



Gujarat University

Part I: Technical Bid

Tender No: GU/ESTATE/INT ARB/2024-25/01

**Tender Document
of**

**INTERIOR DEVELOPMENT OF ARBORETUM WITH AROGYA VAN,
NAKSHTRA VAN AND RASHI VAN AT GUJARAT UNIVERSITY,
AHMEDABAD.**

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LETTER FROM TENDERER

To,
The Registrar,
Gujarat University,
Ahmedabad – 380009

Name of Work: INTERIOR DEVELOPMENT OF ARBORETUM WITH AROGYA VAN, NAKSHTRA VAN AND RASHI VAN AT GUJARAT UNIVERSITY, AHMEDABAD

Dear Sir,

With reference to the tender invited by you for the above works, we are pleased to offer our best rates mentioned in the Schedule.

We have inspected the site of work, studied the actual site condition, read the Conditions of Contract, and we agree to complete the work to the specifications and satisfaction of the Employer.

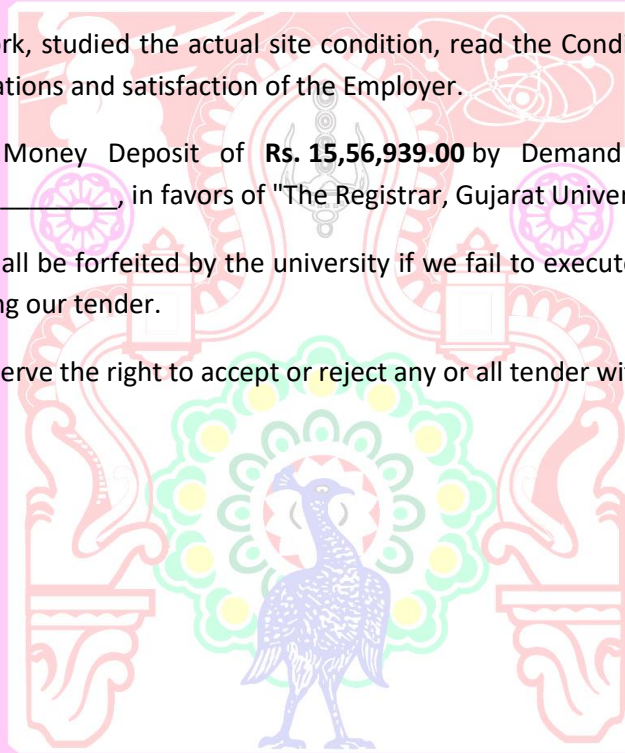
We enclose herewith Earnest Money Deposit of **Rs. 15,56,939.00** by Demand Draft No: _____ drawn on _____, in favors of "The Registrar, Gujarat University" payable at Ahmedabad.

We hereby agree that this sum shall be forfeited by the university if we fail to execute the contract when called upon to do so in the event of your accepting our tender.

We hereby also agree that you reserve the right to accept or reject any or all tender without assigning any reasons.

Your truly,

Sing & Stamp of the Bidder



REGISTRAR

Sign and Seal Of Contractor

GUJARAT UNIVERSITY

Tender Notice

Name of Work: INTERIOR DEVELOPMENT OF ARBORETUM WITH AROGYA VAN, NAKSHTRA VAN AND RASHI VAN AT GUJARAT UNIVERSITY, AHMEDABAD.

The Registrar, Gujarat University invites bids with two bid system for the providing of Expansion Work -detailed in the table below from the bidders having experience for similar type of works, registered in R&B / State Government / Central Government in appropriate class and meeting the qualifying criteria specified.

Sr. No.	Name of Work	Estimated Cost in Rs	Bid Security (EMD) (Rs.)	Tender Fee (Rs.)	Period of Completion
1	2	3	4	5	6
1	INTERIOR DEVELOPMENT OF ARBORETUM WITH AROGYA VAN, NAKSHTRA VAN AND RASHI VAN AT GUJARAT UNIVERSITY, AHMEDABAD.	15,56,93,903/-	15,56,939/-	18,000/- (Non-refundable)	6 (Six) Months

Milestone Dates for Tendering		
1.	Tender Downloading Date	FROM 18 th November 2024 TO 5 th December 2024
2.	Tender Online submission	On or Before 06:00 PM, 5 th December 2024
3.	Submission of tender (Technical bid part-1 including pre-qualification form and its documents) in physical form at room no. 38, Gujarat University, Ahmedabad.	On or Before 2:00 PM, 6 th December 2024
	Opening of Technical Bid	On or Before 4:00 PM, 6 th December 2024
4.	Opening of Financial Bid	Will be intimated to the bidders online
5.	Bid Validity	180 Days from last date of submission of the bid

- Part-1 technical bid** shall be submitted physically in person at the office of Gujarat University, General department (Inward section), Room No: 38, Gujarat University Tower, Gujarat University, Navrangpura, Ahmedabad, Gujarat: 380 009. Part-2 financial bid/Price bid shall be submitted by online only.
- Part-1 Technical bid shall not be accepted by any other means such as RPAD/speed-post/courier.**

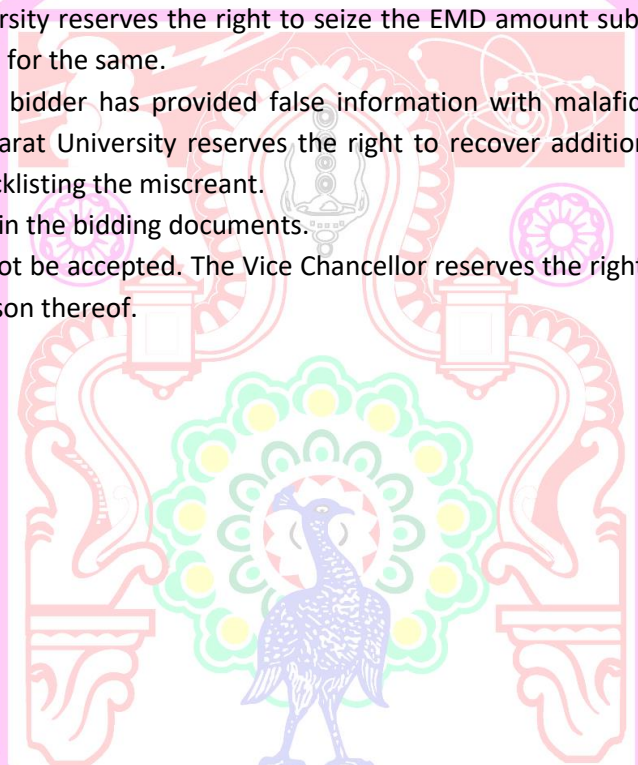
REGISTRAR

Sign and Seal Of Contractor

3. The e-tender can be downloaded from the website [tender.nprocure.com&http://www.gujaratuniversity.ac.in](http://www.gujaratuniversity.ac.in)
4. Technical Bid must be accompanied by security amount specified for the work as Bid security (EMD) in the table in form of a Demand Draft drawn in favor of The Registrar, Gujarat University. Bid security must remain valid for 30 days beyond the validity of the bid. No exemption shall be allowed in the bid security submission.
5. The bidding process shall be two-bid system where technical and financial bids shall be submitted separately by the bidder. The bidding documents shall be submitted by the bidder on-line and physically as prescribed here under.
6. Technical bid shall be submitted on-line as well as in physical form. The bidder shall submit two sets (hard-copies) of the entire technical bid document i.e. original and duplicate, with each page number in unbroken sequence and self-attested in a sealed envelope to the office of Gujarat University, General department (Inward section), Room No: 38, Gujarat University Tower, Gujarat University, Navrangpura, Ahmedabad, Gujarat: 380 009 before the last date and time specified. In extra-ordinary circumstances, if the receiving office is closed on the given date and time, the same shall be received on the next working day of the receiving office.
7. Where-ever required, information must be submitted by the bidder in the prescribed format available with the tender document.
8. Bidder is recommended to go through the checklist provided herewith prior to the submission of the bid to ensure that the bid submitted is complete in all respect. Incomplete bids shall not be accepted.
The envelope containing physical bid shall be clearly marked **“INTERIOR DEVELOPMENT OF ARBORETUM WITH AROGYA VAN, NAKSHTRA VAN AND RASHI VAN AT GUJARAT UNIVERSITY, AHMEDABAD.”** and must have bidder’s address of Communication, e-mail and mobile contact number that may be used for communication if necessary.
9. The financial bid shall be submitted **ON-LINE ONLY**.
10. To provide appropriate information to enable bidders to come out with their best offer, a pre-bid meeting with all interested agencies shall be held as prescribed in Tender Notice.
11. Agencies desirous of seeking any clarification or any additional information must submit their queries in written format duly signed by the bidder along with the name and address as prescribed in Tender Notice. Entertaining any query that is not submitted in written format as prescribed above shall be to the discretion of Gujarat University. Gujarat University reserves rights to reject responding to any/all queries.
12. If found necessary, Gujarat University may provide additional clarifications to the bidders in form of a corrigendum, hence bidders are advised to check nprocure web-site on regular bases to stay updated. Staying informed is the duty of the bidder and Gujarat University shall not entertain any claims based on not being informed of the clarification provided by Gujarat University during the pre-bid meeting or anytime thereafter. Any/ all clarifications provided in the pre-bid meeting shall be binding to all the bidders regardless of their presence or absence in the pre-bid meeting.
13. Gujarat University shall open the technical bid as prescribed in Tender Notice. Interested bidders may remain present during the time of bid opening. After opening of the technical bids, the same shall be evaluated by competent authority of Gujarat University and suitable bidders shall be qualified for the next stage of the bidding based on their competence. This is a merit driven process whereby each bid shall be evaluated on technical criteria to identify capable bidders suitable for a high quality state of art public facility. Gujarat University reserves the right to choose competent bidders based on its evaluation of the technical bids to move forward to the next

stage of the bidding process. No communication regarding the process of evaluation shall be entertained. Decision of Gujarat University shall be final and binding to all bidders.

14. Bidders qualified by Gujarat University shall be eligible for the opening of the financial bid submitted on-line. Opening of the financial bid shall be on-line only. Same may be viewed by qualified bidders if they desire.
15. Financial bid shall be evaluated in terms of lowest over-all offer and the agency qualifying on this merit shall be treated as L1 bidder. Qualifying as L1 bidder does not grant any right to the bidder. Gujarat University reserves the right to accept/reject any/all bidders including the L1 bidder.
16. Though negotiations with L1 bidder or any other bidder are avoidable as per CVC guidelines, considering the public nature of the project being taken up by academic institute; if need be, in the greater interest of the project, Gujarat University reserves the right to negotiate with L1 or any other bidder. No objection shall be entertained in case of any negotiation is taken into consideration for appointment of right agency at the right cost.
17. At any stage of the bidding, Gujarat University reserves the right to seek clarification from any bidder to verify authenticity of the information provided by the bidder. If the information submitted is found to be false or misleading, Gujarat University reserves the right to seize the EMD amount submitted by the said bidder without offering any clarification/s for the same.
18. If it is observed that any bidder has provided false information with malafide intention of derailing and thus delaying the process, Gujarat University reserves the right to recover additional damages from the bidder and initiate the process of blacklisting the miscreant.
19. Other details can be seen in the bidding documents.
20. Conditional tender shall not be accepted. The Vice Chancellor reserves the right to reject any or all of the tenders without assigning any reason thereof.



INFORMATION TO TENDERERS

1. Incomplete or conditional tenders shall be rejected.
2. The registrar reserves right to accept/reject any/all bids without assigning any reasons thereof.
3. The rates offered by the bidder are to be excluding of GST and including of all other. GST shall be paid extra as per the prevailing rate. (Current rate: 18%)
4. Bidder shall make his own arrangements for water and electricity for the construction work at site at his own expense. No additional payment shall be made towards any consumable required for executing any of the items prescribed in the tender. If in case of at all provided by client 0.50% for water and 0.50% for electricity of total value of work shall be deducted from each bill.
5. Bidder shall make his own arrangements for water and electricity for the construction work at site at his own expense. No additional payment shall be made towards any consumable required for executing any of the items prescribed in the tender.
6. Bidder shall follow best practices for health and safety during the entire course of execution, cost of which shall be borne exclusively by the bidder.
7. Bidder shall ensure that all aspects of the activities taken up as part of fulfilling the contract are covered with necessary insurance cover, cost of which shall be borne exclusively by the bidder.
8. Bidder shall ensure that he is registered with all concerned statutory authorities connected with any aspect of the delivery of scope of work of the tender at his cost.
9. Bidder is expected to submit the flow of work envisaged by him for consideration of the Engineer-in-charge. Engineer-in-charge shall reserve the right to finalize the work-schedule to be followed by the bidder and/or modify it from time to time.
10. No price escalation shall be paid/ recovered for the works mentioned in the tender.
11. No advances, either in the form of Machinery advance or materials advance or in any other form shall be given.

Signature of bidder:

Date:

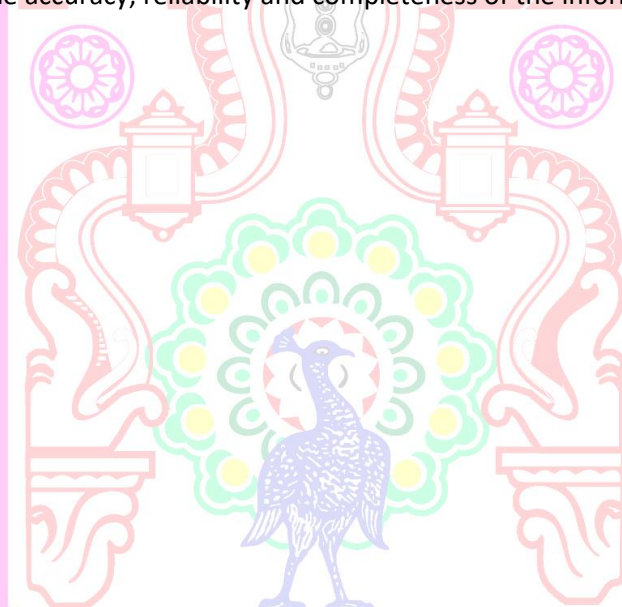
The Registrar
Gujarat University,
Ahmedabad

**PROJECT: INTERIOR DEVELOPMENT OF ARBORETUM WITH AROGYA VAN, NAKSHTRA VAN AND RASHI VAN
AT GUJARAT UNIVERSITY, AHMEDABAD**

DISCLAIMER

1. The information contained in this bid document or subsequently provided to the bidders whether verbally or in documentary form by or on behalf of the Gujarat University or any of their employees/ advisers/ consulting engineers is provided to the bidder (s) on the terms and conditions set out in this bid document.
2. The bid document and subsequent submissions of the bidders are not an agreement. These will subsequently form a part of agreement between the Successful Bidder and the Gujarat University after modifications/ additions/ alterations as decided upon by VC Gujarat University.
3. This document does not purport to contain all the information the bidder may find necessary for the completion of works in a professional manner in accordance with good engineering practice. The bidder is required to check the accuracy, reliability and completeness of the information in this bidding document regarding the site, the movement of traffic, the accessibility, the working conditions, the climatic conditions, the availability of working and storage spaces etc. GU, its employees/ advisers/ consulting engineers do not incur any liability under any law, rules or regulation as to the accuracy, reliability and completeness of the information in this bidding document.

The Registrar
Gujarat University,
Ahmedabad



EVALUATION CRITERIA FOR QUALIFICATION

Minimum Eligibility Criteria:-

1. Only single bidder permitted for bidding.
2. No Joint venture/Consortium permitted for bidding.
3. Contractor registered with Government of Gujarat in “Class AA” with R & B, Municipal Corporations, other state government, or with Central PWD with similar category.
4. Average annual financial turnover of the bidding firm should not be less than **Rs. 1557.00 Lacs** of last three years ending on 31st March 2023.
5. Experience of having successfully executed/completed similar works during last 05 years for reputed clients such as GUJARAT UNIVERSITY/ Central Govt. / State Govt. / Semi Govt./ Railways/ PSU/Municipal Corp/ Concessionaire in case of Govt. PPP projects/ or any other government organization. The claim must be supported with documentary evidence such as satisfactory completion certificate from respective authorities. Certifying agency shall not be below the rank of Executive Engineer.
 - a) Three similar completed works costing not less than the **Rs. 622.72 lacs**
Or
 - b) Two similar completed works costing not less than the **Rs. 778.39 lacs**
Or
 - c) One similar completed work costing not less than the **Rs. 1245.43 lacs**

Weightage of 10 % per financial year (simple) shall be allowed for eligibility purpose for the project completed before 31st March 2024. Financial year shall be from April to March. Similar completed works means work complying following criterion.

Similar works means experience of same amount of building works in the last 5 years in Government/Semi Government/PSU Sectors. Bidder must also have completed, Renovation, Retrofitting, Civil, Horticulture, Electrical & Allied work in single work order. Any industrial works shall not consider as similar nature of work. The right to interpret “similar work” is reserved by Gujarat University.

6. Bidder must have the registration of GST.

Financial Criteria:

1. Average annual financial turnover of the bidding firm should not be less than **Rs. 1560.00 lacs** of last three years ending on 31st March 2024.
2. Attested copy of balance sheet with profit & loss account of last 3 financial years duly audited by chartered accountant.

Other Requirements to be submitted:

A. Bidder's registration

Only those bidders whose names are borne on the approved list of registered contractors in the “Class AA” registered in R&B/State Government/Central Government/Municipal Corporations shall be entertained.

B. Litigation history

The applicant should provide accurate information on litigation and / or arbitration resulting from Contracts completed or under execution by him over the last three years. A consistent history of arbitration awards / judgments against the applicant or any partner of joint ventures may result in disqualification for proposed work. If the details of Litigation History is hidden by the applicant and later on it comes to knowledge of the employer the bidder shall be disqualified for the proposed work and other appropriate actions shall be taken against the bidder.

Even though the Applicants meet the above criteria, they are subject to be disqualified if they have made misleading or false representation in the 16 form , statement and attachments submitted and / or record of poor performance such as abandoning the work, not properly completing the work, not properly completing the contract, delays in completion, litigation history, financial failure etc.

C. Bidding in E-tendering

- i. In addition to physical submission of technical bid, submission of bid must be through e-tendering i.e. Electronic form
- ii. Bidders shall have to submit the bid in E-Tendering form only.
- iii. Bids of those bidders who have submitted all information, statistical details as required in the bid document through E-Tendering will only be considered. If the Employer desires any clarification, for verification / clarification, ambiguity or difference found in the documents / statistical details submitted online (by E-Tendering) by the bidder, the same shall be furnished with in stipulated time, otherwise further processing will be carried out in absence of above and the bidders shall be liable for any consequence.

D. E-Submission of documents

- i. Following documents/papers shall form part of the bid.
 - Attested copy of proprietorship or partnership deed.
 - Attested copy of power of attorney, if any for signing the bid documents.
 - Company registration details
 - Company introductory profile
 - Proof of appropriate registration class.
 - Annual turnover certificate issued by chartered account and for last three financial years.
 - Form 3A issued by employer (duly certified by an officer of the rank not below that of an Executive Engineer) to substantiate successful experience of **similar work**.
 - Litigation / Arbitration history
 - Proof of assured availability of required Machinery/equipment
 - An undertaking for truth-fullness of information furnished.
 - Copy of registration of GST and pan card.
- ii. Any information data, statistics etc. which are not related to bid document will not be considered in evaluation even though furnished by the applicant.
- iii. In accordance with stipulation of Para 3D (iii) Employer reserves the right to call any information / document which is mandatory, essential and critical for the purpose of evaluation. Any information provided by the applicant after last date of submission will not be considered in evaluation, unless except the employer has specifically asked for any information/ document, which is mandatory, essential and critical for evaluation of PQ document. If required information is not furnished within stipulated time, proposal will be liable for rejection.
- iv. If any of the information provided by the bidder is found false during scrutiny or at the later stage, his EMD shall be forfeited and he shall be disqualified for the proposed work. If any of the information provided by

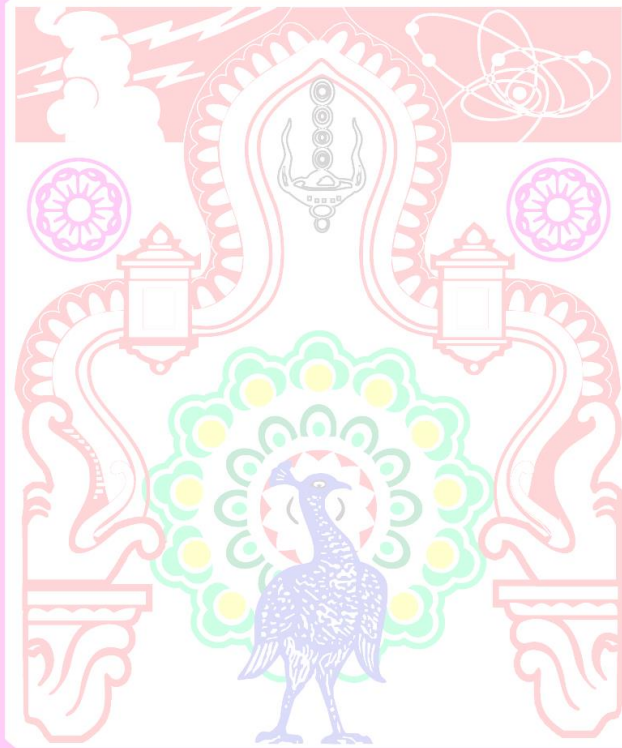
the bidder is found false after award of work, the performance security of the bidder shall be forfeited and the contract shall be terminated.

