



# TAMIL NADU PUBLIC SERVICE COMMISSION

NOTIFICATION NO.29/2017

DATED:28.11.2017

Applications are invited only through online mode upto 27.12.2017 for Direct Recruitment to the post of Assistant Director of Horticulture and Horticultural Officer included in Tamil Nadu Horticultural Service.

It is mandatory for the applicants to register their basic particulars through One - Time Online Registration system on payment of Rs. 150/- (Rupees One Hundred and Fifty only) towards registration fee and then should apply online for this recruitment. [The One-Time Registration will be valid for 5 years from the date of registration. Thereafter, the registration should be renewed by paying the prescribed fee.]

Sl. No.	Name of the Post	Name of the Service	No. of Vacancies	Scale of Pay (Pre-Revised)
1.	Assistant Director of Horticulture (Post Code.3018 )	Tamil Nadu Horticultural Service (Service Code No. 104 )	100	Rs.15600-39100+ GP 5400/-
2.	Horticultural Officer (Post Code.3001 )		29+1*C/F	Rs. 9300-34800+ GP 5100/-

**\*C/F Carried Forward for BC (Muslim)**

## 2. DISTRIBUTION OF VACANCIES

The rule of reservation of appointments is applicable for this recruitment and the distribution of vacancies will be announced later after receipt of orders from the Government regarding identification of suitable categories of Differently Aabled Persons towards 4% reservation for these posts.

## 3. IMPORTANT DATES AND TIME

Date of Notification		28.11.2017	
Last date for submission of application		27.12.2017	
Last date for payment of Fee through Bank(State Bank of India or Indian Bank)		29.12.2017	
<b>Date of Written Examination</b>			
Horticultural Officer	Subject Paper – Horticulture (Degree Standard)	24.02.2018 FN	10.00 A.M. to 01.00 P.M
	General Studies	24.02.2018 A.N	02.30 P.M. to 04.30 P.M
Assistant Director of Horticulture	Subject Paper – Horticulture (P.G Degree standard)	25.02.2018 FN	10.00 A.M. to 01.00 P.M
	General Studies	24.02.2018 A.N	02.30 P.M. to 04.30 P.M

#### 4. FEES

a)	<p><b>Registration Fee</b> For One-Time Registration (Revised with effect from 01.03.2017 vide G.O.(Ms).No.32, Personnel and Administrative Reforms (M) Department, dated 01.03.2017).</p> <p><b>Note</b> Applicants who have already registered in One Time Registration system within the validity period of 5 years are exempted.</p>	Rs.150/-
b)	<p><b>Examination Fee</b> For Examination</p> <p><b>Note</b> The Examination fee <b>should be paid</b> at the time of submitting the online application for this recruitment if they are not eligible for the concession noted below.</p>	Rs.200/-

#### EXAMINATION FEE CONCESSION

Category	Concession	Condition
(i) Scheduled Castes/ Scheduled Caste (Arunthathiyars) and Scheduled Tribes	Full Exemption	--
(ii) Differently Abled Persons, Destitute Widow of all communities	Full Exemption	(i) For Differently Abled Persons, the disability should be not less than 40%. (ii) For DWs, the DW certificate should have been obtained from the RDO / Sub Collector / Assistant Collector.
(iii) Most Backward Class / Denotified Communities, Backward Classes (Other than Muslim), Backward Class (Muslim)	Those who have not availed three free chances so far in the previous recruitments may avail exemption from payment of examination fee.	Should not have availed three free chances in the previous recruitments.
(iv) Ex-Servicemen	Those who have not availed two free chances so far in the previous recruitments may avail exemption from payment of examination fee.	(i) Should not have availed two free chances in the previous recruitments. (ii) Fee concession will not apply to those who have already been recruited to any class or service or category.

**Note:**

- (i) The three / two free chances referred to above are not for **EACH POST** but for **ANY THREE / TWO APPLICATION ONLY**. The claim for exemption from payment of examination fee made in any application which is rejected / admitted or withdrawn will be counted as free chance availed.
- (ii) Failure to pay the prescribed fee along with the application in-time will be liable for rejection of application.
- (iii) The number of free chances availed by the applicant means, the total number of free chances hitherto availed by the applicant in his/her earlier application submitted to the Commission for any post / recruitment.
- (iv) If, the Examination fee concession claimed in the application is found to exceed the admissible limits as announced above, the application will be rejected at any stage of selection. The Number of free chances availed by the applicants will be counted from all previous applications submitted through One-Time Registration and / or submitted directly without One-Time Registration.

(For further details regarding examination fee concession, refer [para 12 of "Instructions to Applicants"](#)).

**5. MODE OF PAYMENT OF EXAMINATION FEE**

- Examination fee Rs.200/- (Rupees Two hundred only) is payable by online through Net Banking/Credit card/Debit card or it can be paid by offline at State Bank of India / Indian Bank within 2 days from the date of submission of online application by choosing the option in the online application.
- Applicants have to register their basic particulars through One -Time Registration which is mandatory on payment of Rs.150/- (Rupees One Hundred and Fifty only) towards registration fee and then should apply online for this recruitment. The One-Time Registration will be valid for 5 years from the date of registration. Thereafter, the registration should be renewed by paying the prescribed fee. Applicants who have already registered in One-Time Registration system by paying Rs.50/- before 01.03.2017 and having validity and those who have registered for One-Time Registration system are exempted from paying the registration fee for this recruitment.
- Applicants have also to pay the service charges applicable to the State Bank of India / Indian Bank.
- Applicants can avail exemption from paying examination fee as per eligibility criteria.
- Offline mode of payment in the form of Demand Draft / Postal Order etc. will not be accepted and the applications forwarded with such modes of payment will be summarily rejected.
- Those who have registered in the One-Time Registration system and paid the registration fee Rs.150/- and received the registration ID need not pay the Registration fee i.e., Rs.150/- and it is enough to pay the examination fee alone.
- Applicants who have made One-Time Registration must pay the prescribed examination fee for this recruitment. (One-Time Registration is only to avail exemption for Registration fee for a period of 5 years from the date of registration and it will not be considered as prescribed examination fee for this recruitment).

