

Name of Project: Horticulture works for Nalanda University- PACKAGE 7A						
Bill of Quantities						
Item No.	DSR No	Description	Unit	Quantity	Total Rate	Amount
1	2.13	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling pit with mixture of good soil and farm yard manure after mixing it in 2:1 proportion (2 parts of good soil : 1 part of farm yard manure), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed (cost of farm yard manure and good earth to be paid for separately) Item includes all royalty, equipment, labour, loading, unloading, and carriage upto any lead & lift required as directed by EIC	Cum	14,783.33	155.91	23,04,892.81
2	2.14.1	Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1 part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any, with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately) : Holes 1.2 m dia and 1.2 m deep	Each	10,629.00	283.18	30,09,884.88
3	2.2	Supplying and stacking of good earth at site (earth measured in stacks will be reduced by 20% for payment). Good earth shall consist of a free draining organic soil from horizons less than 300mm from the original surface, of a workable crumbly and lump free loamy character and shall contain no grass or weed growth of any kind or other foreign material or stones exceeding 25mm in diameter. Total stone content shall be no greater than 5% by volume. A 1 litre sample with back up soil test data is required before supply, to be approved by EIC. Soil should conform to the following parameters: pH 5.5 - 7.8, Electrical conductivity 1:2.5 (w/v), Soil-water extract not exceeding 1500 micromho/cm, Soil texture Sand (0.05 - 2.00mm) Max. 75% Min. 20%, Silt (0.002 - 0.05mm) Max. 60% Min. 5%, Clay (less than 0.002mm) Max. 30% Min. 5%. Item includes all royalty, equipment, labour, loading, unloading, and carriage upto any lead & lift required for supply and stacking of good earth.	Cum	18,157.94	397.76	72,22,557.34
4	2.25	Supplying and stacking of well decayed cow dung manure (cattle manure measured in stacks will reduced by 8% for Payment). Manure shall be well composted, dried, well screened good quality in powdered form. Manure, shall be free from soil clods, fresh mung grass, and dry. Sample will be approved by EIC. Item includes all royalty, equipment, labour, loading, unloading, and carriage upto any lead & lift required for supply and stacking of good earth.	Cum	9,078.97	226.18	20,53,504.12
5	MR 1	Staking of trees, palms and large shrubs using quadrapod staking made of 4 nos Bamboo 25 mm dia 2.5 metre long, fixed 0.3m in the soil and joined at 2/3 height of plant stem using jute rope, fixed to plant using rubber sheath; plant stem to be covered with gunny / jute cloth at fixing point to prevent damage, complete including supply of all material, labour and equipment, upto any lead and lift as directed by EIC	Each	10,629.00	193.63	20,58,106.56
6	MR 2	Supply of Shrubs - well developed, well branched - 3-4 branches each having 4-5 leaves, preferably in bloom, in polybag of 30x20cm size, disease free and development (height 0.75-0.9m) Shrubs are woody perennials of generally multi stemmed and bushy habit ranging from 3 - 4.5m down to 500mm height. Shrubs shall have no less than three main stems and shall be well balanced and bushy, with strongly developed fibrous root systems, and shall be pruned in advance as required to achieve the specified height tolerances. Branches shall break from the base of the plant just above the root collar, and shall be well furnished with leaves right down to ground level. Supply shall include labour & equipment cost of loading, unloading, transport to site, storage & stacking within site in area protected from dust using temporary agronet, watering & maintenance at stacking area until planted as directed by EIC Allamanda neriifolia (0.45m)	each	1,056.00	70.50	74,448.00