(3) Escalation Factors

Following enhancement factors will be applied to annual turnover and completion cost of works to bring them to the base year. The current financial year in which bid is invited shall be considered as the base year.

Year	Financial Year	Enhancement factor
Base(year of inviting tender)	2024-25	1.0
-1	2023-24	1.10
-2	2022-23	1.21
-3	2021-22	1.33
-4	2020-21	1.46

In case the financial figures and value of completed works are in foreign currency, current market exchange rate will be applied for the purpose of conversion of foreign currency in to Indian Rupees. Applicant will indicate actual figures of costs and amounts in the schedule without accounting for the above mentioned factors



The Register
Gujarat University
Ahmedabad

GENERAL INFORMATION FOR THE BIDDER

1. Incomplete and conditional tenders shall not be considered.
2. GUJARAT UNIVERSITY, Ahmedabad reserves the right to split up the work covered in the scope of this contract amongst more than one contractor.
3. Intending bidders shall submit tenders after studying all tender documents carefully and after visiting the site for satisfying themselves of actual site conditions, location and accessibility of site and nature and extent of the work involved etc. Submission of tenders implies that bidders have obtained all necessary information and other data required for executing the work. No claim for extra charges because of any misunderstanding or otherwise shall be allowed.
4. Site cleaning and making the site accessible for execution of the work shall be in the scope of bidders. In case of the bidder requiring removal/breakage of any feature/asset of Gujarat University, the same can be one only after getting written clearance from Gujarat University. The same may be restored by the bidder at his cost if demanded by Gujarat University at any point of time.
5. Bidders will not be allowed to give sub-contract of the works awarded to him for any reasons what so ever without written permission of the Engineer-in-charge.
6. After opening of Technical bid, no price revision shall be accepted from any bidders on any grounds.
7. Price quoted shall be firm, until overall completion of the work, under contract and there shall not be any price escalation.
8. Date of opening of price bid will be intimated later on to those bidders who are qualified in technical bid. Price bid of only qualifying bidders based on evaluation of technical bid shall only be opened. Price bid of bidders who are not technically qualified by Gujarat University shall not be opened.
9. The decision of GUJARAT UNIVERSITY in the matter shall be final and no/any claim will be entertained in this regard.
10. All the works shall be carried out as per specifications and drawings attached with the tender and relevant Indian Standards issued by the Bureau of Indian Standards. All materials procured should be confirming to relevant Indian Standards issued by Bureau of Indian Standards, wherever not specified in the item. In case of the specifications not found in Indian Standards, they shall follow best market practice, adjudicator of which shall be the Engineer-in-charge of Gujarat University
11. Tenders, who do not fulfill all or any of the conditions of the tender or incomplete in any respect, are liable to rejection.
12. GUJARAT UNIVERSITY, Ahmedabad reserves the right to reject any or all the tenders without assigning any reason thereof.
13. This specification is intended as a general description of quality envisaged for materials & workmanship & of the finished work. It is not intended to cover minute details. The work shall be executed in accordance with the best modern practice & to the complete satisfaction of the GUJARAT UNIVERSITY. Special techniques approved by the

GUJARAT UNIVERSITY shall be used if & where found necessary without any extra claim. The specification provided shall have priority if anything contrary to them is stated elsewhere in the contract documents. In case of a specification not adhering to minimum standards prescribed in the IS code for the relevant item, IS code shall prevail upon the specifications. Execution of any such item shall take place only after bringing the issue to the notice of the Engineer-in-charge and taking his written permission. GUJARAT UNIVERSITY's decision shall be final & binding to the contractor on any issue arising out of such discrepancies.

- 14. AGREEMENT:** As per university's rules, successful bidder shall have to enter in to an agreement on non-judicial stamp paper of Rs.300/-with the Gujarat University, Ahmedabad, in the prescribed form on receipt of work order. The cost of the stamp fee shall be borne by successful tender. The tender with specifications, schedules, drawings, the contract booklet and other necessary documents shall be signed by successful bidder. The letter of acceptance, all the bid documents, all the documents accompanying the contract & subsequent correspondence shall be deemed to be a part of the contract agreement. **(Separate Agreement sheet attached below as annexure: I)**
- 15.** Each bidder shall also submit a Declaration to the effect that bidder is an engineering construction firm or an association of firm which has successfully carried out large works of this nature & has adequate organization & experienced personnel to handle this type & magnitude of work. Information should be also given regarding the constitution of the firm; it's authorized, subscribed & paid up capital, the date & place of registration, the place of business, the names of the directors & other relevant information.
- 16.** Each tender shall contain the name, residence & place of business of person or persons making the tender & shall be signed by the bidder with his usual signature with seal of the company.
- 17.** An attested copy of the constitution of the firm with the name of all partners shall be furnished. Whenever, whether in submission of the tender or later in other matters, the signatures are made by one person on behalf of Directors or a firm or a corporation, an attested copy of the resolution of the partners or of law shall be supplied by the bidder authorizing the signatory. Witnesses & sureties shall be persons of status & probity, their names, occupation & address shall be stated below their signatures. All signatures shall be dated.
- 18.** Tenders by corporation shall be signed with the legal name of the corporation followed by the name of the state of incorporation & by the signature & designation of the president, secretary or other person authorized to bind it in the matter with rubber seal of the company.
- 19.** The tenders received after time and date specified in the tender notice, will not be accepted. Once the offer submitted by the contractor before due date of submission, the contractor will not be allowed to submit revised / additional / modified / other even before due date. However, if the issue and receipt of tender is extended by the GUJARAT UNIVERSITY due to any reason, the contractor may submit the revised offer before due date of submission, if he wish to submit.
- 20.** GUJARAT UNIVERSITY reserves the right to delete or add any item of Schedule-B for which contractor shall not have any right to claim on this account.
- 21.** No idle charges shall be entertained by Gujarat University, Ahmedabad for any site conditions or any circumstances.

22. No claims for hindrance shall be entertained in any manner for any natural phenomenon such as rain or water logging.
23. The Contractor shall take all requisite & necessary care to observe that no damage is caused to the Existing structures, assets etc. For any damage to the existing structures or assets of Gujarat University that contractor is be held responsible by Engineer-in-charge, same shall be rectified/restored/replaced immediately at the contractor's cost to the satisfaction of Engineer in Charge. If found necessary, Engineer-in-charge may employ other agency for the same and recover the cost from the contractor's account.
24. The Bidders shall note:
- No price escalation on any account, shall be payable.
25. Recoveries:
- In case of any damage to equipment/machinery or structure/building of GUJARAT UNIVERSITY, Ahmedabad or any public property due to negligence's of contractor or any other reasons attributed to contractor the decision of Engineer in Charge regarding the amount of recovery shall be final.
 - If the contractor fails to execute the work as per direction of Engineer in Charge within the time frame given by GUJARAT UNIVERSITY, Ahmedabad time to time, action as per clause no. 35 of this chapter and action as per clause no. 4 of condition of contract shall be implemented.
26. All royalties, sales tax, toll tax, local tax, development charges, welfare cess and any other taxes including works contract tax etc. and also any statutory variation in future towards above mentioned taxes & any other taxes if levied in future by statutory authority applicable to this contract shall be borne by the contractor and GUJARAT UNIVERSITY shall not entertain any claim whatsoever in this respect. The rates shall be "excluding of GST".
27. The contractor shall have to pay the amount of GST to the respective department as early as possible as per prevailing rules.
28. The contractor shall pay the building and other construction welfare cess of 1% of total estimated cost at respective department of GOG. The contractor shall have to produce the proof of payment of labour welfare cess before submission of final bill, otherwise final bill of the work will not be finalized
29. The EMD will be returned promptly to the unsuccessful bidder after completion of tender process. (i.e Work awarded to the successful bidder)
30. R. A. Bill: R. A. bill payment shall be made only at the end of the month. On submission of bill by the contractor in GUJARAT UNIVERSITY's prescribed format. Completion of each activity will be checked by Engineer-in-charge and after getting approval of each activity contractor will proceed ahead to next stage.
31. Gujarat University shall entertain a R.A. bill of minimum of Rs. **50,00,000/-** only. (Only in special case, Engineer-in-Charge may use his discretion and allow an RA Bill of amount lesser than prescribed herewith). The R.A. bill must be submitted in prescribed format only. On receipt of a valid R.A. bill, Engineer-in-charge, as per his discretion, may suggest an ad-hoc release of not more than 50% of the bill amount on immediate bases to expedite the progress of work. This provision shall be treated ONLY as discretionary power of the Engineer-in-charge and not as a right to demand payment. The ad-hoc amount suggested by Engineer-in-charge shall be processed before verification of the bill and hence must be treated as advance that can be recovered at discretion of Engineer-in-charge, if need be. In case of a large discrepancy is found in the R.A. in comparison of actual work found at site, it shall be treated as a

malpractice and contractor may be forced to pay a penalty or face termination from the contract based on the judgment of the Engineer-in-charge.

32. All R.A. bills shall be scrutinized by Engineer-in-charge for quality and quantity (in case of consultant PMC engineer) and shall be processed based on the approval granted by him. The amount due post-ad-hoc payment shall be released only after due approval of the Engineer-in-charge is received. Though all necessary efforts shall be made to expedite the approval process, minimum approximate time for the approval process shall be of 4 weeks.
33. The work shall be completed within the period stipulated in the contract.
34. **Security Deposit:** The successful bidder shall have to pay security deposit as guarantee money for performance of the contract and observance of contract conditions. The detail of break-up of SD is as under.
Initial security Deposit: Appointed bidder shall have to pay security deposit of 5 % Of Estimated Cost of the work put to tender within 15 Days from the date of issue of letter of intent by way of Bank Guarantee shall be of nationalized / scheduled bank only. On failing to pay security deposit in specified time limit the EMD will be forfeited and bidder will not be allowed to participate in the tenders invited from Gujarat University for the further period of 1 year. The security deposit validity shall be up to six months from the completion period specified in the contract and can be release within 30 days of final certification and only after approval of Engineer-in-charge, Gujarat University. Engineer In-charge reserves the right to withhold the same till the period he considers deemed fit.
Retention Money: For further security for the due fulfillment of the contract by the contractor, 5% of the value of the work done shall be deducted by the employer from each running bill towards retention money. On the PMC issuing a certificate of the virtual completion of the work the retention money will be released after Defect Liability Period of 12 Months.
35. **Compensation for the delay:** The time limit allowed for carrying out the work as entered in the tender shall strictly observed by the contractor and shall be reckoned from the date on which the order to commence the work is given to the contractor. The work throughout the stipulated period of contract proceeds with due diligence (time being deemed to be essence of contract) and for delay. If the contractor fails to complete the work under the contract by the stipulated date, he shall pay compensation (liquidated damages) of rupees 0.1% of the contract value per day from the date of delaying the said work up to the date of completion and handing over to the Gujarat University. The aggregate maximum of compensation shall not exceed 0.1% of contract value per day and shall be subject to the maximum amount of 10% of the tendered value. Delays requiring payment of 10% liquidate damages of the tendered amount for performance shall be sufficient causes for termination of contract and for forfeiture of security deposit. The penalty will be invariably deducted from the bills of the contractor and no refund will be given unless the competent authorities approve the reasons for delay attributable to GUJARAT UNIVERSITY with the prior approval.
36. In case of the item executed as per the actual requirement of the site is less than that of the tendered quantity that results in any saving, Engineer-in-Charge shall have the right to utilize the said saving to his discretion in terms of getting any other works that he finds deemed fit for the cause of the project. Contractor shall have no right to dispute this right of Engineer-in-Charge and/or claim any additional compensation for the same.
37. **Arbitration:** In case of all the disputes, decision of The Vice – Chancellor, Gujarat University shall be final and binding to the bidder. **The Vice – Chancellor, Gujarat University shall be the sole Arbitrator.** The legal jurisdiction shall be Ahmedabad only.

38. Work carried under this contract shall be completed in all respects within **12** calendar month including monsoon period from the date of issue of letter of order to commence the work. If any inevitable situation arises due to which work can be delayed such can be prior approval by Vice-Chancellor of Gujarat University in written that can be only considered as extension of time limit to complete the work. However, interim mile stones of the work will have to be completed as per the priority, sequence, schedule given by GUJARAT UNIVERSITY time to time.

CONDITIONS OF CONTRACT

1. Definitions:

- (a) The "Contract" means documents forming the tender, all the documents therein and acceptance thereof, together with the letter of intent, work order, schedule of terms and conditions, specifications, drawings, communications, instructions and any other directives issued by the competent authority to the appointed contractor.
- (b) The "Tender Document" means the form of tender, the applicable schedules and/or additional conditions and the specifications and/or drawings as issued to the contractors for the purpose of bidding.
- (c) The expression "works" or "work" when used in the conditions of contract shall, unless there be something in the subject or context repugnant to such construction means, the works or the work contracted to be executed under or in virtue of the contract whether original or altered.
- (d) The "Contractor" means the individual or firm or company, whether incorporated or not, undertaking the works and shall include his or its legal personal representative, successors and permitted assignees.
- (e) "GUJARAT UNIVERSITY" means the Gujarat University, Ahmedabad. And the "Accepting Officer" means the officer who is authorized to sign and signs the contract on behalf of the "GUJARAT UNIVERSITY."
- (f) "V.C." means Vice Chancellor who administers and in the case of the term contracts directs the contract.
- (g) The "Engineer-in-charge" means all officers of the GUJARAT UNIVERSITY appointed by the VC to supervise the works or part of the works.
- (h) The "Consultant" means designing, supervision agency appointed by Gujarat University.
- (i) "B.S." means the "British Standard" as issued by the British Standards institution. "A.S." means the American Standards as issued by the American Standard Institutions and "I.S." means the "Indian Standards" as issued by the Indian Standards Institutions. Wherever the above mentioned abbreviations are preferred to, in the specifications and / or work orders, they mean the addition with all amendments current at the date of issue of tender documents of work orders. In the case of measurement and terms of contracts "Specifications" means those contained in Gujarat University, Ahmedabad schedule together with any amendments etc. embodied in the tender documents, "Drawings" refer to those accompanying the tender documents and/or any work orders referred therein.
- (j) The "Contract Sum" means the sum accepted or the sum calculated in accordance with the prices accepted in the tender and/or the contract rate as payable to the contractor for the full and entire executing and completion of works.
- (k) "The date of completion" is the date or dates of completion of the work or any part of the works set out or ascertained in accordance with the individual work orders and the tender documents or any subsequent agreed amendments there to.

2. **Compensation for the delay:** The time limit allowed for carrying out the work as entered in the tender shall strictly observed by the contractor and shall be reckoned from the date on which the order to commerce the work is given to the contractor. The work throughout the stipulated period of contract proceeds with due diligence (time being deemed to be essence of contract) and for delay, the contractor shall pay compensation as per para 35 of general information for the bidder. The penalty will be invariably deducted from the bills of the contractor and no refund will

be given unless the competent authorities approves the reduction the reasons for delay attributable to GUJARAT UNIVERSITY with the prior approval.

3. **Notice for unsatisfactory progress:** If the progress or a particular portion of the work is unsatisfactory the Engineer-in-charge whose decision shall be final, shall notwithstanding that the general progress of work is satisfactory; be entitled to take action under Clause 4(c) after giving the contractor 10 days' notice in writing and the contractor will have no claim for compensation for any loss sustained by him owing to such actions.
4. **Action in the case of Default by Contractor :** if the contractor shall negate or fail to proceed with the work with due diligence or if he violates any of the provision of the contract, the engineer in- charge shall give the contractor a notice, identifying deficiencies in performance and demanding corrective action. Such notice shall clearly states that it is given under the provision of this clause. After service of such notice, the contractor shall not remove any plant, equipment and material from site. University shall have a lien on all such plant, equipment and material from the date of such notice till the said deficiencies have been corrected as mention in the said notice.

If the contractor fails to take satisfactory corrective actions within 10 days after receipt of such notice, the engineer in-charge on behalf of university shall terminates the contract in whole. In case, the entire contract is terminated, the amount of SD and bank guarantee together with the value of the work done but not paid for shall stand forfeited to the university. The plants, equipment and materials, held under this clause shall than be at the disposal of the university to recover the amount equivalent to the liquidated damages and registration of the contractor shall be kept in abeyance for three years from the date as fixed in all such cases.

The engineer in-charge if necessary shall direct that a part or the whole of such plants, equipment and material be removed from the site within a stipulated period. If the contractor fails to do so, the engineer in-charge shall cause them or any part of them to be sold holding the net proceed of such sale to the credit of the contractor. After settlement of accounts, the lien by the University of the Contractor's remaining plant, equipment and balances of material shall be released.

Termination of the contract in whole shall be an adequate authority for the engineer in-charge to demand discharge of the obligations from the guarantors of the security for the performance.

5. **Extension of Time Limit:** If the contractor shall desire an extension of the time limit for completion of the work on the ground of his having been unavoidably hinder in its execution or on any other ground, he shall apply in writing to the Engineer-in-charge and the Engineer-in-charge may, if in his opinion there are reasonable grounds for granting extension, recommend such extension as he may think necessary or proper. The decision of the competent authority in this regard shall be final and binding to the contractor. Any delay attributed to GUJARAT UNIVERSITY shall be compensated only by way of extending the limit.
6. **Completion Certificate:** On completion of the work the Contractor shall be furnished with Completion Certificate by the Engineer-in-charge & PMC of such completion but no such certificate shall be given nor shall be the work considered to be complete until works are taken over and/or duly tested and put to operative as the case may be, nor until the work shall have been measured by the Engineer-In-Charge or where the measurement have been taken by his subordinated until they have received the approval of the Engineer-in-charge the said measurement being binding and conclusive against the contractor.