(For further details regarding the Examination fee concession, refer [para 2\(14\) of "Instructions to Applicants"](#)).

## 6. QUALIFICATIONS

### (A) AGE LIMIT (as on 01.07.2017) (For both posts)

Sl. No.	Category of Applicants	Maximum Age
1.	SCs, SC(A)s, STs, MBCs/DCs, BCs, BCMs and Destitute Widows of all Castes.	No Age limit
2.	'Others' [i.e. applicants not belonging to SCs, SC(A)s, STs, MBCs/DCs, BC(OBCM)s and BCMs].	30 Years
		32 years for Post Graduate degree or Ph.D holders in Horticulture for the post of Horticultural Officer only.

#### Note

"Others" [i.e Applicants not belonging to SCs, SC(A)s, STs, MBCs/DCs, BC(OBCM)s, BCMs] who have put in five years and more of service in the State/Central Government are not eligible even if they are within the age limit.

(For further details refer [para 5 of "Instructions to Applicants"](#) and Section 3(r) of Tamil Nadu Government Servants (Conditions of Service) Act, 2016))

#### Age Concession

##### (i) For Differently Abled Persons

- No maximum age limit for applicants who belong to SCs, SC(A)s, STs, MBCs/DCs, BC(OBCM)s and BCMs.
- "Others" not belonging to any of the categories mentioned in item "a" above are eligible for age concession upto 10 years over and above the maximum age limit prescribed.

##### (ii) For Ex-Servicemen

- No maximum age limit for applicants who belong to SCs, SC(A)s, STs, MBCs/DCs, BC(OBCM)s, BCMs.
- The maximum age limit is 48 years for "Others" i.e. applicants not belonging to any of the categories mentioned in item "a" above.
- The above mentioned age concession **will not apply** to the Ex-Servicemen applicants those who have already been recruited to any class or service or category.

### (B) EDUCATIONAL QUALIFICATION (as on 28.11.2017)

Applicants should possess the following or its equivalent qualification awarded by any University or Institution recognized by the University Grants Commission or the State Board as the case may be.

Sl. No.	Name of the post	Qualification
1	Assistant Director of Horticulture	Must possess M.Sc., Degree in Horticulture
2	Horticultural Officer	Must possess B.Sc., Degree in Horticulture

**Note**

- i) The qualification prescribed for these posts should have been obtained by passing the required qualification in the order of studies, viz., 10<sup>th</sup> + HSC or its equivalent + Bachelor's Degree + PG Degree as required under Section 25 of Tamil Nadu Government Servants (Conditions of Service) Act, 2016.  
(Results of the examination should have been declared on or before the date of notification)
- ii) The qualifications considered equivalent are indicated in **Annexure-I** to this notification. (Refer also to the disclaimer annexed to the notification)
- iii) Applicants claiming equivalence of qualification should upload and submit evidence for equivalence of qualification in the form of G.O. issued prior to the date of this notification when called for, failing which, their application will be summarily rejected. The G.Os issued regarding equivalence of prescribed qualification after the date of this notification will not be accepted.  
(For further details refer [para10 of "Instructions to Applicants"](#)).

**(C) CERTIFICATE OF PHYSICAL FITNESS**

Applicants selected for appointment to the posts will be required to produce a certificate of physical fitness in the form prescribed below:

Sl. No.	Name of the Post	Standard of Vision	Form of Certificate of Physical Fitness
1.	Assistant Director of Horticulture	Standard-III	Form prescribed for Executive post.
2.	Horticultural Officer		

Color blindness will be disqualification. Applicants with defective vision should produce eye fitness certificate from a qualified eye specialist.

**(D) KNOWLEDGE IN TAMIL**

Applicants should possess adequate knowledge in Tamil.

(For details refer [para 11 of Commission's 'Instructions to Applicants'](#))

**7. CONCESSIONS**

- (i) Concessions in the matter of age and/or fees allowed to SC's, SC(A)'s, ST's, MBC's/DC's, BC(OBCM)'s, BCM's, Destitute Widows, Differently Abled Persons, Ex-servicemen, other categories of persons etc., are given in [para 12 to 14 of the 'Instructions to Applicants'](#).
- (ii) Persons claiming concessions referred to above and other claims made in the application have to produce evidence for such claim when called for, otherwise his/her application will be liable for rejection.

**Note**

In all cases, an Ex-Serviceman once recruited to a post in any class or service or category, **cannot claim the concession** of being called an Ex-Serviceman for his further recruitment (Section 3( j ) of Tamil Nadu Government Servants (Conditions of Service) Act, 2016).

