized tubular frame.</li> <li>Sliding Doors: 1.5 m. wide &amp; 2m. tall single door complete</li> </ol>		

	<p>with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware.</p> <p>c) Floor: Cement concrete with plastering and disinfection trough.</p> <p>d) Air curtain: auto on/off when door opening/closing.</p>		
<b>F</b>	<p><u>Civil works:</u></p> <p>a) Foundation wall for polyhouse brick/solid concrete block wall 2' below earth's surface 45cm above earth's surface, as kick-board 9" wide.</p> <p>b) Frame base block height 3'x9"x9" each with front side wall plinth protection 3' wide 6" thick.</p> <p>c) Frame base column: Galvanized channel 12mmx42mmx72mmx42mmx12mm and 3mm thick, C channel with Grouting CC (1:2:4) block, each block size 3'x1'x1'</p> <p>d) Floor:- Rest of the area with Natural levelled soil with ground cover (weed mat) color black for entire area. 6" thick 75cm wide and 38.4m length standard cement concrete floor on one side width of polyhouse.</p>		
<b>G</b>	Water Applicator System (Boom Irrigation): For irrigating the plants 02 water boomers with 3 ways nozzles holding span rail/rod in a bay, Water boomer nozzles span is adjustable height-wise. Adjustable range of water applicator span: From Lowest 1.67 m. (up to a normal human eye height) to nearly 4.5m. qty. 01		
<b>H</b>	Pop up Fan:- 230v popup fan 18'dia fixed on roof top for exhaust hot air from greenhouse. 09 numbers		
<b>I</b>	Complete electrification		
<b>J</b>	Nursery Tray Holding Station: for accommodation of seedlings trays (size 29"x18") LxW), nursery tray holding station by zero balance levelling technique made by GI frame 32x32mm 3mm thick with Aluminium frame 72mm x42mm x 2.5 mm thick : complete set for entire polyhouse		
<b>K</b>	Temperature and RH sensor (4 location in polyhouse) for continuous automatic sensing and logging in a centralized computer/data logger placed in computer room		
<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>4</b>	<b>Graft acclimatization polyhouse with Fan and pad system cooling, high pressure fog cooling system and benching system.</b>	<b>One unit</b>	
<b>A</b>	<p>Polyfilm covered structure:- Total Area: 256 sq. m.</p> <p>Bay width: 8 m. No. of bays: 1no.</p> <p>G.H. width: 8m. G.H. length: 32m. Side height: 2.5-3.0 m</p> <p>Ridge/central height: 4-4.5 m</p> <p>Grid size : 8m x4 m Shape: Gothic/semi circular</p> <p>Main features: Complete Pre-machined Structure, cladding with 200 micron GinegarPolyfilm with locking spring and aluminum profile.</p>		

	<p>All Structures, Rafters, Purlins, Trusses are hot dip galvanized And designed to take a wind load up to 120 km/hr.  Frame Works Structure: Its assembly style without any welding point.  <u>All main parts are hot galvanized</u> with zinc cover 275g/m<sup>2</sup>, as follows:.</p> <p>a) Columns: Is Hot Galvanized Rectangular Profile, tubular Structures. b) Corner Columns: Double Column, Hot Galvanized Rectangular Profiles c) Arches: Hot Galvanized Steel Pipes. d) Arch Column Clamp: Galvanized Steel Sheet. e) Cross and Reinforcements: Steel Pipes f) Corner Reinforcement: Hot Galvanized Rectangular Profile g) Column-Arch Reinforcement: Galvanized Pipes h) Column-Reinforcement: Galvanized Pipes i) H –Reinforcement: Galvanized Rectangular Profile j) X-Reinforcement: Galvanized Pipes.</p> <p><u>Pipe sections to be used</u> for different Structural Member or equivalent will be as below, given structure size in OD:  Pillar: 80mm × 50mm × 2mm thickness hot galvanized rectangular tubes; Distance between pillars to pillars 4m; Arc to Arc spacing: 4m, Arc: 50mm × 50mm × 2mm thickness; Ridge: 50mmx50x2mm thickness; Roof purlins 38mmx38mmx2mm thick, purlin to purlin spacing 1.6m; Trusses bottom member: 42mmX2mm; Trusses tie: 32mm tube structural member fitted with Zn plated nuts and bolt ; Roof beam: 40x30x2mm hot galvanized rectangular tubes; Bolts and Nuts: DIN Steel; Facility should be 100% welding free structure.</p> <p>Fasteners and other metallic parts: Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).  Design Loads: a) Wind Load Resistance: 120 km/hour b) Accessory Load Resistance: 10 kg/sq. m.</p>		
<b>B</b>	<p><u>Pre Entry Room &amp; Doors:</u></p> <p>a) Ante Room/Vestibule: Pre Entry Room of size- 3m. × 3 m. × 2.43m. (L×W×H), made by polycarbonate sheet 6mm and galvanized tubular frame,</p> <p>b) Sliding Doors: 1.5 m. wide &amp; 2m. tall single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware.</p> <p>c) Air curtain: auto on/off when door opening/closing.</p> <p>d) Floor : 6” thick PCC and plastered with disinfection trough.</p>		
<b>C</b>	<p><u>Forced Cooling System:</u></p> <p>a) Two Axial Flow Fan 1250mm Three phase, with damper mechanism, HD motor fixtures.</p> <p>b) 1000 litre polymer water tank to distribute and collect water from pad, cel-pads complete 6” thick 7.4m long, 5’ height with Cooling pad frame, 6”size, frame made of aluminum channel with male female extruded hinge, back openable for</p>		

	<p>easy pad servicing and maintenance.</p> <p>c) All weather protection to motor if not submersible, 6" PCC plastered flooring to water tank.</p>		
<b>D</b>	<p>Microclimate Control Panel for Temperature with manual operating option and , volt meter , RYB indicator etc. Temperature sensor based automatic fan and pad pump operation for the set temperature.</p> <p>Technical feature of Temperature Control System, -Accuracy: <math>\pm 1^{\circ}\text{C}</math>., -Hysteresis: <math>0.4^{\circ}\text{C}</math> with sensor probe Pt-100 Sensor,</p>		
<b>E</b>	<p><u>Hi pressure Ultrafine fogging system:</u></p> <p>a) to achieve 10 micron drop let size, SS nozzles, copper/metal pipe, high pressure pump 30kg/cm<sup>2</sup> or more to get the desired droplet size with pressure balancing tank.</p> <p>b) 1000 litre polymer tank placed on 6" thick Cement concrete &amp; plastered floor connected to RO water tank with auto filling arrangements.</p> <p>c) Sensors and Control mechanism for the cyclic operation of Fan-Pad system and ultra fine fogging system, to automatically maintain the set temperature/humidity.</p>		
<b>F</b>	<p><u>Internal Screen:-</u> 50% monofilament shadenet, manually retractable with UV ropes, rings/hook and pullyetc for easy retraction.</p> <p><u>External screen:</u> 50% monofilament shadenet spread over 200 micron polysheet</p> <p><u>Side Ventilation:</u> - Fully covered with 200 micron standard UV poly sheet fixed above the height of 45cm parapet wall.</p>		
<b>G</b>	<p><u>Civil work:</u></p> <p>a) Frame base column: Galvanized channel 12mmX42mmX72mmX42mmX12mm and 3mm thick, C channel with Grouting CC (1:2:4) block, each block size 3'X1'X1'.</p> <p>b) Plinth protection:- 2'wide cemented plinth protection around the Greenhouse made by PCC (1:6:8) 75mm thick then CC (1:2:4), 50mm thick with cement plaster finished on top.</p> <p>c) Floor: Natural levelled soil with weed mat. Access path of 75cmX8m is by PCC (1:6:8)100 mm thick than CC (1:2:4) 100 mm thick with cement plaster finished on top.</p> <p>d) Foundation wall for polyhouse wide based 2' below earth's surface, 45cm above earth's surface, as kick-board 9" wide. Frame base block height 3'x9"x9"each.</p> <p>e) Ante chamber floor: given above.</p>		
<b>H</b>	<p>Sensors for measuring temperature and humidity. Temperature and RH sensors (2 sets) to measure and record the data continuously at the central computer system placed in computer room.</p>		
<b>I</b>	<p><u>Nursery Tray Holding Station:</u></p> <p>a) for accommodation of seedlings trays (size 29"x18") LxW), nursery tray holding station by zero balance</p>		