- 7. Effect of the Certificate:** Unless otherwise specifically prescribed by the Engineer-in-Charge, No payment shall be made for any work estimated to cost less than **Rs. 5,00,000/-** till after the whole of said work shall have been completed and certificate of completion given. But in the case of works estimated to cost more than **Rs. 5,00,000/-** Contractor shall on submitting a monthly bill thereof, be entitled to receive payments. Proportionate to the part of the work then approved and passed by the Engineer-in-charge, whose certificate of such approval and a passing of the sum so payable shall be final and conclusive against the contract. All such intermediate payments shall be regarded as payment by way of advance against the final payment only and not as payments for work actually done or completed and shall not preclude the Engineer-in-charge from requiring bad, unsound, imperfect or unskillful work to be removed and taken away and reconstructed or re-erected nor shall any such payment be considered as admission of the due performance of the contract or any part thereof in any respect of the accruing of the claim nor shall conclude, determine or effect in any way the powers of the Engineer-in-charge as to the final settlement and adjustment of the accounts otherwise or in any other way, vary or affect the contract. The final bill shall be submitted by the contractor within one month of the date fixed for completion of work; otherwise the certificate of Engineer-in-charge of the measurement and of total amount payable for the work shall be final and binding on all parties.
- 8. Payment to Contractors:** Unless otherwise specifically prescribed by the Engineer-in-Charge, the rates for several items of works estimated to cost more than **Rs.5,00,000/-** shall be valid only when the item concerned is accepted, having been completed full, in accordance with the sanctioned specification. In case, where the items of the work, are not accepted, as so completed the Engineer-in-charge, may make payment on account of such items at such reduced rates, as he may consider reasonable in the preparation of final or running accounts bills.
- 9.** Bills shall be submitted by the contractor end of the work/ month on or before the date fixed by the Engineer-in-charge in two original copies.
- 10.** Works to be executed in accordance with specifications, orders etc. The contractor shall execute in whole and every part of work in the most substantial and workman-like manner and both as regarding materials and in every other respect in strict accordance with the specification. The Contractor also shall confirm exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Engineer-in-charge and lodged in his office and to which the contractor shall be entitled to have access for the purpose of Inspection at such office, or in the site of the work, during office hours and the contractor shall, also if he so requires, be entitled at his own expenses to make or cause to be made copies of the specification, and of all such designs.
- 11. Extension of Time Limit in consequence of Addition or Alteration**
The time limit for the work shall be extended in the proportion that the increase in its cost occasioned by alterations or additions bears to the cost of the original contract work and the certificate of the Engineer-in-charge as to such proportions shall be conclusive.
- 12.** No compensation for alternation in or restriction of work to be carried out. If at any time, after execution of the contract documents the Engineer-in-charge shall, for any reason whatsoever, require the whole or any part of the work, as specified in the tender, to be stopped for any period or shall not require he whole or part of the work to be carried out at all or to be carried out by the contractor, he shall give notice in writing of the fact to the contractor who shall thereupon suspend or stop the work totally or partially as the case may be in any such case, except as provided here under the contractor shall have no claim to any payment or compensation what so ever on account of any profit or advantage which he might have derived from the execution, of the work in full but which he did not so derive in consequence of the full amount of work not having been carried out or on account of any loss that he may be put to

on account of materials purchased or agree to be purchased or for unemployment of labour recruited by him. He shall not also have any; claim for compensation by reason of any alterations having been made in the original specification, drawings, designs and instructions which may involve any curtailment of the work as originally contemplated. Where however, materials have already been purchased or agreed to be purchased by the contractor before receipt by him of said notice, the Engineer-in-charge provided they are not in excess or requirement and are of approved quality and /or shall be compensated for the loss, if any, that he may put to in respect of materials agreed to be purchased by him. The amount of such compensation to be determined by the Engineer-in-charge whose decision shall be final. If the contractor suffers any loss on account of his having to pay, his labour charges during the period, during which the stoppage of work has been ordered under this clause the contractor shall on application be entitled to such compensation on account of labour charges as the Engineer-in-charge whose decision shall be final, may consider reasonable provided that the contractor shall not be entitled to any compensation on account of labour charges if, in the opinion of the University Engineer, the labour could have been employed by the contractor elsewhere for the whole or part of the period during which the stoppage of the work has been ordered as aforesaid.

- 13. No Claim for Variation in Quantities of Work:** Quantities shown in the tender are approximate and no claim shall be entertained for quantities of work actually executed, being either more or less up to any extent than those entered in the tender or less than those entered in the tender or estimate.
- 14. No Claim for Compensation for Delay in starting work:** No compensation shall be allowed for any delay caused into starting of work on account of acquisition of land and in the case of clearance for works or any delay in according sanction to estimates.
- 15. Entering upon or commencing any portion of work:** The contractor shall not enter upon or commence any portion of work except with the written authority or instructions of the Engineer-in-charge or his subordinate in charge of the work, failing such the contractor shall have no claim to ask for measurement or payment for work.
- 16. Method of Payment to contractors shall be made by A/c payee cheques provided the amount exceeds Rs.50/-.** Amount not exceeding Rs.50/-will be paid in cash. Generally payment may take 30 to 60 days after passing of bills depending on availability of fund.
- 17. Acceptance of conditions on tendering for work:**
Submission to tender or acceptance of work order shall imply acceptance of these conditions of tender by contractor.

SPECIAL CONDITION OF CONTRACT

1. All the basic raw material like sand, gravel, metal shall be tested as per I.S. norms before use. For material like cement, CRS steel, the certificate from manufacturer, of the batch shall be submitted before use, for the quality of the lot procured.
2. The water for construction, drinking and other use, shall be arranged by the contractor at his own cost. Similarly arrangement for electricity for construction/ domestic use shall be arranged by the contractor and no claim of this account shall be entertained.
3. The water to be used for construction shall be as per the required I.S /PHE. Standard.
4. In case of dewatering for any reason (including rain water logging) or of any sort, for construction is required, the contractor has to make his own plumbing and disposal arrangement for which no claim shall be entertained.
5. For masonry work, with Aerated light weight blocks, shall be duly certified by the manufacturer for a minimum strength of 35 kg/cm², and shall be as per I.S. Standard.
6. The clay bricks will be used only in below plinth level.
7. Sufficient arrangement of all resources for proper workmanship quality shall be made before start of work be the contractor. However if suggested by engineer in charge an additional arrangement shall be made within 48 Hrs. of instruction.
8. All the bylaws of labor, labor arrangement, insurance, safety, as per the central Govt. and state Govt. shall be strictly followed.
9. The compensation for any accident, causality etc. Shall be the full responsibility of the contractor and shall be as per the law governing for the same.
10. No sub – letting of the work is permitted, unless a written permission is obtained from the G.U Ahmedabad.
11. No deviation from the approved list of makes shall be permitted. In case, certain items of equivalent is mentioned, the same shall be got approved from G.U, before ordering.
12. On instructions from engineer –in-charge / G.U, the material, finished product, construction item, shall be immediately removed from the site within 72Hrs of written instruction without any compensation of whatsoever nature.
13. In case of furniture/ high end material, an inspection, as written in the technical specifications, is compulsory. In addition to this, inspection from G.U engineer shall also be necessary before dispatch of the material to the site.
14. All the items covered under the commercial bids are based on the Schedule of rates for R&B Gujarat 2015-16, or market rates. The specification of each or all the items shall be guided by the specifications mentioned in following order of preference.
15. Technical specifications for SOR for R&B Gujarat 2022-23 for SOR items, any discrepancy mentioned in the bid shall be corrected at any stage of the contract, as per the technical specifications and items description mentioned in SOR for R&B Gujarat, for items mentioned under the head of SOR, without any extra cost. This condition shall be binding on the contractor / Bidder.

16. All the items mentioned under NS i.e. non Schedule items are to be read in conjunction with the prevailing specifications of the manufactures and as per the relevant I.S code for the item/Materials, as mentioned in the tender. All the relevant material sample shall be got approved, from the G.U before placing bulk order/ usage. Any discrepancy in specification of any item or any material shall be brought to the notice of G.U before implementation.
17. Any extra item shall be first got approved form the G.U before implementation.
18. Dewatering of any type/ sort shall not be payable.
19. Barricading all around the building/ campus as per the safety norms is compulsory within 15 days after getting work order otherwise, failing which the penalty @ 0.1% of the total cost of the particular building, per week shall charge till the barricading is done.
20. If necessity "the contractor shall provide suitable barricading with suitably painted single row of metal pre- cated GI sheets about 3' – 0" wide (90 cms.) nailed or bolted with wooden poles spaced 2 to 3 meter apart and each pole 1.6 m to 2 m long 8 cm. to 10 cm. dia. Total height of barricading should be 4.5 meter high as per drawing / direction of EIC. The poles will be embedded in mobile iron pedestal rings suitably framed for giving stable support as per direction of the engineer-in-charge. All management (including watch and ward) of barricades shall be the full responsibility of the contractor. The barricades shall be removed only after completion of the work or part of the work. The contractor's rate shall include all above items of work and nothing extra shall be paid to the contractor over and above his quoted rates. It should also include writing and painting, arrangement for traffic diversion such as traffic signals during construction at site for day and night, glow lamps, reflective signs, marking, flags, and caution tape as directed by engineer-in-charge. The barricading provided shall be retained in position at site continuously i/c shifting of barricading from one location to another location as many times as required during the execution of the entire work till this its completion. Rate includes its maintenance for damages, painting, all incidentals, labour materials, equipment and works required to execute the job. The barricading shall not be removed without prior approval of engineer-in-charge".
21. The contractor shall maintain the site and all works thereon in neat, clean and tidy conditions at all times. The contractor shall properly clean the works as it progress and shall remove all rubbish and debris from the site on a daily basis and as directed by the engineer in charge.
22. For internal plastering, scaffolding shall be erected independent of walls. No numbers of scaffolding shall be allowed to be housed in the walls being treated with plaster. Scaffolding for external plaster shall also be supported independent of walls to avoid patchy appearance.
23. Vitrified tiles and glazed tiles shall be tested in central glass & ceramic research institute (CGCRI) as per IS 15622:2006.
24. The contractor has to make his own arrangement for labour colony outside the campus. It is strictly prohibited to stay inside the campus.
25. The contractor shall also make sufficient arrangement for photography/videography preferably by maintaining a camera/video camera at site so that video photographs can be taken of a specific activity at any point of time.
26. The execution of the work may entail working in the monsoon also. The contractor must maintain labour force as may be required for the job and plan and execute the construction and erection according to the prescribed

schedule. No special/ extra rate will be considered for such work in monsoon. The contractor's rate shall be considered inclusive of cost of dewatering required if any and no extra rate shall be payable on this account.

27. Addenda/ Corrigenda to the tender documents may be issued prior to the date of opening of the tender to clarify or effect modification in specification and / or contract terms included in various tender documents. The tenderer shall suitably take into consideration such addenda/ corrigenda while submitting his tender. The tenderer shall return such addenda/ corrigenda duly signed and stamped as confirmation of its receipt and submit along with the tender document. All addenda/ corrigenda shall be signed and stamped on each page by the tenderer and shall become part of the tender and contract documents.
28. Defect Liability period will be 12 Months from the date of final completion of the work.
29. Any increase in the existing taxes, levies & duties in the present tax structure will have to be borne by the contractor. The department will not make any separate payment towards any type of tax.
30. Any measures for soil stabilization during excavation shall be solely responsibility of contractor including design and execution. Contractor shall have to quote excavation item rates considering above measures. No extra payment shall be made for such measures.
31. The contractor will have to deploy full time manpower of two plumbers and one carpenter on site 24X7 during the whole contract period within the rate quoted. G.U will not make any additional payment towards the same. The contractor has to quote the rate accordingly.
32. The scope of work includes day to day current repairing work like leakage repairing, repairing plumbing line, plumbing fittings like elbow, tee, coupler etc. plumbing related items, minor work & special repairing work as per requirements of the department.
33. It is the sole responsibility of the Contractor to maintain the mentioned buildings during the contract period without any complaint. If any complaint arises the contractor will have to solve it within 2 hours, failing to which the penalty of Rs. 1000/- per complaint per hour will be imposed till the complaint is resolved.
34. It is the responsibility of the contractor to follow the system of G.U and co-ordinate with concern department.
35. It is the responsibility of the contractor to maintain the complaint register with closer report as per G.U format.
36. The Scope of work may be extended from beyond the mentioned buildings to the entire campus.
37. The Contractor has to deploy two Civil Engineer & three technical supervisors on site in day time and one technical supervisor in night time for day to day work and to resolve the complaint for the maintenance of the buildings.
38. The Contractor should work without disturbing the hospital staff & patient.
39. The contractor will have sufficient stock of routine consumable materials within the campus.
40. The contractor will have to deploy full time one office boy for G.U office during the whole contract period within the rate quoted. G.U will not make any additional payment towards the same. The contractor has to quote the rate accordingly.

SPECIAL CONDITIONS: TECHNICAL

1. Contractor shall be responsible for any accident or damage to road gutter, manholes, dustbins, water closet pipe line etc. or any inconvenience caused by contractor for which the necessary compensation shall be paid by the contractor or recovered from the bill as deemed fit by the University.
2. If required the work shall be continued during the extended period without any extra rate and its terms & condition. The time limit of the works shall be considered accordingly.
3. It is the responsibility of the contractor to get the work done satisfactorily by arranging sufficient manpower, tools, tackles, materials etc. as per the requirement. For poor performance of the works, reduced rates shall be paid and necessary action shall be taken as per Corporation's rules.
4. The contractor or his authorized representative shall remain present during working hours and as per requirement.
5. Any description is left out in item the work shall be executed as per the instruction of Engineer-in-charge.
6. If work is not carried out by the contractor, it will be got done at risk and cost of contractor and amount along with 15% supervision charges will be recovered from the bill.
7. If any dispute arises the booklet of "TENDER AND CONTRACT FOR WORKS" may be referred and it will be treated as part of the contract.
8. Contractor has to carry out the items as per the requirement as and when required and if he fails to carry out the work as required, recovery will be made as per Corporation's rules.
9. Quantities of each item shown in the tender is approximate and may vary up to any extent. No claim shall be entertained for quantities of work, executed being more or less than those entered in the Schedule-B of the Tender.
10. For Any extra items, the SOR rates or the Rate analysis/MR finalized by Gujarat University shall be paid to contractor. No extra claim shall be entertained of such items.
11. The rate only items shall be considered for tender evaluation and those items shall be operated by Gujarat University as and when required.
12. Work shall be carried out as per the priority given by Engineer-in-charge.
13. The rate of the tender is firm and no any price escalation shall be paid to the contractor, for the contract period & extended period if any.
14. Look in to the urgency of the particular work. The Engineer-in-charge will instruct to take up and complete the particular job / work in specified time. Otherwise, to complete the work, Engineer-in-charge will arrange to execute the same without giving any notice or intimation to get the work executed through any other agency and recovery will be made as per University's rules.

15. Contractor shall establish the following at the site:

- a. A pucca go down for all necessary material requiring protection from weather
 - b. Site office manned with One Project Manager (Be. Civil with minimum 10 years of experience), Two site supervisors (BE/Diploma Civil with minimum 5 years of experience) and necessary office staff and infrastructure. The site office must be equipped with internet and communication facilities. Computers and printer with necessary software shall be made available at site by the contractors.
- 16.** In addition to the above, the site office shall have a dedicated enclosed and well-furnished office-space for the PMC Engineer and a meeting space. Responsibility to keep the site neat and clean and providing it with all necessary security shall be of the contractor.
- 17.** Bidder is sole responsible for Design execution of precast building as per the LATEST IS CODES AND GOVERNMENT GUIDELINES.
- 18.** Bidder shall submit all architectural design for approval of architecture regarding look and necessity of building.
- 19.** Bidder shall submit THIRD party stability certificate compiling all guidelines as per the requirements of Client/Consultant.
- 20.** After completion of work bidder must submit all design data as well as stability certificate for USE.
- 21.** FOR ABOVE SUBMISSIONS NO EXTRA COST WILL BE GIVEN.

SPECIAL CONDITIONS FOR USE OF CEMENT IN WORK:

- 1.** The rates in Schedule-'B' are inclusive of cement cost. Contractor has to purchase fresh 43 / 53 grade cement confirming to as per IS 8112 -1991 or PPC (Fly ash Based) confirming to IS-1489 (Part-I) of approved brand by GUJARAT UNIVERSITY.
- 2.** Contractor has to construct pucca go down at site of work so that cement bags be properly preserved to avoid damage due to any kind of weather. GUJARAT UNIVERSITY will in no way responsible for any damage, loss or theft of the same.
- 3.** Contractor has to bring sufficient quantities of cement bags and at no time less than 200 (two hundred) bags to maintain progress of work. The work should not suffer for want of cement.
- 4.** Cement should give the required strength of cement concrete.
- 5.** To bring sufficient & timely cement at site is full responsibility of contractor. Nothing extra will be paid on account of any reason to maintain progress of works and to complete the works in schedule time.
- 6.** Contractor has to submit material A/c consumption of cement used with every bill. In case of not submitting the same, bill will not be passed. Party has to submit the copy of cement / purchase bill along with each RA Bill/Final Bill.
- 7.** Empty cement bags are not to be returned to the University and contractor will be allowed to take away with written permission from Engineer-in-charge.
- 8.** Contractor is fully responsible for safety of cement at site; nothing will be paid extra on account of safety.
- 9.** If GUJARAT UNIVERSITY's authorized representative wants to check cement stock at site, Contractor has to allow for the same at any time.

REGISTRAR

Sign and Seal Of Contractor

10. Contractor has to maintain day-to-day cement consumption balance account at site.
11. As far as possible, contractor has to maintain supply of cement of only one brand & grade throughout the work and on account of closer/shortage of approved brand, cement of other brand in accordance of condition No. (1) Will be allowed by Engineer-in-charge.
12. Contractor will be allowed to carry out work only after physical verification of cement brought at site.
13. Contractor shall have to use PPC (Fly Ash based) preferably as per the relevant I.S. codes.
14. The cement consumption will be considered as per the standardized norms of state P.W.D. / GUJARAT UNIVERSITY and accordingly the required quantity of cement shall have to be brought by the contractor and has to use the cement accordingly. Contractor should not use less than the prescribed quantities of cement even in the case of mix design recommends lower quantity. Nothing will be paid extra for over consumption.

Engineer-in-charge
GUJARAT UNIVERSITY

DECLARATION FORM

(To be submitted duly notarized on Rs 300/-Stamp paper)

I/We hereby declare that I/We have carefully studied the entire tender and condition of the contract, specification & other relevant documents of this work mentioned in the tender and abide by the same. Also I/We hereby and agree to execute the same accordingly.

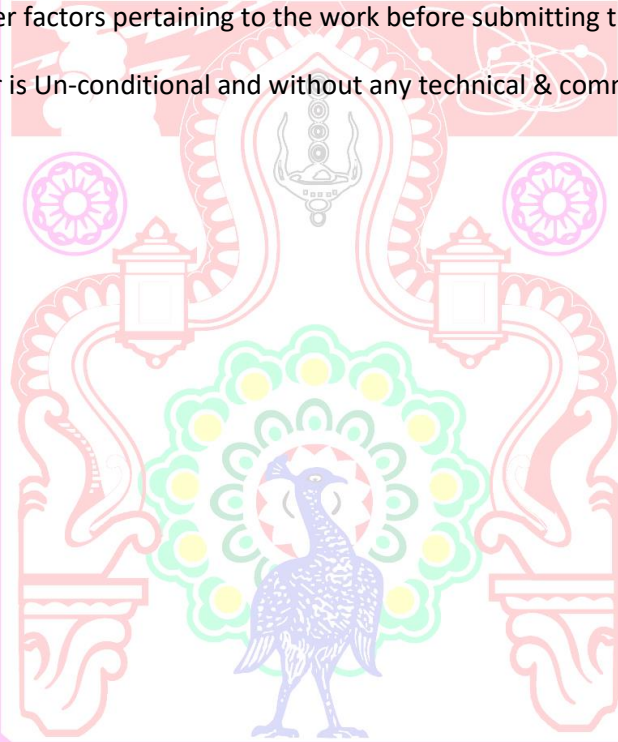
I/We hereby abide to execute the contract agreement of the condition of the contract, specification & other relevant documents of this work or otherwise I/We will get copy of the same from the office of the tender inviting authority and the same will be acceptable to me /us. I/We hereby accept and confirm that any dispute on this regards shall not be entertained by the tender inviting authority.

I/We hereby declare that I/we have visited the work site and fully acquainted myself/ourselves with the local situation regarding materials, labor and other factors pertaining to the work before submitting this tender.

I/We hereby confirm that our offer is Un-conditional and without any technical & commercial deviations.

Signature of Contractor
Names

Seal,
Detail address



REGISTRAR

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Schedule for Testing of Materials

For ensuring quality control and workmanship, various test prescribe below corresponding to the material concerned shall be taken as periodic intervals as stipulated below be taken. The Material shall be got tested Govt. recognized Laboratory (R & B) or field Laboratory of GERI (R & B).