## 8. SCHEME OF EXAMINATION (OBJECTIVE TYPE) AND ORAL TEST

### I. FOR THE POST OF ASSISTANT DIRECTOR OF HORTICULTURE

Subject	Duration	Maximum Marks	Minimum Qualifying Marks for selection	
			SCs, SC(A)s, STs, MBCs/ DCs, BC(OBCM)s and BCMs	Others
(i) <b>Paper-I</b> Subject Paper (P.G Degree Standard - 200 questions) <b>Horticulture</b> (code No.279)	3 Hours	300	171	228
(ii) <b>Paper II:</b> General Studies (100 questions) (Code No.003)  General Studies (Degree Standard) -75 questions Aptitude and Mental Ability (SSLC Standard -25 questions)	2 Hours	200		
(iii) <b>Interview and Records</b>	--	70		
<b>Total</b>		<b>570</b>		

### II. FOR THE POST OF HORTICULTURAL OFFICER

Subject	Duration	Maximum Marks	Minimum Qualifying Marks for selection	
			SCs, SC(A)s, STs, MBCs/ DCs, BC(OBCM)s and BCMs	Others
(i) <b>Paper-I</b> Subject Paper (Degree Standard -200 questions) <b>Horticulture</b> (code No 278)	3 Hours	300	171	228
(ii) <b>Paper II:</b> General Studies (100 questions) (Code No 003)  General Studies (Degree Standard) -75 questions Aptitude and Mental Ability (SSLC Standard -25 questions)	2 Hours	200		
(iii) <b>Interview and Records</b>	--	70		
<b>Total</b>		<b>570</b>		

**Note (For both posts)**

- (i) The Questions in Subject Paper "Horticulture" will be set in English only and Paper-II "General Studies" will be set both in English and in Tamil.
- (ii) The syllabus for the subjects Paper-I (Subject Paper) and Paper-II (General Studies) are available in **Annexure-II** to this Notification.
- (iii) Refer [para 22 of "Instructions to Applicants"](#) in regard to Instructions to be followed while appearing for competitive examinations conducted by the Commission.

**9. CENTRE FOR EXAMINATION****Examination will be held at the following Centres:-**

Sl. No.	Name of the Centre	Centre Code
1.	Chennai	0100
2.	Coimbatore	0200
3.	Madurai	1000

**Note**

- (i) Request for change of venue will not be complied with (For further details refer "[Instructions to Applicants](#)").
- (ii) The Commission reserves the right to increase or decrease the number of examination centres and to re-allot the applicants.
- (iii) Applicants should appear for the Written Examination / Certificate Verification/ Oral Test at their own expenses.

**10. SELECTION PROCEDURE**

**Selection will be made in two successive stages** i.e., (i) Written Examination and (ii) Oral Test in the shape of an interview. Final selection will be made on the basis of the total marks obtained by the Applicants at the Written Examination and Oral Test taken together subject to the rule of reservation of appointments. Applicant's appearance in the Written Examination and Oral Test is compulsory. An Applicant who has not appeared for the Written Examination or the Oral Test will not be considered for selection, even if he/she secures qualifying marks for selection.

**(For further details refer [paragraph 23 \(b\) of "Instructions to Applicants"](#))**

**11. NO OBJECTION CERTIFICATE / INFORMATION TO THE EMPLOYER**

No Objection Certificate obtained from appropriate authority shall be produced at the time of Certificate Verification. Failure to produce at that time will lead to rejection of application.

For details refer [para 15 \(g\) of 'Instructions to Applicants'](#). Any violation of this instruction will be liable for / end in rejection of application and forfeit his/her candidature.

**12. GENERAL INFORMATIONS**

- A. The rule of reservation of appointments is applicable to this recruitment.
- B. In G.O.(Ms.) No.145, Personnel and Administrative Reforms (S) Department, dated 30.09.2010, and G.O.(Ms.)No.40 Personnel and Administrative Reforms(S) Department dated 30.04.2014 the Government have issued orders to fill up 20% of all vacancies in direct recruitment on preferential basis to persons who studied the prescribed qualification in Tamil Medium. The 20% reservation of vacancies on preferential allotment to Persons Studied in Tamil Medium (PSTM) will apply for this recruitment. (Applicants claiming this reservation should have studied the prescribed qualification for the post in Tamil Medium and should have the certificate for the same.

Having written the examinations in Tamil language alone will not qualify for claiming this reservation). If the Applicants with PSTM Certificate are not available for selection for appointment against reserved turn, such turn shall be filled up by Non-PSTM Applicants but belonging to the respective communal category. The PSTM certificate shall be produced / uploaded by the applicant in prescribed format / proforma available in the Commission's website at [www.tnpsc.gov.in](http://www.tnpsc.gov.in) which shall be obtained from the Head of the Institution when called for by the commission.