	levelling technique made by GI frame 32x32mm 3mm thick with aluminum frame 72mm x42mm x 2.5 mm thick : complete set for the entire polyhouse. b) Low tunnel: Each bench is welded with 6mm rod, width: bench width; side ht 30cm center height height 45cm; spacing between rod: 2m.		
S.No.	Technical Details of component	Units	Price (Lakh Rs.)
5	<b>Naturally Ventilated Polyhouse for cultivation of Tomato, Capsicum, cucumber 562sq.m</b>	3nos	
<b>A</b>	<u>General specification:</u> a) Poly house size: 23.4mX24m (LXW) = 562sq.m. b) Length: 02 Bays of 9.6m each+ 2 Corridors of 2.1m each=23.4m. c) Width: 24m (4mx6gaps), width=gutter length=24m. d) Grid size: 9.6m x 4m, Side Height:4m, Centre Height: 6m, e) Gutter slope:1.5-2% provided in civil work. f) Type: Flange based technology, Structural member fitted with zinc plated nuts, bolts, clamps, fastners etc., 100% welding free. g) All Structures, Rafters, Perlins, Trusses are hot dip galvanized iron steel. h) Design to take a wind load up to 120 km/h.,		
<b>B</b>	<u>Hot dip galvanized Steel Structure :</u> 1) Using tubular structure or equivalent sections. Pipe sections to be used for different Structural Member will be as below or equivalent : a. Columns: 80 mm x 50 mm and 2 mm thick , b. Arch 60mm x2mm GI and arc to arc spacing 4m c. Trusses: Bottom cord 50 mm x 2mm; d. Truss Members 32mm & Bracing 32 mmx2mm , e. Pillars bracings 42mmx2mm f. Purlins: Using profile 42mm X2mm thick and purlin to purlin distance of 2.4m g. Gutter: each gutter size 4m long, 248mm wide, 150mm depth, and 1.5mm thick molding hot galvanized steel plate. 2) Nuts and other metallic parts: Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).		
<b>C</b>	<u>Cladding:</u> Attaching the Plastic on Roof of Playhouse & pre entry room: Ginegar 200 micron UV stabilized 5 layer poly film having 85% light transmission, five or more layered, anti-drip. This is attached with the structure by the spring, aluminium profile, SDS.		
<b>D</b>	<u>Side wall &amp; Ventilation:-</u> a) All 4 side wall are to be covered by 45cm high parapet wall from ground level and 40x40 mesh (polysack/garware;		

	<p>120gsm) insect net from parapet wall to gutter level (3.55m height)</p> <p>b) Insect net: Above the parapet wall, the remaining height of side wall to be covered with the single width 40x40 mesh monofilament nylon insect net (120gsm polysack/garware).</p> <p>c) <u>Rollablepolyfim:</u></p> <p>i) Outer side to the nylon net, provide rollable 200 micron UV stabilized standard poly film with suitable rolling pipe shaft and clip.</p> <p>ii) For easy and complete manual roll up and down, suitable manual roll up unit with chain arrangement is to be fixed to one end of rolling pipe along with guiding GI vertical pipe. Vertical guard pipe has to be fixed to other end of the rolling shaft to prevent the oscillation/wobbling due to wind.</p> <p>iii) Rolling pipe shaft section can be maximum of 20m.</p> <p>iv) Polyfilm and insect net are attached to the structure by aluminium profile and separate spring..</p> <p>d) <u>Top Ventilation:-</u> Top ventilation fixed type 1m height covered with 40x40mesh nylon net. Top vent area 24m x1m -02 Nos. Arc suitably overlapped to prevent rain splash.</p>		
<b>E</b>	<p><u>Ante room/Pre Entry Room &amp; Doors:</u></p> <p>a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No.,</p> <p>b) Doors: Sliding Doors 1m wide &amp; 2m high single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware, 02 numbers, outer door lockable.</p> <p>c) Air curtain: auto on/off when door opening/closing.</p> <p>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough.</p> <p>e) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</p>		
<b>F</b>	<p><u>Internal Screen:-</u> 50% monofilament shadenet, manually retractable with UV ropes, rings/hook and pullyetc for easy retraction</p>		
<b>G</b>	<p><u>Drip Irrigation System</u> – Inline Pressure Compensated (PC) drip lateral 16mm OD, discharge 2LPH, dripper spacing 30cm, lateral laid out at a spacing of 0.75m, PVC pipes 6kg/cm<sup>2</sup> ; 50mm OD connected at both end of the inline drip lateral, PVC fittings and valves 10kg/cm<sup>2</sup> pressure rating, air release valve, pressure gauge, PVC valves, flush valves for flushing of sub main 04 numbers, inlet connected to common pumping, filtration &amp; fertigation unit.</p>		
<b>H</b>	<p><u>Fogging System:</u></p> <p>a) Four way anti-leak foggers with 28lph discharge which</p>		

	<p>gives very fine droplet size, PVC pipes of 6 Kg/cm<sup>2</sup> pressure rating of various sizes, 10kg/m<sup>2</sup> pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge.</p> <p>b) Plastic storage tank 1000L (with auto filling and stopping arrangement from RO unit), high head motor, starter, timer based operation, control panel for fogging motor, independent fogging system with tank and pump for individual polyhouses. Storage tank placed on 150mm thick cement concrete floor and all weather protection to motor if not submersible motor.</p>		
<b>I</b>	<b>Crop Support:</b> Horizontal G.I wire grid at 3.0m above ground level with 10 gauge GI wires and tightners at a spacing of 0.75m in the direction of gutter originating from crop support brazings at both gable ends. 6mm steel wire rope to be fixed to support the GI wire at a spacing of 4m across the gutter direction with column support.		
<b>J</b>	<b>Civil Work:</b> <p>a) Foundation Wall for polyhouse: Wide based 45cm below earth's surface, 45cm above earth's surface, 9" wide wall, duly plastered and painted.</p> <p>b) Frame base column (Column foundation) : Galvanized channel 12mmx42mmx72mmx42mmx12mm and 3mm thick, C channel with PCC Grouting (1:2:4) block, each block size 3'x1'x1.</p> <p>c) Plinth protection:-2' wide cemented plinth protection around the Greenhouse made by PCC (1:6:8) 100mm thick then CC (1:2:4), 50 mm thick with cement plaster finished on top.</p> <p>d) Ante room flooring: mentioned above.</p>		
<b>K</b>	<b>Electrical Wiring.</b> All wires will be of copper and desired load and switches imported make, extra switches also provided as standby. Each polyhouse has own electric line with control panel and MCB and will be underground in PVC pipe complete set with A grade work, connected to central electricity supply UG cable.		
<b>L</b>	<b>Rain water harvesting:</b> Gutter end to be connected to 160mm (6") PVC pipe, 4kg/cm <sup>2</sup> with proper funnel/accessories till the ground level & then connecting to 200mm (8") UG PVC pipe		
<b>M</b>	<b>Pop up Fan:-</b> 230v popup fan 18" dia fixed on roof top for exhaust hot air from greenhouse. Total fan – 6 Nos. With all MCBs, switches etc.		
<b>N</b>	<b>Temperature and humidity sensor</b> (4 location in polyhouse) for continuous automatic sensing and logging in a centralized computer/data logger.		
<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>6</b>	<b>Naturally Ventilated Polyhouse for cultivation of Capsicum and Cucumber with external curtain(quote separately for</b>	02 numbers	

	<b>external curtain)</b>		
<b>A</b>	<u>General specification:</u> <ol style="list-style-type: none"> <li>a) Poly house size: 23.4mX24m (LXW) = 562sq.m.</li> <li>b) Length: 02 Bays of 9.6m each+ 2 Corridors of 2.1m each=23.4m.</li> <li>c) Width: 24m (4mx6gaps), width=gutter length=24m.</li> <li>d) Grid size: 9.6m x 4m, Side Height:4m, Centre Height: 6m,</li> <li>e) Gutter slope:1.5-2% provided in civil work.</li> <li>f) Type: Flange based technology, Structural member fitted with zinc plated nuts, bolts, clamps, fastners etc., 100% welding free.</li> <li>g) All Structures, Rafters, Perlins, Trusses are hot dip galvanized iron steel.</li> <li>h) Design to take a wind load up to 130 km/h.,</li> </ol>		
<b>B</b>	<u>Hot dip galvanized Steel Structure :</u> <ol style="list-style-type: none"> <li>1) Using tubular structure or equivalent sections. Pipe sections to be used for different Structural Member will be as below or equivalent : <ol style="list-style-type: none"> <li>a. Columns: 80 mm x 50 mm and 2 mm thick ,</li> <li>b. Arch 60mm x2mm GI and arc to arc spacing 4m</li> <li>c. Trusses: Bottom cord 50 mm x 2mm;</li> <li>d. Truss Members 32mm &amp; Bracing 32 mmx2mm ,</li> <li>e. Pillars bracings 42mmx2mm</li> <li>f. Purlins: Using profile 42mm X2mm thick and purlin to purlin distance of 2.4m</li> <li>g. Gutter: each gutter size 4m long, 248mm wide, 150mm depth, and 1.5mm thick molding hot galvanized steel plate.</li> </ol> </li> <li>2) Nuts and other metallic parts: Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).</li> </ol>		
<b>C</b>	<u>Cladding:</u> Attaching the Plastic on Roof of Playhouse & pre entry room: Ginegar 200 micron UV stabilized 5 layer poly film having 85% light transmission, five or more layered, anti-drip. This is attached with the structure by the spring, aluminium profile, SDS.		
<b>D</b>	<u>Side wall &amp; Ventilation:-</u> <ol style="list-style-type: none"> <li>a) All 4 side wall are to be covered by 45cm high parapet wall from ground level and 40x40 mesh insect net from parapet wall to gutter level (3.55m height)</li> <li>e) Insect net: Above the parapet wall, the remaining height of side wall to be covered with the single width 40x40 mesh monofilament nylon insect net (120gsm polysack/garware).</li> <li>b) <u>Rollablepolyfim:</u> <ol style="list-style-type: none"> <li>i) Outer side to the nylon net, provide rollable 200 micron UV stabilized standard poly film with suitable rolling pipe shaft and clip.</li> </ol> </li> </ol>		