7	MR 3	Allamanda schottii (0.45m)	each	1,058.00	70.50	74,589.00
8	MR 4	Aloe vera (0.45m)	each	1,596.00	47.00	75,012.00

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9	MR 5	Angelonia angustifolia (0.45m)	each	1,056.00	82.25	86,856.00
10	MR 6	Asystasia gangetica pink (0.45m)	each	15,630.00	99.88	15,61,046.25
11	MR 7	Asystasia gangetica white (0.45m)	each	12,355.00	99.88	12,33,955.63
12	MR 8	Brya ebenus (0.75m)	each	1,494.00	99.88	1,49,213.25
13	MR 9	Caesalpinia pulcherimma red (0.9m)	each	1,056.00	70.50	74,448.00
14	MR 10	Caesalpinia pulcherimma yellow (0.9m)	each	1,056.00	99.88	1,05,468.00
15	MR 11	Canna generalis orange (0.45m)	each	1,408.00	58.75	82,720.00
16	MR 12	Canna generalis red (0.45m)	each	1,408.00	58.75	82,720.00
17	MR 13	Canna generalis yellow (0.45m)	each	1,408.00	58.75	82,720.00
18	MR 14	Canna variegated (0.45m)	each	1,408.00	64.63	90,992.00
19	MR 15	Cassia alata (0.9m)	each	1,056.00	82.25	86,856.00
20	MR 16	Clerodendrum paniculatum (0.6m)	each	1,056.00	47.00	49,632.00
21	MR 17	Hibiscus rosa sinensis (0.6m)	each	6,902.00	47.00	3,24,394.00
22	MR 18	Ipomoea batatas (0.3m)	each	1,710.00	29.38	50,231.25
23	MR 19	Jatropha integerimma (0.9m)	each	1,056.00	47.00	49,632.00
24	MR 20	Manihot escangulata (0.9m)	each	1,056.00	70.50	74,448.00
25	MR 21	Murraya exotica (0.9m)	each	1,056.00	41.13	43,428.00
26	MR 22	Mussaenda erythrophylla (0.9m)	each	1,056.00	82.25	86,856.00
27	MR 23	Mussaenda frondosa (0.9m)	each	1,056.00	82.25	86,856.00
28	MR 24	Nerium dwarf white (0.3m)	each	4,755.00	99.88	4,74,905.63
29	MR 25	Nerium oleander pink (0.6m)	each	2,464.00	64.63	1,59,236.00
30	MR 26	Nerium oleander white (0.6m)	each	2,464.00	52.88	1,30,284.00
31	MR 27	Sansevieria trifasciata (0.45m)	each	1,584.00	70.50	1,11,672.00
32	MR 28	Stachytarpheta indica (0.6m)	each	5,054.00	64.63	3,26,614.75
33	MR 29	Tecoma stans (0.9m)	each	12,163.00	47.00	5,71,661.00
34	MR 30	Thryallis glauca (0.6m)	each	1,584.00	70.50	1,11,672.00
35	MR 31	Vinca alba (0.3m)	each	6,816.00	41.13	2,80,308.00
36	MR 32	Vinca rosea (0.3m)	each	2,119.00	47.00	99,593.00
37	MR 33	Wedelia trilobata (0.3m)	each	3,040.00	7.05	21,432.00
38	MR 34	Supply of Trees - well developed, well branched crown - 4-6 branches each having 4-5 leaves, well developed (Poly bag size - 30"x 30", min. stem diameter 50mm and height as specified) Trees shall be large size nursery grown trees pruned during growth to produce a tight well rounded head and a straight stem clear of leaves or twigs. Trees shall be at least two years old, as certified by the nursery. Trees shall be 70-100 mm circumference stem when measured 1.0m from ground level and shall have a clear straight stem of minimum 1.2m. The head shall be well balanced and rounded and contain at least four main branches with a well-developed secondary branch system and a defined central leader that has not been pruned, giving a minimum overall height of 1.5m at the time of planting. Rootball dimensions : diameter 750mm x 750mm deep minimum. Branching/leaf spread 1.5 - 1.8m diameter. Pruning at the time of removal from the nursery will not be permitted. In dry weather conditions, trees are to be sprayed with approved Anti-transpirant. Trees shall have a strong fibrous root system. Supply shall include labour & equipment cost of loading, unloading, transport to site, storage & stacking within site in area protected from dust using temporary agronet, watering & maintenance at stacking area until planted as directed by EIC Adina cordifolia (1.8m)	each	87.00	763.75	66,446.25