**(For further details refer para 27 (XIX) of ["Instructions to Applicants"](#))**

- C. The number of vacancies advertised is only approximate and is liable for modification including reduction with reference to vacancy position at any time before finalisation of selection.
- D. The Selection for appointment to the above said posts are purely provisional subject to final orders on pending Writ Petitions, if any, filed at Madras High Court and Madurai Bench of Madras High Court." The selection for appointment to the posts
- E. As per Section 26 and 27(c) of Tamil Nadu Government Servants (Conditions of Service) Act, 2016, reservation of appointment to "Destitute Widows" and "Ex-Servicemen" **will not apply** to this recruitment.
- F. If the post is identified as suitable for Differently Abled Persons for any category the reservation of 4% for Differently Abled Persons as per G.O.Ms. No.21, Welfare of Differently Abled Persons (DAP 3.2) Department dated 30.05.2017 will be made applicable. Hence the Differently Abled Persons may also apply to this recruitment. Their application will be accepted subject to the orders to be issued by the Government.
- G. The Differently Abled Persons should submit / upload a copy of Differently Abled Certificate from the Competent Authority specifying the nature of physical handicap and the degree of disability when called for by the Tamil Nadu Public Service Commission.
- H. If no qualified and suitable women applicants are available for selection against the vacancies reserved for them, those vacancies will be filled by male applicants belonging to the respective communal categories.
- I. Wherever vacancies are reserved for Arunthathiyars on preferential basis, even after filling up of the vacancies reserved for SC (Arunthathiyars) on preferential basis, if more number of qualified Arunthathiyars are available, they shall be entitled to compete with the Scheduled Castes other than Arunthathiyars in the inter-se-merit among them and if any posts reserved for Arunthathiyars remain unfilled for want of adequate number of qualified applicants, it shall be filled up by Scheduled Castes other than Arunthathiyars.
- J. Evidence for claims made in the online application should be uploaded / submitted in time when documents are called for. Any subsequent claim made thereafter on submission of online application will not be entertained. Failure to submit the documents within the stipulated time limit will entail rejection of application.
- K. Correct and True information regarding arrest, convictions / debarment / disqualification by any recruiting agency, criminal or any disciplinary proceedings initiated / pending or finalised, participation in agitation or any Political Organisation, candidature in election for Parliament / State Legislature / Local Bodies etc, if any, should also be furnished to the Commission at the time of application i.e. the details thereof, originals of the judgement, order/ or G.O. dropping

further action in Departmental proceedings or any document that may prove the suitability of such applicants for a Government appointment in such cases must be produced at the stage / time of certificate verification without fail.

- L. Incomplete applications and applications containing wrong claims or incorrect particulars relating to category of reservation / other basic qualification / eligibility wise / age / communal categories / educational qualification / PSTM / physical qualification and other basic eligibility criteria will be liable for rejection.
- M. One-Time Registration is not an application for any Post / Recruitment. Though the details / particulars were furnished in the One-Time Registration by the applicants, the details / particulars furnished in the online application for this recruitment alone will be taken into consideration. Tamil Nadu Public Service Commission will not be responsible for any consequences arising out of furnishing of incorrect and incomplete details in the application or omission to provide the required details in the application for this recruitment.

### 13. OTHER IMPORTANT INSTRUCTIONS

- a) Applicants **should ensure their eligibility for examination**. The Applicants applying for the examination should go through all instructions carefully and ensure that they fulfil all eligibility conditions for admission to examination. Their admission to all stages of the examination will be purely provisional subject to satisfaction of the eligibility conditions. Mere issue of memo of admission to the applicants will not imply that his/her candidature has been fully cleared by the Commission.
- b) The **Hall Tickets** for eligible applicants will be made available in the Commission's Website [www.tnpsc.gov.in](http://www.tnpsc.gov.in) or [www.tnpscexams.net](http://www.tnpscexams.net) or [www.tnpscexams.in](http://www.tnpscexams.in) for downloading by applicants. No Hall Tickets will be sent by post. So the applicants should watch TNPSC website before the scheduled date of examination.
- c) **Grievance Redressal Cell for guidance of applicants:** In case of any guidance /information / clarification regarding applications, candidature, etc., applicants can contact Tamil Nadu Public Service Commission's Office in person or over Telephone No. 044-25332833 / 25332855 or the Commission's Office Toll-Free No. 1800 425 1002 on all working days between 10.00 a.m. and 05.45 p.m.

#### d) **Communication to Applicants**

Individual communication regarding the date and time of certificate verification, oral test and counselling will not be sent to the applicants by post. The details will be made available on the Commission's website. Applicants will be informed of the above fact only through SMS and e-mail and they should watch Tamil Nadu Public Service Commission's website in this regard.

#### e) **Mobile Phones and other Articles Banned**

- i. Applicants are not allowed to bring Pager, Cellular Phone, Calculator, Watches and Ring with Inbuilt Memory Notes etc., or any other Electronic device and Non Electronic devices such as P&G Design Data Book, Books, Notes, Hand Bags and Recording Device either as separate piece or part of something used by the applicant such as Watch or Ring etc., to the examination hall / room on the date of examination.
- ii. Do not bring into the Examination Hall any article such as books, notes, loose sheets, electronic or any other type of calculators, mathematical and drawing instruments, Log Tables, stencils of maps, slide rules, Text Books, rough sheets etc., except the permitted writing material (i.e. pen).

- iii. If they are found to be in possession of any such thing or instrument they will not be allowed to write the examination further, besides invalidation of answer paper and / or debarment. If it is considered necessary they will be subjected to thorough physical search including frisking on the spot (For further details refer [“Instructions to Applicants”](#)).
  - iv. Applicants are advised in their own interest not to bring any of the banned items including Mobile Phones / Pager to the venue of the examination, as arrangements for safekeeping cannot be assured.
- f) Unless specific instruction is given, applicants are not required to submit along with their application any certificates (in support of their claims regarding age, educational qualifications, physical qualification, community certificates and certificates regarding their physical disability etc.,) which should be submitted when called for by the Tamil Nadu Public Service Commission. The applicants applying for the examination should ensure that they fulfil all the eligibility conditions for admission to the Examination. Their admission at all the stages of examination for which they are admitted by the Commission viz. Written Examination and Oral Test will be purely provisional, subject to their satisfying the prescribed eligibility conditions. If, on verification at any time before or after Written Examination, Certificate Verification and Oral Test, it is found that they do not fulfil any of the eligibility conditions, their candidature for the examination will be liable for rejection / cancellation by the Commission. (For further details refer [“Instructions to Applicants”](#))
  - g) If any of their claims is found to be incorrect, it will lead to rejection of their candidature and suitable penal action including debarment.
  - h) **Unfair means strictly prohibited:** No applicant shall copy from the papers of any other applicant or permit his papers to be copied or give or attempt to give or obtain or attempt to obtain irregular assistance of any description. (For further details refer [“Instructions to Applicants”](#))
  - i) **Conduct in Examination Hall:** No applicant should misbehave in any manner or create a disorderly scene in the Examination Hall or harass the staff employed by the Commission for the conduct of the examination. Any such misconduct will be severely viewed and penalised. (For further details refer [“Instructions to Applicants”](#))
  - j) For violation of “Instructions to Applicants” in any manner, suitable penalty will be imposed as per the “Instructions to Applicants” or as deemed fit by the Commission.

