

*Specifications*  
*For*  
*Horticulture*  
*&*  
*Landscaping*  
*works*

## HORTICULTURE AND LANDSCAPING CONTENTS

Item No.	Description of Item	Page No.
1	Cutting and removing of wild vegetation.	3
2	Application of Weedicide/herbicide.	3
3	Transportation of soil/murum.	3
4	Supply of good quality fine textured Red soil free from pebbles suitable for Lawns	4
5	Maintenance and up-keeping of Grassed playfields	4
6	Rolling in Playfields, athletic track & grassed ground areas by operating 2 Tons capacity Roller	5
7	Rolling in Cricket field, athletic track ,other play field areas by power roller of minimum 8 to 10 tons capacity	5
8	Digging of pits/beds in soil/murum	6
9	HIRE CHARGES FOR TRANSPORTATION OF WILD VEGETATIONS	6
10	DRESSING OF AREAS	6
11	REMOVAL OF AQUATIC WEEDS	7
12	HIRE CHARGES FOR DEPLOYMENT OF JCB MACHINE	7
13	Cleaning of water body(Cemented Tanks) in RRCAT campus	8
14	Providing and stacking of FYM.....	8
15	Providing, Installation and commissioning of Drip irrigation system for Gardens	8
16	Development of Garden .	9
17	Providing of Earthworms amongst listed species (i.e.Eisenia fetida & Eudrilus eugeniae)	10
18	Preparation of Vermi-compost by Garden waste viz. weeds, wild vegetations and FYM, cow dung etc. in the vermin beds	10
19	Complete Maintenance & up keeping of Gardens/Parks in Residential area	10
20	Providing of flowering seasonal plants in thumb pots/plastic trays amongst listed species	14
21	Pesticide treatment of roadside tree trunk(Measuring Girth upto 30cm) upto a height of 1meter from ground level with pesticide emulsion ,lime& Geru etc.	14
22	Pesticide treatment of roadside tree trunk(Measuring Girth 30cm to 60cm) upto a height of 1meter from ground level with pesticide emulsion, lime& Geru etc.	14
23	Pesticide treatment of roadside tree trunk(Measuring Girth 60cm & above) upto a height of 1meter from ground level with pesticide emulsion, lime& Geru etc.	15
24	Watering arrangements for Gardens/plantations	15
25	Air layering (gooty preparation).	15
26	Raising of Plant material in poly bags.	16
27	Providing of good quality flower sticks of polyhouse grown(Tissue cultured) Gerbera....	16
28	Providing of good quality flower sticks of Tuberose/Gladiolus (local var.)	16
29	Arrangement of flower vases.	16
30	Preparation of Flower bouquets.	17
31	Stage Decoration for Convention centre, Auditorium, Lecture hall	17
32	Removal/Lowering of a submersible pump set in the open well within RRCAT campus having depth upto 6.00M	17
33	Removal/Lowering of a submersible pump set in the open well within RRCAT campus having depth from 6.00M to 12M	18
34	Removal/Lowering of a submersible pump set in the open well within RRCAT campus having depth from 12.00M to 18.00M	18
35	Maintenance of potted plants	18
36	Maintenance & up keeping of Nursery stock plants in poly bags	19
37	Complete maintenance & up keeping of Gardens/Nursery in Laboratory area	19

**Item No:1****CUTTING & REMOVING OF WILD VEGETATIONS:**

The item includes cutting of wild vegetations ,bushes/grass etc. including wild grown lantana, boroo grass, thin saplings of subabool, seasonal/perennial weeds etc. from ground level, collecting and stacking the same in heaps at least 10 mtrs away from the place of working so as to give a neat and clean appearance complete as directed by Head, Horticulture Cell.

**Measurements**

Length, breadth of the operated area shall be measured correct to 0.1 meter and the area shall be calculated in sqm correct to two places of decimal.

**Rate**

The rate shall include the cost of all the labour and material (tools and tackles) involved for all the operations described above.

**Item No.2****APPLICATION OF WEEDICIDE/HERBICIDE:**

The item includes spraying of weedicide/herbicide by deploying trained manpower using manual(knapsack)spray pumps in desired concentrations by properly mixing to form uniform solution on foliar plant parts/vegetations using water as media including arranging water from within RRCAT campus at site for use. Spraying at site shall be carried in the wind direction to avoid any body contact following safety precautions like use of mask/gloves, goggles etc during spray operation preventing any accident /health hazard .

Note : 1. Department shall not responsible for any injuries/disorders arising out of misuse/mishandling of weedicide and equipment put to use.

2. The contractor shall keep the record of weedicide issued by the Department updated

3. The contractor shall carry out spray operation on site identified by Head, Horticulture Cell.

**Measurements**

Payments shall be based on the herbicide/weedicide issued by dept.& consumed by contractor at the site of work from time to time correct to 0.001 Litre .

**Rate**

The rate shall include the cost of all the labour and material involved in all the operations described above including cost towards safety measures , transportation of water, cost of spray pumps, buckets etc. **(excluding the cost of herbicides, fertilizers, sticking agent and water to be supplied by the deptt. free of cost.)**

**Item No.3.****TRANSPORTATION OF SOIL/MURRUM:**

The item includes the cost of excavation of soil/murum, loading, transportation, unloading at all leads with in RRCAT campus. The contractor shall transport the soil/murum from the areas identified for various Gardens/Parks/Cricket field etc by the department. The soil excavated shall be certified by the Department for its suitability i.e. as per requirements as per the directions and instructions issued by Head, Horticulture Cell.

**Measurements:** Length, breadth and height of dumper/tractor trolley shall be measured correct to a cm. The volume of the dumper/tractor trolley shall be reduced by 20% for voids for payment.

**Rate:** The rate shall include the cost of excavating the earth from areas lying at distance from the site, loading, transporting the same at site ,unloading at places indicated.

#### **Item No. 4.**

##### **SUPPLY OF GOOD QUALITY FINE TEXTURED RED SOIL:**

The item includes the cost of supply of fine textured Red soil suitable for Lawns, plant propagation and pot culture etc. at RRCAT site, including royalty, loading, transportation, unloading, stacking at RRCAT Indore site. Red soil shall be free from stones, pebbles, weeds, unwanted garbage, grass etc. Before affecting bulk supply contractor shall get the sample of Red soil approved for its quality/suitability. The Red soil shall not be unloaded unless approved by departmental representative failing which the material shall not be paid. In case of rejection of material for quality etc the contractor shall not unload the same and if done shall remove it at his own cost from the site.

It shall be transported to the site in Truck/dumper with efficient arrangement to prevent spilling en route. It shall be stacked at site..

**Measurements:** Length, breadth and depth of stacks shall be measured correct to cm. The volume of the stack shall be reduced by 20% for looseness in stacking and to arrive at the net quantity for payment.

**Rate:** The rate shall include the cost of supply, labour and material involved in all operations described above, including carriage up to RRCAT Indore site and levies if any.

#### **Item No.5**

##### **MAINTENANCE & UPKEEPING OF GRASSED PLAYFIELDS:**

Maintenance of Lawn (Cynodon dactylon) includes follow up of cultural practices as specified below on day today basis.

**1.Watering :** The lawn shall be watered regularly using sprinklers/hoses provided at site through distribution network laid down. While making use of hose the direction of hose out let shall be towards sky so as to have a rain effect. In no case flooding shall be done except it is required for some reason.