	<p>ii) For easy and complete manual roll up and down, suitable manual roll up unit with chain arrangement is to be fixed to one end of rolling pipe along with guiding GI vertical pipe. Vertical guard pipe has to be fixed to other end of the rolling shaft to prevent the oscillation/wobbling due to wind.</p> <p>iii) Rolling pipe shaft section can be maximum of 20m.</p> <p>iv) Polyfilm and insect net are attached to the structure by aluminium profile and separate spring..</p> <p>c) <u>Top Ventilation:-</u> Top ventilation fixed type 1m height covered with 40x40mesh nylon net. Top vent area 24m x1m -02 Nos. Arc suitably overlapped to prevent rain splash.</p>		
<b>E</b>	<p><u>Ante room/Pre Entry Room &amp; Doors:</u></p> <p>a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No.,</p> <p>b) Doors: Sliding Doors 1m wide &amp; 2m high single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware, 02 numbers, outer door lockable.</p> <p>c) Air curtain: auto on/off when door opening/closing.</p> <p>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough.</p> <p>e) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</p>		
<b>F</b>	<p><u>Internal Screen:-</u> 50% monofilament shadenet, manually retractable with UV ropes, rings/hook and pullyetc for easy retraction</p>		
<b>G</b>	<p><u>Drip Irrigation System</u> – Inline Pressure Compensated (PC) drip lateral 16mm OD, discharge 2LPH, dripper spacing 30cm, lateral laid out at a spacing of 0.75m, PVC pipes 6kg/cm<sup>2</sup> ; 50mm OD connected at both end of the inline drip lateral, PVC fittings and valves 10kg/cm<sup>2</sup> pressure rating, air release valve, pressure gauge, PVC valves, flush valves for flushing of sub main 04 numbers, inlet connected to common pumping, filtration &amp; fertigation unit.</p>		
<b>H</b>	<p><u>Fogging System:</u></p> <p>a) Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm<sup>2</sup> pressure rating of various sizes, 10kg/m<sup>2</sup> pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge.</p> <p>b) Plastic storage tank 1000L (with auto filling and stopping arrangement from RO unit), high head motor, starter, timer based operation, control panel for fogging motor, independent fogging system with tank and pump for individual polyhouses. Storage tank placed on 150mm thick</p>		

	cement concrete floor and all weather protection to motor if not submersible motor.		
<b>I</b>	<b>Crop Support:</b> Horizontal G.I wire grid at 3.0m above ground level with 10 gauge GI wires and tightners at a spacing of 0.75m in the direction of gutter originating from crop support brazings at both gable ends. 6mm steel wire rope to be fixed to support the GI wire at a spacing of 4m across the gutter direction with column support.		
<b>J</b>	<b>Civil Work:</b> a. Foundation Wall for polyhouse: Wide based 45cm below earth's surface, 45cm above earth's surface, 9" wide wall, duly plastered and painted. b. Frame base column (Column foundation) : Galvanized channel 12mmx42mmx72mmx42mmx12mm and 3mm thick, C channel with PCC Grouting (1:2:4) block, each block size 3'x1'x1. c. Plinth protection:-2'wide cemented plinth protection around the Greenhouse made by PCC (1:6:8) 100mm thick then CC (1:2:4), 50 mm thick with cement plaster finished on top. d. Ante room flooring: mentioned above.		
<b>K</b>	<b>Electrical Wiring.</b> All wires will be of copper and desired load and switches imported make, extra switches also provided as standby. Each polyhouse has own electric line with control panel and MCB and will be underground in PVC pipe complete set with A grade work, connected to central electricity supply UG cable.		
<b>L</b>	<b>Rain water harvesting:</b> Gutter end to be connected to 160mm (6") PVC pipe,4kg/cm2 with proper funnel/accessories till the ground level & then connecting to 200mm (8") UG PVC pipe		
<b>M</b>	<b>Pop up Fan:-</b> 230v popup fan 18'dia fixed on roof top for exhaust hot air from greenhouse. Total fan – 6 Nos. With all MCBs, switches etc.		
<b>N</b>	<b>Temperature and humidity sensor</b> (4 location in polyhouse) for continuous automatic sensing and logging in a centralized computer/data logger.		
<b>6.1</b>	<b>External Screen:-</b> Motorized external operated screen 50:50% monofilament shade net at 1m above structure with retractable mechanism using Gear Motor with Inbuilt limit switch for smooth control, Rack & Pinion, Support Aero wheel, Handspike driving shaft, Rolling axes, Pull Rod Clamp, Directing clamp, Aluminium pipe for more long life & light in weight. Retraction mechanism supported on polyester wire having with high abrasion strength-which results smooth operation & long durability.	For 02 poly houses	
<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>7</b>	<b>Greenhouse with Fan and Pad cooling system for cultivation of off-season Vegetable and Flower</b>	<b>2nos</b>	
<b>A</b>	<b>General specification:</b> a) Poly house size: 23.4mX24m (LXW) = 562sq.m.		

	<ul style="list-style-type: none"> <li>b) Length: 02 Bays of 9.6m each+ 2 Corridors of 2.1m each=23.4m.</li> <li>c) Width: 24m (4mx6gaps), width=gutter length=24m.</li> <li>d) Grid size: 9.6m x 4m, Side Height:3m, Centre Height: 5m,</li> <li>e) Gutter slope:1.5-2% provided in civil work.</li> <li>f) Shape: Gothic/semi circular; no top vent</li> <li>g) Type: Flange based technology, Structural member fitted with zinc plated nuts, bolts, clamps, fastners etc., 100% welding free.</li> <li>h) All Structures, Rafters, Perlins, Trusses are hot dip galvanized iron steel.</li> <li>i) Design to take a wind load up to 120 km/h.,</li> </ul>		
<b>B</b>	<p><u>Hot dip galvanized Steel Structure :</u></p> <p>1) Using tubular structure or equivalent sections. Pipe sections to be used for different Structural Member will be as below or equivalent :</p> <ul style="list-style-type: none"> <li>a) Columns: 80 mm x 50 mm and 2 mm thick ,</li> <li>b) Arch 60mm x2mm GI and arc to arc spacing 4m</li> <li>c) Trusses: Bottom cord 50 mm x 2mm;</li> <li>d) Truss Members 32mm &amp; Bracing 32 mmx2mm ,</li> <li>e) Pillars bracings 42mmx2mm</li> <li>f) Purlins: Using profile 42mm X2mm thick and purlin to purlin distance of 2.4m</li> <li>g) Gutter: each gutter size 4m long, 248mm wide, 150mm depth, and 1.5mm thick molding hot galvanized steel plate.</li> </ul> <p>2) Nuts and other metallic parts: Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).</p>		
<b>C</b>	<p><u>Cladding:</u> Attaching the Plastic on Roof of Playhouse &amp; pre entry room: Ginegar 200 micron UV stabilized 5 layer poly film having 85% light transmission, five or more layered, anti-drip. This is attached with the structure by the spring, aluminium profile, SDS.</p>		
<b>D</b>	<p><u>Side wall &amp; Ventilation:-</u></p> <p>Side wall : fully closed with 200 micron UV stabilized poly film fixed to sides to a height of 3.55sm above the 45cm parapet wall. No top ventilation and ventilations on the two sides.</p>		
<b>E</b>	<p><u>Ante room/Pre Entry Room &amp; Doors:</u></p> <ul style="list-style-type: none"> <li>a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No.,</li> <li>b) Doors: Sliding Doors 1m wide &amp; 2m high single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware, 02 numbers, outer door lockable.</li> <li>c) Air curtain: auto on/off when door opening/closing.</li> <li>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top</li> </ul>		

	<p>provided with disinfection solution holding trough.</p> <p>f) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</p>		
<b>F</b>	<p><b>Internal Screen:-</b> Motorized Internal Aluminet Screen 50% with mechanism using Gear Motor with Inbuilt limit switch for smooth control, Rack &amp; Pinion, Support Aero wheel, Handspike driving shaft, Rolling axes, Pull Rod Clamp, Directing clamp, Aluminium pipe for more long life &amp; light in weight. Retraction mechanism supported on polyester wire having with high abrasion strength-which results smooth operation &amp; long durability for 562sq.m area</p>		
<b>G</b>	<p><b><u>Drip Irrigation System</u></b> – Inline Pressure Compensated (PC) drip lateral 16mm OD, discharge 2LPH, dripper spacing 30cm, lateral laid out at a spacing of 0.75m, PVC pipes 6kg/cm<sup>2</sup> ; 50mm OD connected at both end of the inline drip lateral, PVC fittings and valves 10kg/cm<sup>2</sup> pressure rating, air release valve, pressure gauge, PVC valves, flush valves for flushing of sub main 04 numbers, inlet connected to common pumping, filtration &amp; fertigation unit.</p>		
<b>H</b>	<p><b><u>Fogging System:</u></b></p> <p>a) Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm<sup>2</sup> pressure rating of various sizes, 10kg/m<sup>2</sup> pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge.</p> <p>b) Plastic storage tank 1000L (with auto filling and stopping arrangement from RO unit), high head motor, starter, timer based operation, control panel for fogging motor, independent fogging system with tank and pump for individual polyhouses. Storage tank placed on 150mm thick cement concrete floor and all weather protection to motor if not submersible motor.</p>		
<b>I</b>	<p><b><u>Crop Support:</u></b> Horizontal G.I wire grid at 3.0m above ground level with 10 gauge GI wires and tightners at a spacing of 0.75m in the direction of gutter originating from crop support brazings at both gable ends. 6mm steel wire rope to be fixed to support the GI wire at a spacing of 4m across the gutter direction with column support.</p>		
<b>J</b>	<p><b><u>Civil Work:</u></b></p> <p>a) Foundation Wall for polyhouse: Wide based 45cm below earth's surface, 45cm above earth's surface, 9" wide wall, duly plastered and painted.</p> <p>b) Frame base column (Column foundation) : Galvanized channel 12mmx42mmx72mmx42mmx12mm and 3mm thick, C channel with PCC Grouting (1:2:4) block, each block size 3'x1'x1.</p> <p>c) Plinth protection:-2' wide cemented plinth protection around the Greenhouse made by PCC (1:6:8) 100mm thick then CC</p>		