Item No. as per Sch. B	Brief Description of Materials to be tested	Qty. of Material	Prescription of test which shall be carried out	Frequency @ which test shall be carried out	Total No. of Test to be taken
1.	Coarse aggregate (metal, kapchi, gravel)		- Gradation test - Impact Value - Flakiness Index -Abrasion test	CMT 1 to 100 – 1 test 100 to 500 – 3 tests 500 to 1500 – 5 tests 1500 to 5000 – 7 tests	
2.	Grit		- Gradation test - Impact Value - Flakiness Index -Abrasion test	CMT 1 to 100 – 1 test 100 to 500 – 3 tests 500 to 1500 – 5 tests 1500 to 5000 – 7 tests	
3.	Sand		- Special gravity - Water absorption - Fineness Modulus - Silt – Content - Soundness -Gradation test	1 test per 150 cum	
4.	Tiles		- Dimension Test - Transverse strength - Water Absorption - Abrasion Test	1 test per 2000 tiles	
5	Bricks		- Water absorption - Effluence - dimension and tolerance - Comprehensive Strength	1 Test per 50,000 Bricks	
6	Steel		- Tensile Strength - Yield Stress - Elongation - Size	1 test per 40 tonnes per category	
7	C.C. Cube test 1:2:4		- Compressive Strength	1 to 5 Cum. 1 No. 6 to 15 Cum. 2 Nos. 16 to 20 Cum. 3 Nos. 21 to 50 Cum. 4 Nos. 51 & Above Cum. 4 + 1 for each Cum or part thereof	

SIGN OF CONTRACTOR

REGISTRAR

Sign and Seal Of Contractor

SPECIAL CONDITIONS OF THE WORK

1. The agency shall take all the required safety measures and observe all safety rules while carrying the above excavation works etc. to avoid any type of accident and damage. The contractor shall be held fully liable and responsible for any type of accident, injury, damage and loss etc. if occur at site till the completion of work.
2. The Gujarat University can split up this work by entrusting the orders to two or more agencies by splitting the quantities of items of the schedule –B in any proportion, at its own discretion at any time or delete one or more items as per the requirement. No any claim in any way will be entertained from contractor.
3. The contract shall be deemed to have carefully examined the site. The contractor should be deemed to have fully aware with the local site conditions & sounding structures and also all the terms & conditions scope drawings etc. Attached herewith. The bidders are ADVISE to visit the site, inspect the existing location of executing the work before quoting the rates. Any extra claims for extra items, rates etc. for any reason will not be entertained after acceptance of contract bid.
4. The rates are inclusive of all type of laborers, tools, tackles, equipment's, machineries, removed materials category wise, their protection, preservation, storing, loading, unloading, transporting for all leads lifts & elevations height/depths and inclusive of all risks & all liabilities, providing all safety precautions, Insurance, securities, site cleaning leveling dressing the sites etc. required for completion of the work in all respects.
5. The required labour licenses, permission of the Govt. authorities and insurances policies to be taken by the contractor in advance at no extra charges.
6. The responsibility and liability of manpower to be engaged for this work will be totally of contractor who has been awarded this contract and he will take away all these manpower in his own establishments on completion of this contract. The GUJARAT UNIVERSITY will not be held any responsible and liable in any way in the matter
7. **SPECIAL CONDITIONS FOR HEALTH, SAFETY & ENVIRONMENTAL NORMS**
(Referred to as HSE norms)

The complete responsibility of compliance of health and safety of all the "persons at site" and all issues connected with environmental laws as well as pollution at site is placed on the contractor for which no additional amount shall be paid.

There shall be no vicarious liability on Gujarat University or any of its officials or the consultants or PMC agencies for any violation of any HSE provisions provided in Indian Standard Code, National Building Code, and Local authority statutory provisions for HSE and any other specific HSE parameters related to work. HSE manager and contractor/s shall remain solely and wholly liable for any such violation and its civil or criminal liabilities.

The "persons at site" shall include entire workforce as well as outsiders, visitors, by-standers and all other persons who are affected by any activity taking place at site.

Contractor shall appoint/nominate a representative from his end who shall be solely held responsible for all HSE related activities. This appointee shall be identified as HSE manager.

Contractor shall ensure that HSE manager appointed by him is completely aware of all health, safety & environmental protection procedures provided in Indian Standard Code, National Building Code, and Local authority statutory provisions for HSE and any other specific HSE parameters related to work being undertaken

in the project. It shall be COMPLETE and nontransferable responsibility of the HSE manager to ensure that all HSE procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for HSE and any other specific HSE parameters related to work are followed.

Contractor agrees that he is aware of and is instructed regarding HSE procedures provided for under the Indian Standard Code, National Building Code, Local authority statutory provisions for HSE and any other specific HSE parameters related to work and it is his responsibility to follow them to the word. If any violation of any HSE rules, laws, codes or measures is observed, contractor shall be solely responsible for negligence.

In case of any activity taken up at site that causes damage or loss the a person or property or causes injury or death of a living being; and the cause of accident is identified or adjudged to be negligence of any HSE procedure or violation of any HSE procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for HSE and any other specific HSE parameters related to work, contractor and his safety manager shall be held sole responsible for the same.

In the case of any event that results in damage or loss the a person or property or causes injury or death of a living being, contractor shall not be able to seek protection under not-being-informed or instructed regarding HSE procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for HSE and any other specific HSE parameters related to work, as he has been explicitly and specifically informed to follow all HSE procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for HSE and any other specific HSE parameters related to work from time to time and is made solely responsible to implement them.

Apart from general HSE measures, contractor is made aware of the safety to be followed during excavation work, especially the danger of collapse of excavated earth of the excavated pits and is expected to follow all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

Apart from general HSE measures, contractor is made aware of the safety procedures to be followed during removal of formwork, especially the danger of collapse of formwork members as well as failure of structural members and is expected to follow all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

Apart from general HSE measures, contractor is made aware of the safety procedures to be followed while working at a height, especially the danger of falling and is expected to follow all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

Apart from general HSE measures, contractor is made aware of the safety procedures to be followed to prevent people from falling into pits, holes, bore-wells, lift-shafts, duct or any other location falling from which can result in injury or death and is expected to follow all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

Apart from general HSE measures, contractor is made aware of the safety procedures to be followed during use of hazardous materials and is expected to follow all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

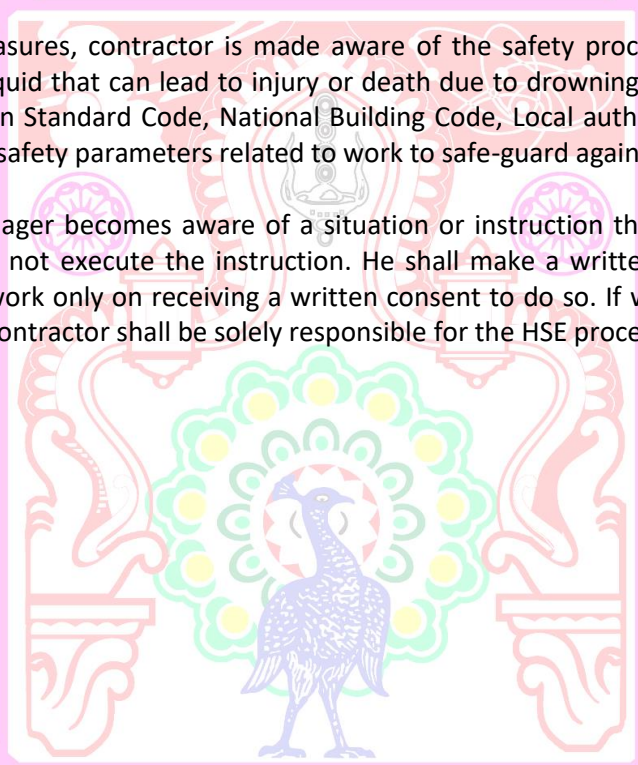
Apart from general HSE measures, contractor is made aware of the safety procedures to be followed while using mechanical and electrical equipment and is expected to follow all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

Apart from general HSE measures, contractor is made aware of the safety procedures to be followed to prevent electrical shock leading to injury or death and is expected to follow all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

Apart from general HSE measures, contractor is made aware of the safety procedures to be followed during stacking, storing, placing or keeping of material or tools or equipment which can result in injury or death by falling or causing obstruction and is expected to all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

Apart from general HSE measures, contractor is made aware of the safety procedures to be followed while storing water or any other liquid that can lead to injury or death due to drowning and is expected to all safety procedures provided in Indian Standard Code, National Building Code, Local authority statutory provisions for safety and any other specific safety parameters related to work to safe-guard against such accidents.

If contractor or his HSE manager becomes aware of a situation or instruction that can or may lead to a HSE procedure violation, he shall not execute the instruction. He shall make a written representation of the HSE issue and shall execute the work only on receiving a written consent to do so. If written consent is not sought and instruction is executed, contractor shall be solely responsible for the HSE procedure violation.



Annexure - i
CONTRACT AGREEMENT

This agreement is made on the ____ day of ____ month, ____ year between the registrar Gujarat University, Ahmedabad (Hereinafter called "the employer")

And,

M/s, _____

(hereafter called "the contractor " on the other part")

PAN Card No: _____

Address: _____

Hence forth to be referred to as " _____ (name of contractor)" or "contractor/s" or "agency"

The said agreement is put in place for the specific and limited purpose of construction/renovation of _____ as per the tender ID no: _____ and all its binding and operative parts that was duly participated in by the contractor and is awarded the contract.

It is a non-transferable agreement.

This contract is part of the agreement for the construction/renovation of _____ along with all the parts of tender document (Technical bid, P.Q. documents, Price bid, specifications, schedules, Drawings) and subject to all the laws, statutes, rules, regulation and any other state or center directives from time to time that shall, if need be, ONLY as per the interpretation of Vice-Chancellor Gujarat University, supersede any/all conditions of this agreement.

Whereas the Employer is desirous that contractor execute

(Hereinafter called "the Works".) and the employer has accepted the bid by the contractor for the execution and completion of such work at a cost of _____ Rs. (in Figure),(in words) _____

NOW THIS AGREEMENT WITHLESS AS FOLLOWS

1. In this agreement words and expression shall have the same meaning as are respectively assigned to them in the condition of contract hereinafter referred to, and they shall be deemed to form and to be read and confused as part of this agreement.

2. In consideration of the payments to be made by the employers to the contractor as hereinafter mentioned the contractor hereby covenants with the employer to execute and complete the works and remedy any defects there in conformity in all aspects with the provision of the contract.
3. The employers hereby covenants to pay the contractor in consideration of the execution and completion of the works and the remedy the defects wherein contract price or such other sum as may become payable under the provision of the contract at the times and in the manners prescribed by the contract.

Read, understood, agreed to and signed by

Authorized representative of Gujarat University

M/s _____

Authorized representative of _____

M/s _____

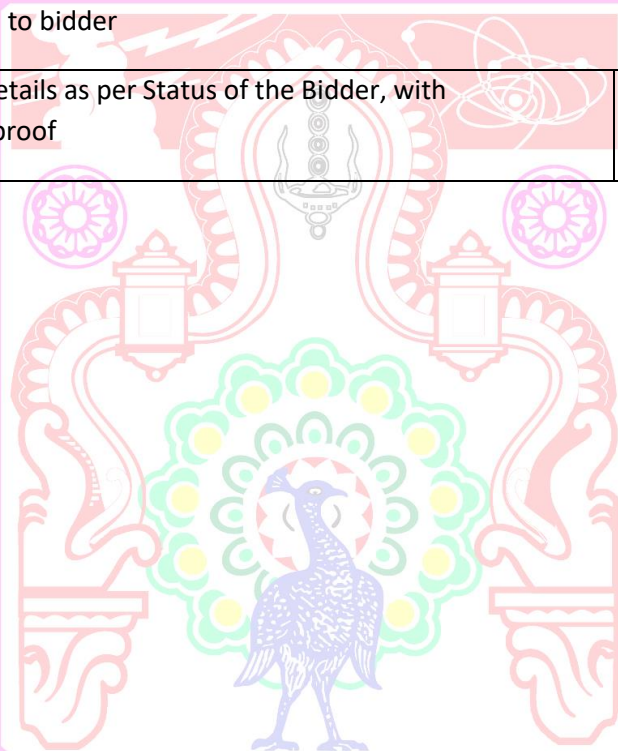
DATE: _____

PLACE: _____



Check List of Documents Enclosed With Tender

Sr. No.	Particulars	Declaration (Strike out whichever is not applicable)
1	Check list of documents in the prescribed Performa,	Yes / No
2.	Earnest Money deposit paid for the value as indicated in Notice Inviting Tender,	Yes / No
3.	Formats enclosed-dully filled in and signed along with all required enclosures , complete as per Instruction to bidder	
4	Documents /details as per Status of the Bidder, with documentary proof	Yes / No



REGISTRAR

Sign and Seal Of Contractor

FORM 'A'**STRUCTURE AND ORGANIZATION**

1	Name And Address of the company	
2	Telephone No.	
	Mobile no	
	Telex No.	
	Fax No.	
	E mail ID, Website	
3	Name of concern person	
4	Description of Company/whether Individual/Partnership/ Limited Co./Pvt Ltd or any other	
5	Documentary evidence for sr no- 6 above	
6	No. Of Year Experience in construction field.	
7	Name and address of the Bankers :-	
8	Income tax PAN Registration No Copy [Copy to be enclosed]	
9	You will have to submit registration certificate as per statutory requirement under contract labour laws (for the subject work. (If you have a copy of such certificate for executed work in past to be submitted)	Yes/No
10	Whether enlisted as approved Contractor with GOG / Public Under taking /SEB / others if so please furnish details and copy of certificate in separate sheet	Yes/ No
11	Tax No. details. VAT [State Sales Tax] No	
	Central Sales Tax C.S.T No	
	GST No.	
12	Provident Fund Registration Number – Copy attached	Yes/ No

REGISTRAR

Sign and Seal Of Contractor

13	Penalty Clause - Accepted Penalty for the work delayed /non completion/ nonperformance of the works will be imposed as mentioned in Technical bid-I –	Yes/No
14	Prices/Charges- Accepted Prices / charges should be firm and fixed. No price increase will be allowed during tenure of contract due to any reason.	Yes/No
15	Payment Terms – Accepted	Yes/No
16	I. T. and other taxes Deduction.-Agree Taxes will be deducted as per prevailing Government rules from the monthly bill	Yes/No
17	Validity of offer –Accepted	Yes/ No
18	Work completion period as per price schedule- accepted	Yes/ No
19	Declaration sheet - Attached Declaration in prescribed format on letter head of the bidder	Yes/No

Note :- The above necessary information shall be supported with necessary documents otherwise the same shall be treated as null and void.

FORM 'B'

FINANCIAL STATEMENT

(Please fill as applicable)

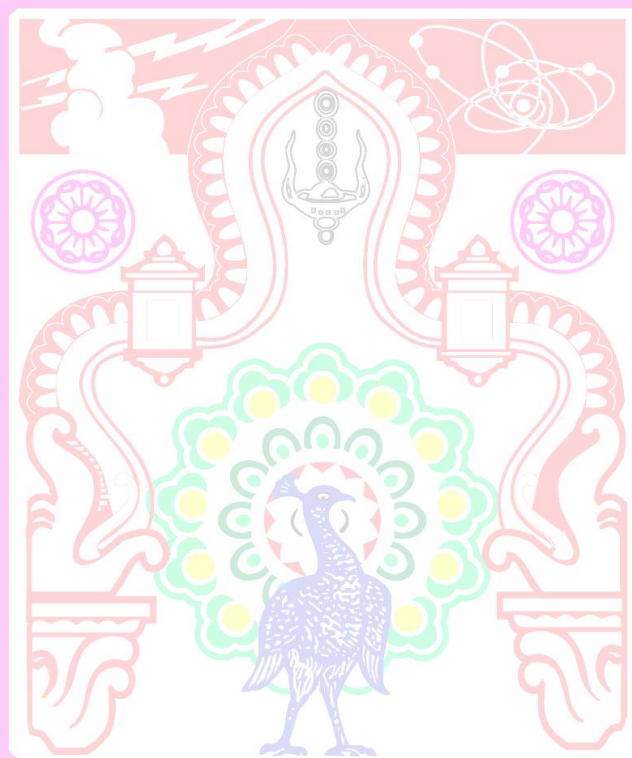
1	Name of firm			
2	Attach audited balance sheet & Profit & Loss statement for the past 05(five)Year			
3	Approximate value of works in hand :	Rs.		
4	Bidders should have to submit the registration having with State R & B dept /CPWD/Electrical Board/Railway with 'A' class or above having registration of special category-II.			
5	Turnover /profit during last five years certified by chartered Accountant.	Year 2023-24 2022-23 2021-22 2020-21 2019-20 2018-19	Turnover in RS.	Profit after Tax In Rs.
6	Name of the government entity for whom work carried out during last five years with copy of orders and satisfactory job completion certificate as per PQ criteria			
Sr. no	Name of clients / Nature of work	Work Order No	Date of commencement & date of completion	Value in Rs.

REGISTRAR

Sign and Seal Of Contractor

Note: Information asked against each item to be carefully filled in, more preference to balance sheet in reply to above points is acceptable

1. The above details supported by last financial year Balance sheet / Profit & Loss account etc. must be audited by the chartered accountant.
2. The above information shall be supported with necessary documents otherwise, the same shall be treated as null & void.
3. Certified copies of actual audit report by Chartered Accountant for the financial year 2015-16 to 2020-21 shall have to be attached.
4. Details of actual turnover last five years must be notarized by notary office.
5. Copy of unaudited provisional certificate of last year By Chartered Accountant shall be submitted.



FORM 'C'**PERSNNEL DETAILS****Name of the Applicant:**

S.No.	Description	On Applicants Pay Roll
1.	Project Manager	
2.	Material and Quality Control Engineer	
3.	Works Manager (Main Civil works)	
4.	Number of Engineering Gradates a) Design b) Construction Supervision	
5.	Number of administrative grades	
6.	Number of Skilled employees	
7.	Number of Unskilled employees	
8.	Please indicate whether design, wherever required as per conditions of bid, will be carried out in house or with the help of consultants.	
9.	If in house, please indicate the details of designs carried out over the last few years. If to be done by back – up consultants please give the data such as name of company, key personal and professional qualification, present position, total experience number of engineering staff under each category of specification and details of work executed.	
10.	No. of Carpenters	
11.	No. of Bar Bender	
12.	No. of Concrete foreman	
Please indicate whether sub soil investigation as required under condition of contract will be carried out in house or with help of other agency.		

NOTE:

It is expected that a Project Manager having in Degree in Civil Engineering having appropriate ten years of experience and two Supervising Engineer having Degree/Diploma in Civil Engineering with appropriate five years of experience of similar work and experience of materials testing and quality control shall be permanently deployed for the project.

REGISTRAR

Sign and Seal Of Contractor

PLANT & EQUIPMENT PROPOSED TO BE DEPLOYED BY THE APPLICANT FOR USE ON THE SUBJECT WORK

[illegible]

[illegible]

22	Needle Vibrator									
23	Soundness testing operator for cement									
24	Theodolite									
25	Precision automatic level									
26	Precision staff									
27	Steel taps of road (a) Steel tape- 5 mt long (b) 10 mt long (c) 20 mt long (d) 30 mt long									

Note: -

1. The above information may be furnished for each machinery and equipment listed herewith.
2. The location of machinery should be furnished in detail i.e. [i] Site of work [ii] Own workshop [iii] Other places.
3. The document regarding ownership of machinery /equipment etc, and attested copies of purchase agreement if any must be enclosed.
4. Describe the fabrication and workshop facilities [a] to be set up site [b] to be sub contracted locally.
5. The above information shall be supported with necessary documents otherwise the same shall be treated as null & void. If leased indicate the date when the current lease expires.
6. The Agency can hire the machineries for from the other sources and proper written proof should be submitted for the same.

Signature of Bidder

SCHEDULE 'E'
EXPERIENCE ALL PROJECTS IN PROGRESS

Give information about relevant projects in progress including the company has received a letter of intent but a formal contract has not yet been awarded.

Employer	Engineer Responsible for supervision	Location & Description of works	Value of Contract	Cost of work executed as on the date of this bid	Remaining work to be executed as on the date of this bid	Percentage of Practical Completion	Date of work order	Stipulated date of Completion of work	Likely date of Completion	Reason for Slow Progress if any.
1	2	3	4	5	6	7	8	9	10	11

Note :-

- 1) Attested copies of the latest certificate from the Employers with office seal & office outwork nos. with date may be attached. In case of private work sufficient authentic proof of work done along with details of financial transaction have to be furnished and list to be notarized.
- 2) Non-disclosure of any formation in the Schedule will result in disqualified of the bidder
- 3) This schedule shall to be attested by notary office.