**2.Weeding/Mowing :** The lawn shall be moved regularly and worked for removal of weeds therein on regular basis. All efforts shall be made to timely weed out nut grass and broad leaved weeds in the lawns by uprooting alternatively using herbicidal treatment under the instructions. The average interval for lawn moving shall be once a week or on requirement at site depending on season. Lawn moving shall be done in same direction /no cross cutting is allowed. Immediately after moving with lawn mower, the grass edges etc shall be trimmed off by shears to maintain uniformity in grass growth. Constant supervision shall be kept to keep the lawn area clean and weed free. As a regular feature lawns shall be swept and maintained clean from rubbish material/leaves and other material etc all the time.

**3.Providing lawn mower :** The contractor shall make elaborate arrangement for providing lawn mower for cutting lawn grass at his own cost. The lawn mower may be diesel operated suitable for large lawn area fitted with back roller to ensure timely cutting of grass. It shall be the responsibility of the contractor to keep the machines in up to date condition and ready to use with periodical sharpening of blades to ensure smooth and uniform cutting of grass. The person using the power lawn mower shall be technically skilled to look into the aspects of adjustments of cutter which should be around 2.00 cm high grass level. Cutting of lawn at lower level shall only be carried out once in a year as per the directions/instructions issued by Officer in Charge Horticulture.

**4.Rolling:** Rolling operation for compactness shall be done using manual roller in the direction of mowing with cross rolling to be followed once in 4 months. Rolling or mowing shall not be done when the lawns are in wet condition as this shall spoil the areas. All the operations stated above shall be strictly followed in continuous manner.

**5. Topping up/Pest control:** Half yearly top dressing with garden earth/FYM/fertilizers shall be carried out Pest /disease management shall be done as per the requirement & care must be taken for keeping the lawns in green lush condition.

**6 Measurements:**

Length & breadth of the lawns in cricket field shall be measured on monthly basis correct to 0.1 meter and the area shall be calculated in sqm correct to two places of decimal.

**7 Rate:**

The rate shall include cost of all the labour and material (Lawn mower, tools and tackles) involved in all the operations described above. **(Excluding the cost of water, soil, FYM, fertilizers, pesticides, Sprinklers, hose, Manual roller to be made available by the dept free of cost.)**

**Item No. 6.**

**ROLLING OF GRASSED PLAYFIELDS (by Deptt. Roller of 2 Tons capacity ):**

Rolling in Playfields, athletic track, kho-kho ground, Cricket pitch & grassed ground areas as and when required for compacting areas and making it suitable for play /athletics etc. by operating 2 Tons capacity departmental mechanized diesel operated Roller by deploying a trained driver having valid driving license. The contractor shall ensure for pre-watering before rolling to ensure compact surface & follow the safety measures/regulations during the operation of roller at site of work.

**Measurements:**

Length & breadth of the rolled playfields shall be measured correct to 0.1 meter and the area shall be calculated in sqm correct to two places of decimal.

**Rate:**

The rate shall include cost of all labour(Driver) and material(fuel) involved in all the operations described above.**(Excluding the cost of Deptt. Roller[2Tons capacity ] which shall be made available free of cost)**

**Item No. 7.**

**ROLLING OF GRASSED PLAYFIELDS (with power roller of 8 to 10 ton's capacity):**

It includes rolling of grassed playfield with power roller of 8 to 10 ton's capacity, moving the same on lawns/ track/kho-kho ground surrounded so as to provide compact well pressed surface suitable for playing /athletics. The contractor shall ensure for pre-watering before rolling to ensure compact surface & follow the safety measures/regulations during the operation of roller at site of work.

**Measurements:**

Length & breadth of the rolled playfields shall be measured correct to 0.1 meter and the area shall be calculated in sqm correct to two places of decimal.

**Rate:**

The rate shall include cost of Roller deployment, all labour and material involved in all the operations described above. **(Excluding the cost of water to be made available by the dept free of cost.)**

**Item No. 8.****DIGGING PITS/BEDS IN SOIL/MURRUM:**

Excavation of Pits/beds of desired shape& size in ordinary soil up to a depth of 1mt. in soil/murrum by staggering serviceable material and removing Stones, brick bats, unsuitable earth and other rubbish, all roots and other undesirable growth stacked/spread for disposal up to 50 meters. Good earth in quantities as required to replace such discarded stuff shall be unloaded at site by the contractor which shall be paid for separately. The tree beds/pits shall be back filled with farm yard manure/fertilizers/pesticides by uniformly mixing with the soil in the specified proportion, to the level of adjoining ground and then profusely watered to enable the soil to subside the refilled soil shall then be dressed evenly with its surface about 50 to 75 mm below the adjoining ground level complete as directed by the Head, Horticulture Cell.

**Measurements:**

Length, breadth and depth of excavated pits/beds shall be measured correct to a cm and the volume of pit shall be calculated in cubic meter. Correct to two places of decimal, to be paid on back filling as per above.

**Rate:**

The rate shall include the cost of all the labour and material involved in all the operations described above **(excluding the cost of soil, FYM, Fertilizer/Pesticides water to be made available by the dept free of cost.)**

**Item No-9.****HIRE CHARGES FOR TRANSPORTATION OF WILD VEGETATIONS:-**

Transportation of wild vegetations/bushes/Garden material/uprooted/fallen tree trunks, wooden logs etc. by truck/dumper/tractor trolley (raised with wooden planks) including the cost of loading/unloading/stacking etc. by deploying sufficient labour for handling of above at all leads within RRCAT campus and complete as per specifications and as directed by the Head, Horticulture Cell, RRCAT, Indore. (Body measurement for Truck /Dumper/Trolley shall not be less than 5.00 Cu.M by volume.)

Note:-The contractor shall ensure and follow all Safety /Security rules and regulations during execution of work in colony area and technical area by deploying separately truck/dumper/tractor trolley in good condition as and when required at site.

**Measurements:** Measurements shall be based on number of trips operated on day to day basis as certified by departmental representative.

**Rate:** The rate shall include operational cost of truck/trolley as above the cost of all labour and material (Tools and Tackles) required during the operations.

**Item No-10.****DRESSING OF AREAS:-**

Dressing of areas by scraping, spreading, levelling by removing all vegetations/unwanted material and stacking the same upto 50 Mtr. So as to give a well neat and clean appearance at site complete as per specifications and as directed by the Head, Horticulture Cell, RRCAT, Indore.

**Measurements:** Measurements shall be based length/breadth corrected upto 0.1M. The area shall be calculated in Sq.M. correct to two places of decimal.

**Rate:** The rate shall include the cost of all the labour and material (Tools and Tackles) involved in all the operations described above.

**Item No-11.**

**REMOVAL OF AQUATIC WEEDS:-**

Removal of aquatic weeds from water bodies (lakes) in RRCAT campus by cutting/pulling using FRP boat, tools and tackles by deploying skilled labour by following safety precautions, transporting the same to bank at predetermined location, unloading from boat and further disposal by truck /trolley within campus complete as per specifications and as directed by Head, Horticulture Cell, RRCAT, Indore. (The payment shall be based on body measurement (truck/trolley) in Cu.M.

Removal of aquatic weeds from lake pertains to removal of aquatic weeds grown up in lake by cutting/pulling out branchlets/roots using sickle/suitable tool collecting and transporting the same to the bank of the lake for disposal at pre-determined location and stacking the same and shall be operated as and when required on observing weed growth. A dept .F.R.P. boat shall be made available along with rowing rods and safety jacket/life buoy etc. for movement in water body i.e lake. The contractor shall engage skilled experienced manpower for the work and shall be essentially expert swimmers. The contractor shall ensure for all safety and precautionary measures involved in carrying out the work in water body. The department shall not in any case responsible for any accident/or any eventualities arising at the site of work and shall not be liable to pay any compensation towards the same.