#### 14. HOW TO APPLY

1. Applicants should apply only through online mode in the Commission’s Websites [www.tnpsc.gov.in](http://www.tnpsc.gov.in) / [www.tnpscexams.net](http://www.tnpscexams.net) / [www.tnpscexams.in](http://www.tnpscexams.in)
2. One-Time Registration (OTR) and applicant Dashboard are mandatory before applying for any post. Applicant should register only once in the One-Time Registration by paying Rs.150/- as registration fee. Successfully registered One-Time Registration is valid for 5 years from the date of Registration. All the applications should be submitted using the One-Time Registration ID and password registered by the applicant.
3. For applying in One-Time Registration, the applicants should have scanned image of their photograph, certificate wherever insisted and signature in CD/DVD/Pen Drive to upload the photo, certificate and signature.

4. Applicants who have already registered in One-Time Registration on or before 29.09.2015 shall use their existing user ID and Password to create applicants Dashboard in the new One-Time Registration system. No applicant is permitted to create more than one registration ID in One-Time Registration.
5. Enter the Unique ID and password to view the already available information and update them.
6. One-Time Registration is not an application for any post. It is just collection of information from the applicants and giving a separate dashboard to each applicant to facilitate them to maintain their own profile. Applicant who wish to apply for this recruitment shall click "[Apply](#)" against the recruitment Notified in the Commission's Website using the same USER ID and PASSWORD given for ONE-TIME REGISTRATION.
7. Select the name of the post or service for which the applicant wishes to apply.
8. Applicants are required to upload their photograph and signature as per the specifications given in the Guidelines for Scanning and Upload of Photograph and Signature.
9. An Online application uploaded without the photograph, specified documents and signature will be rejected.
10. All the particulars mentioned in the online application including name of the Applicant, Post applied, Educational Qualifications, Communal Category, Date of Birth, Address, Email ID, Centre of Examination etc. will be considered as final and no modifications will be allowed after the last date specified for applying online. Since certain fields are firm and fixed and cannot be edited, applicants are requested to fill in the online application form with the utmost care and caution as no correspondence regarding change of details will be entertained.
11. Print Option
  - a) After submitting the application, applicants can print / save their application in PDF format.
  - b) On entering User ID and password, applicants can download their application and print, if required.
  - c) Need not send the printout of the online application or any other supporting documents to the Commission. The application and certificates will be verified only when the applicants come up for next stage of selection.

12. One-Time Registration will not be considered as an application for any post.

## 15. UPLOAD OF DOCUMENTS

The candidates must upload / submit the documents whenever called for specifically.

## 16. LAST DATE FOR SUBMITTING APPLICATION

The Online Application can be submitted upto 27.12.2017 till 11.59 p.m., after which the link will be disabled.

(For detailed information applicants may refer Commission's 'Instructions to Applicants' at the Commission's website [www.tnpsc.gov.in](http://www.tnpsc.gov.in) )

**Secretary**

**DISCLAIMER**

“The Government orders relating to Equivalence of qualification have been hosted in the Tamil Nadu Public Service Commission website. However the applicants while applying for the examination should furnish the details of equivalence of qualification in the form of Government orders issued prior to the date of this notification, if any, which are not mentioned in Annexure-I to the notification and produce the same when called for by Tamil Nadu Public Service Commission, failing which their application will be rejected. The Government Orders regarding equivalence of qualification issued after the date of this notification will not be considered.”

**Secretary**

**ANNEXURE-I**

Sl. No.	Equivalent Qualifications	Government Orders
1.	<p>தமிழ்நாடு வேளாண்மைப் பல்கலைக் கழகத்தால் வழங்கப்படும் பிடெக்/(தோட்டக்கலை) ( B.Tech (Horticulture) பட்டப்படிப்பு அதே பல்கலைக்கழகத்தால் வழங்கப்படும் இளங்கலை அறிவியல்(தோட்டக்கலை) (B.Sc/Horticulture) பட்டப்படிப்பிற்கு இணையானது என அங்கீகரிக்கலாம் என ஆணையிடப்பட்டுள்ளது.</p>	<p>அரசாணை (நிலை) எண்.7, வேளாண்மை (பக) துறை, நாள் 10.01.2011.</p>

**ANNEXURE-II**  
**HORTICULTURE**

**(P.G. DEGREE STANDARD)**

**SUBJECT CODE: 279**

**UNIT- I: PRINCIPLES OF HORTICULTURE**

Scope and importance of horticulture - Scenario of horticulture industry in the regional, National and global economy - Area and production - Export and import - Nutritive value of horticultural crops - Horticultural therapy - Role of soil and climate on crop production – Planting system – HDP, UHDP and meadow orchard - Importance and methods of Irrigation - Water stress management - Essential and beneficial nutrients – Classification - Functions and deficiency symptoms of primary, secondary and micronutrients in horticulture crops – Fertigation - Weed management – Training and pruning – Cropping systems – Mulching - Role of growth regulators – Off season production – Physiological disorders and its remedies – Pests and diseases management strategies - Maturity indices – Harvest – Grading – Post harvest handling - Importance of protected cultivation in horticultural crops – Vegetable forcing - Hydroponics – Nutrient Film Technique - Aeroponics - Precision horticulture – Commercial horticulture – GAP – GMP - Organic horticulture and certification – Horticulture developmental agencies, programmes and commodity boards.