39	MR 35	Aegle marmelos (1.8m)	each	53.00	940.00	49,820.00
40	MR 36	Albizia procera (1.8m)	each	55.00	705.00	38,775.00

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41	MR 37	Albizia lebbeck (1.8m)	each	60.00	705.00	42,300.00
42	MR 38	Alstonia scholaris (1.8m)	each	145.00	705.00	1,02,225.00
43	MR 39	Anogeissus latifolia (1.8m)	each	90.00	881.25	79,312.50
44	MR 40	Araucaria cookii (1.8m)	each	46.00	1,057.50	48,645.00
45	MR 41	Artocarpus heterophyllus (1.8m)	each	53.00	1,233.75	65,388.75
46	MR 42	Azadirachta indica (1.8m)	each	143.00	705.00	1,00,815.00
47	MR 43	Balanites roxburghii (1.8m)	each	46.00	1,057.50	48,645.00
48	MR 44	Barringtonia acutangula (1.8m)	each	55.00	822.50	45,237.50
49	MR 45	Bauhinia purpurea (1.8m)	each	5.00	705.00	3,525.00
50	MR 46	Bauhinia racemosa (1.8m)	each	5.00	822.50	4,112.50
51	MR 47	Bauhinia variegata (1.8m)	each	5.00	2,115.00	10,575.00
52	MR 48	Bombax ceiba (1.8m)	each	24.00	705.00	16,920.00
53	MR 49	Borassus flabellifer (1.8m)	each	262.00	822.50	2,15,495.00
54	MR 50	Brassia actinophylla (1.8m)	each	40.00	998.75	39,950.00
55	MR 51	Bridelia retusa (1.8m)	each	90.00	1,057.50	95,175.00
56	MR 52	Buchanania cochinchinensis (1.8m)	each	201.00	1,233.75	2,47,983.75
57	MR 53	Callistemon lanceolatus (1.8m)	each	7.00	822.50	5,757.50
58	MR 54	Calophyllum indicum (1.8m)	each	24.00	940.00	22,560.00
59	MR 55	Carica papaya (1.8m)	each	131.00	1,057.50	1,38,532.50
60	MR 56	Cassia fistula (1.8m)	each	79.00	822.50	64,977.50
61	MR 57	Cassia javanica (1.8m)	each	62.00	705.00	43,710.00
62	MR 58	Cassia siamea (1.8m)	each	79.00	822.50	64,977.50
63	MR 59	Citrus aurantifolia (1.8m)	each	53.00	1,057.50	56,047.50
64	MR 60	Citrus limon (1.8m)	each	53.00	705.00	37,365.00
65	MR 61	Cochlospermum religiosum (1.8m)	each	24.00	1,057.50	25,380.00
66	MR 62	Cordia dichotoma (1.8m)	each	46.00	822.50	37,835.00
67	MR 63	Cordia myxa (1.8m)	each	90.00	822.50	74,025.00
68	MR 64	Couroupita guianensis (1.8m)	each	104.00	1,057.50	1,09,980.00
69	MR 65	Crateva adansonil (1.8m)	each	47.00	822.50	38,657.50
70	MR 66	Delonix regia (1.8m)	each	645.00	705.00	4,54,725.00
71	MR 67	Diospyros melanoxylon (1.8m)	each	87.00	822.50	71,557.50
72	MR 68	Erythrina indica (1.8m)	each	40.00	1,057.50	42,300.00
73	MR 69	Erythrina variegata (1.8m)	each	40.00	2,115.00	84,600.00
74	MR 70	Ficus amplissima (1.8m)	each	201.00	822.50	1,65,322.50
75	MR 71	Ficus benghalensis (1.8m)	each	104.00	1,057.50	1,09,980.00
76	MR 72	Ficus elastia (1.8m)	each	201.00	1,057.50	2,12,557.50
77	MR 73	Ficus hispida (1.8m)	each	201.00	1,410.00	2,83,410.00
78	MR 74	Ficus microcarpa (1.8m)	each	267.00	2,585.00	6,90,195.00
79	MR 75	Ficus racemosa (1.8m)	each	267.00	1,410.00	3,76,470.00
80	MR 76	Ficus religiosa (1.8m)	each	104.00	1,057.50	1,09,980.00
81	MR 77	Ficus virens (1.8m)	each	24.00	1,410.00	33,840.00
82	MR 78	Flacourtia indica (1.8m)	each	90.00	1,057.50	95,175.00
83	MR 79	Gardenia latifolia (1.8m)	each	46.00	1,292.50	59,455.00

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Item No.	DSR No	Description	Unit	Quantity	Total Rate	Amount