**Measurements:** Removed aquatic weeds shall be measured in CuM only by loading, unloading and transportation in specified location with RRCAT campus in truck/trolley separately in good condition. The length, breadth and height of the truck/trolley shall be measured correct to a cm and area worked out in CuM correct to two places of decimal.

**Rate:** The rate includes cost of labour, tools and tackles, safety measures required for all the operations described above.

**Item No-12.**

**HIRE CHARGES FOR DEPLOYMENT OF JCB MACHINE:**

The contractor shall deploy JCB Machine with operator having bucket/loader, excavator suitable for works pertaining to uprooting to trees from soils/Murum, shifting the same for holding and unloading for transportation, placing at site for planting, excavation works pertaining to uprooting of treestubbles/wild vegetations, relocating/shifting of trees/dry wood/rubbish, leveling of areas, trenching in soils etc. within RRCAT campus complete as per requirements and instructions issued at site by Head, Horticulture Cell, RRCAT, Indore.

The contractor shall ensure safety/security rules and regulations, follow precautions during operation of machine while execution of said works at site.

**Measurements:** The measurements shall be based on per hour basis i.e. charges for operation of machine as certified by a deptt. representative at site of work.

**Rate:** The rate shall be applicable for deployment of JCB Machine including the cost of operation, all labour, tools, tackles etc.

**Item No-13.****Cleaning of water body(Cemented Tanks) in RRCAT campus:**

Cleaning of water body(Cemented Tank) water fountain near Convention Centre having area of 35.32 Sqm and inside Main Auditorium Director Block water lily pond having area of 147.00 Sqm by deploying unskilled labourers by dewatering, cleaning of settled scum, unwanted rubbish material, biological material etc. by scrapping using suitable brush cleaning floor/inner and outer walls around and fountains unit installed, including water filter using detergent powder, drying and mopping by cloth making it clean, suitable for filling of fresh water complete as per requirements and instructions issued at site by Head, Horticulture Cell, RRCAT.

The contractor shall ensure Safety/Security rules and regulations ,follow precautions during cleaning operation of cemented tanks at work.

**Measurements:** The measurements shall be based on per operation basis as certified by a dept. representative at site of work. Total 30 Nos.(Thirty Nos.) of operation has to carry out in contract.

**Rate:** The rate shall be applicable for deployment of unskilled labourers including the cost of cleaning operation of cemented tanks, tools and tackles etc.

**Item No.14.****PROVIDING AND STACKING OF FYM:**

Supply of FYM from source including loading, transportation, unloading and stacking at RRCAT site. Farm Yard Manure (FYM) shall be well rotten and made up of cattle /buffalo dung only. In no case the manure made up of camel/horse/sheep dung shall be accepted. FYM shall be free from soil clods, fresh dung, unwanted garbage, grass etc. Before affecting bulk supply contractor shall get the sample of FYM approved for its quality/moisture content. The FYM shall not be unloaded unless approved by departmental representative failing which the material shall not be paid. In case of rejection of material for quality etc the contractor shall not unload the same and if done shall remove it at his own cost from the site. It shall be transported to the site in Truck with efficient arrangement to prevent spilling en-route. It shall be stacked at site.

**Measurements**

Length, breadth and depth of stacks shall be measured correct to a cm. The volume of the stack shall be reduced by 8% for looseness in stacking and to arrive at the net quantity for payment.

**Rate**

The rate shall include the cost of supply, labour and material involved in all operations described above, including carriage up to RRCAT site and levies if any.

**Item No.15****PROVIDING, INSTALLATION & COMMISSIONING OF DRIP IRRIGATION SYSTEM:**

The work consists of supply of items as per specifications, laying the same in pre excavated trenches in the Garden. The items supplied & laid shall be checked for proper installation, testing for functioning on connecting the nearest water source/waterline.

**1.R-PVCPipes :**

Providing, laying and jointing in position PVC pipes of Size 32mm OD conforming to IS:4985: 1988 and suitable for the working pressures of 8.0 kg/cm<sup>2</sup> with all fittings and accessories e.g. couplings, tees, bends, reducers, screwed adapters, flanged tail pieces etc. jointing as per manufacturers' instruction.



## **2. 16mm Innerdripline:**

Providing, laying and jointing in position LLDPE, UV stabilized drip line of 16mm nominal diameter, Class-II confirming to IS 13488. Innerdripline shall be a flexible extruded seamless tube with drippers permanently fixed inside, manufactured from special grade virgin polymers. Drippers/Emitters with widest turbulent flow path and large cross section area to have clog resistant drip line suitable for surface and sub surface installations with emission uniformity. Emitter discharge of 2.4LPH at 2.5Kg/sqcm working pressure with standard dripper spacing of 30cm made as per ISO:9261 in a suitable coil length of 400mt. with all fittings and accessories e.g. rubber grommets, connectors/grommet take off, poly inline joiners, end stop etc. jointing as per manufacturers' instruction.

## **3. 16mm LLDPE Polytube:**

Providing, laying and jointing in position LLDPE, UV stabilized polytube/lateral of 16mm 16mm nominal diameter, Class-II, confirming to IS 12786. Minimum wall thickness of polytube/lateral shall be 1.1mm, suitable for working pressure of 2.5Kg/sqcm in a coil length of 400mt with all fittings and accessories e.g. rubber grommets, connectors/grommet take off, poly joiners, end stop etc. jointing as per manufacturers' instruction.

## **4. Filtration Unit ,GI Valves & fittings:**

(A) Providing & Fixing of screen filter having a 1" inlet/outlet ,Male thread-BSP, suitable for Range of flow=4-6cum/Hr, filtration surface area=120sqm and material of construction shall be polypropylene. It shall be suitable for a operating pressure of 6Kg/sqcm.

(B) Providing & fixing of poly takeoff and 16mm poly valve with the R-PVC pipes and 16mm polytubes.

## **Item No.16**

### **DEVELOPMENT OF GARDEN:**

Development of Garden at RRCAT campus by planting trees, shrubs, hedges, ground covers, creepers and lawns etc in the area as per design/instructions which includes loosening the soil, mixing it with FYM/fertilizers/pesticides in upper layer of 0.03M, flooding with water for weed emergence, weeding out the areas, dressing, leveling etc making it suitable for planting amongst above at site of work. Planting of lawns/Grassing involves operations like scrapping of lawn turfs from the pre located areas, transporting, loading, unloading and planting at specified distance in rows at site, rolling with manual roller for compaction and facilitating rooting and maintaining for the initial development period of one month on completion of above, by following cultural practices for weeding, basin making, watering, application of plant protection measures by carrying out sprays of insecticides/ pesticides as and when required including replacement of mortalities if any complete as directed by Head, Horticulture Cell, RRCAT .

#### **Measurements:**

Length, breadth of the garden area developed on completion of initial development period shall be measured correct to 0.1 meter and the area shall be calculated in sqm. Correct to two places of decimal.

#### **Rate:**

The rate shall include of all the labour, material (tools and tackles)& cost of transportation involved in all the operations described above. **(Excluding the cost of plant material, Water, FYM, pesticides, weedicides, and fertilizer to be made available by the dept. free of cost)**

**Item No:17****Providing of Earthworms(Vermin culture):**

Providing of Earthworms(Vermin culture)amongst listed species (i.e.Eisenia foetida & Eudrilus eugenaee)including the cost of packing, transportation, mixing with raw compost material etc. at RRCAT site at desired interval during the entire duration of contract and complete as per specifications and as directed by Head, Horticulture Cell.