Signature of Bidder

SCHEDULE 'F'

EXPERIENCE RELEVANT SIMILAR PROJECTS COMPLETED

Please furnished information about relevant project completed over the last five years

Name of Employer	Name of location & type of work	Name of Engineer responsible for supervision	Accepted Contract price and Date (Rs. in lacs)	Final value as per bill prepared by the employer	Additional amount released if any through court claims or by award on arbitrate	Percentage participates of company in Project	Was Contract satisfactory completed including time
1	2	3	4	5	6	7	8

Note :-

- 1) Attested copies of the latest certificate from the Employers may be attached In Case of Private work. Sufficient authentic proofs of work done along with details of financial transactions have to furnish and list to be notarized.
- 2) Non-disclosure of any formation in the Schedule will result in disqualification of the bidder

Signature of Bidder

**- : DETAILS OF
LITIGATION: -**

Name of applicant / or parties:

Applicant should provide information on any History of litigation or arbitration resulting from contracts executed in last five years or currently under execution as per format on letterhead. :

Years	Award for / or against applicant	Name of client Cause of Litigation & matter of dispute.	Disputed Amount in Rupees.

NOTE: -

- [1] The above information shall be supported with necessary documents otherwise the same shall be treated as null & void.
- [2] If the information to be furnished in this schedule will not be given & come to the notice subsequently will result in disqualification of bidder.

Signature of Applicant

Schedule – G

(FORM NO. 3A)

DETAILS OF SIMILAR WORK COMPLETED

- 1 Name of Contractor :
- 2 Name of work :
- 3 Estimated cost of work put to tender :
- 4 Revised Estimated cost :
- 5 Tender Amount :
- 6 Date of starting the work :
- 7 Date of completion of the work:(As per contract agreement)
- 8 Actual date of completion of work :
- 9 State whether the details as above : Given by the contractor are correct if not state as to what is the correct Information
- 10 State whether the contractor has Executed the work in progress Satisfactory as per specification if not Give the correct position of the work :
- 11 Period rate & amount of compensation if levied :
- 12 Period of extension granted if any :
- 13 Reason for delay in granted if any :
- 14 Any other remarks : Particulars of work completed

Date :

Signature of Applicant

SPECIAL CONDITION OF CONTRACT FOR LANDSCAPING AND CONTROLLED ENVIRONMENT ARBORATUM WORK.

The Bidder should have been involved in the Horticulture/landscape and Irrigation Business for last seven years or more (Company / Partnership registration certificate (Incorporation Certificate)).

Landscaping contractor should give detail of joint venture with Civil , Mechanical Electrical and plumbing agency including their work Experience with required Registration with Government Of Gujarat.

It is essential for Bidder to submit Photographs - documentation during construction phase along with the respective certificates for Evaluation.

As a part of prequalification process, Gujarat university and/or their representative may visit Project sites/Plant nursery.

The Landscaping Agency should have been involved in the Horticulture/landscape Business for last seven years or more.

The Bidder should submit one ongoing work of landscaping works with campus / development project of minimum value Rs 200 lakhs and whose financial completion is 50% or more for assessment of overall workmanship of ongoing execution work.

The Bidder should submit Minimum 5 colour photographs of each elements taken from different locations for evaluation of above completed similar project with good quality workmanship in finishing works:

In order to co-ordinate the work properly the Landscape Contractor must submit a programme of works for development, maintenance of the areas etc., before starting the work at the site which will specify dates on which material will be delivered to site, detailed commitment for stage wise development of work and final dates for virtual completion of works. In the event Landscape Contractor/s are unable to meet with the schedule without valid reasons (which must have been presented in written at appropriate time) PDEU reserves to itself the right to assign the party completed works to other landscape contractor and/or to do it departmentally at the cost of the Landscape contractor who has defaulted on completion of work on the agreed dates. Quality of completed work shall under no circumstances be sacrificed for the speed of completion of work.

Landscape Contractor must keep a site diary/site record (in triplicate). This diary shall be used to give any instructions for site work, by the EIC. The Contractor must get all instructions in writing, at first possible opportunity, even if any instructions are given orally.

Samples of each type of materials and workmanship shall be submitted/shown by the Landscape Contractor for the approval of the EIC and after such approval; these samples shall be deposited at any place the EIC may choose and the Landscape Contractor will be required to perform all the works of this contract in accordance with these samples.

The work shall be carried out in conformity with the landscape drawings and within the requirements of Architectural, HVAC, Plumbing, Electrical, Structural and other specialized services drawings.

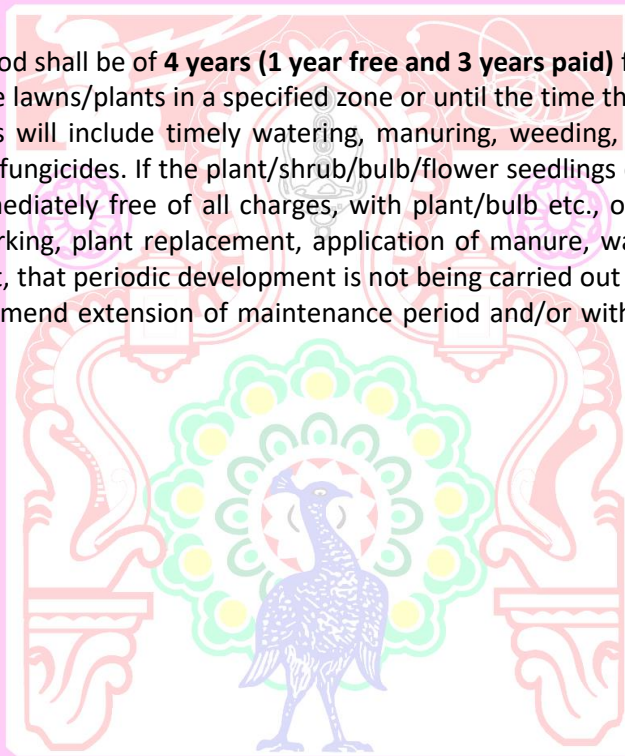
The contractor shall, without any additional charge to the department, renew or replace any dead or defective plants/grass and shall fully maintain the whole landscape for a period of defects liability period after the certified date of completion.

All equipment required for development shall be made available by Landscape Contractor, and its maintenance shall be his responsibility. This includes, Tagaras, Pawdas, Hose Pipes, Ground Rollers, Electric lawn Mowers, Sprinklers, etc.,

Landscape Contractor will take full care to ensure that no service lines (water supply, Electrical) or civil work is damaged during the course of work. EIC can recover cost of damaged works from Landscape Contractor if required.

Landscape Contractor will attend fortnightly meetings during course of work as and when scheduled without fail; in addition to carrying out regular visits as and when may be required for carrying out the work.

Total Maintenance period shall be of **4 years (1 year free and 3 years paid)** from the date of planting / handing over of all the lawns/plants in a specified zone or until the time the planting is established, whichever is later. This will include timely watering, manuring, weeding, spraying of insecticides, weedicides, pesticides, fungicides. If the plant/shrub/bulb/flower seedlings dies/destroyed the same must be replaced, immediately free of all charges, with plant/bulb etc., of same species and size. Lawn dressing, soil working, plant replacement, application of manure, watering, etc., are routine operations and in event, that periodic development is not being carried out to the satisfaction of the EIC. The EIC can recommend extension of maintenance period and/or withholding of maintenance payment.



SIZES OF PLANTS (GENERAL LANDSCAPING WORK)

sr.No.	Product Name	Bag Size
1	DESSERT ROSE	POT
2	CHINESE EVERGREEN AGLAONEMA	POT
3	ELEPHANT EAR ALOCASSIA	POT
4	CHINESE MODESTRUMRED AGLAONEMA	POT
5	SNAP GINGER	POT
6	PAINTED TOUNGE ANTHURIUM	POT
7	BRIGHT EYES	POT
8	ROSEMARRY	POT
9	DENDROBIUM	POT
10	FIUCS KING BUSH	POT
11	PHILODEDRON	POT
12	SOCIETY GARLIC TULBAGHIA	POT
13	SNAKE PLANT	POT
14	SONG OF INDIA	POT
15	FOUNTAIN BUSH	POT
16	SCARED FIG	POT
17	PANDANUS ODORATUS	POT
18	HELICONIA ROSTRARA	POT
19	GUGGAL	8X10
20	GULANECHA	8X10
21	ASGANDH	8X10
22	GURMAR	8X10
23	KIRYAT	8X10
24	MAMIJJAK	8X10
25	ADUSA	8X10
26	BAKUCHI	8X10
27	PANPHUTI	8X10
28	BABUITULSI	8X10
29	BANTULSI	8X10
30	JANGLI TULSI	8X10
31	PUDINA	8X10
32	PIPLA MUL	8X10
33	ARJUN	8X10
34	PATCHORCHUR	8X10
35	KHASI KHATRI	8X10
36	FORSKOHLI	8X10
37	GANDHATRINA	8X10
38	ROSA GHAS	8X10
39	HARSIN GHAS	8X10
40	GULSSABO	8X10
41	SADABAHAR	8X10

42	NIRGANDI	8X10
43	HENA	8X10
44	MONSOU ALLIACEA	8X10
45	HADSANKAL	8X10
46	LATERAL	8X10
47	SANT	8X10
48	KALIHARI	8X10
49	ASHOK	8X10
50	RATI	8X10
51	SATVAR	8X10
52	LAJJWANTTI	8X10
53	BAEL	8X10
54	LATKAN	8X10
55	APARAJIT	8X10
56	KAPURTULSI	8X10
57	JASUM	8X10
58	SAFED CHANDANI	8X10
59	BRAHMA- MANDUKI	8X10
60	SADA DHATURA	8X10
61	NISOTH	8X10
62	PEPERMINT	8X10
63	DORI	8X10
64	BHRINGRAJ	8X10
65	VAJRADANTI	8X10
66	LAL AMBARI	8X10
67	KAWACH	8X10
68	RAT KI RANI	8X10
69	DIN KA RAJA	8X10
70	KHAS	8X10
71	BARACHANDRIKA	8X10
72	CHITRO	8X10
73	PUDINA	8X10
74	BACH	8X10
75	KATSREYA	8X10
76	PIPAL	13X13
77	GULMOHAR	13X13
78	BORSALI	13X13
79	GARMALO	13X13
80	RUBIA	13X13
81	TERMILIA	13X13
82	BANYAN	13X13
83	SIMDO	13X13
84	SILVER OAK	13X13
86	NEEM	13X13

87	KHIJDO	13X13
89	SONMAHOR	13X13
90	AASHOPALAV	13X13
91	TAAD	13X13
92	SAPTAPARNI	13X13
93	AERIKAPALM	13X13
94	DEAD PALM	30X30
95	FOX TAIL PALM	13X13
96	PUDIKA CHAMPA	13X13
97	JETROPHA	8X10
98	BOGANVEL	8X10
99	SEVANTI	8X10
100	AEDENIUM	8X10
102	JASUD	8X10
103	RAIN LILY	8X10
104	NIRENIUM	8X10
105	IXORA PINK	8X10
106	IXORA WHITE	8X10
107	IXORA ORANGE YELLOW	8X10
108	POM POM CHAMPA	8X10
109	ROSE	8X10
110	KELENCHO	8X10
111	KOSENDRA	8X10
112	KRISHNA KAMAL	8X10
113	PENTHUS	8X10
114	SUDARSAN LILY	8X10
115	SON CHAMPA	8X10
116	KUFIYAA	8X10
117	NIKADOIYA	8X10
118	KENA	8X10
119	ALAMANDA	8X10
120	GALFENIYA	8X10
121	BIGUNIYA VENUSTA	8X10
122	PLAMBAGO	8X10
123	TIKOMA	8X10
124	AEKYLIFA	8X10
125	DUBBLE TUGGER	8X10
126	GULBAS	8X10
127	TARPETA	8X10
128	MEHANDI	8X10
129	KADAKBIJLI	8X10
130	FICUS	13X13
131	BOXES	13X13
132	PARAS	13X13

133	MADHUKAMINI	13X13
134	PENDENUS	13X13
135	CRISTENA FICUS	13X13
136	TRIANGULAR FICUS	13X13
137	RED MACHETA	13X13
138	CROTTON SCREW	13X13
139	MORPANCH	13X13
140	Z PLANT	13X13
141	CEREUS	POT
142	ECHINOCACTUS	POT
143	FEROCACTUS	POT
144	MAMMILLARIA	POT
145	NOTOCACTUS	POT
146	OPUNTIA	POT
147	PARODIA	POT
148	PILOSOCEREUS	POT
149	REBUITA	POT
150	PRICKLY PEAR	POT
151	CACTUS PEAR	POT
152	SPINELESS CACTUS	POT
153	MEXICAL SNOWBALLS	POT
154	STRING OF PEARLS	POT
155	DONCKY'S TAIL	POT
156	PERL VON NURNBURG	POT
157	CANDELABRA SOLDIER PLANT	POT
158	ZEBRA HAWORTHIE	POT
159	GHOST PLANT	POT
160	MOTHER OF THOUSANDS	POT
161	JELLY BEAN SUCCLENTS	POT
162	PINK QUILL	POT
163	AFRICAN MILK TREE	POT
164	HEN & CHICKS	POT
165	TREE AENIUM	POT
166	PARRY'S AGAVE	POT
167	GIANT CHALK DUBLEYA	POT
168	PROPELLER PLANT	POT
169	EASTERN PRICKLY PEAR	POT
170	AUTUMUN JOY STONECROP	POT
171	HARDLY ICE PLANT	POT
172	LIVING STONES	POT
173	SNAKE PLANT	POT
174	MONEY PLANT	POT
175	HIBISCUS SABDARIFFA	POT

ARBORATUM DOM 1-2-3

FOLLOWING PLANTS ARE TO BE GROWN IN ARBORATUM WITH REQUIRED FERTILIZER, PERLITE, TRYCHODERMA, COCOPEAT AND HYDROTONES AS INSTRUCTED BY CONSULTANTS AND CLIENT

DOME-1		
SR. NO.	PLANT	QTY
1	SKYROCKET JUNIPER	16
2	PURPLE PRAIRIE GLOVER	12
3	POPPY MALLOW	25
4	SPURGE	30
5	ELDERBERRY	12
6	DELPHINIUM	25
7	LILAC	16
8	MOUNTAIN ASH	20
9	FERN	600
10	PASQUE FLOWER	60
11	BLEEDING HEART	25
12	SNOW DROP	60
13	PHILODENDRON AEUTATUM	55
14	PHILODENDRON ENSIFOLIUM	40
15	PHILODENDRON GIGAS	25
16	SNAKE PLANT	150
17	SPIDER PLANT	150
18	SISAL	30
19	CHRISTMAS CACTUS	30
20	CLIVYA	250
DOME-2		
1	AMAZONE WATER LILY	20
2	CACAO TREE	15
3	BANANA TREE	15
4	CAMU CAMU	15
5	PITCHER PLANT	100
6	ACHIATE	15
7	CORPSE FLOWER	25
8	MONKEY CRUSH	20
9	ORCHID	30
10	BROMELIADS	150
11	LOBSTER CLOW	80
12	PASSION FLOWER	40
13	ALACASSIA	50
14	RAIN TREE	10
15	BLACK VELVET	100
16	BRINA	100

17	DRAGON SCALE	150
18	MUSK	150
DOME-3		
1	WHALE TONGE PLANT	200
2	AGAVE	300
3	BROAD LEAF STONE CROP	150
4	GHOST PLANT	150
5	ACOTILLO	100
6	OLD MAN CACTUS	300
7	ORGAN PIPE CACTUS	60
8	ELEPHANT'S FOOT	25
9	ALOEVERA	50
10	YUOCA	20
11	DESERT MARIPOSA	30
12	PRICKLY PERN	40
13	DESERT WILLOW	50
14	MOJAVE WOODYASTER	30
15	GERMANDER SAGE	40
16	TEXAS SAGE	60
17	DESERT MARIGOLD	100
18	BRITTLE BUSH	150
19	FERO CACTUS	20
20	GOLDEN BARREL CACTUS	30
21	RAT TAIL CACTUS	250
22	PHOENIX PALM	25
23	DATE PALM	25
24	ADENIYAM	120

REQUIRED DOSING			
Sr no	Insect name	insecticide	Dose/ 15 lit water
1	Aphid	Dimethoate 30% EC	30 ml
2	Mites	Propergite 57%EC	50 ml
3	Whitefly	Diafenthuron 50% WP	35 gm
4	Thrips	Spinosad 44.03% SC	15 ml
5	Grass hopper	Dinotefuran 20% sg	8 gm
6	Painted lady	Chlorantraniliprole 18.5% W/W	6 ml

	butterfly		
7	Cut worm	Chlorpyrifos 50% EC	40 ml
8	Scale insect	Imidacloprid 30.5 EC	30 ml
9	Lilac borer	Profenofos 40% + Cypermethrin 4% E.C.	40 ml
10	Sawfly	Diafenthuron 50% WP	35 gm
11	Beetle	Flonicamid 50% WG	8 gm
12	Sisal weevil	Dinotefuran 20% sg	8 gm
Die back		Kasugamycin 3% SL	50 ml
Wilt		Difenconazole 25%EC	15 ml
Root rot		Copper oxychloride 50% WP	70 gm
Rust		Mancozeb 75% WP	60 gm
Powdery mildew		Flusilazole 40% EC	40 ml
Fire blight		Chlorothalonil 75% WP	30 gm
Damping off		Fosetyl AL 80% WP	25 gm
Leaf spot		Azoxystrobin 23% SC	15 ml

Name	Plant	Skyrocket juniper
	Latin	<i>Juniperus scopulorum</i>
	Sanskrit	not known

Introduction	Family	Cupressaceae	
	Dimensions	Height	14 ft
		Dia	2 ft
	Life	20–50 years	

Origin &	Origin Country	western North America	
	Continent	North America	
	Weather	Winter	-7 to 8 °C
		Summer	10 to 35 °C
		Monsoon	

Nutrition	- Fertilizers that are high in nitrogen (16-4-8 NPK) will promote lush green growth.
	-Organic manure, FYM
	-SSP

Insects & Disease	-Skyrocket juniper has no serious threats from diseases or insect pests.
	- In rainy seasons, they may be susceptible to blights which causes the dieback of the stem tips.

Advantages	-Berry is High in nutrients and powerful plant compounds.
	- provide anti-inflammatory and antioxidant effects.

Disadvantages	- Juniper is commonly consumed in foods. But it is likely unsafe when used as medicine in doses larger than 10 grams of juniper berries (about 60 berries) of juniper oil, or when used for more than 4 weeks.
	- It might cause kidney problems

Photo 1		Photo 2	
			

Name	Plant	Purple prairie clover
	Latin	<i>Dalea purpurea</i>
	Sanskrit	not available

Introduction	Family	Fabaceae	
	Dimensions	Height	1-3feet
		Dia	

	Life	2 years
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Origin & Weather	Origin Country	Central North America	
	Continent	America	
	Weather	Winter	-30°C
		Summer	15-30 °C
		Monsoon	0 to 32 °C

Nutrition	- Apply no fertilizer the establishment year unless soil test indicates a low deficiency of less than 15 PPM of phosphorus and or less than 90 PPM of potassium.		
	-Organic manure, FYM		
	-SSP		

Insects & Disease	- Three-spotted Treehopper, and the Little Pasture Grasshopper.		
	-wilt		

Advantages	- used the plant as a heart medicine, to ease diarrhea, for pneumonia and measles.		
	- Tea can be made from vigorous taproot to reduce fever in measles victims.		

Disadvantages	-Generally safe for humans, with minor risks like skin irritation.		