**UNIT - II: PROPAGATION AND NURSERY TECHNIQUES OF HORTICULTURAL CROPS**

Sexual propagation, principles, advantages and disadvantages – Apomixis, polyembryony, seed dormancy and methods to overcome the dormancy - Factors influencing seed germination - Protrays - Containers - Media - Growing structures – Management of fruit nursery - Asexual propagation – Principles, advantages and disadvantages – Mist chamber - Rooting of vegetatively propagated plants - Physiological, anatomical and bio chemical basis of root induction - Layering, Grafting and budding principles – Methods - Problems and measures to overcome - Stock and scion relationship – Incompatibility - Propagation through specialized plant parts, rejuvenation of senile orchards through top working, progeny orchard and bud wood bank - Hardening - Nutrient management, pest and disease management in nursery. Nursery certification-micro propagation - principles and concepts – *in vitro* clonal propagation techniques – Media - Growth hormones - Callus induction - Direct and indirect organogenesis – Synthetic seeds - Meristem culture - Embryogenesis - Micro-grafting - Callus induction and sub culturing - Hardening - Packing and transport of micro propagated plants.

### **UNIT - III: GROWTH AND DEVELOPMENT OF HORTICULTURAL CROPS**

Important phases of growth and development – Definitions, photosynthetic productivity, leaf area index (LAI) – optimum LAI in horticultural crops. Canopy development: Different stages of growth, growth curves, growth analysis in horticultural crops. Plant bio-regulators – Auxin, gibberellin, cytokinin, ethylene, inhibitors and retardants, basic functions, biosynthesis, role in crop growth and development, propagation, flowering, fruit setting, fruit thinning, fruit development, fruit drop and fruit ripening. physiological basis of training and pruning, source and sink relationship. Seed development and maturation, seed dormancy and bud dormancy, causes and breaking methods in horticultural crops. factors affecting flowering, physiology of flowering, photoperiodism in horticultural crops. Physiology of fruit growth and development, fruit setting, ripening- study of chemical manipulations on growth and development, understanding stress impact on growth and development.

### **UNIT - IV: BREEDING OF HORTICULTURAL CROPS**

Scope and importance of plant breeding in horticultural crops – Breeding systems and objectives – Plant genetic resources - Modes of reproduction - Mechanisms of pollination control, sterility and incompatibility – Effect of mating systems. Methods of breeding in annual vegetable crops(cross and self pollinated crops) – Approaches for crop improvement – Introduction, selection, hybridization – Pedigree breeding, bulk, single seed descent method, mass selection, recurrent and reciprocal recurrent selection, back cross breeding – Heterosis breeding – Development of F1 hybrids, synthetics, composites, mutation breeding, polyploidy breeding, breeding for quality traits – Resistance breeding for biotic and abiotic stress. Methods of breeding in fruit crops - Objectives– modes of reproduction – Approaches for crop improvement – Introduction, selection, hybridization, mutation breeding , polyploidy breeding, breeding for quality traits – Resistance breeding for biotic and abiotic stresses - Biotechnological interventions. In vitro and molecular approaches - Molecular tools for breeding – Molecular markers – Protein based and PCR based detection for genetic confirmation – *in vitro* mutation breeding - Genetic transformation methods – Vector transformation and particle bombardment – RNAi technology – Emerging concepts and applications in horticultural crops.

## **UNIT – V: PRODUCTION TECHNOLOGY OF FRUIT CROPS**

Scope and importance - Current scenario on national and international level production and trade of fruit crops – Field gene bank and cryopreservation of fruit crops - Species - Varieties / hybrids – Climate and soil requirements and its influence on crop growth - propagation methods and nursery technologies – Rootstocks influence-planting systems including high density planting(HDP) and ultra high density planting(UHDP) – Canopy management and crop regulation - Water management – Nutrient management – Fertigation - Cropping systems – Training and pruning - Mulching – Weed management – Use of plant growth regulators - Special horticultural practices - Role of biotic and abiotic factors, limits of fruit production and their management – Nutrient deficiency and physiological disorder and its corrective measures - Maturity indices – Harvesting - Ripening – Post harvest management – Supply chain management of important fruit crops : Mango, Banana, Acidlime, Sweet Orange, Grapes, Papaya, Guava, Sapota, Pineapple, Jackfruit, Pomegranate, Annona, Ber, Aonla, Apple, Pear, Plum, Peach, Strawberry, Litchi, Avocado, Walnut and Almond and minor fruit crops.