**Measurements:** Supply shall be measured correct to a gm. The weight of the earthworms shall be measured after reducing weight of packing material, feed/filler material (e.g.FYM,cow dung etc.)to arrive at the net quantity of earthworms for payment.

**Rate:** The rate shall include the cost of supply, labour and material involved in all operations described above, including carriage up to RRCAT Indore site and levies if any.

**Item No.18****PREPARATION OF VERMICOMPOST :**

Preparation of Vermi-compost in RRCAT campus by mixing Garden waste viz. weeds, wild vegetations etc. with FYM/cow dung in the vermibeds, processing the same using earthworms by carrying out required practices like watering for decomposition, sieving, isolating earth worms and stacking the finished product i.e. vermicompost filling in bags, weighing and arranging at pre-located site by deploying labourers complete as directed by Head, Horticulture Cell, RRCAT.

**Measurements**

Vermicompost for quantity shall be measured by weighing the bags correct to a kilogram's to arrive at the quantity for payment.

**Rate**

The rate shall include the cost of labour and material(tools and tackles) involved in all operations described above( **excluding the cost of Garden waste /Earthworms/ water/FYM/Cow dung to be provided by the deptt. free of cost at site**).

**Item No.19****Complete Maintenance & up keeping of Gardens/Parks in Residential area:**

The work includes up keeping of lawns/trees/shrubs/flowerbeds/edges/hedges/ ground covers water pool, pond/Potted plants/Garden benches/ play items etc by following cultural practices:

**1.Lawns :**

Maintenance and Up keeping includes:

A.1. The lawn shall be watered regularly and shall not be allowed to dry out for any reason. The watering arrangement shall be done by using sprinklers/hoses/water tankers as per requirements. While making use of hose the direction of hose out let shall be towards sky so as to have a rain effect. In no case flooding shall be done except it is required or asked for some reason.

A.2. The lawn having Cynadon dactylon (Rajghat) shall be moved regularly and worked for removal of weeds therein on regular basis. All efforts shall be made to timely weed out nut grass growth in the lawns by uprooting. The average Interval for lawn mowing shall be once a week or on requirement at site depending on season. In case of Korean grass/ Maxican/Jumping (diamond) lawn timely arrangement for watering,weed

removal/shearing and pest /disease management shall be done. All care must be taken for keeping it in green lush condition.

A.3. The contractor shall make elaborate arrangement for providing and operating lawn mower for cutting lawn grass at his own cost. The lawn mower may be diesel operated suitable for large lawn area fitted with back roller to ensure timely cutting of grass. However, in case of small garden areas mechanical type of machines can be put to use .It shall be the responsibility of the contractor to keep the machines in up to date condition and ready to use and periodical sharpening of blades to ensure smooth and uniform cutting of grass. The person using the power lawn mower shall be sufficiently technically sound to look into the aspects of adjustments of cutter which should be around 2.00 cms high grass level. Cutting of lawn at lower level shall only be carried out once in a year as per the directions/instructions issued by Officer In Charge Horticulture or his authorized representative at site.

A.4. Rolling shall be done at least once in 10 days and shall be in the same direction of lawn moving. However, cross rolling shall be done once in 4 to 5 months or so.

A.5. Lawn moving shall be done in same direction /no cross cutting is allowed.

A.6. Constant supervision shall be kept to keep the lawn area clean and weed free. As a regular feature lawns shall be swept and cleaned from rubbish material/leaves and other material etc all the time.

A.7. Top dressing with Garden earth/FYM/ Vermi compost shall be done on yearly basis for which shall be supplied by the Dept.

A.8. Lawns shall be fed with Manure& fertilizer so as to maintain form /texture & color.

A.9. Rolling or mowing shall not be done when the lawns are in wet condition as this shall spoil the areas. All the operations stated above shall be strictly followed in continuous manner.

A.10. Mowing of ground covers other than that Cynodon dactylon shall be done as per requirement /instructions of Departmental representative at site of work.

A.11. Immediate to the mowing with lawn mower, grass area edges shall be trimmed by shears to maintain proper shape and uniform growth.

## **2.TREES:**

Maintenance and Up keeping includes:

B.1. During early stage i.e.at least first three years, the maintenance shall include regular watering, mulching, soil working, supporting and pruning operation. The tree shall be manured once in a year with Manure (FYM/vermin compost) to be provided free of cost by the Deptt.) Regular checking against insect/pest /fungus attack shall be made.

B.2. The tree which are well established, then the maintenance shall include occasional watering, soil working, manuring and checking against attack of insect or pest. Training/ pruning of trees for form and shape shall be an important aspect of maintenance.

### **3.SHRUBS/CREEPERS/LOW GROWING PLANTS:**

- C.1.General maintenance such as watering, weeding, mulching, supporting and pruning shall be done as required.
- C.2. Regular checking against insect/pest/fungus attack shall be made.
- C.3. PH value and treatment to modify the same shall be the part of maintenance if required.
- C.4.Removal of dead branches, leaves, flowers, pruning, training, supporting, cutting back, and protection against heat/cold/heavy rains shall be the part of maintenance.
- C.5.Soil working shall be done once a week up till a minimum depth of 20cm till proper establishment of plant.
- C.6.Manuring/application of fertilizers shall be done twice a year at equal intervals or as directed by Officer Incharge, Horticulture.

### **4.HEDGES/EDGES:**

- D.1. Maintenance shall include pruning/cutting of hedge with Garden shears at an interval of minimum 14 days or earlier if required. The height and thickness of hedge /edge to be done as per direction given by Head, Horticulture Cell, RRCAT.
- D.2. Maintenance shall also include timely watering, weeding, manuring/application of fertilizers, spraying of insecticides/fungicides.
- D.3. Soil digging up to depth of 20cm for loosening of soil shall be done once in two months.

### **5.SEASONAL FLOWER BEDS:**

- E.1. In addition to general maintenance of flower beds i.e. raising of seedlings ,planting in appropriate season/time, weeding of flower bed area, mulching, providing FYM, mixing it thoroughly, regular watering, plant protection etc ,proper maintenance, collection of seeds of maturity etc., shall form part of maintenance.

### **6.WATER POOL OR POND,GARDEN BENCHES,PLAY ITEMS ETC.**

- F.1. Maintenance shall include regular cleaning of water ponds, pools etc. in order to have clean and fresh water inside. Timely removal of water and filling with fresh clean water shall be insured as and when needed.
- F.2.The garden benches play items if any within park area shall be kept neat and clean with washing the same with water.

### **7.PATHWAYS:**

- G.1. Maintenance of pathways shall include cleanliness of pathways, timely trimming of grass within the crevices of path, putting soil if needed for proper fixing of block etc.

### **8.DEPLOYMENT OF MANPOWER:**

In order to ensure proper up keeping and maintenance of areas under Garden/Parks the contractor shall deploy a good team of experienced Mali's possessing good skills adopting a yard stick 1 Mali for 4000sqm/day under Garden/Park area and supporting manpower and complete as per instructions and as directed by Officer In charge., which may vary from season to season and requirement to take care of package & Practices like practices like weeding/soil working which becomes critically important during monsoon months for proper up keeping and maintenance of Gardens/Parks .

### **9.GARDEN TOOLS & IMPLEMENTS:**

The contractor shall make all necessary arrangements for providing tools and tackles for the work (As per annexure-A). No Mali shall be allowed to use substandard /defective tools at site of work.