	(1:2:4), 50 mm thick with cement plaster finished on top. d) Ante room flooring: mentioned above.		
<b>K</b>	<u>Electrical Wiring.</u> All wires will be of copper and desired load and switches imported make, extra switches also provided as standby. Each polyhouse has own electric line with control panel and MCB and will be underground in PVC pipe complete set with A grade work, connected to central electricity supply UG cable.		
<b>L</b>	<u>Rain water harvesting:</u> Gutter end to be connected to 160mm (6") PVC pipe, 4kg/cm <sup>2</sup> with proper funnel/accessories till the ground level & then connecting to 200mm (8") UG PVC pipe		
<b>M</b>	<u>Temperature and humidity sensor</u> (4 location in polyhouse) for continuous automatic sensing and logging in a centralized computer/data logger.		
<b>N</b>	<u>Microclimate Control Panel</u> for Temp. with manual operating option and , volt meter , RYB indicator etc. also open and close motorized system with temperature based. Technical feature of Temperature Control System, -Accuracy: $\pm 1^{\circ}\text{C}$ ., -Hysteresis: $0.4^{\circ}\text{C}$ with sensor probe Pt-100 Sensor,		
<b>O</b>	<u>Evaporative Cooling System :</u> a) 5ft height x 63' long evaporative Cellulose CELDEC cooling pad complete with all necessary framing material of Aluminum required supporting distribution & returning piping. b) Gutters, down spout end caps & drip pan, plumbing kit, c) Pump 440 volt – 3 phase 50 cycles, Drilled PVC piping cap, pad retainer, all suspension hardware. Metal flashings as required to seal pad to vent opening, d) 4" thick evaporative cooling pad material. Pad Area: 63' x 5' x 4" (w x h x Thickness), e) Slow Speed Axial Flow Fan – 1250mm single speed belt driven exhaust fan , 440V, 50 cycles, 3 phase) with damper mechanism assembly Qty. 04 f) Construction Material, Aluminum 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 55mm viscous filter for 30 m efficiency., Miscellaneous: Fasteners, Galvanized, Rivet- Aluminum., g) Water storage Tank for each polyhouse: Plastic Tank 2000 lit, Pump: Mono block capacity as per required ( Crompton or approved equivalent), 40 Mesh Nylon: for extra protection from dust, fitted behind the pad.		
<b>P</b>	Forced Air circulation fan:- Horizontal air flow fan 230V, 50HZ, 6500cfm capacity with SS housing and fixture- qty. 4		
<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>8</b>	<b>Naturally ventilated Polyhouse for cultivation of Carnation,</b>	<b>3 nos</b>	

<b>Rose and Gerbera (3 No's)</b>			
<b>A</b>	<p><u>General specification:</u></p> <ul style="list-style-type: none"> <li>a) Poly house size: 23.4mX24m (LXW) = 562sq.m.</li> <li>b) Length: 02 Bays of 9.6m each+ 2 Corridors of 2.1m each=23.4m.</li> <li>c) Width: 24m (4mx6gaps), width=gutter length=24m.</li> <li>d) Grid size: 9.6m x 4m, Side Height:4m, Centre Height: 6m,</li> <li>e) Gutter slope:1.5-2% provided in civil work.</li> <li>f) Type: Flange based technology, Structural member fitted with zinc plated nuts, bolts, clamps, fastners etc., 100% welding free.</li> <li>g) All Structures, Rafters, Perlins, Trusses are hot dip galvanized iron steel.</li> <li>h) Design to take a wind load up to 120 km/h.,</li> </ul>		
<b>B</b>	<p><u>Hot dip galvanized Steel Structure :</u></p> <p>1) Using tubular structure or equivalent sections. Pipe sections to be used for different Structural Member will be as below or equivalent :</p> <ul style="list-style-type: none"> <li>a) Columns: 80 mm x 50 mm and 2 mm thick ,</li> <li>b) Arch 60mm x2mm GI and arc to arc spacing 4m</li> <li>c) Trusses: Bottom cord 50 mm x 2mm;</li> <li>d) Truss Members 32mm &amp; Bracing 32 mmx2mm ,</li> <li>e) Pillars bracings 42mmx2mm</li> <li>f) Purlins: Using profile 42mm X2mm thick and purlin to purlin</li> <li>g) distance of 2.4m</li> <li>h) Gutter: each gutter size 4m long, 248mm wide, 150mm depth, and 1.5mm thick molding hot galvanized steel plate.</li> </ul> <p>2) Nuts and other metallic parts: Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).</p>		
<b>C</b>	<p><u>Cladding:</u> Attaching the Plastic on Roof of Playhouse &amp; pre entry room: Ginegar 200 micron UV stabilized 5 layer poly film having 85% light transmission, five or more layered, anti-drip. This is attached with the structure by the spring, aluminium profile, SDS.</p>		
<b>D</b>	<p><u>Side wall &amp; Ventilation:-</u></p> <ul style="list-style-type: none"> <li>a) All 4 side wall are to be covered by 45cm high parapet wall from ground level and 40x40 mesh insect net from parapet wall to gutter level (3.55m height)</li> <li>f) Insect net: Above the parapet wall, the remaining height of side wall to be covered with the single width 40x40 mesh monofilament nylon insect net (120gsm polysack/garware).</li> </ul> <p>b) Rollablepolyfim:</p> <ul style="list-style-type: none"> <li>i) Outer side to the nylon net, provide rollable 200 micron UV stabilized standard poly film with suitable rolling pipe shaft and clip.</li> </ul>		

	<p>ii) For easy and complete manual roll up and down, suitable manual roll up unit with chain arrangement is to be fixed to one end of rolling pipe along with guiding GI vertical pipe. Vertical guard pipe has to be fixed to other end of the rolling shaft to prevent the oscillation/wobbling due to wind.</p> <p>iii) Rolling pipe shaft section can be maximum of 20m.</p> <p>iv) Polyfilm and insect net are attached to the structure by aluminium profile and separate spring..</p> <p>g) <u>Top Ventilation:-</u> Top ventilation fixed type 1m height covered with 40x40mesh nylon net. Top vent area 24m x1m -02 Nos. Arc suitably overlapped to prevent rain splash.</p>		
<b>E</b>	<p><u>Ante room/Pre Entry Room &amp; Doors:</u></p> <p>a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No.,</p> <p>b) Doors: Sliding Doors 1m wide &amp; 2m high single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware, 02 numbers, outer door lockable.</p> <p>c) Air curtain: auto on/off when door opening/closing.</p> <p>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough.</p> <p>e) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</p>		
<b>F</b>	<p><u>Internal Screen:-</u> 50% monofilament shadenet, manually retractable with UV ropes, rings/hook and pullyetc for easy retraction</p>		
<b>G</b>	<p><u>Drip Irrigation System</u> – Inline Pressure Compensated (PC) drip lateral 16mm OD, discharge 2LPH, dripper spacing 30cm, lateral laid out at a spacing of 0.75m, PVC pipes 6kg/cm<sup>2</sup> ; 50mm OD connected at both end of the inline drip lateral, PVC fittings and valves 10kg/cm<sup>2</sup> pressure rating, air release valve, pressure gauge, PVC valves, flush valves for flushing of sub main 04 numbers, inlet connected to common pumping, filtration &amp; fertigation unit.</p>		
<b>H</b>	<p><u>Fogging System:</u></p> <p>a) Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm<sup>2</sup> pressure rating of various sizes, 10kg/m<sup>2</sup> pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge.</p> <p>b) Plastic storage tank 1000L (with auto filling and stopping arrangement from RO unit), high head motor, starter, timer based operation, control panel for fogging motor, independent fogging system with tank and pump for individual polyhouses. Storage tank placed on 150mm thick</p>		