## **UNIT - VI: PRODUCTION TECHNOLOGY OF VEGETABLE CROPS**

Scope and importance of warm, cool and under exploited vegetable crops -Current scenario on national and international level of production and trade of vegetable crops - Types of vegetable farming - Commercial varieties / hybrids - Climatic and soil requirements – Seasons - Seed rate and seed treatment - Nursery management - Protray nursery - Sowing/planting - Cropping systems – Nutrient management – Fertigation - Irrigation management – Plant growth regulators - Intercultural operations, weed management – Mulching - Biotic and abiotic stresses and their management - Nutrient deficiency and physiological disorder and its corrective measures - Maturity standards – Harvesting - Post harvest management -Protected cultivation – Precision farming - Seed production techniques of vegetable crops: Tomato, Brinjal, Chilli and Capsicum (Sweet pepper), Bhendi, Leguminous Vegetables (Beans, Peas, Cluster beans - Cowpea - Dolichos bean); Bulbous vegetables (onion); Tuber crops - (Potato, Tapioca, Sweet potato, Elephant footyam, Colacassia); Cucurbitaceous Vegetables (Cucumber, Bittergourd, Snakegourd, Ridgegourd, Ashgourd, Musk melon, Watermelon, Pumpkin) - Cruciferous vegetables (Cabbage, Cauliflower and Knolkhol); Root vegetables (Carrot, Radish, Beetroot, Turnip) - Leafy vegetables (Spinach, Lettuce, Palak, Amaranthus) – Perennial vegetables (Drumstick, Coccinea) – Underexploited vegetables.

## **UNIT - VII: PRODUCTION TECHNOLOGY OF COMMERCIAL FLOWER CROPS AND LANDSCAPING**

Scope and importance of floriculture industry - Loose flower production and trade - National and international status – Commercial varieties/ hybrids - Climatic and soil requirements - Field preparation – Season - Systems of planting, transplanting techniques - Precision farming techniques - Water and nutrient management, Weed management - Training and pruning, Special horticultural practices - Pinching, disbudding, use of growth regulators - Physiological disorders and remedies – Biotic and abiotic stress management - Harvest indices, harvesting techniques - Post -harvest handling and grading, pre-cooling, packing and storage, transportation and marketing. value addition - Dry flowers - Pigment extraction - Concrete and essential oil extraction of important loose flower crops – Jasmine, Scented Rose, Chrysanthemum, Tuberose, Marigold, Crossandra, Celosia, Gomphrena, Nerium.

Scope and importance of cut flowers - Production and trade - Global and National scenario - Special nursery practices, growing environment, open cultivation, protected cultivation, soil requirements, soil decontamination techniques, planting methods, influence of environmental parameters, light, temperature, moisture, humidity and CO<sub>2</sub> on growth and flowering - Water and nutrient management, Fertigation, weed management, ratooning, training and pruning, special horticultural practices - Use of growth regulators, flower forcing and year round flowering through physiological interventions, chemical regulation, physiological disorders and remedies, environmental manipulation – Biotic and abiotic stress management - Cut flower standards and grades, harvest indices, harvesting techniques, post-harvest handling of cut Rose, cut Chrysanthemum, carnation, gerbera, anthurium, orchids, gladiolus, cut foliage and fillers.

Principles of landscape designing – Styles of gardening - Types of gardening viz., Mughal, Japanese, English, Persian, Italian, French gardening - Garden components – Plants for container growing – Indoor plants - Plants for instant gardens – Plants for spring, summer, winter and autumn - Ornamental trees and burlapping - Shrub, annuals, climbers and creepers, hedge and edge plants (foliage and flowering) - Cactus and succulent, xeriscapping - Interior scaping – Garden adornments - Principles and styles of flower arrangements – Bonsai styles and culture – Different gardening: industrial, institutional, public and private landscaping – Vertical garden – Roof garden – Terrace garden – Sky rise garden – Scenic gardens - Landscaping for roadways and traffic islands – Garden with water

features and water conservation – Speciality garden – Dish, terrarium, bottle, miniature, bog and rock garden. Lawn – Classification of turf grasses - Conditions for healthy turf - Soil properties, micro irrigation, nutrient management – Turf grass establishment and maintenance – Astroturf and maintenance - Overview of software for Computer Aided Design and Drafting (CADD) - AUTOCAD plants and design - AUTOCAD - File handling.

### **UNIT - VIII: PRODUCTION TECHNOLOGY OF SPICES AND PLANTATION CROPS**

Scope and importance of spices and plantation crops - Present status - National and International trade - Climatic and soil requirements - Commercial varieties/hybrids - Season – Propagation - Sowing/planting - Seed rate and seed treatment - Nutrient and water management – Intercropping - Mixed cropping - Multitier cropping - Weed management – Mulching - Shade and canopy regulation – Nutrient deficiencies – Biotic and abiotic stress management - Harvest and post-harvest management and processing - Organic farming and certification of major spices and plantation crops - Spice crops : Black pepper, Cardamom, Turmeric, Ginger, Coriander, Fenugreek, Fennel, Cumin and Ajowan, Nutmeg, Clove, Cinnamon, Allspice, Tamarind, Garcinia, Garlic, Vanilla, Curry Leaf and Paprika. Plantation crops: Coffee, Tea, Rubber, Cashew, Coconut, Oilpalm, Palmyrah, Arecanut, Cocoa and Betelvine

### **UNIT - IX: PRODUCTION TECHNOLOGY OF MEDICINAL AND AROMATIC CROPS**

Scope and importance of medicinal and aromatic plants. - Production and trade - National and International scenario of herbal and perfumery industry, WTO - Export and import status, Indian system of medicine, *in situ* and *ex situ* conservation. Classification of medicinal and aromatic crops - Organic production and certification - Climatic and soil requirements - Varieties and species – Propagation -Sowing/planting - Nutrient and water management, Weed management - Biotic and abiotic stress management - Harvest index-harvesting, Post harvest handling – Drying, processing, grading, packing and storage, processing and value addition; Quality standards in herbal products. Production of secondary metabolites - Distillation of essential oils and quality analysis. GAP – GCP – GMP. Medicinal crops: Senna, Periwinkle, Coleus, Aswagandha, Glory Lily and Sarpagandha. *Dioscorea sp.*, *Aloe vera*, *Phyllanthus amarus*, *Andrographis paniculata* and Medicinal solanum , Isabgol, Poppy, Safed Musli, *Stevia rebaudiana* and *Mucuna pruriens*, Aromatic crops: Palmarosa, Lemongrass, Citronella, Vettiver, Geranium, *Artemisia*, *Mentha*, *Ocimum*, Eucalyptus, Rosemary, Thyme, Patchouli, Lavender, Marjoram, Oreganum.