#### ANNEXURE-A

Sr.No.	Particulars of implements (For 60000sqm area of Garden/Nursery/park)	Quantity (minimum requirement)
1.	Lawn mower	02
2.	Hand cart	02
3.	Insecticide spray pump	01
4.	Measuring tape(50Mtr)	1Set
5.	Safety mask, Hand gloves& safety goggles	05 set
6.	Plastic Bucket(15 lit. capacity)	05
7.	Plastic mug (2 lit capacity with scale)	05
8.	Pruning saw	02
9.	Pick Axe	03
10.	Spade	03
11.	Tagari	04
12.	Watering can with hose	03
13.	Rose cutter(Secateur)	05
14.	Hedge cutter	04
15.	Axe	01
16.	Spanner set	01
17.	M.S.Lawn cutting blade	With every Mali
18.	Khurpi	With every Mali
19.	Plaiier	01
20.	Screw driver	01

### **10.Measurements:**

Length & breadth of the Gardens, Nursery beds, Parks maintained in neat & clean condition as per the specifications shall be measured on monthly basis correct to 0.1meter & the area shall be calculated in square meter correct to two places of decimal.

### **11.Rate:**

The rate shall include cost of all the labour and material (Lawn mower, tools and tackles) involved in all the operations described above.**(Excluding the cost of water, soil, FYM, fertilizers, pesticides, sprinklers, hose, manual roller to be made available by the deptt. at free of cost)**

**Item.20****PROVIDING OF FLOWERING SEASONAL PLANTS IN THUMB POTS/PLASTIC TRAYS:**

The item includes providing of flowering seasonal plants in thumb pots/plastic trays amongst listed species i.e. Calendula, cosmos, holyhock, Dahlia, Antirrhinum, Dianthus, Petunia, Chrysanthemum, zinnia, Pansy, Aster, Sunflower, Gazania, Salvia, Kochia, Gump hrena, Coscomb etc at desired interval during the entire duration of contract..

**Note:**

1. Plants should be of true to type i.e. as per the list/approved by Head, Horticulture Cell and shall be free from disease & pest infestation.
2. Plants to be supplied in polybag's of convenient size, in required quantity of each variety as directed by Head, Horticulture Cell.
3. Plants shall be well established i.e. before affecting the bulk supply the changes of location at nursery shall be carried out at least 15 days before affecting the supply. Affected/ wilted plants as a result of shock/root damage during transportation shall not be accepted/paid in any case.
4. While transporting the plants shall be well watered i.e. on or before loading to avoid any wilting during transportation.
5. Plant material shall be supplied FOR RRCAT, Indore only.

**Measurements:**

Number of plants provided as per the list in healthy condition shall be measured/calculated for payment.

**Rate:**

The rate shall include of all the labour, material (planting material, tools and tackles) & cost of transportation involved in all the operations described above.

**Item No. 21****Pesticide treatment of roadside tree trunk (Measuring Girth upto 30cm):**

The item includes washing and cleaning the surface of tree trunks (Measuring Girth upto 30cm) with water up to a level of one meter from the ground & paint/treat with 2 to 3 coats of approved pesticide emulsion, lime & Geru etc.

**Measurements:**

Measurement shall be based on number of tree trunks treated/painted as per the specifications.

**Rate:**

The rate shall include the cost of labour and material (tools and tackles like brush, hessian cloth, drum/containers etc ) involved in all operations described above.

**(Excluding the cost of water, Pesticides, Lime & Geru, to be made available by the dept. free of cost)**

**Item No. 22.****Pesticide treatment of roadside tree trunk (Measuring Girth 30cm to 60cm):**

The item includes washing and cleaning the surface of tree trunks (Measuring Girth from 30cm to 60cm) with water up to a level of one meter from the ground & paint/treat with 2 to 3 coats of approved pesticide emulsion, lime & Geru etc.

**Measurements:**

Measurement shall be based on number of tree trunks treated/painted as per the specifications.

**Rate:**

The rate shall include the cost of labour and material (tools and tackles like brush, hessian cloth, drum/containers etc ) involved in all operations described above.

**(Excluding the cost of water, Pesticides, Lime & Geru, to be made available by the dept. free of cost)**

**Item No. 23****Pesticide treatment of roadside tree trunk(Measuring Girth 60cm and above):**

The item includes washing and cleaning the surface of tree trunks(Measuring Girth from 60cm and above) with water up to a level of one meter from the ground & paint/treat with 2 to 3 coats of approved pesticide emulsion, lime & Geru etc.

**Measurements:**

Measurement shall be based on number of tree trunks treated/painted as per the specifications.

**Rate:**

The rate shall include the cost of labour and material (tools and tackles like brush, hession cloth, drum/containers etc ) involved in all operations described above.

**(Excluding the cost of water, Pesticides, Lime & Geru, to be made available by the dept. free of cost)**

**Item.24****WATERING ARRANGEMENTS FOR GARDENS/PLANTATIONS**

Watering arrangement in RRCAT by deploying water tanker of **4500 lit.** Capacity facilitating movement at site by mechanical transport fitted with suitable pressure regulating valves for water distribution /flexible hose (HDPE) etc for arranging uniform watering for Lawns/Trees/ shrubs/hedges/edges/flower beds etc as per site requirement. The contractor shall deploy adequate manpower to avoid any over watering/flooding in areas with due care to prevent soil erosion and root exposure of plants in the Garden. The water tanker shall be leakage proof to avoid loss of water during tanker movement etc. The deployment/operation shall be carried out in the presence of Departmental Representative only. The frequency of operation of water tanker shall vary from season and requirement at site of work however; the contractor shall make elaborate arrangements towards timely deployment as and when desired by Head, Horticulture Cell.

**Note:** The contractor shall ensure that the person deployed for operating water tanker is well trained for the job, following safety measures and holds valid driving license etc.

**Measurements:**

Measurement shall be based on number of trips operated on day to day basis in the presence of dept. representative only.

**Rate:**

The rate shall include the cost of labour and operation charges for water tanker and material ( hose pipes/valves etc ) involved in all operations described above.

**(Excluding the cost of water, pumping equipment)**

**Item.25****AIR LAYERING(GOOTY PREPARATION):**

Propagation of shrubs/trees/creeper species etc. by deploying skilled Mali /budder by removing outer inter node skin (bark) of stem using grafting knife with sharp edges ,just below the node facilitating callus formation, application of rooting hormone, wrapping with moist sphagnum moss to cover the scrapped portion with perforated polyethylene strips, tying with jute thread compacting so as to remove air pockets inside and allowing for rooting and finally removal of rooted air layers complete as directed by Head, Horticulture Cell.

**Measurements:**

Number of well rooted air layer cuttings received in healthy & profuse conditions suitable for further survival/growing shall be measured.

**Rate:**

The rate shall include the cost of labour and material (tools and tackles) involved in all operations described above.**(excluding the cost of rooting hormone, polythylene strips, sphagnum moss, jute thread)**

**Item.26****RAISING OF PLANT MATERIAL IN POLYBAGS:**

The work includes preparation of suitable garden mixture using soil/FYM/vermin compost/pesticide etc in proportions, pre-filling of poly bags with Garden mixture for raising/sowing of plant material, planting seeds/plant material as per requirement , pressing the same to remove air pockets, followed with watering using cans and maintaining for the initial development period of one month by following cultural practices like shifting the planted Polybags to shady location, arranging in rows conveniently for facilitating watering arrangements, weeding, application of plant protection measures by carrying out sprays of insecticides/ pesticides as and when required complete as directed by Head, Horticulture Cell.