84	MR 80	Gliricidia sepium (1.8m)	each	87.00	1,057.50	92,002.50
85	MR 81	Gmelina arborea (1.8m)	each	87.00	1,410.00	1,22,670.00
86	MR 82	Grewia tiliifolia (1.8m)	each	90.00	1,057.50	95,175.00
87	MR 83	Garuga pinnata (1.8m)	each	90.00	822.50	74,025.00
88	MR 84	Hardwickia binata (1.8m)	each	173.00	1,116.25	1,93,111.25
89	MR 85	Holarrhena pubescens (1.8m)	each	46.00	1,057.50	48,645.00
90	MR 86	Holoptelea integrifolia (1.8m)	each	24.00	1,410.00	33,840.00
91	MR 87	Hymenodictyon orixense (1.8m)	each	28.00	1,410.00	39,480.00
92	MR 88	Jacaranda mimosifolia (1.8m)	each	622.00	822.50	5,11,595.00
93	MR 89	Lagerstroemia parviflora (1.8m)	each	40.00	1,057.50	42,300.00
94	MR 90	Lannea coromandelica (1.8m)	each	87.00	1,410.00	1,22,670.00
95	MR 91	Litchi chinensis (1.8m)	each	262.00	1,057.50	2,77,065.00
96	MR 92	Madhuca longifolia (1.8m)	each	24.00	1,116.25	26,790.00
97	MR 93	Mangifera indica (1.8m)	each	207.00	1,410.00	2,91,870.00
98	MR 94	Manikarna sapota (1.8m)	each	80.00	1,057.50	84,600.00
99	MR 95	Manilkara hexandra (1.8m)	each	131.00	1,292.50	1,69,317.50
100	MR 96	Melia azedarach (1.8m)	each	90.00	1,057.50	95,175.00
101	MR 97	Michelia champaca (1.8m)	each	40.00	1,410.00	56,400.00
102	MR 98	Miliusa tomentosa (1.8m)	each	90.00	1,645.00	1,48,050.00
103	MR 99	Millingtonia hortensis (1.8m)	each	90.00	1,645.00	1,48,050.00
104	MR 100	Mimusops elengi (1.8m)	each	24.00	1,057.50	25,380.00
105	MR 101	Mitragyna parvifolia (1.8m)	each	24.00	1,410.00	33,840.00
106	MR 102	Moringa oleifera (1.8m)	each	79.00	1,410.00	1,11,390.00
107	MR 103	Morus alba (1.8m)	each	131.00	1,057.50	1,38,532.50
108	MR 104	Musa paradisiaca (1.8m)	each	53.00	1,233.75	65,388.75
109	MR 105	Musa pudica (1.8m)	each	53.00	1,410.00	74,730.00
110	MR 106	Oroxylum indicum (1.8m)	each	46.00	1,645.00	75,670.00
111	MR 107	Parkia biglobosa (1.8m)	each	24.00	1,057.50	25,380.00
112	MR 108	Phoenix sylvestris (1.8m)	each	131.00	2,937.50	3,84,812.50
113	MR 109	Phyllanthus emblica (1.8m)	each	262.00	822.50	2,15,495.00
114	MR 110	Plumeria alba (1.8m)	each	5.00	940.00	4,700.00
115	MR 111	Plumeria rubra (1.8m)	each	5.00	1,410.00	7,050.00
116	MR 112	Pongamia pinnata (1.8m)	each	87.00	822.50	71,557.50
117	MR 113	Psidium guajava (1.8m)	each	131.00	1,645.00	2,15,495.00
118	MR 114	Pterospermum acerifolium (1.8m)	each	72.00	2,115.00	1,52,280.00
119	MR 115	Punica granatum (1.8m)	each	262.00	1,057.50	2,77,065.00
120	MR 116	Putranjiva roxburghii (1.8m)	each	24.00	822.50	19,740.00
121	MR 117	Salix babylonica (1.8m)	each	55.00	822.50	45,237.50
122	MR 118	Salvadora persica (1.8m)	each	55.00	1,057.50	58,162.50
123	MR 119	Samanea saman (1.8m)	each	95.00	822.50	78,137.50
124	MR 120	Saraca asoca (1.8m)	each	115.00	822.50	94,587.50
125	MR 121	Schleichera oleosa (1.8m)	each	24.00	1,410.00	33,840.00
126	MR 122	Shorea robusta (1.8m)	each	346.00	822.50	2,84,585.00

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127	MR 123	Spathodea campanulata (1.8m)	each	40.00	1,645.00	65,800.00
128	MR 124	Sterculia villosa (1.8m)	each	24.00	1,057.50	25,380.00
129	MR 125	Syzygium cumini (1.8m)	each	262.00	1,410.00	3,69,420.00
130	MR 126	Syzygium salicifolium (1.8m)	each	55.00	1,292.50	71,087.50
131	MR 127	Tabebuia argentea (1.8m)	each	66.00	1,292.50	85,305.00
132	MR 128	Tabebuia rosea (1.8m)	each	76.00	1,410.00	1,07,160.00
133	MR 129	Tamarindus indica (1.8m)	each	173.00	1,057.50	1,82,947.50
134	MR 130	Tectona grandis (1.8m)	each	87.00	1,057.50	92,002.50
135	MR 131	Terminalia arjuna (1.8m)	each	109.00	1,410.00	1,53,690.00