	cement concrete floor and all weather protection to motor if not submersible motor.		
<b>I</b>	Crop Support – Special support arrangement for carnation fabricated by use of 20mmx20mmx5mm hot galvanized angle iron and different levels of GI wire grid to 120cm height. For one polyhouse. Not required for other two polyhouses.		
<b>J</b>	<u>Civil Work:</u> a) Foundation Wall for polyhouse: Wide based 45cm below earth's surface, 45cm above earth's surface, 9" wide wall, duly plastered and painted. b) Frame base column (Column foundation) : Galvanized channel 12mmx42mmx72mmx42mmx12mm and 3mm thick, C channel with PCC Grouting (1:2:4) block, each block size 3'x1'x1. c) Plinth protection:-2'wide cemented plinth protection around the Greenhouse made by PCC (1:6:8) 100mm thick then CC (1:2:4), 50 mm thick with cement plaster finished on top. d) Ante room flooring: mentioned above.		
<b>K</b>	Electrical Wiring. All wires will be of copper and desired load and switches imported make, extra switches also provided as standby. Each polyhouse has own electric line with control panel and MCB and will be underground in PVC pipe complete set with A grade work, connected to central electricity supply UG cable.		
<b>L</b>	Rain water harvesting: Gutter end to be connected to 160mm (6") PVC pipe,4kg/cm2 with proper funnel/accessories till the ground level & then connecting to 200mm (8") UG PVC pipe		
<b>M</b>	Pop up Fan:- 230v popup fan 18'dia fixed on roof top for exhaust hot air from greenhouse. Total fan – 6 Nos. With all MCBs, switches etc.		
<b>N</b>	Temperature and humidity sensor (4 location in polyhouse) for continuous automatic sensing and logging in a centralized computer/data logger.		
<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>9</b>	<b>Greenhouse with Fan and Pad cooling system for cultivation of Chrysanthemum with lighting arrangements.</b>	<b>One unit</b>	
<b>A</b>	<u>General specification:</u> a) Poly house size: 23.4mX24m (LXW) = 562sq.m. b) Length: 02 Bays of 9.6m each+ 2 Corridors of 2.1m each=23.4m. c) Width: 24m (4mx6gaps), width=gutter length=24m. d) Grid size: 9.6m x 4m, Side Height:3m, Centre Height: 5m, e) Gutter slope:1.5-2% provided in civil work. f) Shape: Gothic/semi circular; no top vent g) Type: Flange based technology, Structural member fitted with zinc plated nuts, bolts, clamps, fastners etc., 100%		

	<p>welding free.</p> <p>h) All Structures, Rafters, Perlins, Trusses are hot dip galvanized iron steel.</p> <p>i) Design to take a wind load up to 120 km/h.,</p>		
<b>B</b>	<p><u>Hot dip galvanized Steel Structure :</u></p> <p>1) Using tubular structure or equivalent sections. Pipe sections to be used for different Structural Member will be as below or equivalent :</p> <p>a. Columns: 80 mm x 50 mm and 2 mm thick ,</p> <p>b. Arch 60mm x2mm GI and arc to arc spacing 4m</p> <p>c. Trusses: Bottom cord 50 mm x 2mm;</p> <p>d. Truss Members 32mm &amp; Bracing 32 mmx2mm ,</p> <p>e. Pillars bracings 42mmx2mm</p> <p>f. Purlins: Using profile 42mm X2mm thick and purlin to purlin distance of 2.4m</p> <p>g. Gutter: each gutter size 4m long, 248mm wide, 150mm depth, and 1.5mm thick molding hot galvanized steel plate.</p> <p>1) Nuts and other metallic parts: Includes all the elements required for joining and water tightens components (such as fittings, clamps, screws and nuts plated against corrosion).</p>		
<b>C</b>	<p><u>Cladding:</u> Attaching the Plastic on Roof of Playhouse &amp; pre entry room: Ginegar 200 micron UV stabilized 5 layer poly film having 85% light transmission, five or more layered, anti-drip. This is attached with the structure by the spring, aluminium profile, SDS.</p>		
<b>D</b>	<p><u>Side wall &amp; Ventilation:-</u></p> <p>Side wall : fully closed with 200 micron UV stabilized poly film fixed to sides to a height of 3.55sm above the 45cm parapet wall. No top ventilation and no ventilations on the two sides.</p>		
<b>E</b>	<p><u>Ante room/Pre Entry Room &amp; Doors:</u></p> <p>a) Ante Room of size- 2.41m. x 2.41m. x2.43m. (LxWxH) 01 No.,</p> <p>b) Doors: Sliding Doors 1m wide &amp; 2m high single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware, 02 numbers, outer door lockable.</p> <p>c) Air curtain: auto on/off when door opening/closing.</p> <p>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough.</p> <p>e) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</p>		
<b>F</b>	<p><u>Internal Screen:-</u></p> <p>a) Internal Screen:- 50% monofilament shadenet, manually retractable with UV ropes, rings/hook and pullyetc for easy retraction</p> <p>b) Internal Screen:-Blackout blanket on top and all sides,</p>		

	manually retractable with UV ropes, rings/hook and pullyetc for easy retraction		
<b>G</b>	<u>Drip Irrigation System</u> – Inline Pressure Compensated (PC) drip lateral 16mm OD, discharge 2LPH, dripper spacing 30cm, lateral laid out at a spacing of 0.75m, PVC pipes 6kg/cm <sup>2</sup> ; 50mm OD connected at both end of the inline drip lateral, PVC fittings and valves 10kg/cm <sup>2</sup> pressure rating, air release valve, pressure gauge, PVC valves, flush valves for flushing of sub main 04 numbers, inlet connected to common pumping, filtration & fertigation unit.		
<b>H</b>	<u>Fogging System:</u> a) Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm <sup>2</sup> pressure rating of various sizes, 10kg/m <sup>2</sup> pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge. b) Plastic storage tank 1000L (with auto filling and stopping arrangement from RO unit), high head motor, starter, timer based operation, control panel for fogging motor, independent fogging system with tank and pump for individual polyhouses. Storage tank placed on 150mm thick cement concrete floor and all weather protection to motor if not submersible motor.		
<b>I</b>	<u>Crop Support</u> – Special support arrangement for chrysanthemum fabricated by use of 20mmx20mmx20mm hot dipped galvanized angle iron and different levels of GI wire grid, to 130cm height.		
<b>J</b>	<u>Civil Work:</u> a) Foundation Wall for polyhouse: Wide based 45cm below earth's surface, 45cm above earth's surface, 9" wide wall, duly plastered and painted. b) Frame base column (Column foundation) : Galvanized channel 12mmx42mmx72mmx42mmx12mm and 3mm thick, C channel with PCC Grouting (1:2:4) block, each block size 3'x1'x1. c) Plinth protection:-2' wide cemented plinth protection around the Greenhouse made by PCC (1:6:8) 100mm thick then CC (1:2:4), 50 mm thick with cement plaster finished on top. d) Ante room flooring: mentioned above.		
<b>K</b>	<u>Electrical Wiring.</u> All wires will be of copper and desired load and switches imported make, extra switches also provided as standby. Each polyhouse has own electric line with control panel and MCB and will be underground in PVC pipe complete set with A grade work, connected to central electricity supply UG cable.		
<b>L</b>	<u>Rain water harvesting:</u> Gutter end to be connected to 160mm (6") PVC pipe, 4kg/cm <sup>2</sup> with proper funnel/accessories till the ground level & then connecting to 200mm (8") UG PVC pipe		
<b>N</b>	<u>Temperature and humidity sensor</u> (4 location in polyhouse) for		

	continuous automatic sensing and logging in a centralized computer/data logger.		
<b>N</b>	<u>Microclimate Control Panel</u> for Temp. with manual operating option and , volt meter , RYB indicator etc. also open and close motorized system with temperature based. Temperature/RH sensor based control and operation of fan and pad pump. Technical feature of Temperature Control System, -Accuracy: $\pm 1^{\circ}\text{C}$ ., -Hysteresis: $0.4^{\circ}\text{C}$ with sensor probe Pt-100 Sensor.		
<b>O</b>	<u>Evaporative Cooling System</u> : a) 5ft height x 63' long evaporative Cellulose CELDEC cooling pad complete with all necessary framing material of Aluminum required supporting distribution & returning piping. b) Gutters, down spout end caps & drip pan, plumbing kit, c) Pump 440 volt – 3 phase 50 cycles, Drilled PVC piping cap, pad retainer, all suspension hardware. Metal flashings as required to seal pad to vent opening, d) 4" thick evaporative cooling pad material. Pad Area: 63' x 5' x 4" (w x h x Thickness), e) Slow Speed Axial Flow Fan – 1250mm single speed belt driven exhaust fan , 440V, 50 cycles, 3 phase) with damper mechanism assembly Qty. 04 f) Construction Material, Aluminum 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 55mm viscous filter for 30 m efficiency., Miscellaneous: Fasteners, Galvanized, Rivet- Aluminum., g) Water storage Tank for each polyhouse: Plastic Tank 2000 lit, Pump: Mono block capacity as per required ( Crompton or approved equivalent), 40 Mesh Nylon: for extra protection from dust, fitted behind the pad.		
<b>P</b>	Forced Air circulation fan:- Horizontal air flow fan 230V, 50HZ, 6500cfm capacity with SS housing and fixture- qty. 4		
<b>Q</b>	Horticulture PAR lamp:-Gavita Pro 600 W Electronic HPS E40. -- Philips Master Green Power 600W EL Plus. L, Special light for plants for providing essential photosynthesis wave length of 400-700nm to the plants for optimum growth & production. Qty- 20 Nos.		
<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>10</b>	<b>Installation of Insect Proof Net Houses for Vegetable growing of area 528 Sq. mtr.</b>	<b>2 units</b>	
<b>A</b>	<u>General specification:</u> Structure:- Wire rope structure with Flat roof:-Insect Proof Net house size:- 24m. x 22 m. (LxW) = 528 Sq. m. Number of bays 03 Nos., Bays width:6m.		