**Measurements:**

Number of plants raised in poly bags received in healthy conditions on completion of initial maintenance period of one month shall be measured.

**Rate:**

The rate shall include the cost of labour and material (tools and tackles) involved in all operations described above. **(Excluding the cost of poly bags, seeds, plant cuttings, plant protection measures)**

**Item.27****Providing of flower sticks of (Tissue cultured)Gerbera/Carnation/Gladiolus/Rose:**

Providing of good quality flower sticks of polyhouse grown, tissue cultured Gerbera Carnation/Gladiolus/Rose amongst Dutch/hybrid varieties suitable for flower vase free from blemishes, having healthy & fresh in proper form including the cost of packing, transportation at RRCAT site, spread over the year in regular interval and complete as directed by Head, Horticulture Cell.

**Measurements:**

Measurement shall be based on number of flower sticks supplied in healthy, fresh and in proper form at RRCAT site.

**Rate:**

The rate shall include the cost of material, packing, transportation at RRCAT site and other expenses involved in all operations described above.

**Item.28****Providing of flower sticks of Tuberose/Gladiolus (Local/Desi varieties):**

Providing of good quality flower sticks of Tuberose/Gladiolus amongst Local/Desi varieties (open field cultivated)suitable for flower vase free from blemishes, having healthy & fresh in proper form including the cost of packing, transportation at RRCAT site, spread over the year in regular interval and complete as directed by Head, Horticulture Cell.

**Measurements:**

Measurement shall be based on number of flower sticks supplied in healthy, fresh and in proper form at RRCAT site.

**Rate:**

The rate shall include the cost of material, packing, transportation at RRCAT site and other expenses involved in all operations described above.

**Item.29****Arrangement of flower vases:**

Arrangement of flower vases by collecting flower sticks, filler material etc from flower beds & Gardens within the campus, washing and cleaning the same using fresh water, carrying and arranging the same in different patterns in flower vases placed in the various office locations including the cost of cleaning of vases by deploying skilled



mali's with in stipulated time frame on day to day basis and complete as directed by Head, Horticulture Cell.

**Measurements:**

Measurement shall be based on number of flower vases arranged on per day basis.

**Rate:**

The rate shall include the cost of labour and material (tools and tackles) involved in all operations described above. **(Excluding the cost of flower sticks/filler material, cleaning agent , water)**

**Item.30**

**Preparation of flower bouquets:**

Preparation of Flower bouquets by collecting flower sticks, filler material etc from flower beds,Gardens /supplies ,washing and cleaning floral material with clear water, arranging the same in the presentable form as a bunch, tying with thread , wrapping with gelatin paper and ribbons etc in artistic manner and complete as directed by Head, Horticulture Cell.

**Measurements:**

Measurement shall be based on number of flower bouquets made on acceptance.

**Rate:**

The rate shall include the cost of labour involved in all operations described above.

**(Excluding the cost of flower sticks,filler material, thread, gelatin paper,ribbon, cleaning agent &water)**

**Item.31**

**Stage decoration**

Stage decoration for convention centre, Auditorium, Lecture hall etc, within RRCAT campus with cut flowers and fillers on floral foam of 80mmX110mmX230mm size of Oasis/equivalent make in presentable manner in tray/stand or polythene sheets by providing floral foam of Oasis/ equivalent make, wire mesh required including collection of flowers /fillers from Gardens /floriculture beds/supplies , washing the same with clear water, fixing and arranging on floral foams as per approved designs/patterns and clearing the site on use including the cost of shifting material required by deploying skilled mali's and complete as directed by Head, Horticulture Cell ( Excluding the cost of tray/stand, polythene sheets, Flower sticks, filler material, cleaning agent , water)

**Measurements:**

Measurement shall be based on number of floral foams supplied & approved duly arranged with floral material at site.

**Rate:**

The rate shall include the cost of material (Floral foam,wire mesh) & labour involved in all operations described above. **(Excluding the cost of Flower sticks/filler material, cleaning agent , water)**

**Item No. 32.**

**Removal/Lowering of a submersible pumpset in the open well within RRCAT campus having depth upto 6.00M**

The item includes deploying skilled/experienced manpower suitable for removal/Lowering of a submersible pump set in the open well located within RRCAT campus up to the depth of 6.00M. The work includes dismantling/ jointing of pipes and electrical cables etc. for operating pumping system and complete as directed by Head, Horticulture Cell.

Note: The shifting of submersible pump sets from stores to site & back within RRCAT campus shall be carried out by the contractor at no extra cost.

**Measurements:**

Measurement shall be based on number of operations carried out(removal/Lowering of a submersible pump set) as per the specifications.

**Rate:**

The rate shall include the cost of labour deployed, material (tools and tackles like spanners, patch roll, electrical tape, plier, tester etc. ) for the operations described above. **(Excluding the cost of Chain block, tripod stand, nylon rope)**

**Item No. 33.****Removal/Lowering of a submersible pumpset in the open well within RRCAT campus having depth of 6.00M to 12.00M**

The item includes deploying skilled/experienced manpower suitable for removal/Lowering of a submersible pump set in the open well located within RRCAT campus up to the depth ranging from 6.00M to 12.00M. The work includes dismantling/ jointing of pipes and electrical cables etc. for operating pumping system and complete as directed by Head, Horticulture Cell.

Note: The shifting of submersible pump sets from stores to site & back within RRCAT campus shall be carried out by the contractor at no extra cost

**Measurements:**

Measurement shall be based on number of operations carried out (removal/Lowering of a submersible pump set) as per the specifications.

**Rate:**

The rate shall include the cost of labour deployed, material (tools and tackles like spanners, patch roll, electrical tape, plier, tester etc. ) for the operations described above. **(Excluding the cost of Chain block, tripod stand, nylon rope)**

**Item No. 34.****Removal/Lowering of a submersible pumpset in the open well within RRCAT campus having depth of 12.00M to 18.00M**

The item includes deploying skilled/experienced manpower suitable for removal/Lowering of a submersible pump set in the open well located within RRCAT campus up to the depth ranging from 12.00M to 18.00M. The work includes dismantling/ jointing of pipes and electrical cables etc. for operating pumping system and complete as directed by Head, Horticulture Cell.

Note: The shifting of submersible pump sets from stores to site & back within RRCAT campus shall be carried out by the contractor at no extra cost

**Measurements:**

Measurement shall be based on number of operations carried out (removal/Lowering of a submersible pump set) as per the specifications.

**Rate:**

The rate shall include the cost of labour deployed, material (tools and tackles like spanners, patch roll, electrical tape, plier, tester etc. ) for the operations described above. **(Excluding the cost of Chain block, tripod stand, nylon rope)**

**Item.35****MAINTENANCE OF POTTED PLANTS:**

Maintenance of potted plants in RRCAT includes practices like watering of plants using water cans, soil working, weeding, plant protection measures, application of fertilizer/growth promoting substances as required, repotting with garden earth & manure mix, top up with Garden soil and or fertilizers at a month interval, rotating / changing locations of potted plants once a week for balanced growth of plants. The foliage plants shall be cleaned with good quality water and soft cloth twice a month while flowering potted plants shall be suitably placed exposed to morning sunlight

including cleaning of pots and painting with Geru/white wash/paint once in every three month or as and when required complete as directed by Head, Horticulture Cell.