136	MR 132	Terminalia bellirica (1.8m)	each	87.00	1,645.00	1,43,115.00
137	MR 133	Terminalia catappa (1.8m)	each	262.00	1,410.00	3,69,420.00
138	MR 134	Terminalia chebula (1.8m)	each	87.00	1,410.00	1,22,670.00
139	MR 135	Terminalia elliptica (1.8m)	each	87.00	1,645.00	1,43,115.00
140	MR 136	Terminalia tomentosa (1.8m)	each	87.00	1,410.00	1,22,670.00
141	MR 137	Wrightia arborea (1.8m)	each	87.00	1,645.00	1,43,115.00
142	2.57.2	Plantation of Trees, Shrubs, and Hedge at site i/c watering and removal of unserveiceable material's as per direction of officer in charge (excluding cost of plant & water) Item includes all royalty, equipment, labour, loading, unloading, and carriage upto any lead & lift required as directed by EIC - SHRUBS plant	each	1,00,036.00	2.57	2,57,254.08
143	2.57.1	Plantation of Trees, Shrubs, and Hedge at site i/c watering and removal of unserveiceable material's as per direction of officer in charge (excluding cost of plant & water) Item includes all royalty, equipment, labour, loading, unloading, and carriage upto any lead & lift required as directed by EIC - TREES plant	nos	10,629.00	5.08	54,031.72
144	MR 138	Supply and Grassing with Vettiver grass at 0.3m c/c including watering and maintenance for the slope stabilization for 180 days or more till the grass forms a thicket, sapling with well developed root system, in polybag, disease free, and development including excavation upto 450mm deep, complete including supply of all material, labour and equipment, upto any lead and lift as directed by EIC	sqm	33,612.00	26.87	9,03,154.44
145	MR 139	Supply & installation of Coir based Geotextile 700 gsm (H2M8) conforming to IS 15868 : Part 1 to 6, for covering top of erosion prone slopes or embankments as per IS 15872:2009; fixed to ground as per drawing, including all royalty, equipment, labour, loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	sqm	33,612.00	108.00	36,30,096.00
146	MR 140	Complete maintenance of the plantation area i.e. lawn trees, shrubs, hedge, flower beds, foliages, creepers etc. including hoeing,weeding pruning replacement of plants, gap filling, watering, mowing of lawn, grass cutting by lawn mover and brush cutter , removal of garden waste, applying insecticide, pesticide & fertilizers(whenever required) top dressing of lawn with good earth and manure and maintenance of other garden related works as directed by EIC / Institute. This item shall be operated only after complete campus horticultural development and all plants have survived their development period or completion of defect liability period.This item shall be renewable on annual basis after completion of first year of maintenance, and institute shall have right to deny renewal without assigning any reason whatsoever. (a) For first year	year	1.00	25,13,199.00	25,13,199.00
147	MR 141	(b) For second year	year	1.00	26,38,859.00	26,38,859.00
148	MR 142	(c ) For third year	year	1.00	27,70,802.00	27,70,802.00
149	MR 143	(d ) For fourth year	year	1.00	29,09,343.00	29,09,343.00
150	MR 144	(e ) For fifth year	year	1.00	30,54,811.00	30,54,811.00
		<b>LANDSCAPE WORK</b>				<b>5,44,87,899.45</b>

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151	MR 145	<b>SPRINKLER , DRIP &amp; HYDRANT IRRIGATION SYSTEM</b> Supply and installation of drip based irrigation system including all piping, drips, pumps, automation, accessories and maintenance for 60 months including all royalty, equipment, labour, loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge <b>Piping Network</b> Providing of PVC pipes (IS:4985- 88), and fittings & Accessories like tees, elbows, bends, junctions, Reducers etc; as required/directed at site including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge <b>PVC Pipe 160 mm X 06kg/cm2</b>	rm	54.00	708.00	38,232.00