Photo 1	Photo 2
	

Name	Plant	Poppy mallow
	Latin	<i>Callirhoe involucrata</i>
	Sanskrit	Not known

Introduction	Family	Malvaceae	
	Dimensions	Height	6-12 inch
		Dia	3 feet
	Life	many years	

Origin &	Origin Country	United States	
	Continent	America	
	Weather	Winter	above-25°C
		Summer	below 32°C
		Monsoon	35-40°C

Nutrition	- slow-release balanced fertilizer with a 10-10-10 NPK ratio.
	-Organic manure, FYM
	-SSP

Insects & Disease	- Gray Hairstreak, and Painted Lady butterflies.
	- crown rot

Advantages	- pain-relieving properties and ability to alleviate respiratory and internal ailments

Disadvantages	-not specify

Photo 1	Photo 2
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Name	Plant	Spruge	
	Latin	<i>Euphorbia serrata</i>	
	Sanskrit	Snuhi	
Introduction	Family	Euphorbiaceae	
	Dimensions	Height	1-3 feet
		Dia	1-3 feet
	Life	5-20 years	
Origin &	Origin Country	North America	
	Continent	America	
	Weather	Winter	0-20°C
		Summer	15°C to 24°C
		Monsoon	
Nutrition	- Use low nitrogen fertilizer with a ratio of 5-10-10 or 10-20-20.		
	-Organic manure, FYM		
	-SSP		
Insects & Disease	- Adult leafy spurge beetles		
	- Root rot and fungal disease		
Advantages	- The flowering plant and root are used to make medicine		
	- Treatment for cancer, a purgative, an ointment for sores, and numerous uses of the root: a physic, a treatment for pin worms, and treatment of urinary tract diseases.		
Disadvantages	-Irritating to the skin, eyes and digestive tracts of humans and other animals.		

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Photo 1		Photo 2	
			

Name	Plant	Elderberry
	Latin	<i>Sambucus nigra</i>
	Sanskrit	not known

Introduction	Family	Adoxaceae	
	Dimensions	Height	6-13 ft
		Dia	8 feet
	Life	25 to 50 years	



Origin & Weather	Origin Country	Europe and North America	
	Continent	Europe	
	Weather	Winter	
		Summer	15°C to 25°C
		Monsoon	18-24°C



Nutrition	- Incorporate manure or compost into the soil before planting		
	-Organic manure, FYM		
	-SSP		

Insects & Disease	- elder borer beetles, Aphids, Sawfly larvae		
	- Elderberry rust		

Advantages	- The dried berries or juice are used to treat influenza, infections, sciatica, headaches, dental pain, heart pain, and nerve pain, as well as a laxative.
	- The berries can be cooked and used to make juice, jams, chutneys, pies, and elderberry wine.

Disadvantages	- elderberries, leaves, stems, seeds, and bark contain toxic substances that can cause nausea, vomiting, and diarrhea.
	- Allergic reactions

Photo 1		Photo 2	
			
Name	Plant	Delphinium	
	Latin	<i>Delphinium elatum</i>	
	Sanskrit	Apavisha, Avisha, Nirvisha, Nirvishi	
Introduction	Family	Ranunculaceae	
	Dimensions	Height	2-3 ft
		Dia	2 feet
	Life	5 years	
Origin & Weather	Origin Country	Tropical Africa	
	Continent	Africa	
	Weather	Winter	
		Summer	15°C to 24°C
		Monsoon	
Nutrition	- use a potassium-rich liquid fertilizer		
	- Use a balanced fertilizer, such as a 10-10-10 granular fertilizer, or well-aged compost.		

	-organic manure		
Insects & Disease	- Aphids, Cyclamen mites, Cutworms, Slugs and snails		
	- Yellowing, stunted growth, and abnormal flower development		
Advantages	- used to treat intestinal worms, fluid retention, poor appetite, and trouble sleeping (insomnia).		
Disadvantages	- symptoms due to gastric irritation, competitive neuromuscular blockade, and cardiotoxicity.		
Photo 1		Photo 2	
			
Name	Plant	Lilac	
	Latin	<i>Syringa vulgaris</i>	
	Sanskrit	Not known	
Introduction	Family	Oleaceae	
	Dimensions	Height	12-16 ft
		Dia	8-12 ft
	Life	50 years	
O r i	Origin Country	Eastern Europe	
	Continent	Europe	
		Winter	-34°C

	Weather	Summer	18~27°C
		Monsoon	-

Nutrition	- Use a fertilizer with a 5-10-10 or 10-10-10 NPK ratio
	-Organic manure, FYM
	-SSP

Insects & Disease	- Lilac borers, Oyster-shell scale, Mealybugs, Aphids
	-Powdery mildew



Advantages	- Treat cough, diarrhea, acute icteric hepatitis, vomit, abdominal pain, bronchitis and other ailments

Disadvantages	-not specify

Photo 1		Photo 2	
			

Name	Plant	Mountain Ash
	Latin	Sorbus aucuparia
	Sanskrit	Not known

Introduction	Family	Rosaceae	
	Dimensions	Height	20-40 ft
		Dia	8-20 ft



	Life	200 years	
Origin & Weather	Origin Country	Europe	
	Continent	Europe	
	Weather	Winter	15 °C and 21 °C
		Summer	
		Monsoon	
Nutrition	- A balanced fertilizer with a 10-10-10 ratio of nitrogen (N), phosphorus (P), and potassium (K) can help the tree thrive.		
	-Organic manure, FYM		
	-SSP		
Insects & Disease	- Mountain ash sawfly, woolly aphid, san jose scale, scurfy scale		
	- Bacterial fireblight		
Advantages	- Treat respiratory tract, fever, infections, colds, flu, rheumatism and gout		
Disadvantages	- If inhaled, volcanic ash can cause breathing problems and damage the lungs.		
Photo 1		Photo 2	
			
N a	Plant	Fern	

	Latin	Polypodiopsida	
	Sanskrit	Ashvakatri, Hanumana hastha	
Introduction	Family	Marattiaceae	
	Dimensions	Height	2 to 4 feet
		Dia	1-2 ft
	Life	2-3 year	
Origin & Weather	Origin Country	north America and Europe	
	Continent	North America	
	Weather	Winter	10°C
		Summer	15–24°C
		Monsoon	
Nutrition	-Fish fertilizer is an excellent source of nutrition for your ferns.		
	-Balanced NPK ratio like a 20-20-20 mix.		
Insects & Disease	- Fern scale crawlers		
	- Bacterial wilt		
Advantages	-Healing skin, skin smoothening, anti-acnes, and protection against aging or UV damage		
Disadvantages	- Ferns release spores that can cause poisoning through oral ingestion.		
Photo 1		Photo 2	



Name	Plant	Pasque flower	
	Latin	<i>Pulsatilla patens</i> var. <i>multifida</i> ,	
	Sanskrit	Not known	
Introduction	Family	Ranunculaceae	
	Dimensions	Height	2 ft
		Dia	0.5-1 ft
	Life	10 years	
Origin & Weather	Origin Country	Central and Northern Europe	
	Continent		
	Weather	Winter	18~27°C
		Summer	
		Monsoon	
Nutrition	- Use a balanced fertilizer, like 5-10-10 NPK		
	-Organic manure, FYM		
	-SSP		
Insects & Disease	-Black beetles, Bees		
	-wilt		
Advantages	-flower can be used medicinal purposes, including dysmenorrhea and other gynecological disorders		

Disadvantages	-It flower can be poisonous to human like skin irritation, cardiotoxic, urinary and renal side effects.

Photo 1	Photo 2
	

Name	Plant	Bleeding heart
	Latin	<i>Dicentra spectabilis</i>
	Sanskrit	Not known

Introduction	Family	Papaveraceae	
	Dimensions	Height	10-15 ft
		Dia	4 ft
	Life	3-5 years	





Origin & Weather	Origin Country	Eastern Asia	
	Continent	Asia	
	Weather	Winter	-20°C
		Summer	12-14°C
		Monsoon	

Nutrition	- Use a balanced fertilizer, like 10-10-10 NPK
	-Organic manure, FYM
	-SSP

Insects & Disease	-Aphid, cater-pillars, spider mite
	-Leaf spot

Advantages	-It can help pain relief

Disadvantages	-Bleeding heart plants contain is quinoline alkaloids that are toxic to humans and animals.
	-The toxins in bleeding heart can cause liver damage and seizures in humans when ingested in large quantities.

Photo 1		Photo 2	
			

Name	Plant	Snow drop
	Latin	Galanthus nivalis
	Sanskrit	Sarpagandha

Introduction	Family	Amaryllidaceae	
	Dimensions	Height	0.25 to 0.5 ft
		Dia	0-3 ft
	Life	1-2 years	



Origin & Weather	Origin Country	southern Europe and Asia Minor	
	Continent	Asia	
	Weather	Winter	1.5°C to 7°C
		Summer	10-21°C
		Monsoon	

Nutrition	- Use a balanced fertilizer, like 10-10-10 NPK
	-organic fertilizers, SSP
	-Neem cake, FYM

Insects & Disease	-Narcissus flies
	-Grey Mold, Damping off

Advantages	-The snowdrop also contains an alkaloid, galantamine, which has been approved for use in the management of Alzheimer's disease

Disadvantages	-It may cause skin irritation

Photo 1		Photo 2	
			

Name	Plant	Philodendron spp
	Latin	<i>Philodendron Acutifolium</i>
	Sanskrit	Not known

Introduction	Family	Araceae	
	Dimensions	Height	3 ft
		Dia	4-6 ft
	Life	20 years	



Origin & Weather	Origin Country	Colombia	
	Continent	South America	
	Weather	Winter	18–29°C
		Summer	
		Monsoon	

Nutrition	- Use a balanced fertilizer, like 10-10-10 NPK
	Organic fertilizer
	ssp

Insects & Disease	aphids, moths (worms), fungus gnats, mealybugs, mites, scales, and thrips
	Root rot, Bacterial leaf spot

Advantages	-It used for air purification, stress reduction
	-It can be aesthetic enhancement

Disadvantages	- both plants contain oxalates which can cause swelling, drooling, and loss of speech if swallowed

Photo 1	Photo 2
	

Name	Plant	Philodendron spp
	Latin	<i>Philodendron ensifolium</i>
	Sanskrit	Not known

Introduction	Family	Araceae	
	Dimensions	Height	3 ft
		Dia	0.3-1.4 cm
	Life	20 years	

	Origin Country	Australia
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	Continent	Australia	
	Weather	Winter	18°C and 24°C
		Summer	
		Monsoon	

Nutrition	Controlled-Release Fertiliser NPK
	Organic manure
	Compost

Insects & Disease	aphids, moths (worms), fungus gnats, mealybugs, mites, scales, and thrips
	Root rot, Bacterial leaf spot

Advantages	-It widely used for the treatment of inflammation, gastroenteritis, abdominal pain, and diarrhea.

Disadvantages	This genus of plants is mildly toxic to humans

Photo 1	Photo 2
	

Name	Plant	Philodendron spp
	Latin	<i>Philodendron gigas</i>
	Sanskrit	Not known

Introduction	Family	Araceae	
	Dimensions	Height	3-6 ft
		Dia	2-4 ft
	Life	15-20 years	



Origin & Weather	Origin Country	Panama	
	Continent	Central America	
	Weather	Winter	18°C to 29°C
		Summer	
		Monsoon	

Nutrition	NPK fertilizer
	Organic manure, vermicompost
	FYM

Insects & Disease	Scale insect, aphid
	Root rot

Advantages	Philodendron gigas can dial down stress levels
	carbon dioxide don't stand a chance as this plant quietly scrubs the air clean, making your living space a fresher, healthier environment.

Disadvantages	- contains calcium oxalate crystals, making it potentially irritating and toxic if ingested.


Photo 1	Photo 2
	

Name	Plant	Snake plant	
	Latin	<i>Dracaena trifasciata</i>	
	Sanskrit	Vishalata	
Introduction	Family	Asparagaceae	
	Dimensions	Height	1-3 ft
		Dia	2 ft
	Life	Upto 10 years	
Origin & Weather	Origin Country	Central america	
	Continent	America	
	Weather	Winter	16°C to 24°C
		Summer	
		Monsoon	
Nutrition	balanced NPK ratio (10-10-10) fertilizer is ideal for the snake plant		
	Organic manure		
	Vermicompost		
Insects & Disease	Aphid, mites		
	Root rot, leaf spot		
Advantages	- Snake plants produce oxygen at night and remove carbon dioxide, which can help improve sleep quality		
	Snake plants remove indoor air pollutants like formaldehyde and benzene		
Disadvantages	Their leaves contain a poison that can cause swelling and numbness on the tongue if eaten in large doses.		
Photo 1		Photo 2	



Name	Plant	Spider plant	
	Latin	<i>Chlorophytum comosum</i>	
	Sanskrit	Musli Bhed	
Introduction	Family	Asparagaceae	
	Dimensions	Height	12-24 inch
		Dia	12-36 inch
	Life	20-50 years	
Origin & Weather	Origin Country	Tropical regions of South and West Africa	
	Continent	Africa	
	Weather	Winter	18-24°C
		Summer	
		Monsoon	
Nutrition	20-20-20. Fertilizers can take the form of either liquid, granular, or slow release.		
	FYM		
	Organic fertilizer, neem cake		
Insects & Disease	Aphids, mealybugs, Whitefield and spider mites		
	Brown leaf tips, root rot		
Advantages	It can be Effective Air Purifiers		
	The leaves have anti-inflammatory properties		

Disadvantages	Spider plants are non-toxic to both human

Photo 1	Photo 2
	

Name	Plant	Sisal
	Latin	<i>Agave sisalana</i>
	Sanskrit	Not available

Introduction	Family	Asparagaceae	
	Dimensions	Height	3 ft
		Dia	15 inch
	Life	7-12 years	



Origin & Weather	Origin Country	Central America	
	Continent	America	
	Weather	Winter	10°C to 32°C.
		Summer	15–27°C
		Monsoon	

Nutrition	SSP, FYM
	Organic fertilizer
	Neem cake

Insects & Disease	Mexican sisal weevil
	Sisal bole rot disease

Advantages	- Sisal's medicinal properties are as robust as its fibers.
	- its juice for its anti-inflammatory and antimicrobial benefits

Disadvantages	- Sisal contains saponins, which can disrupt red blood cells and promote cell lysis



Photo 1	Photo 2
	

Name	Plant	Christmas cactus
	Latin	<i>Schlumbergera truncata</i>
	Sanskrit	Not available

Introduction	Family	Cactaceae	
	Dimensions	Height	12 inch
		Dia	24 inch
	Life	20-30 years	

Origin & Weather	Origin Country	Brazil	
	Continent	South america	
	Weather	Winter	
		Summer	18–20°C
		Monsoon	

Nutritio	A balanced fertilizer or one slightly higher in phosphorus is ideal. Consider ratios like 20-20-20 or 20-10-20.
	CFYM

Insects & Disease	Mealybugs, red spider mites, soft brown scale, thrips, and whiteflies		
	Stem rot, blight, root rot		
Advantages	- Christmas cactus can be therapeutic and may help reduce anxiety and stress		
Disadvantages	Christmas cactus is not poisonous for humans		
Photo 1			
			
Photo 2			
			
Name	Plant	Clivia	
	Latin	Clivia miniata	
	Sanskrit	Not known	
Introduction	Family	Amaryllidaceae	
	Dimensions	Height	2-3 ft
		Dia	2 ft
	Life	10 years	
O ri	Origin Country	South Africa	
	Continent	Africa	
		Winter	18°C to 27°C

	Weather	Summer	
		Monsoon	

Nutrition	- A 3-1-5 ratio is often recommended, but some growers swear by a balanced 20-20-20 formula.
	-FYM
	-Neem cake, vermicompost

Insects & Disease	Amaryllis Borer Moth, Brithys pancratia, mealy bugs
	Damping off, Brown spot, root rot

Advantages	Clivia miniata is effective in the treatment of pain, as well as uterine stimulation, muscle stimulation, fever, pneumonia, acute bronchitis and influenza.

Disadvantages	Clivia contains various alkaloids that are poisonous to humans
	after swallowing plant parts are initially dizziness, nausea or sweating. In worse cases, it can lead to paralysis or even kidney damage.

Photo 1	Photo 2
	

Dome 3

Sr no	Insect name	insecticide	Dose/ 15 lit water
1	Aphid	Dimethoate 30% EC	30 ml
2	Mites	Propargite 57%EC	50 ml
3	Whitefly	Diafenthiuron 50% WP	35 gm
4	Thrips	Spinosad 44.03% SC	15 ml
5	Grass hopper	Dinotefuran 20% sg	8 gm
6	Painted lady butterfly	Chlorantraniliprole 18.5% W/W	6 ml
7	Cut worm	Chlorpyrifos 50% EC	40 ml
8	Scale insect	Imidacloprid 30.5 EC	30 ml
9	Lilac borer	Profenofos 40% + Cypermethrin 4% E.C.	40 ml
10	Sawfly	Diafenthiuron 50% WP	35 gm
11	Beetle	Flonicamid 50% WG	8 gm
12	Sisal weevil	Dinotefuran 20% sg	8 gm

Sr no	Disease name	Fungicide	Dose/ 15 lit water
1	Die back	Kasugamycin 3% SL	50 ml
2	Wilt	Difenconazole 25%EC	15 ml
3	Root rot	Copper oxychloride 50% WP	70 gm
4	Rust	Mancozeb 75% WP	60 gm
5	Powdery mildew	Flusilazole 40% EC	40 ml
6	Fire blight	Chlorothalonil 75% WP	30 gm
7	Damping off	Fosetyl AL 80% WP	25 gm

8	Leaf spot	Azoxystrobin 23% SC	15 ml
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Name	Plant	Whale's Tongue Agave
	Latin	<i>Agave ovatifolia</i>
	Sanskrit	Not known

Introduction	Family	Asparagaceae	
	Dimensions	Height	3-4 ft
		Dia	4-6 ft
	Life	10-20 year	


Origin & Weather	Origin Country	northern Mexico	
	Continent	Mexico	
	Weather	Winter	13-21°C
		Summer	
		Monsoon	

Nutrition	-NPK fertilizer	
	-SSP, Organic matter	
	-FYM	

Insects &	-scale insects	
	-Anthracnose, Root rot	

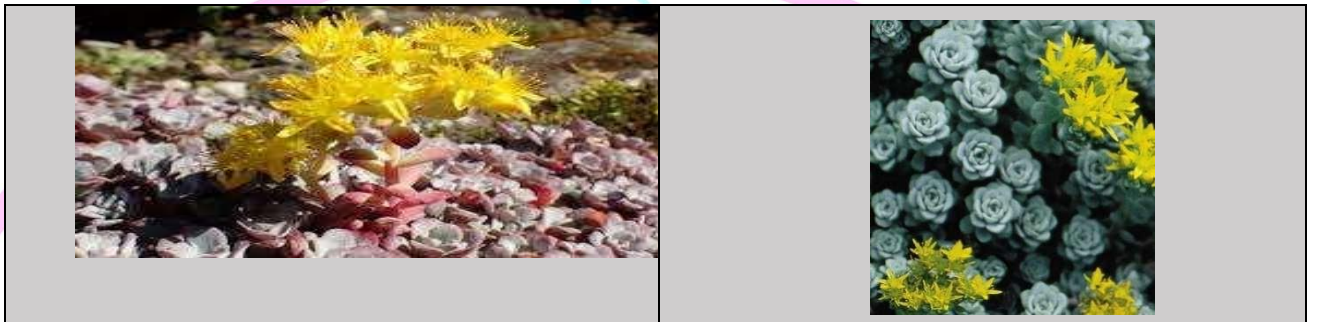
Advantages	-Agave to have medicinal properties
	-The sugars in agave are also fermented to make tequila.

Disadvantages	-Exposure to the fresh agave plant may cause swelling and redness.
	-It can be skin sores, and swelling of small blood vessels within minutes to hours of exposure.

Photo 1		Photo 2	
			

Name	Plant	Broadleaf stonecrop	
	Latin	<i>Sedum spathulifolium</i>	
	Sanskrit	Not available	
Introduction	Family	Crassulaceae	
	Dimensions	Height	8-20cm
		Dia	30-90cm
	Life		
Origin & Weather	Origin Country	western North America	
	Continent	North America	
	Weather	Winter	
		Summer	5 to 15 °C
		Monsoon	
Nutrition	-NPK fertilizer		
	-SSP, Organic matter		
	-FYM, Organic matter		
Insects & Disease	-slugs and snails, vine weevil, and root rot		
	-Fungal diseases		
Advantages	A good choice for beginners, broadleaf stonecrop is easy to keep alive and quick to spread.		
	This succulent plant can tolerate a wide range of moisture levels and is extremely drought and heat tolerant.		

Disadvantages	Broadleaf stonecrop (Sedum spathulifolium) is a native succulent that can be invasive
	Poaching: Native succulents like broadleaf stonecrop are at risk of being poached and sold overseas. It's best to buy plants from nurseries or take cuttings from a friend.