	Net house length 24m.; Net house width 20.84m. Grid size : 6m x 6m.; Uniform Height: 4m.; Corridor:2 m each side.		
<b>B</b>	<u>Specification:</u> a) Hot galvanized steel structure: using galvanized iron column and G.I. Wire rope of different size in combination for support the 40 mesh and fixed with customized UV stabilized clips. b) Pipe sections to be used for different structural member will be as below : i) Galvanized steel columns: minimum 3 mm thick . ii) Foundation : galvanized steel pipe 3mm thick. iii) Nuts and other metallic parts: Includes all the elements required for joining (such as fittings, clamps, screws and nuts plated against corrosion). c) Covering Material:- All top & side and ante room sides covering with 40x40mesh, U. V. stabilized, Insect proof imported opti-nets.		
<b>C</b>	<u>Ante room/Pre Entry Room &amp; Doors:</u> a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No., b) Doors: Sliding Doors 1m wide & 2m high single door complete with polycarbonate sheet glazing, top & bottom tracks, jambs, flashings & installation hardware, 02 numbers, outer door lockable. c) Air curtain: auto on/off when door opening/closing. d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough. e) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.		
<b>D</b>	Drip Irrigation System – Inline lateral 16mm ,2.0 lph@30 cm emitter spacing, lateral laid out at a spacing of 0.75m, PVC pipes 6kg/cm sq. Pressure rating of different sizes , Screen filter, pressure gauge, PVC valves, flush valves for flushing of sub main , connected to common pumping, filtration & fertigation unit etc.		
<b>E</b>	Manually operated internal screen with UV rope, pulley etc.		
<b>F</b>	<u>Fogging System:</u> a) Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm2 pressure rating of various sizes, 10kg/m2 pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge. b) Plastic storage tank 2000L (with auto filling and stopping arrangement from RO unit), high head motor, starter, timer		

	based operation, control panel for fogging motor, combined fogging system for 3 nethouses. Storage tank placed on 150mm thick cement concrete floor and all weather protection to motor if not submersible motor.		
<b>G</b>	<u>Crop Support</u> : Horizontal G.I wire grid at 3.0m above ground level with 10 gauge GI wires and tightners at a spacing of 0.75m in the direction of gutter originating from crop support brazings at both gable ends. 6mm steel wire rope to be fixed to support the GI wire at a spacing of 4m across the gutter direction with column support.		
<b>H</b>	Civil Work: Structure raised on CC column size:- 450x450x800mm, Standard PCC for ante room floor and front side strip of 2ftX20ft.		
<b>I</b>	Temperature and humidity sensor (2 location in nethouse) for continuous automatic sensing and logging in a centralized computer/data logger.		
<b>11</b>	<b>Installation of Insect Proof Net Houses (1 nos) for Papaya growing of area 528 Sq. mtr.</b>	<b>1 unit</b>	
<b>A</b>	<u>General specification</u> : Structure:- Wire rope structure with Flat roof:- Insect Proof Net house size:- 24m. × 22 m. (L×W) = 528 Sq. m. Number of bays 02 Nos.; Bays width 6m. Net house length 24m.; Net house width 20.84m Grid size 6m x 6m.; Side Height : 5m. Roof –Flat; Corridor:2 m each side.		
<b>B</b>	<u>Specification</u> : a) Hot dip galvanized steel structure: using galvanized column and G.I. Wire rope of different size in combination for support the 40 mesh and fixed with customized UV stabilized clips. b) Pipe sections to be used for different structural member will be as below : c) Galvanized steel columns: minimum 3 mm thick d) Foundation : galvanized steel pipe 3mm thick. e) Nuts and other metallic parts: Includes all the elements required for joining (such as fittings, clamps, screws and nuts plated against corrosion). f) Covering Material:- All side covering with 40x40mesh U. V. stabilized Insect proof imported opt-net also same for roof and side covering of ante room.		
<b>C</b>	<u>Ante room/Pre Entry Room &amp; Doors</u> : a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No., b) Doors: Sliding Doors 1m wide & 2m high single door complete with polycarbonate sheet glazing, top & bottom tracks, jambs, flashings & installation hardware, 02 numbers, outer door lockable. c) Air curtain: auto on/off when door opening/closing.		

	<p>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough.</p> <p>f) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</p>		
<b>D</b>	Drip Irrigation System – solid lateral 16mm , Dripper 4.0 lph@ 4per plant, lateral laid out at a spacing of 1.5m, PVC pipes 6kg/cm sq. Pressure rating of different sizes , Screen filter, pressure gauge, PVC valves, flush valves for flushing of sub main , connected to common pumping, filtration & fertigation unit etc.		
<b>E</b>	Manually operated internal screen with UV rope, pulley etc.		
<b>F</b>	Civil Work: Structure raised on CC column size:- 450x450x800mm, Standard PCC for ante room floor and front side strip of 2ftX20ft.		
<b>G</b>	Temperature and humidity sensor (2 location in nethouse) for continuous automatic sensing and logging in a centralized computer/data logger		
<b>12</b>	<b>Poly net tunnel 192m<sup>2</sup> (8mx24m): Parabolic shape</b>		
<b>A</b>	<p>Specification:</p> <p>a) Top and side covering with polysheet: polyfilm with 200micron IR+antifog+UVR+sulphurresistant+thermic+antidrip+difused 5 layer sheet. Poly sheet should be in roll up structure from sides with proper manual rolling up device.</p> <p>b) Distance between poles 4m (8mx4m)</p> <p>c) Side covering and ante room covering with UV stabilized, HDPE in 4m width, white insect net 50mesh size.</p> <p>d) Side height 3m, center height: 4m</p> <p>e) Trellis system: Spanish type( separated from the net house), GI pipe post 2.8m long 1”, 3.8mm thick GI wire and all “pascal trellis system.</p> <p>f) GI pipe structure 2mm thick, column minimum 60mm OD, Purlin: 48mm OD, trusses: 42mm OD, side corridor pipe: 48mm OD.</p> <p>g) With aluminium locking profile and springs.</p> <p>h) Civil work foundation below the ground level with block size 90cmX40cmX40cm.</p> <p>i) Aluminetshadenet with easy manual retraction using UV rope, pulley bends etc, supported over a wire grid mesh.</p>		
<b>B</b>	<p><u>Ante room/Pre Entry Room &amp; Doors:</u></p> <p>a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No.,</p> <p>b) Doors: Sliding Doors 1m wide &amp; 2m high single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware, 02 numbers, outer door lockable.</p>		

	<ul style="list-style-type: none"> <li>c) Air curtain: auto on/off when door opening/closing.</li> <li>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough.</li> <li>e) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</li> </ul>		
<b>C</b>	<p><b>Fogging System:</b></p> <ul style="list-style-type: none"> <li>a) Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm<sup>2</sup> pressure rating of various sizes, 10kg/m<sup>2</sup> pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge.</li> <li>b) Plastic storage tank 2000L (with auto filling and stopping arrangement from RO unit), high head motor, starter, timer based operation, control panel for fogging motor, combined fogging system for polynet tunnel (item 15) and walk in tunnel (item 13). Storage tank placed on 150mm thick cement concrete floor and all weather protection to motor if not submersible motor.</li> </ul>		
<b>13</b>	<b>Walk in Tunnel: 192m<sup>2</sup> (8m X 24 m)</b>		
<b>A</b>	<p><b>Specification:</b></p> <ul style="list-style-type: none"> <li>a) Structure: Galvanized Tubular Structure, of 2mm thickness.</li> <li>b) Grid size: 8mx4m;</li> <li>c) Central height: 4m; side height 2.25m</li> <li>d) Arch: 60 mm OD/2 mm thick G.I. Tubular Pipe</li> <li>e) Purlins: 42 mm OD/ 2 mm thick G. I. Pipe/ 33 mm OD/ 2 mm thick G. I. Pipe.</li> <li>f) Fastner: Structure with nut and bolt with best quality plating to have good anti-corrosiveness.</li> <li>g) Foundation: Columns are fitted over ground ‘‘ Inserts’’ and bolted to insert Pipe. Length of insert 800 to 1000 mm. Construction of foundation with ratio 1:2:4 PCC of size 0.40 m x 0.40 m x 0.9 m.</li> <li>h) Polyfilm: 200 micron thick, U. V. stabilized, Diffused, IR, Anti fog/ drip, Five-layers film.</li> <li>i) Locking profile: Alluminium Locking profiles with G. I. wire spring with smooth finish for fixing of Polyfilm.</li> <li>j) Insect net- white colour 50 mesh below roll up curtains at side ventilation</li> <li>k) Trellis system: It consists of GI wire of 3mm thickness fixed over the beds. Two wires over the bed.</li> <li>l) Side ventilation: 1.75 M to 2.25 M from Ground Level Covered with 50 Mesh UV stabilized insect proof Net. Over to that Rollable poly ethylene Flap has to be Provided (200 Micron UV Stabilized with roll up unit ).</li> </ul>		