152	MR 146	PVC Pipe 140 mm X 06kg/cm2	rm	2,178.00	568.00	12,37,104.00
153	MR 147	PVC Pipe 110 mm X 06kg/cm2	rm	1,652.00	337.00	5,56,724.00
154	MR 148	PVC Pipe 75 mm X 06kg/cm2	rm	756.00	163.00	1,23,228.00
155	MR 149	PVC Pipe 63 mm X 06kg/cm2	rm	3,510.00	118.00	4,14,180.00
156	MR 150	PVC Pipe 50 mm X 06kg/cm2	rm	2,557.00	74.00	1,89,218.00
157	MR 151	PVC Pipe 40 mm X 06kg/cm2	rm	-	48.00	-
158	MR 152	<b>Drip &amp; Accessories</b> Providing of 16 mm - 4 Bar Pressure Rating, 1.2mm Thickness, LEED Compliant, PE pipe -together with all required accessories. (Brown Color) including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	rm	1,07,445.00	15.00	16,11,675.00
159	MR 153	Providing INLINE Drip 16mm 50CM 2.3 LPH, 4 Bar Pressure Rating, 1.2mm Thickness together with all required accessories. (Brown Color) including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	rm	22,320.00	39.00	8,70,480.00
160	MR 154	Providing Pressure Comp. Xeri Dripper 2 GPH including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	rm	57,304.00	8.00	4,58,432.00
161	MR 155	Providing Take Off Connection (PP Clamp Saddle + PVC Riser + 17mm Barbed x Threaded Tee) including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	Set	2,882.00	190.00	5,47,580.00
162	MR 156	Providing 9" Long Lateral Hold Stake - MS Gavanized including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	Nos	25,953.00	13.00	3,37,389.00
163	MR 157	<b>Valves</b> Providing of Various Valves with required Fittings & Tapping PP Clamp Saddles with Chromed Nut Bolt & Nitrile Rubber Ring including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge a) PVC Ball Valve 63mm PN 16	Nos	43.00	1,995.00	85,785.00
164	MR 158	b) PVC Butterfly Valve 140 mm (for Main line Isolation)	Nos	4.00	10,181.00	40,724.00
165	MR 159	c) PVC Butterfly Valve 110 mm (for Main line Isolation)	Nos	4.00	7,470.00	29,880.00
166	MR 160	d) 3/4" Quick Coupling Valve	Nos	60.00	2,550.00	1,53,000.00
167	MR 161	e) 3/4" Quick Coupling Valve Key	Nos	10.00	2,500.00	25,000.00
168	MR 162	f) PP Saddlet Tee 140 X 3/4" with ASTM Pipe (18" Long)	Nos	28.00	1,459.00	40,852.00
169	MR 163	g) PP Saddlet Tee 110 X 3/4" with ASTM Pipe (18" Long)	Nos	32.00	540.00	17,280.00
170	MR 164	h) 1" Double Acting Air cum Vacuum Release Valve	Nos	15.00	2,975.00	44,625.00
171	MR 165	i) PP Saddlet Tee 140 X 1" with ASTM Pipe (18" Long)	Nos	8.00	1,459.00	11,672.00
172	MR 166	j) PP Saddlet Tee 110 X 1" with ASTM Pipe (18" Long)	Nos	7.00	540.00	3,780.00
173	MR 167	k) Rectangular Valve Box 12"	Nos	43.00	2,390.00	1,02,770.00
174	MR 168	l) Round Valve Box 10"	Nos	68.00	1,145.00	77,860.00
175	MR 169	m) Round Valve Box 6"	Nos	75.00	260.00	19,500.00
176	MR 170	n) GM Valve 1"	Nos	75.00	1,725.00	1,29,375.00

Name of Project: Horticulture works for Nalanda University- PACKAGE 7A						
Bill of Quantities						
Item No.	DSR No	Description	Unit	Quantity	Total Rate	Amount
177	MR 171	<b>Providing Automation equipment including loading, unloading, and carriage upto any lead &amp; lift required as directed by Engineer-in-Charge</b> Irrigation Controller - 0-50 station, Expandable upto 200 Station with expansion Module, Out Door, 230 VAC Unit, Capable of running Six Independent Programs with Power Back Up Lithium Coin- Cell Battery	Set	1.00	92,925.00	92,925.00