Name	Plant	Ghost Plant
	Latin	<i>Graptopetalum paraguayense</i>
	Sanskrit	Monotropa uniflora

Introduction	Family	Stonecrops	
	Dimensions	Height	0.5-1 ft
		Dia	1-2 ft
	Life		

Origin & Weather	Origin Country	Mexico	
	Continent	North America	
	Weather	Winter	20°F (-6°C)
		Summer	
		Monsoon	

Nutrition	NPK fertilizer
	FYM
	Compost, neem cake

Insects & Disease	Spider Mites, mealybug
	The most common disease that affects ghost plants is root rot, which is usually caused by overwatering or poor drainage. Other issues that can affect ghost plants.

Advantages	Ghost plants are an excellent source of calcium to strengthen bones and teeth and magnesium to maintain optimum nerve and muscle functioning

Disadvantages	Ghost plants are sensitive to wet soil and can develop root rot if overwatered. Signs of overwatering include mushy roots, a foul odor, and wilting leaves.
	Ghost plants can get sunburned if exposed to too much direct sunlight, especially during hot summer months.

Photo 1	Photo 2
	

Name	Plant	ocotillo
	Latin	<i>Fouquieria splendens</i>
	Sanskrit	Fouquieria splendens.

Introduction	Family	Fouquieriaceae	
	Dimensions	Height	20 ft
		Dia	15 ft
	Life	up to 100 years	

Origin & Weather	Origin Country	northern Mexico	
	Continent	North America	
	Weather	Winter	21° / 9 °C
		Summer	36° / 21 °C
		Monsoon	



Nutrition	NPK fertilizer
	FYM

	Compost
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Insects &	Spider mites and scale insects: Look for webbing, bumps, or waxy coatings.
	blackened roots, a musty smell, and wilting leaves.

Advantages	Its bark, roots, and flowers have been harnessed for traditional remedies, addressing ailments from sore throats to varicose veins.
	Herbalists value Ocotillo for its ability to stimulate lymph flow and reduce swelling, especially in the abdominal and pelvic regions

Disadvantage	Ocotillos are a "live fast, die young" species that are declining in the face of climate change.
	Ocotillo sap can irritate the skin, especially on sensitive skin. If the sap comes into contact with your skin

Photo 1	Photo 2
	

Name	Plant	Old man cactus
	Latin	<i>Cephalocereus senilis</i>
	Sanskrit	saptala

Introduction	Family	Cactaceae	
	Dimensions	Height	up to 40 feet in the wild
		Dia	6–12 inches
	Life	50 to 200 years	

O r i	Origin Country	central Mexico
	Continent	North America
	Winter	50°F (10°C)

	Weather	Summer	70°F and 80°F
		Monsoon	

Nutrition	During the growing season, you can fertilize it once a year with a balanced, NPK (5-10-5) fertilizer		
	-SSP		
	-NPK fertilizer		

Insects & Disease	Fungus gnats are tiny, mosquito-like insects that thrive in moist soil, while fruit flies are drawn to decaying organic matter.		
	-root rot, wilt		

Advantages	The Old Man Cactus is a survivor. Its drought tolerance is legendary, making it the perfect plant for those who might not remember to water it regularly.		
	Forgetful waterers rejoice; this cactus has your back, thriving on minimal hydration and embodying resilience.		

Disadvantages	The Old Man Cactus can be susceptible to mealybugs and spider mites. Mealybugs are small white insects that feed on the cactus's sap. Spider mites are small spider-like insects that are hard to see		
	Overwatering or poorly drained soil can cause root rot. Signs of overwatering include a squishy texture, especially at the bottom of the cactus.		

Photo 1		Photo 2	
			

Name	Plant	Organ pipe cactus
	Latin	<i>Stenocereus thurberi</i>
	Sanskrit	Not known

Introduction	Family	Cactaceae	
	Dimensions	Height	23 feet tall

		Dia	6–8 inches
	Life	over 150 years	

Origin & Weather	Origin Country	Mexico	
	Continent	North America	
	Weather	Winter	21° / 5°
		Summer	39° / 19°
		Monsoon	

Nutrition	-use a water-soluble NPK fertilizer with a ratio like 5-10-5 or 1-7-6, where nitrogen is the lower number.		
	FYM		
	Compost, Organic manure		

Insects & Disease	Invertebrates like this dragonfly are the most numerous wildlife in the monument, scale insect		
	The lower stem of your organ pipe cactus is the telltale area for spotting root rot. Look for yellowing, which is more than just a color change—it's a distress signal.		

Advantages	Organ Pipe Cactus plants are natural guardians of the desert, their root systems stabilizing the soil and preventing erosion		

Disadvantages	Cactus Is Adaptive To Heat, Not Cold. The cactus plant is known to be highly adaptive. ...		



Photo 1		Photo 2	
			

Name	Plant	Elephants foot	
	Latin	Elephantopus mollis	
	Sanskrit	Bahukanda	
Introduction	Family	Arums	
	Dimensions	Height	3 ft
		Dia	1-1.5 ft
	Life	December to March	
Origin & Weather	Origin Country	Mexico	
	Continent	South America	
	Weather	Winter	20°C to 38°C
		Summer	
		Monsoon	
Nutrition	FYM		
	Castor cake		
	SSP		
Insects & Disease	Elephantopus mollis is a medicinal plant widely recognized in traditional medicine in the tropics; it is used to treat many diseases such as diarrhea, stomach disorders, edema, menstrual disorders, heart problems, rheumatism and certain skin diseases		
Advantages	It has traditionally been used to treat diarrhea, cancer, dysentery, and leukemia.		
Disadvantages	Tobacco Weed (Elephantopus mollis), a native of the West Indies and tropical America, is a slender, fast growing herb. It is a prolific setter of seed.		
Photo 1		Photo 2	



Name	Plant	Aloe Vera	
	Latin	<i>Aloe barbadensis miller</i>	
	Sanskrit	Ghrit Kumari	
Introduction	Family	Asphodelaceae	
	Dimensions	Height	1–2 feet
		Dia	1 ft
	Life	12–25 years	
Origin & Weather	Origin Country	North Africa	
	Continent	Africa, Asia, Europe and America	
	Weather	Winter	13°C to 27°C
		Summer	between 55°F and 85°F
		Monsoon	
Nutrition	NPK fertilizer		
	FYM		
	Compost		
Insects & Disease	-True weevil, scal insect, mealybug		
	-wilt, Aloe rust, anthracnose		
Advantages	Clinical research suggests topical application of aloe gel may speed burn healing.		

Disadvantages	Aloe vera is not recommended for pregnant or breastfeeding people. It can cause uterine contractions and may trigger miscarriage in pregnant people. It may also cause gastrointestinal distress in nursing infants
	Aloe vera can cause allergic reactions, such as skin rashes. It's best to test for a possible allergic reaction by applying it to a small area first.

Photo 1	Photo 2
	

Name	Plant	Yueca
	Latin	<i>Adam's needle</i>
	Sanskrit	Shigru

Introduction	Family	Asparagus	
	Dimensions	Height	4 to 8 feet
		Dia	2 to 3 inch
	Life	20–60 years	

Origin & Weather	Origin Country	Mexico	
	Continent	Southeastern United States	
	Weather	Winter	-10° to -20°F
		Summer	
		Monsoon	

Nutrition	Drought-resistant and low-maintenance, perfect for busy or forgetful gardeners.		
	-FYM		
	-Neem cake		

Ins ec	Spider Mites
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	Leaf spot and anthracnose are common fungal diseases that cause circular spots or irregular brown patches on the leaves.
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Advantages	One of the key benefits of Adam's Needle Yucca is its hardiness. This plant can thrive in a variety of soil types and weather conditions, making it a low-maintenance addition to your yard.
	It is also drought-tolerant, so you can enjoy its beauty even in the driest of summers.

Disadvantages	Adam's Needle isn't toxic, but its sap may irritate skin. Ingestion may cause discomfort; remove plant pieces, provide water, monitor symptoms.

Photo 1		Photo 2	
			

Name	Plant	Desert Mariposa Lily
	Latin	Calochortus kennedyi
	Sanskrit	Unknown

Introduction	Family	Acanthaceae	
	Dimensions	Height	50 cm
		Dia	30 cm
	Life	3-5 years	

Origin & Weather	Origin Country	Southwestern United States	
	Continent	America	
	Weather	Winter	
		Summer	35-40°C
		Monsoon	



Nut	FYM
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	-Neem cake
	-Castor cake

Insects & Disease	- bees, wasps, bee-flies, and beetles
	-bacterial and fungal disease

Advantages	It is to treat rheumatic swellings and to ease the delivery of the placenta.

Disadvantages	-Non toxic to human

Photo 1	Photo 2
	

Name	Plant	Prickly pear
	Latin	Opuntia spp
	Sanskrit	vajradandaka

Introduction	Family	Cactaceae	
	Dimensions	Height	1-20 ft
		Dia	10-15 ft
	Life	20 years	

O r	Origin Country	Mexico
	Continent	North America



	Weather	Winter	21–38°C
		Summer	
		Monsoon	

Nutrition	Organic manure
	FYM
	NPK fertilizer

Insects & Disease	-scale insect, Cochineal insects
	Cactus Anthracnose, scab, stem rot

Advantages	It may help with weight loss, promote skin and hair health, improve blood sugar and blood fat levels, and protect the liver.
	The pads of the cactus can also be cooked and eaten, and are a good source of vitamins and minerals

Disadvantages	Prickly pear cactus can cause minor side effects in some people, including diarrhea, nausea, bloating, and heartburn

Photo 1	Photo 2
	

Name	Plant	Desert willow
	Latin	Chilopsis linearis
	Sanskrit	Not available

Int ro	Family	Bignoniaceae
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	Dimensions	Height	30 ft
		Dia	25 ft
	Life	up to 100 years	



Origin & Weather	Origin Country	United States and Mexico.	
	Continent	North America	
	Weather	Winter	
		Summer	65°F to 90°F
		Monsoon	

Nutrition	-NPK fertilizer
	FYM, vermicompost
	SSP

Insects & Disease	-scale insect
	-stunted growth, leaf drop, root rot

Advantages	- Use Medicinal: Floral decoctions taken for coughs and bronchial problems
	Fast growth for quick shade, also offers erosion control and aromatic garden vibes

Disadvantages	The desert willow (<i>Chilopsis linearis</i>) is generally safe for humans and pets, and there are no major toxins

Photo 1	Photo 2
	

Name	Plant	Mojave woodyaster.
	Latin	Xylorhiza tortifolia
	Sanskrit	Not known

Introduction	Family	Asteraceae	
	Dimensions	Height	2-3 ft
		Dia	3 ft
	Life	50 years	

Origin & Weather	Origin Country	California	
	Continent	America	
	Weather	Winter	above 20°C
		Summer	
		Monsoon	

Nutrition	SSP, compost
	FYM, vermicompost
	DAP

Insects & Disease	Aphid
	root rot, wilt, and foot rot



Advantages	- Aster are important plants in gardens, wildflowers meadows and roadsides because they are one of the latest-blooming nectar plants for bees and butterflies.
	Used to treat earache, relieve gas pains, stomach aches, & fevers.

Disadvantages	Non toxic to human

Photo 1	Photo 2
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Name	Plant	Desert Lily	
	Latin	<i>Hesperocallis undulata</i>	
	Sanskrit	Not known	
Introduction	Family	Liliaceae	
	Dimensions	Height	6 ft
		Dia	2 ft
	Life	decades or even centuries	
Origin & Weather	Origin Country	southwestern North America, including California, Arizona, and Northwestern Mexico	
	Continent	America	
	Weather	Winter	
		Summer	15 to 38°C
		Monsoon	
Nutrition	-Organic maanu		
	Compost, neem cake		
	ssp		
Insects & Disease	Lily beetle, sphinex moth		
	Soil borne fungal disease		
Advantages	The juice from the leaves of the desert lily plant can be used to treat cuts, burns, and sunburn		
	This is give energized, great digestive aid, strong immune system support, great for skin and wrinkles, source of vitamins and minerals,		

Photo 1	Photo 2
	

Disadvantages	The flowers, fruit, and leaves of the lily of the valley plant are poisonous.

Name	Plant	Germander sage
	Latin	<i>Salvia chamaedryoides</i>
	Sanskrit	Not known

Introduction	Family	Lamiaceae	
	Dimensions	Height	3-4 ft
		Dia	2-3 ft
	Life	9-10 years	

Origin & Weather	Origin Country	Mexico	
	Continent	North america	
	Weather	Winter	below 35°C
		Summer	
		Monsoon	



Nut	-FYM
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	Compost, neem cake
	SSP, organic fertilizer

Insects & Disease	slugs, snails, capsid bugs, rosemary beetles, and leafhoppers
	powdery mildews, foot and root rots, and verticillium wilt.

Advantages	It can be treat inflammatory and digestive disorders.
	It has been used in traditional medicine for centuries to treat gout, diabetes, obesity, dyspepsia, and hypertension

Disadvantages	Germander can cause liver injury, including hepatitis, liver cirrhosis, and hepatic necrosis.

Photo 1	Photo 2
	

Name	Plant	Texas sage
	Latin	<i>Leucophyllum frutescens</i>
	Sanskrit	Not available

Introduction	Family	Scrophulariaceae	
	Dimensions	Height	5-8 ft
		Dia	4-6 ft
	Life	40 years	

	Origin Country	Chihuahuan Desert
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	Continent	New mexico	
	Weather	Winter	10 to 35 °C
		Summer	
		Monsoon	

Nutrition	- slow-release 10-10-10 or 14-14-14
	-organic fertilizer
	FYM

Insects & Disease	whiteflies, spider mites, mealybugs, and aphids
	Root rot, powdery mildew

Advantages	Texas sage has been used to treat coughs, fevers, and skin irritations.
	benefits such as lower cancer risk, memory improvement, and improved brain function.

Disadvantages	Tachycardia or rapid heart beat may be a side effect in some people
	It can cause seizures and damage the liver and nervous system.

Photo 1	Photo 2
	

Name	Plant	Desert Marigold
	Latin	<i>Baileya multiradiata</i>
	Sanskrit	Not available

In tr	Family	Asteraceae
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	Dimensions	Height	12-18 inch
		Dia	24-30 inch
	Life	2-3 y	

Origin & Weather	Origin Country	southwestern United States and northern Mexico	
	Continent	-	
	Weather	Winter	
		Summer	20 to 38 °C
		Monsoon	

Nutrition	- slow-release NPK fertilizer		
	Organic manure		
	FYM, vermicompost		

Insects & Disease	whiteflies, spider mites, mealybugs, and aphids		
	Root rot, powdery mildew		

Advantages	- Marigold petals contain antioxidants that can reduce inflammation and protect cells from damage		
	Marigold ointments can soothe sunburns, acne, warts, bites, and ulcerations. They can also heal dry skin, blisters, and wounds.		

Disadvantages	reactions can vary and some marigold species can cause stomach upset or skin irritation		



Photo 1	Photo 2
	

Name	Plant	Brittle bush	
	Latin	<i>Encelia farinosa</i>	
	Sanskrit	Not known	
Introduction	Family	Asteraceae	
	Dimensions	Height	2-4 ft
		Dia	3-5 ft
	Life	20 years	
Origin & Weather	Origin Country	Mexico	
	Continent	North Amnrecia	
	Weather	Winter	15 to 38 °C
		Summer	
		Monsoon	
Nutrition	A fertilizer that has an N-P-K ratio of 10-10-8		
	Organic manure		
	FYM		
Insects & Disease	Lacebug, chinch bugs		
	Brittle leaf disease		
Advantages	using the leaves of the plant can be used to treat hay fever, allergies, congestion, joint pain, and headaches.		
Disadvantages	Non toxic		
Photo 1		Photo 2	



Name	Plant	Ferro cactus	
	Latin	<i>Ferocactus latispinus</i>	
	Sanskrit	not available	
Introduction	Family	Cactaceae	
	Dimensions	Height	45-70 cm
		Dia	50 cm
	Life	50-100 years	
Origin & Weather	Origin Country	Southern western	
	Continent	America	
	Weather	Winter	
		Summer	21–38°C
		Monsoon	
Nutrition	balanced cactus fertilizer, such as a 5-10-10 NPK		
	Organic manure		
Insects & Disease	Spider mites, scale insect, mealybug		
	Root rot		
Advantages	-Ferocactus fruits and pads are high in fiber, vitamins, and minerals, including vitamin C,		

Disadvantages	-no toxic to human

Photo 1	Photo 2
	

Name	Plant	Golden barrel
	Latin	<i>Echinocactus grusonii</i>
	Sanskrit	Not known

Introduction	Family	Cactaceae	
	Dimensions	Height	3 ft
		Dia	1-2 ft
	Life	30 years	



Origin & Weather	Origin Country	east-central Mexico	
	Continent	North America	
	Weather	Winter	
		Summer	70–90°F
		Monsoon	

Nutrition	phosphorus-rich fertilizer given at least once monthly		
	Organic manure		
	SSP		

Insects & Disease	mealybugs, spider mites, and scale insect		
	Pythium rot, fungal infection		

Advantages	-The cactus contains compounds that may help reduce inflammation and protect against oxidative stress.
	-The gel-like pulp of the cactus can be used topically to soothe burns, cuts, and insect bites.

Disadvantages	Barrel Cactus isn't toxic

Photo 1	Photo 2
	

Name	Plant	Rat tail
	Latin	<i>Disocactus flagelliformis</i>
	Sanskrit	Not known

Introduction	Family	Cactaceae	
	Dimensions	Height	6 ft
		Dia	3 ft
	Life	4-6 month	

Origin & Weather	Origin Country	Mexico	
	Continent	Central America	
	Weather	Winter	16°C to 29°C
		Summer	
		Monsoon	



Nut	5-10-5 or a 3-1-2 N-P-K ratio fertilizer applied
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	FYM
	Organic manure

Insects & Disease	mealybugs or spider mites
	Fungal disease, black spot

Advantages	The plant is used in the treatment of intestinal parasites
	The leaves, seeds and old roots are used in the treatment of asthma and other chest complaints. The juice of the fresh leaves is diuretic and laxative.

Disadvantages	-rat tail plants are not toxic to humans or pets; they can cause skin irritation or discomfort if handled

Photo 1	Photo 2
	

Name	Plant	Phoenix
	Latin	Phoenix sylvestris
	Sanskrit	Kharjura

Introduction	Family	Arecaceae	
	Dimensions	Height	1-6 m
		Dia	0.5-2 m
	Life	10 Years	

O r	Origin Country	northern and central Africa
	Continent	Africa



	Weather	Winter	
		Summer	20-40 C
		Monsoon	

Nutrition	NPK fertilizer
	FYM
	Neem cake

Insects & Disease	Bark beetles, defoliators, sap-sucking insects, wood-boring beetles, and bud and shoot insects
	several species of fungi, including Septoria, Phyllotactic, Mycoshaerella, and Actinopelte

Advantages	thatching and for making mats, fans, baskets, ropes,
	Petioles make light walking- sticks, also used for fishing floats

Disadvantages	Invasive, Big Size, allergic responses,
	diseases like lethal yellowing disease, leaf spot, and Ganoderma fungus

Photo 1	Photo 2
	

Name	Plant	Date palm
	Latin	<i>Phoenix dactylifera</i>
	Sanskrit	Kharjura

Introductio	Family	Arecaceae	
	Dimensions	Height	50-100 ft

		Dia	20-50 ft
	Life	100 years	

Origin & Weather	Origin Country	Iraq and Iran	
	Continent	Asia	
	Weather	Winter	20°C
		Summer	50-60° C
		Monsoon	

Nutrition	3:1:3 ratio of nitrogen (N), phosphorus (P), and potassium (K) fertilizer		
	SSP		

Insects & Disease	date white scale, Parlatoria blanchardii; lesser date moth, Batrachedra amydraula; red palm weevil, Rhynchophorus ferrugineus; and rhinoceros beetle, Oryctes rhinoceros		
	Black scorch, leaf spot		

Advantages	use juice from the date palm for coughs and breathing problems.		