**Note:** The potted plants shall be arranged /displayed at various buildings/Offices/labs & Nursery by shifting from one place to other at no extra cost.

**Measurements:**

Measurement shall be based on number of potted plants maintained on monthly basis in healthy condition.

**Rate:**

The rate shall include the cost of labour and material (tools and tackles) involved in all operations described above. **(Excluding the cost of water, Garden soil, pesticides, fertilizers, growth promoting hormones, geru, lime, paint)**

**Item.36**

**MAINTENANCE & UPKEEPING OF NURSERY STOCK PLANTS IN POLYBAGS:**

Maintenance and up keeping of stock plants raised in polybags amongst different species of shrubs/trees/creepers/ground covers arranged in beds within Nursery area by following cultural practices viz. watering, soil working, application of Plant protection measures/fertilizers, pruning, replacement of worn out poly bags, changing/shifting of poly bag plants to prevent root spread in beds & clearing of wild growth/leaf litter etc from beds, approach/adjoining paths at no extra cost by deploying skilled Mali complete as directed Head, Horticulture Cell.

**Measurements:**

Length & breadth of the bed area where stock plants in polybags are arranged excluding approaches/adjoining pathways shall be measured on monthly basis correct to 0.1 meter and the area shall be calculated in sqm correct to two places of decimal.

**Rate:**

The rate shall include cost of all the labour and material (tools and tackles) involved in all the operations described above. **(Excluding the cost of water, polybags, pesticides, fertilizer to be made available by the dept free of cost.)**

**Item.37**

**Complete Maintenance and Upkeeping of Gardens/Nursery in Laboratory areas :**

The work includes up keeping of lawns/ shrubs/ trees/flowerbeds/edges/hedges/ water pools/ pathways etc by following cultural practices:

**1. Lawns :**

Maintenance and Up keeping includes:

A.1. The lawn shall be watered regularly and shall not be allowed to dry out for any reason. The watering arrangement shall be done by using sprinklers/hoses/water tankers as per requirements. While making use of hose the direction of hose out let shall be towards sky so as to have a rain effect. In no case flooding shall be done except it is required or asked for some reason.

A.2. The lawn having Cynadon dactylon shall be moved regularly and worked for removal of weeds therein on regular basis. All efforts shall be made to timely weed out nut grass growth in the lawns by uprooting. The average Interval for lawn mowing shall be once a week or on requirement at site depending on season. In case of Korean grass/ Mexican/Jumping (diamond) lawn timely arrangement for watering/weed removal shearing and pest /disease management shall be done. All care must be taken for keeping it in green lush condition.

A.3. The contractor shall make elaborate arrangement for cutting lawn grass by providing and operating lawn mower including the cost of fuel, oil & maintenance at his own cost. The lawn mower may be diesel operated suitable for large lawn areas fitted with back roller to ensure timely cutting of grass. Operation of electrical operated lawnmower shall not be allowed in any case. However, in case of small garden areas mechanical type of machines can be put to use .It shall be the responsibility of the contractor to keep the machines in up to date condition and ready to use and periodical sharpening of blades to ensure smooth and uniform cutting of grass. The person using the power lawn mower shall be sufficiently technically sound to look into the aspects of adjustments of cutter which should be around 2.00 cms high above grass level. Cutting of lawn at lower level shall only be carried out once in a year as per the directions/instructions issued by Head, Horticulture Cell or his authorized representative at site.

A.4. Rolling shall be done as and when required and shall be in the same direction of lawn moving. However, cross rolling shall be done once in 4 to 5 months or so.

A.5. Lawn mowing shall be done in same direction /no cross cutting is allowed.

A.6. Constant supervision shall be kept to keep the lawn area clean and weed free. As a regular feature lawns shall be swept and cleaned from rubbish material/leaf litter and other material all the time.

A.7. Top dressing with Garden earth/FYM/ Vermi compost shall be done on yearly basis for which material shall be supplied by the Deptt.

A.8. Lawns shall be fed with Manure& fertilizer so as to maintain form /texture & color.

A.9. Rolling or mowing shall not be done when the lawns are in wet condition as this shall spoil the areas.In such case garden shears shall be put to use. All the operations stated above shall be strictly followed in continuous manner.

A.10. Mowing of ground covers other than that Cynodon dactylon shall be done as per requirement /instructions of Departmental representative at site of work.

A.11. Immediate to the mowing with lawn mower, grass area edges shall be trimmed by shears to maintain proper shape and uniform growth.

A12. Any concrete platforms/chambers, earthing pits, foundations of electrical/fire hydrants etc fouling with in the area shall be cleaned regularly for brooming/uprooting of weeds if any at no extra cost.

## **2.TREES:**

Maintenance and Up keeping includes:

B.1. During early stage i.e.at least first three years, the maintenance shall include regular watering, mulching, soil working, supporting and pruning operation. The tree shall be manured once in a year with Manure(FYM/Vermicompost to be provided free of cost by the Deptt.) Regular checking against insect/pest /fungus attack shall be made.

B.2. The tree which are well established, then the maintenance shall include occasional watering, soil working, manuring and checking against attack of insect or pest. Training/ pruning of trees for form and shape shall be an important aspect of maintenance. Pruning of dried branches/off shoots shall be removed on occurrence.

### **3.SHRUBS/CREEPERS/LOW GROWING PLANTS:**

C.1.General maintenance such as watering, weeding, mulching, supporting and pruning shall be done as required.

C.2. Regular checking against insect/pest/fungus attack shall be made.

C.3. PH value and treatment to modify the same shall be the part of maintenance if required.

C.4.Removal of dead branches, leaves, flowers, pruning, training, supporting, cutting back, and protection against heat/cold/heavy rains shall be the part of maintenance.

C.5.Soil working shall be done once a week up till a minimum depth of 20cm till proper establishment of plant.

C.6.Manuring/application of fertilizers(FYM/Vermicompost, fertilizers to be provided free of cost by the Deptt.) shall be done twice a year at equal intervals or as directed by Head, Horticulture Cell.

### **4 HEDGES/EDGES:**

D.1. Maintenance shall include pruning/cutting of hedge with Garden shears at an interval of minimum 14 days or earlier if required. The height and thickness of hedge /edge to be done as per direction given by Head, Horticulture Cell.

D.2. Maintenance shall also include timely watering, weeding, manuring/application of fertilizers, spraying of insecticides/fungicides(Material to be provided free of cost by the Deptt.).

D.3. Soil digging up to depth of 20cm for loosening of soil shall be done once in two months.

### **5 .SEASONAL FLOWER BEDS:**

E.1. In addition to general maintenance of flower beds i.e. raising of seedlings ,planting in appropriate season/time, weeding of flower bed area, mulching, providing FYM, mixing it thoroughly, regular watering, plant protection etc ,proper maintenance, collection of seeds of maturity etc., shall form part of maintenance.

### **6.WATER POOL OR POND,GARDEN BENCHES ETC.**

F.1. Maintenance shall include regular cleaning of water ponds, pools etc. in order to have clean and fresh water inside. Timely removal of water and filling with fresh clean water shall be insured as and when needed.

F.2.The garden benches if any within Garden area shall be kept neat and clean with washing the same with water.

### **7.PATHWAYS:**

G.1. Maintenance of pathways shall include cleaning of pathways, timely trimming of grass within the crevices of path, putting soil if needed for proper fixing of block etc.