178	MR 172	2" Solenoid Valve - BSP Female Threaded, Pressure - 1 to 10 Bar	Nos	41.00	4,460.00	1,82,860.00
179	MR 173	1-1/2" Solenoid Valve - BSP Female Threaded, Pressure - 1 to 10 Bar	Nos	2.00	4,140.00	8,280.00
180	MR 174	Decoder 1 Station	Nos	43.00	8,285.00	3,56,255.00
181	MR 175	Flow Sensor	Nos	1.00	59,000.00	59,000.00
182	MR 176	Rain Sensor	Nos	1.00	7,500.00	7,500.00
183	MR 177	Maxi - Direct Burial Decoder Cable 14/2	rm	4,176.00	160.00	6,68,160.00
184	MR 178	Pressure Reducing Valve 2"	Nos	43.00	2,390.00	1,02,770.00
185	MR 179	Weather Prrof Cable Connection DBY	Nos	250.00	145.00	36,250.00
186	MR 180	Line Surge Protector LSP	Nos	28.00	8,385.00	2,34,780.00
187	MR 181	Copper Grounding ROD 5/8" x 8' with 2 nos of Clamp	Nos	28.00	4,070.00	1,13,960.00
188	MR 182	Maxi Surge Pipe	Nos	1.00	39,500.00	39,500.00
189	MR 183	MGP - Maxi Grounding Plate	Nos	1.00	40,500.00	40,500.00
190	MR 184	Votage Stabilizer 0.5 Kva	Nos	1.00	5,135.00	5,135.00
191	MR 185	PVC Pipe 32mm 8kg / Maxi Cable Conduit	rm	120.00	45.00	5,400.00
192	MR 186	<b>Filteration Unit</b> : Providing Screen Filter, 80/110 Micron with all required Accesories including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge Self Cleaning Screen Filter capacity Pressure Differential Baised Backwas mechnism both working on Hydraulic backwash command having Flow capacity of 85 m3/h	Nos	1.00	6,71,000.00	6,71,000.00
193	MR 187	<b>Pump Station</b> Providing, of VFD Based Pump Station giving flow of 23.0 lps at 53 m head combibation of three pumps, each pump capacity is 11.50 lps @ 53 m head complete Set (2 working + 1 stand By) with Pressure Tank, Panel & all required accessories. including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	set	1.00	9,15,000.00	9,15,000.00
194	MR 188	Providing Fertigation Pump - Hydraulic Type - Maximum Flow 640 LPH including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	set	1.00	65,000.00	65,000.00
195	MR 189	Providing Hydrometer cum Solenoid Valve 6" including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	Nos	1.00	2,62,990.00	2,62,990.00
196	MR 190	<b>Installation of Landscape Irrigation System</b> Exacavating, Laying, Joiting & Commissioning PVC Pipes from 160mm OD to 25mm OD, Trench Size minimum 600mm Deep for Main Lines, 300mm to 450mm Deep for Submain ines, Backfilling with compaction and removing excess soil up to 50m Lead from site. Includes Installation & Commissioing of all Irrigation hardwares like Sprinklers, Dripper, Drip Lines, Valves, Saddles, Swing Joints, Valve Boxes, Filter Unit & Automation Items Complete as per drawing, specifications, instruction & directions of the Engineer-in-charge.	rm	14,376.00	160.00	23,00,160.00
197	MR 191	Providing Road Sleeve DWC Pipe 6" SN 8 (Excluding road cutting, auguring) including loading, unloading, and carriage upto any lead & lift required as directed by Engineer-in-Charge	Nos	304.00	670.00	2,03,680.00
198	MR 192	<b>Operation &amp; Maintenance of Irrigation System</b> Daily Operation of Irrigation System by using Automation, Routine Check up of Pump Station, Cleaning of Disc Filter, Cehcking Cable Connection, Valves & Servicing them as per requirement. Attending minor repair works as & when required. Maintaining Daily Log sheet provided.	Months	60.00	65,000.00	39,00,000.00
		<b>IRRIGATION WORK</b>				<b>1,74,37,450.00</b>
		<b>GRAND TOTAL</b>				<b>7,19,25,349.45</b>