	<p>m) Shade net: UV stabilized Shade net 50% inside Poly Tunnel House, White colour with manual collapsible arrangement with pulley etc.</p> <p>n) Entry room : Entry of size 4m x 2.66 m with Double Door of PVC sheet, 1 m x 2 m size hinged type.</p> <p>o) Drip system: It consist of 16mm inline lateral 2 lph @ 30 cm spacing spaced at 75cm, 6 kg/cm<sup>2</sup> PVC submain pipes, PVC Valves, connected to common irrigation and fertigation line.</p> <p>p) Four way anti-leak foggers with 28lph discharge which gives very fine droplet size, PVC pipes of 6 Kg/cm<sup>2</sup> pressure rating of various sizes, 10kg/m<sup>2</sup> pressure rating fittings and valves, PVC ball valves, Flush valves for flushing of sub main, suitable overhead supply pipe, with pressure gauge connected to fogging pumping system of polynet tunnel (item 12)</p>		
<b>B</b>	<p><u>Ante room/Pre Entry Room &amp; Doors:</u></p> <p>a) Ante Room of size- 2.41m. × 2.41m. ×2.43m. (L×W×H) 01 No.,</p> <p>b) Doors: Sliding Doors 1m wide &amp; 2m high single door complete with polycarbonate sheet glazing, top &amp; bottom tracks, jambs, flashings &amp; installation hardware, 02 numbers, outer door lockable.</p> <p>c) Air curtain: auto on/off when door opening/closing.</p> <p>d) Floor : PCC (1:6:8) 75 mm thick, then CC (1:2:4) 50 mm thick, then 25mm thick cement plaster finished on top provided with disinfection solution holding trough.</p> <p>e) Tractor door: 2.4m wide and 3.0m ht at convenient location fabricated from rectangular section , to be insect proof, hinged lockable double door.</p>		
<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>14</b>	<b>Internal screens</b>		
<b>14.1</b>	Internal Screen:- Motorized Internal Aluminet Screen 50% with mechanism using Gear Motor with Inbuilt limit switch for smooth control, Rack & Pinion, Support Aero wheel, Handspike driving shaft, Rolling axes, Pull Rod Clamp, Directing clamp, Aluminium pipe for more long life & light in weight. Retraction mechanism supported on polyester wire having with high abrasion strength-which results smooth operation & long durability for 562sq.m area.	One poly house	
<b>14.2</b>	Internal Screen:- Motorized Internal Aluminet Screen 50% using GI wire rope mechanism for 562sq.m greenhouse ( <i>replacement item, hence subtract the cost of manually retractable monofilament internal shade net from this items quote</i> ).	One poly house	
<b>14.3</b>	Internal screen (50% aluminet) movement attached to roller shaft, GI wire rope and shaft rotation with double chain pulley manually for 562sq.m greenhouse. ( <i>replacement item, hence subtract the cost</i>	One poly house	

	<i>of manually retractable monofilament internal shade net from this items quote ).</i>		
<b>14.4</b>	Internal Screen:- 50% monofilament shadenet (120gsm), manually retractable with UV ropes, rings/hook and pullyetc for easy retraction for 562sq.m area		
<b>15</b>	Soil less cultivation complete set up with growing media and specialized drip irrigation system. Soilless cultivation polyhouses may need to be placed together to be able to run auto fertigation unit using RO water.		XXXXXXX XXXXXXX XXXXXXX XXXXXXX
<b>15.1</b>	Cocopeat grow bag slab (500 nos) size 100cmx20cmx17cm expandable size for Entire greenhouse area of 560sq.m area with HDPE film drainage gutter set up (Mapal/equivalent) with drainage collection unit and inter connecting drain pipe placed on weed mat with minimum 1.5% slope (one polyhouse).	One poly house	
<b>15.2</b>	One polyhouse with 40cmX24cmx24cm white UV stabilized grow bags (1200nos) placed on weed mat and drainage collection arrangements.	One poly house	
<b>15.3</b>	One polyhouse with Mapal or equivalent growing troughs with drainage spacer, drainage envelope, drainage collection outlet connected to PVC pipes and growing media. Minimum 1.5% slope to be provided.	One poly house	
<b>15.4</b>	Grow bag Drip Irrigation System – Drip system for cocopeat cultivation with arrow PC drippers, drip lateral 16mm, very low discharge drippers, dripper spacing suitable to grow bag, lateral laid out at a spacing of 0.75m, PVC pipes 6kg/cm <sup>2</sup> 50mm OD, air release valve, pressure gauge, PVC valves, flush valves for flushing of sub main , connected to common pumping, filtration & automated fertigation unit with complete auto fertigation arrangements etc. <i>(replacement item, hence subtract the cost of inline drip lateral from this items quote ).</i>	For one poly houses	
<b>S.No.</b>	<b>Technical Details of Project</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
<b>16</b>	<b>FERTIGATION SYSTEM:</b> Computerized multichannel fertigation and irrigation system. (Centralized Automatic) It consists of Fertigation Machine with EC/Ph Control- 1nos., Irrigation Controller – 1nos., with complete hardware and software, BAFO cable for connect, within controller and computer, control and safety valves, Sol. Valve Plastic and , Pressure Relief Valve Plastic , Auto Electric Panel For Irrigation Pumps, polymer tank, Stock solution tank 500ltrs each -5 set with solenoid control valve and cable connection to boom irrigation of primary and secondary seedling houses, graft aclamitazationpolyhouse, 11 polyhouses of 562sq.m and three net houses, polynet tunnel and walk in tunnel. <u>Housing for fertigationunit</u> :- Shelter for accommodate Fertigation machine, stock solution, room size:4mx4mx2.6m: 3.5m. Roof and	1 unit	

	<p>side covered with PPGI sheet and with cemented floor.</p> <p><u>Open well submersible Pump</u> of suitable capacity fitted to 25000 litre OH tank to run all the irrigation and fertigation requirement in the facility with all plumbing and electrical accessories connected to auto fertigation unit; with all accessories.</p> <p><u>Pump</u> of suitable capacity fitted to 9000 litre RO tank to run all the irrigation and fertigation requirement in the facility with all plumbing and electrical accessories connected to auto fertigation unit to run the soil less polyhouses.</p> <p>Filtration unit consisting of sand and disc filter (50m<sup>3</sup> each) with necessary manifolds and plumbings</p>		
<b>17</b>	<p>Centralized weather data collection and retrieval system:</p> <ol style="list-style-type: none"> <li>a) Centralized computer/server/data logger to continuously record and retrieve all the weather data collected in different polyhouse structures and automatic weather station.</li> <li>b) Temperature, RH and other sensors specified in all the greenhouses/net houses/weather station etc to be integrated to a central computer/server to record the data continuously.</li> <li>c) Housing 4mX3mX2.6m:3.5m cladding with puff panel 63mm with inner &amp; outer pre quoted GI sheet 0.5 mm thick, with air conditioning.</li> </ol>	1 set	
<b>18</b>	<p>Complete Main Electrical And Plumbing Works: Feeder pillars, Junction boxes, control panels switches, MCBs and UG cabling interconnecting all the units from main electricity receiving point of the facility with additional 50m supply line to the facility..</p> <p>Similarly water supply from main pumping, filtration, RO unit and fertigation site to all the units of the facility with additional 50m supply line to the facility.</p>	1 set	
<b>19</b>	<p>Pack house with refrigeration</p> <p>Packing shed 16mX6mX3m:4m(LxWxSH:CH)</p> <p>PACKING HOUSE:</p> <p>Size: LxWxHc:s 10m x 6m x4m:3m</p> <p>Structure made by :hot dip galvanized structure.</p> <p>Roof and all side covered with PPGI sheet with lockable door</p> <p>Door: Aluminium sliding door 1m wide with accessories.</p> <p>Electrification : for general purpose</p> <p>Foundation wall for Packing room wide based 2' below earth's surface.2' above earth's surface, as kick-board 9" wide, Frame base block height 3'x9"x9"each with front side wall plinth protection 3'wide 6" thick.</p> <p>Floor: made by PCC (1:5:10)100 mm thick than CC (1:2:4) 100 mm thick, over that ceramic floor tiles. Floor area : 96sq.m</p> <p>Cold Chamber10'x10'x8':- made of puff panel 80mm for roof and all sides with lockable door, flat roof inside packing shed, Temp. range-4°C, multi tier shelve, floor with insulated tiles, with control panel and electrification</p>	1 unit	
<b>20</b>	<p>General Store Room : Size: LxWxHc:s 16m x 6m x4m:3m</p>	1 unit	