### **8. Removal & transportation of Garden rubbish:**

H.1.In order to keep the Garden & surrounding area in neat & clean condition removal of rubbish shall be carried out. The operation includes removal of Gardenwaste/ rubbish generated during maintenance of gardens, transporting the same including weeds, dried leaves, clippings of shrubs, hedges, lawns etc (rubbish) from the Garden & surrounding areas on day today basis by deploying trolley or suitable means at pre-located site for disposal including the cost of loading unloading, stacking etc at all leads within RRCAT campus and as directed by Head, Horticulture Cell

**Note**-The contractor shall ensure & follow safety rules and regulations during execution of work at site. The contractor shall ensure that a person deployed for operating

truck/trolley is well trained for the job & hold valid driving license etc.

**9. Watering Management :**

1. The contractor shall carry out all necessary arrangements for watering Gardens from distribution network (Pipeline/ driplines) with regular up keeping for replacement of gate-valve/Ball valve/sprinklers, pipe lengths, cleaning/replacement of sprinkler/drip nozzles etc. excluding the Cost of material.

**10. GARDEN TOOLS & IMPLEMENTS:**

The contractor shall make all necessary arrangements for providing tools and tackles for the work (As per annexure-A). No Mali shall be allowed to use substandard /defective tools at site of work.

**ANNEXURE-A**

Sr.No.	Particulars of implements (For 60000sqm area of Garden/Nursery)	Quantity (minimum requirement)
1.	Lawn mower	02
2.	Hand cart	02
3.	Insecticide spray pump	01
4.	Safety mask, Hand gloves & safety goggles	01 set
5.	Plastic Bucket(15 lit. capacity)	02
6.	Plastic mug (2 lit capacity with scale)	02
7.	Pruning saw	3
8.	Pick Axe	3
9.	Spade	5
10.	Tagari	5
11.	Watering can with hose	3
12.	Rose cutter(Secateur)	10
13.	Hedge cutter	5
14.	Axe	01
15.	Spanner set	01
16.	M.S.Lawn cutting blade	With every Mali
17.	Khurpi	With every Mali
18.	Plaier and Screw driver	01
19.	Measuring tape(50M Length)	01

**11 Measurements:**

Length & breadth of the Gardens, Nursery beds maintained in neat & clean condition as per the specifications shall be measured on monthly basis correct to 0.1meter & the area shall be calculated in square meter correct to two places of decimal.

**12. Rate:**

The rate shall include cost of all the labour and material (Lawn mower, tools and tackles) involved in all the operations described above. **(Excluding the cost of water, soil, FYM, fertilizers, pesticides, sprinklers, hose, manual roller)**

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**SPECIAL INSTRUCTIONS , TERMS AND CONDITIONS**

**(A) SPECIAL INSTRUCTIONS :**

(a)The contractor shall visit the site and see himself for the scope of work involved prior to tendering.

(b)The contractor shall note that as and when require the Department may excavate trenches to reach telephone chambers, OFC lines, power cable, earth pits, water/sewer line, chilled water services for regular maintenance. The tenderer /contractor in such locations shall so plan his activities so that the departmental work is not impended. After the backfilling of such areas the contractor shall reinstate lawn as required at no extra cost.

(c)In the laboratory area the Gardens are located in scattered fashion with a thrust on ornamental theme like topiaries, edging and hedging. Watering arrangement for the Gardens is being made from different locations provided with pumping arrangements spread over the campus with a well connected distribution network using GI/HDPE pipes/Driplines. In order to augment the supply/regulate the same contractor shall carry out all day to day arrangements for pump operations/throttling the valves, monitoring the supply including day today upkeeping of driplines/nozzles/sprinklers for cleaning and replacement if any on breakage etc(excluding cost of material) by deploying trained manpower.During the summer months on scarcity of water an elaborate water management schedule shall be planned for linking/delinking the source based on site requirements to meet the needs and priorities as per instructions issued by Head,Horticulture Cell.

(d)Water for executing the work shall be supplied by the department, however water charges @1% of gross value of work done shall be recovered from each bill payable to the agency.

(e) The contractor or his authorized representative shall as a regular practice (every day) submit a list of workman working area wise at site of work. The contractor must submit a weekly report indicating the progress done/reasons for delay in completion of any works.

(f) Department shall provide pesticides, fungicides, fertilizers, sticking agent, hose pipes (HDPE), sprinklers,LLDPE driplines/nozzles including plant material required at site. The contractor shall maintain the stock of the same and records for its use at locations and delivery notes for all such material shall be submitted by the contractor or his authorized representative at site on daily basis.

(g) Department shall provide B.C.Soil for use in Gardens/nursery for top dressing purpose from within RRCAT to be paid separately.

(h) In water scarcity conditions certain areas of gardens under lawns may be discontinued for maintenance/up keeping for restricted period during summer months under an advance intimation. Similarly any additions due to ongoing development work under gardens shall be included for maintenance & shall be intimated in advance for arranging additional manpower to be deployed for the same.

(i) In order to ascertain satisfactorily progress fortnightly site inspection shall be carried out indicating corrective actions if any in order to consider the areas for payments.

(j)The whole work shall be carried out in accordance with the specifications, general instructions as per the terms and conditions of the contract.The maintenance shall include watering, fertilizing, plant protection from pest & diseases, mowing & upkeeping of lawns, sweeping & disposal of garden refuse, minor weeding, cutting of edges, pruning & clipping of hedges, topiary work as per pruning standards, raking, preparation & planting of seasonal flowers, minor repair works & all other landscape operations necessary for the proper growth of garden features & presenting a satisfactory standard of maintenance throughout the period of contract.

(k) While quoting rates for the work the contractor shall take into account the above requirements/factors in mind. Any additions/alterations in this regard shall only be made on approval of Head, Horticulture Cell.

**(B) TERMS AND CONDITIONS:**

**(1) DEPLOYMENT OF MANPOWER :**

In order to ensure proper up keeping and maintenance of Gardens & Nursery areas together with other activities highlighted in Schedule of Quantities, the contractor shall deploy a team of experienced work force possessing good Gardening skills including a supervisor on day to day basis as per Annexure-B. A periodical schedule highlighting deployment of labourers shall be the benchmark for execution of work at site.

**It shall be mandatory on the part of contractor to deploy mentioned team of labour force on day to day basis as per Annexure-B. However, the total number of mandays in a month shall not be less than as specified in annexure-B for period of work.**

The contractor shall have to engage the minimum agreed workforce all the time. Due to exigencies or otherwise if some additional staff/labour force is required to be deployed no additional payment shall be made to the contractor if the work are carried out within the maintained area & within the scope of work in light of specifications & special condition of contract. In any case the contractor shall not deploy construction labourer for the Gardening/landscaping activity.

The contractor shall carryout the work invariably on all working days however, in case of exigencies the contractor may be allowed to carry out the work on **Sundays with prior permission only from Head Horticulture Cell complying the prevailing labour laws.**

The contractor shall depute a supervisor at site of work who shall be essentially a technically experienced person to manage the workforce at site, well conversant with package and practices, pest control measures assigned pertaining to up keeping and maintenance of Gardens, Nursery, plant propagation and other items specified in the scope of work. The supervisor on site shall be responsible to carry out the work under the time schedule and follow instructions issued from time to time and respond in writing for smooth functioning of day to day activities pertaining to the scope of work. The supervisor at site shall be able to follow the instructions /directions at site and get the work executed strictly as per specifications, terms and conditions of the contract laid down. In no case the contractor shall be allowed to deploy ill trained personals for the work.

It shall be mandatory on the part of contractor to submit list of staff/labour deployed at site (location wise) on day to day basis and put on machinery for work as listed/required.

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