Disadvantages	- Date palms aren't poisonous to human		

Photo 1	Photo 2
	

Name	Plant	Adenium
	Latin	Adenium spp
	Sanskrit	

Introduction	Family	Apocynaceae	
	Dimensions	Height	3-9 ft
		Dia	3-5 ft
	Life	40 years	

Origin & Weather	Origin Country	Asia	
	Continent	ASia	
	Weather	Winter	21–38°C
		Summer	
		Monsoon	

Nutrition	3:1:3 ratio of nitrogen (N), phosphorus (P), and potassium (K) fertilizer		
	SSP		
	FYM		

Insects & Disease	mealybugs, spider mites, fungal gnats, and aphid		
	Stem and root rot		

Advantages	The Adenium plant has been used in traditional medicine to treat a variety of diseases:		

Disadvantages	It is extremely toxic to animals and humans,		

Photo 1	Photo 2
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Fertilizer Requirement (soil mixture) for Dome 1:

Dome 2

Sr no	Insect name	insecticide	Dose/ 15 lit water
1	Aphid	Dimethoate 30% EC	30 ml
2	Mites	Propergite 57%EC	50 ml
3	Whitefly	Diafenthiuron 50% WP	35 gm
4	Thrips	Spinosad 44.03% SC	15 ml
5	Grass hopper	Dinotefuran 20% sg	8 gm
6	Painted lady butterfly	Chlorantraniliprole 18.5% W/W	6 ml
7	Cut worm	Chlorpyrifos 50% EC	40 ml
8	Scale insect	Imidacloprid 30.5 EC	30 ml
9	Lilac borer	Profenofos 40% + Cypermethrin 4% E.C.	40 ml
10	Sawfly	Diafenthiuron 50% WP	35 gm
11	Beetle	Flonicamid 50% WG	8 gm
12	Sisal weevil	Dinotefuran 20% sg	8 gm

Sr no	Disease name	Fungicide	Dose/ 15 lit water
1	Die back	Kasugamycin 3% SL	50 ml
2	Wilt	Difenconazole 25%EC	15 ml
3	Root rot	Copper oxychloride 50% WP	70 gm
4	Rust	Mancozeb 75% WP	60 gm
5	Powdery mildew	Flusilazole 40% EC	40 ml
6	Fire blight	Chlorothalonil 75% WP	30 gm

7	Damping off	Fosetyl AL 80% WP	25 gm
8	Leaf spot	Azoxystrobin 23% SC	15 ml

Name	Plant	Amazone Water lily	
	Latin	<i>Victoria amazonica</i>	
	Sanskrit	Not known	

Introduction	Family	Water lilies	
	Dimensions	Height	0.5-1 ft
		Dia	Up to 6 ft
	Life	10–15 years	

Origin & Weather	Origin Country	Brazil	
	Continent	South America	
	Weather	Winter	33–50°F
		Summer	
		Monsoon	

Nutrition	potassium, sodium and calcium levels are high whiles copper and zinc are low.		
	-Organic manure		
	-SSP		

Insects & Disease	-mealybug		
	doesn't have any serious pest or disease issues.		

Advantages	Its large leaves provide shade, reducing sunlight penetration and inhibiting the growth of competing plants.		

Disadvantage	The leaves of this plant may be impressive, but their nocturnal flowers are equally so. They do not last long though, perishing after just 48 hours or so, and each plant produces just one flower at a time.		
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Photo 1	Photo 2
	

Name	Plant	cacao tree	
	Latin	<i>Theobroma cacao</i>	
	Sanskrit	nārikera	
Introduction	Family	Mallows	
	Dimensions	Height	13–26 ft
		Dia	5 cm
	Life	up to 100 years	
Origin & Weather	Origin Country	South America	
	Continent	Central America.	
	Weather	Winter	65–90°F (18–32°C)
		Summer	
		Monsoon	
Nutrition	-Organic manure, NPK fertilizer		
	-FYM		
	-SSP		
Insects & Disease	The main visitors are Diptera (biting midges and fruit flies) and Hymenoptera (stingless bees and ants).		
	-fungal disease		
Advantages	Cacao powder is packed with flavonoids, which have been shown to help lower blood pressure, improve blood flow to your brain and heart, and help prevent blood clots.		

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Disadvantage	Eating large amounts might cause caffeine-related side effects such as nervousness, increased urination, sleeplessness, and a fast heartbeat

Photo 1	Photo 2
	

Name	Plant	Pitcher plant
	Latin	Sarracenia
	Sanskrit	bāndurā

Introduction	Family	Pitcherplants	
	Dimensions	Height	6 inches to 36 inches tall
		Dia	0.8–2.8 inches
	Life	20 years or more	

Origin & Weather	Origin Country	South America	
	Continent	Texas	
	Weather	Winter	20–30°F
		Summer	
		Monsoon	

Nutrition	require less watering and protection from frost burn		
	-NPK fertilizer, SSP		
	-FYM		

Insects	
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	Sarracenia are very tough plants but they, like most plants, can be killed. Freeze damage in cold sensitive species and clones results in mushy rotting rhizomes
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Advantage	Since the pitcher plants can catch insects and get nutrients from them, they are able to live in nutrient- poor habitats

Disadvantages	Sarracenia plants undergo dormancy in the winter, which causes the tops of their hoods to wither, dry, and brown.

Photo 1	Photo 2
	

Name	Plant	Banana Tree
	Latin	Musa paradisiaca
	Sanskrit	kadali

Introduction	Family	Bananas	
	Dimensions	Height	7 to 25 feet tall
		Dia	7–25 ft tall and 6–10 ft wide
	Life	around 25 years	



Origin & Weather	Origin Country	Southeast Asia	
	Continent	Asia	
	Weather	Winter	18°C (64°F)
		Summer	
		Monsoon	

Nutrition	FYM
	NPK fertilizer
	Organic manure

Insects & Disease	Leaf caterpillar, Spodoptera litura
	Wilt, powdery mildew

Advantages	It is an excellent source of potassium and a single banana is said to provide 23% of potassium on a daily basis.
	—good source of vit.-D

Disadvantages	These plantations are abandoned, and the process repeated, once factors such as soil depletion or pest infestation begin to lower yields.
	—no toxic to human

Photo 1	Photo 2
	

Name	Plant	camu camu
	Latin	<i>Myrciaria dubia</i>
	Sanskrit	camū

Introduction	Family	Myrtle family	
	Dimensions	Height	9.8–16.4 ft
		Dia	1–3 cm
	Life	3 years	

Origin	Origin Country	Amazon region
	Continent	South America



	Weather	Winter	28-35°C
		Summer	
		Monsoon	

Nutrition	The most required nutrients for Myrciaria dubia, also known as camu-camu, are nitrogen (N), calcium (Ca), potassium (K), iron (Fe), manganese (Mn), and boron (B).
	FYM
	Organic manure

Insects & Disease	-scale insect
	-Jumping louse, Anthracnose

Advantages	-It has been shown to have hepatoprotective, antimicrobial, and antimalarial activity. Finally, it is best known for its high content of vitamin C.
	-Reducing inflammation, fighting cold symptoms and fatigue, and helping with symptom management in other health conditions.

Disadvantages	- If taken in excess, it may lead to digestive upset or iron overload in susceptible people.

Photo 1	Photo 2
	

Name	Plant	Pitcher Plant
	Latin	<i>Cephalotus follicularis</i>
	Sanskrit	Ghatparni

Introduction	Family	Sarraceniaceae	
	Dimensions	Height	4.9 ft
		Dia	30 cm
	Life	50 years	

Origin & Weather	Origin Country	Madagascar, Southeast Asia, and Australia.	
	Continent	Asia	
	Weather	Winter	21-32°C
		Summer	
		Monsoon	



Nutrition	- high nitrogen liquid fertilizer
	-FYM
	-Compost, SSP

Insects & Disease	-Mealy bugs, aphids, spider mites, scale insects
	-Root rot, leaf spot, and Fusarium wilt,

Advantages	- Pitcher plant contains tannins and other chemicals that are thought to help with some digestive tract problems.

Disadvantages	- Pitcher plant injections can cause some side effects including feelings of heat or heaviness.

Photo 1	Photo 2

			
Name	Plant	Achiote	
	Latin	Bixa orellana	
	Sanskrit	Sindoor	
Introduction	Family	Bixaceae	
	Dimensions	Height	12 ft
		Dia	0.32 ft
	Life	20-50 years	
Origin & Weather	Origin Country	Central america	
	Continent	Amrecia	
	Weather	Winter	20 to 24°C
		Summer	
		Monsoon	
Nutrition	- 1:2 mixture of sand and compost, 3:1 mixture of vermiculite and perlite, or 1:1:1 mixture of sand, soil, and manure		
	-NPK fertilizer		
Insects & Disease	-Spider mites, Grasshoppers, Leaf cutter ants, Scale insect, Mealybugs		
	- Phyllosticta bixina: A minor foliar disease caused by a fungus, Powdery mildew		
Advantages	- The leaf infusion has been shown to be effective against bronchitis, sore throat and inflammation of the eyes		
	- used for enlarged prostate (benign prostatic hyperplasia or BPH), diabetes, stomach problems, skin problems		

Disadvantages	- Symptoms include itchiness, swelling, low blood pressure, hives, and stomach pain

Photo 1	Photo 2
	

Name	Plant	Corpse Flower
	Latin	<i>Amorphophallus titanum</i>
	Sanskrit	Not known

Introduction	Family	Araceae	
	Dimensions	Height	12 ft
		Dia	3.3 ft
	Life	30-40 years	

Origin & Weather	Origin Country	western Sumatra, Indonesia	
	Continent	Asia	
	Weather	Winter	24 to 36.7 °C
		Summer	
		Monsoon	

Nutrition	-NPK Liquid fertilizer
	-Neem cake, Organic Manure

Insects & Disease	- Dung beetles, flesh flies
	-Fungal disease

Advantages	-IT is used for Smelly plant
	- plant is grown for food in some parts of the world, processed into a tasteless flour or stiff jelly.

Disadvantages	- Its fruit is poisonous to humans

Photo 1	Photo 2
	

Name	Plant	Monkey Brush
	Latin	<i>Combretum rotundifolium</i>
	Sanskrit	Not known

Introduction	Family	Combretaceae	
	Dimensions	Height	10-15 ft
		Dia	3-5 ft
	Life	-	

Origin & Weather	Origin Country	South America	
	Continent		
	Weather	Winter	18°C to 27°C
		Summer	
		Monsoon	

Nut	-Organic Fertilizer
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	-Aminal manure, Boanmeal
	-compost

Insects & Disease	-Aphid
	- yellowing, stunted growth

Advantages	- helps in carbon sequestration by absorbing carbon dioxide from the atmosphere and releasing oxygen
	- food to eat, air to breathe, clothes to cover our body, wood, medicine, shelter, and many products for human benefit

Disadvantages	-not specify

Photo 1	Photo 2
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Name	Plant	Orchid
	Latin	<i>Apostasioideae Horaninov</i>
	Sanskrit	kovidara

Introduction	Family	Orchidaceae	
	Dimensions	Height	1-3 ft
		Dia	6-12 inch
	Life	15-20 years	

O ri	Origin Country	Laurasia	
	Continent	America, Asia	
		Winter	10° to 27° C



	Weather	Summer	20° to 32° C
		Monsoon	

Nutrition	-NPK Liquid fertilizer
	-Neem cake, Organic Manure

Insects & Disease	-Spider mites, Grasshoppers, Leaf cutter ants, Scale insect, Mealybugs
	-Powdery mildew, wilt

Advantages	-Enhance vision and prevents you from eye diseases such as cataract, muscular degeneration,
	-It can be stress release

Disadvantages	-No toxicity to humans

Photo 1		Photo 2	
			
Name	Plant	<i>Tillandsia usneoides</i>	
	Latin	Bromeliaceae	
	Sanskrit	Guzmania	

Introductio	Family	Bromeliaceae	
	Dimensions	Height	2-3 ft

		Dia	2 ft
	Life	3-4 years	



Origin & Weather	Origin Country	Tropical America	
	Continent	America	
	Weather	Winter	15° to 27° C
		Summer	
		Monsoon	

Nutrition	-NPK fertilizer		
	-SSP, Organic manure		
	-FYM		

Insects & Disease	-mealybug, aphid, bug		
	-wilt, powdery mildew, root rot		

Advantages	-It can be Air purification, stress relief		
	-improve air quality by absorbing pollutants and producing oxygen. In addition, they help to create a relaxed atmosphere and can have a stress-reducing effect		

Disadvantages	-Bromeliads are non-toxic for human		

Photo 1	Photo 2
	

Name	Plant	Lobster claw
	Latin	<i>Heliconia Rostrata</i>
	Sanskrit	Not known

Introduction	Family	Heliconiaceae	
	Dimensions	Height	5-6 ft
		Dia	3-6 ft
	Life	Many years	

Origin & Weather	Origin Country	Colombia, Peru, Bolivia and Ecuador.	
	Continent	South America	
	Weather	Winter	
		Summer	21°C to 29°C
		Monsoon	

Nutrition	-NPK Liquid fertilizer
	-Neem cake, Organic Manure
	-SSP

Insects & Disease	-mealubug, aphid
	-collar rot, powdery mildew, wilt

Advantages	- Heliconia rostrata is used to treat skin cancers

Disadvantages	-It not toxic for human

Photo 1	Photo 2
Photo 1	Photo 2

Registrar



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Name	Plant	Passion Flower
	Latin	<i>Passiflora spp</i>
	Sanskrit	Mukkopeera
Introduction	Family	Passifloraceae
	Dimensions	Height 16-82 ft
		Dia 6-33 ft
	Life	3-4 years
Origin & Weather	Origin Country	Mexico
	Continent	North america
	Weather	Winter 13-18°C
		Summer 21-29°C
		Monsoon
Nutrition	- Use a fertilizer with a 5-10-10 or 10-10-10 NPK ratio	
	-SSP	
	-Organic manure, FYM	
Insects & Disease	-Aphid, scale insect, Thrips	
	-Powdery mildew, root rot, Die back	
Advantages	- It is applied to the skin for burns and to treat haemorrhoids.	
	- It is still used today to treat anxiety and insomnia.	
Disadvantage	- It may cause side effects such as drowsiness, dizziness, and confusion.	

	- It can cause nausea and vomiting in humans
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Photo 1	Photo 2
	

Name	Plant	Alacochia
	Latin	Alacochia spp.
	Sanskrit	Manaka

Introduction	Family	Araceae	
	Dimensions	Height	2-6 ft
		Dia	1-2 ft
	Life	many decades	

Origin & Weather	Origin Country	Nepal	
	Continent	Asia	
	Weather	Winter	16°C
		Summer	
		Monsoon	



Nutrition	- Use a fertilizer with a 5-10-10 or 10-10-10 NPK ratio
	-ssp, neem cake
	Organic manure, FYM

Insects & Disease	-spider mite, mealybug
	-wilt, root rot

Advantage	- Alocasia plants have many biological activities, including anti-cancer, antidiabetic, antihyperglycaemic, antioxidant, antidiarrhoea, antimicrobial, antifungal, and anti-inflammatory.
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	-It also used for Air purification
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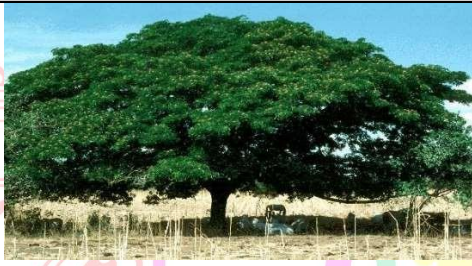
Disadvantages	- Alocasia plants can be harmful when mishandled. All parts of the plant contain tiny calcium oxalate crystals. If any part of the plant is chewed it can cause irritation to the lips, mouth, tongue, and throat.

Photo 1		Photo 2	
			
Name	Plant	Rain tree	
	Latin	<i>Samanea saman</i>	
	Sanskrit	shiriisha	
Introduction	Family	Fabaceae	
	Dimensions	Height	50-80 ft
		Dia	50 ft
	Life	80-100 years	
Origin & Weather	Origin Country	Central and South America.	
	Continent	America	
	Weather	Winter	0 to 38°C
		Summer	18.3°–29.4°C
		Monsoon	
Nutrition	-Blance NPK 10-10-10 Fertilizer		
	-compost, fish fertilizer		
	-organic manure		
Insects	-Lac insect, rain tree bug, mealybug		

	-gummosis, wilt, cankers
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Advantages	- Planting Rain trees offers several benefits, including providing shade, beauty, and habitat for wildlife in parks, gardens, and urban landscapes, improving air quality through carbon sequestration and oxygen production,
	-reduce stress

Disadvantages	- Raintree is non-toxic, safe around children and pets

Photo 1	Photo 2
	


Name	Plant	Black Velvet
	Latin	Alocasia reginula
	Sanskrit	

Introduction	Family	Araceae	
	Dimensions	Height	1–2 feet
		Dia	40 cm wide
	Life		

Origin & Weather	Origin Country	Malaysia	
	Continent	Southeast Asia	
	Weather	Winter	above 15°C (59°F)
		Summer	65-80°F
		Monsoon	

Nutrition	-Blance NPK 10-10-10 Fertilizer
	-compost, fish fertilizer
	-organic manure

Insects & Disease	The Alocasia Black Velvet is a relatively pest-free plant, but it can be susceptible to spider mites and scale insects.
	Overwatering or poorly-draining soil can cause root rot, which is caused by fungal pathogens. To prevent this, ensure the soil drains well and reduce watering.

Advantages	with Alocasia's air-purifying leaves and rich cultural tapestry.
	

Disadvantages	Alocasia reginula, also known as the Black Velvet plant, is toxic to humans and pets. It contains calcium oxalate crystals that can cause illness if chewed or eaten: Mouth pain, Nausea, Vomiting, Diarrhea, and Irritation of the throat and stomach.
	Alocasia reginula should be kept away from children and pets.

Photo 1		Photo 2	
			

Name	Plant	Dragon Scale
	Latin	Alocasia baginda
	Sanskrit	Vritra

Introduction	Family	Araceae	
	Dimensions	Height	1.5–36 inches
		Dia	up to 70–120 cm wide
	Life	many decades	

O r	Origin Country	Indonesia
	Continent	Southeast Asia



	Weather	Winter	13°C and 27°C
		Summer	18–29°C
		Monsoon	

Nutrition	-Blance NPK 10-10-10 Fertilizer
	-compost, fish fertilizer
	-organic manure

Insects & Disease	Spider mites, Mealybugs, Scale insects, Fungus gnats, Thrips
	Under-watering symptoms include wilting, little to no growth and greying leaves - these issues are commonly down to too much light/heat, or forgetfulness.

Advantages	Filter indoor air by absorbing toxins, and removing harmful chemicals. Boost mood, productivity, concentration and creativity. Reduce stress, Fatigue and Allergies.

Disadvantages	The Bottom Line. Alocasia plants make stunning houseplants, but they can be harmful if the plant material is chewed on or swallowed. These plants contain oxalate crystals that can cause mouth pain, nausea, vomiting, and diarrhea. They should be kept away from children and pets.

Photo 1		Photo 2	
			
Name	Plant	Musk	
	Latin	Malva moschata	

	Sanskrit	Latakasturika	
Introduction	Family	Mallows	
	Dimensions	Height	2-3' tall
		Dia	2.5–5 cm
	Life	Short-lived perennial	
Origin & Weather	Origin Country	Europe	
	Continent	Southwestern Asia	
	Weather	Winter	40°F (5°C)
		Summer	
		Monsoon	
Nutrition	-Blance NPK 10-10-10 Fertilizer		
	-compost, fish fertilizer		
	-organic manure		
Insects & Disease	Malva is known for attracting bees, beneficial insects, butterflies/moths and other pollinators. It is a caterpillar food plant and has nectar/pollen rich flowers.		
	Powdery Mildew: Powdery mildew is a fungal disease characterized by a white powdery growth on the leaves, stems, and flowers of common musk mallow.		
Advantages	All parts of the plant are antiphlogistic, astringent, demulcent, diuretic, emollient, expectorant, laxative, salve[4, 7, 9, 21, 46, 222, 238].		
Disadvantages	It might cause stomach problems such as nausea, diarrhea, and indigestion in some people.		
	Pregnancy and breast-feeding: There isn't enough reliable information to know if mallow is safe to use when pregnant or breast-feeding. Stay on the safe side and avoid use.		

Photo 1	Photo 2