	<p>Structure made of Galvanized steel with all side and roof covered with PPGI sheet (0.5mm) profile shape. Room having provision with window-04 nos. of size: 1.2m x0.8m, General 15A Electric wiring for Light points, fan points and plug points etc. one lockable door.</p> <p>Civil Foundation: - wide based 2ft below earths surface. 2ft above earths surface foundation wall 9”wide dully plastered and painted, Frame base block height 3’X9”x9” each. Plinth protection of 3ft wide and 6 inch thick. Floor: made by PCC (1:5:10) 100mm thick then CC (1:2:4) 100mm thick and then duly plastered. Floor height will be approx. 1ft above natural ground level.</p>		
21	<p><u>Implement shed/workshop:</u> Size: LxWxHc:s 16m x 12m x4m:3m Structure made by :80mmx50mm, 50mmx50mm &amp;38mmx38 mm hot galvanized pipe. Structure made of Galvanized steel with all side and roof covered with PPGI sheet (0.5mm) profile shape. Window : made by aluminium frame with Polycarbonate sheet 6mm and accessories, window size : 4’x4’ Qty. 04 Door: sliding doormade by Aluminium frame with Polycarbonate sheet 6mm and accessories, door size 2mx1m qty. 02 Foundation wall for Store room brick/solid concrete block wall 2’ below earth’s surface.2’ above earth’s surface, as kick-board 9” wide, Frame base block height 3’x9”x9”each with front side wall plinth protection 3’ wide 6” thick. Floor: made by PCC (1:5:10)100 mm thick than CC (1:2:4) 100 mm thick with dully plastered , floor area 192 m2</p>	1 unit	
22	<p><u>RO System and storage tank:</u> 1000LPH R.O. system with 3000LX3nos polymer water storage tank placed at 6ft high RCC platform from ground level (for auto filling of polymer tank used for misting, high pressure fogging and soil less cultivation drip irrigation and fertigation) and housing for RO unit with PPGI sheet and GI pipe and complete plumbing job as per requirement.</p>	1 unit	
23	<p><u>Over Head Covered Water Tank:</u> Capacity: 25000 Itr (10’X10X’9’), at height of 10’ from ground level with complete plumbing work etc. Made by RCC as per standard civil work, guide line. (For auto filling of polymer tank used for wetting pad pump and also for centralized drip irrigation and fertigation motors)</p>	1 unit	
24	<p><u>Chain link fencing</u> with 7.5’ ht, 40mmX40mmX5mm angle iron pole. 60cm depth CC Grouting (1:2:4), pole to pole distance 8’ ; with 2 horizontal member of 35mmX35mmX5mm angled iron welded interconnection to the poles, 5ft width, 50mm mesh size, 3.0mm wire diameter, GI wire mesh welded to horizontal 35mm angled iron. Angled iron duly painted with primer and enamel paint.</p>	650m	
25	<p>Main gate (Sliding, 20ft width, 5ft ht), Security cabin 8ftX6ft, Entrance pillar arch fabricated from MS, Name board 20ftX4ft,</p>	1 unit	

	Foundation stones etc		
26	Generator operating capacity 63 KVA make Kirlosker/Mahindra or equivalent make with Automatic on/off panel, change over, earthing, exhaust pipe, cable connections to mains and feeders, Shelter with platform for Generator and sound proof enclosure, earthing and internal cabling complete.	1 set	
27	Main Electricity supply 11KVA OH line 1200m length with 9m RCC poles of 145kg, spaced at 30m, erected with 1.5m pit and CC grouting, ACSR 7/3.35 conductors from IIHR's main receiving cubicle to 100 KVA transformer, providing guarding at one road crossing point (30m).	1 unit	
28	100 KVA transformer (11KV to 440V) setup complete installation with change over switches, Platform, Fencing, Earthing, fuses, switches, MCB, input and output feeders etc	1 unit	
29	Rain water harvesting Drain pipe installed at 2ft depth in soil with 200mm (8") PVC pipe, 4kg/cm <sup>2</sup> for the disposal of rain water from individual greenhouse to RWH pond maintaining minimum uniform slope of 1% with complete plumbing work to connect the RWH vertical pipe from gutter of every individual polyhouse	650m	
30	MINI AUTOMATIC PROTRAY MEDIA FILLING AND SEEDER MACHINE: Automatic tray filling and dispensing machine, Dibbling of tray, auto sowing machine with capacity of 18,000 Seeds sowing per hour, Top cotter with conveyer belt, Speed Controller, Includes ¼ vac pump and small air, Seeds sowing kit, Needle manifold, Stabilized for machine, Water tank & water station.	1 unit	
31	<b>Total basic price</b>	<b>all items</b>	
32	<b>Transportation charges if any</b>	<b>all items</b>	
33	<b>CGST/SGST/IGST/BCD etc*</b>		
34	<b>Grand total</b>		

\* can be separately given if tax rate varies to different items

**Signature,**

**Name & Seal of the bidder**

**(Note: Please sign in every page)**

**Annexure VIII**

**Sections (Items) of Financial Bid for quoting separate price  
(To be placed in Financial bid sealed and labeled envelope)**

<b>S.No.</b>	<b>Technical Details of component</b>	<b>Units</b>	<b>Price (Lakh Rs.)</b>
1.1	Automated machine assembly for V type seedling production	Complete set	
1.2	Conveyer Belt: Conveyer for transportation .....	2 units	
1.3	Support Conveyer: This conveyer is .....	2 units	
1.4	Housing Facility for the auto seeding machine equipment (pre-fabricated Structure):.....	1 unit	
1.5	Preparation yard and tray washing area- Cemented .....	1 unit	
1.6	Input Store Room for nursery unit: Store .....	1 unit	
1.7	Charges for technical supervision, .....		
2	Computerized Climate controlled Polycarbonate nursery unit for primary hardening; 768sq.m .....	Complete set	
2.1	Thermal trays 198 cell and portrays 99 cell 2000 & 4000 no. each to run the units for two cycles		
3	Naturally ventilated polyhouse for secondary hardening of seedling: 1536sq.m. with boom irrigation, benching system, fogging system.	One set	
4	Graft acclimatization polyhouse with Fan and pad system cooling, high pressure fog cooling system and benching system.	One unit	
5	Naturally Ventilated Polyhouse for cultivation of Tomato, Capsicum, cucumber 562sq.m	3nos	
6	Naturally Ventilated Polyhouse for cultivation of Capsicum and Cucumber with external curtain (quote separately for external curtain)	02 numbers	
6.1	External Screen:- Motorized external operated screen 50:50% monofilament shade net at 1m above structure with retractable mechanism using Gear Motor with Inbuilt limit switch for smooth control, Rack & Pinion, Support Aero wheel, Handspike driving shaft, Rolling axes, Pull Rod Clamp, Directing clamp, Aluminium pipe for more long life & light in weight. Retraction mechanism supported on polyester wire having with high abrasion strength- which results smooth operation & long durability.	02 poly houses	
7	Greenhouse with Fan and Pad cooling system for cultivation of off-season Vegetable and Flower	2nos	
8	Naturally ventilated Polyhouse for cultivation of Carnation, Rose and Gerbera (3 No's)	3 nos	
9	Greenhouse with Fan and Pad cooling system for cultivation of Chrysanthemum with lighting arrangements.	one	
10	Installation of Insect Proof Net Houses for Vegetable growing of area 528 Sq. mtr.	2 units	
11	Installation of Insect Proof Net Houses (1 nos) for Papaya growing of area 528 Sq. mtr.	1 unit	

12	Poly net tunnel 192m2 (8mx24m): Parabolic shape	1 unit	
13	Walk in Tunnel: 192m2 (8m X 24 m)		
14.1	Internal Screen:- Motorized .....	For 1 PH	
14.2	Internal Screen:- Motorized .....	For 1 PH	
14.3	Internal screen (50% aluminet) movement.....	For 1 PH	
14.4	Internal Screen:- 50% monofilament .....	For 1 PH	
15.1	Cocopeat grow bag slab (500 nos) .....	For 1 PH	
15.2	One polyhouse with 40cmX24cmx24cm .....	For 1 PH	
15.3	One polyhouse with Mapal .....	For 1 PH	
15.4	Grow bag Drip Irrigation System .....	For 1 PH	
16	Fertigation system:Computerized multichannel fertigation....	1 unit	
17	Centralized weather data collection and retrieval system...	1 set	
18	Complete Main Electrical And Plumbing Works....	1 set	
19	Pack house with refrigeration Packing shed 16mx6mx3m:4m(LxWxSH:CH).....	1 unit	
20	General Store Room : Size: LxWxHc:s 16m x 6m x4m:3m.....	1 unit	
21	<u>Implement shed/workshop</u> :Size: LxWxHc:s 16m x 12m x4m:3m...	1 unit	
22	<u>RO System and storage tank</u> : 1000LPH R.O. system ....	1 unit	
23	<u>Over Head Covered Water Tank</u> : Capacity: .....	1 unit	
24	<u>Chain link fencing</u> with 7.5' ht, .....	650m	
25	Main gate (Sliding, 20ft width, 5ft ht), Security cabin .....	1 unit	
26	Generator operating capacity 63 KVA make Kirlosker.....	1 set	
27	Main Electricity supply 11KVA OH line 1200m .....	1 unit	
28	100 KVA transformer (11KV to 440V) setup .....	1 unit	
29	Rain water harvesting Drain pipe.....	650m	
30	Mini automatic protray media filling and seeder machine....	1 unit	
31	Total basic price	all items	
32	Transportation charges if any	all items	
33	CGST/SGST/IGST/BCD etc*		
34	Grand total		

\* can be separately given if tax rate varies to different items

**Signature,**

**Name & Seal of the bidder**

**(Note: Please sign in every page)**