**UNIT - X: POST- HARVEST TECHNOLOGY OF HORTICULTURAL CROPS**

Scope and importance – National and Global scenario of post-harvest technology in horticultural crops – Harvest indices, harvesting methods in horticultural crops – Harvesting practices for specific market requirements - Influence of pre harvest factors on post harvest quality and shelf life of horticultural crops – Factors leading to post harvest losses. Ethylene action on ripening of fruits and ethylene management – Pre-cooling - Treatments prior to transport – Chlorination, waxing, chemicals, bio-control agents and natural plant products. Storage methods viz., ventilated, refrigerated, MAS, CAS – Physical injuries and disorders during storage – Post-harvest disease and insect management. Packaging technologies - Packaging materials and transport - Principles and methods of preservation - Minimal processing of fruits and vegetables – Pre-treatment – Blanching, canning and irradiation – Value added including, encapsulated fruit flavours, nutritionally enriched / fortified products in horticultural crops - Food safety standards.

**HORTICULTURE**  
**(DEGREE STANDARD)**

**SUBJECT CODE: 278**

**UNIT- I: FUNDAMENTALS OF HORTICULTURE**

Scope and importance – State, National and Global scenario of horticultural crops – Area and production – Import and export – Nutritive value of horticultural crops – Horticultural zones of Tamil Nadu and India – National and regional agencies involved in promotion of horticultural Industry in India (NHB, APEDA and Commodity Boards) – Classification of horticultural crops – Factors limiting horticultural crop production – Role of season – Soil and climate requirements - Physical and chemical properties of soil - Climatic factors – Light, temperature, photoperiod, relative humidity, rainfall, altitude, microclimate - Kitchen gardening -Nutrition gardening – Truck gardening – Market gardening - Vegetable forcing - Protected and precision horticulture – Hydroponics, Aeroponics – Nutrient Film Technique - Horticulture therapy.

**UNIT - II: GROWTH AND DEVELOPMENT OF HORTICULTURAL CROPS**

Important phases of growth and development - Bearing habits – Classification of horticultural crops based on life cycle – Annual, biennial perennial (woody and herbaceous perennials) – Fruitfulness and unfruitfulness - External and internal factors associated with unfruitfulness – Physiology of flowering, fruit set, ripening and senescence – Fruitdrop - Causes and control measures - Plant growth regulators – Functions and role in horticultural crops - Bud dormancy – Dormancy breaking – Parthenocarpy – Parthenogenesis – Polyembryony – Stenospermocarpy – Vivipary - Apomixis.

**UNIT - III: PROPAGATION OF HORTICULTURAL CROPS**

Propagation – Definition – Establishment of nursery – Site selection - Tools and implements propagation structures - Mist chamber, phytotron - Humidifiers – Greenhouse – Glasshouse – Polyhouse - Shade net, glass house, poly tunnels, cold frames and hotbeds, pit nursery - Media and containers – Soil sterilization - Sexual propagation – Merits and demerits – Crops propagated through seeds - Seed viability, longevity, dormancy, germination – Pre-sowing treatment – stratification, scarification, seed priming, seedling vigour – Raised seed bed and pro-tray nursery – Asexual propagation – Merits and demerits – Methods of vegetative propagation – Identification of plus trees – Mother block, scion bank – Clonal nursery –

Cutting – Layering – Grafting, budding types – Anatomical and physiological basis of grafting – Stock scion relationship, graft compatibility -Budwood selection and certification – Propagation through specialized plant parts (bulbs, tubers, offsets, runners, suckers, slip, crown, rhizomes, corms) – Quality management and nursery certification – Micro propagation – Application – infrastructure requirements – Types of media – Stages of micro propagation – Micro grafting – *in vitro* propagation of important horticultural crops.

#### **UNIT - IV: MANAGEMENT TECHNIQUES FOR HORTICULTURAL CROPS**

Planning – Layout and management of orchards – Fencing – Wind breaks and shelter beds – Spacing – Planting system – Physical and chemical properties – Soil reaction – acid, saline and alkaline soils – Soil fertility - Essential elements –Functions - Organic manures and inorganic fertilizers, bio-fertilizers, vermi-composting - Applications and management – Nutrient deficiencies and corrective measures - Physiological disorders and remedies - Irrigation – Critical stages of water requirement – Effect of water stress on crop yield – Anti-transpirants – management of irrigation water quality - Conventional and micro irrigation – Fertigation - Mulching – Sod culture – Weed management – Application growth regulators – Training and pruning principles and methods - Rejuvenation of senile and old orchards – Cropping systems - Cover cropping - Multitier cropping –Intercropping – Special horticultural techniques (pinching, thinning, disbudding, blanching, smudging, notching, ringing) - Principles of organic horticulture – GAP and GMP.

#### **UNIT - V: PRODUCTION TECHNOLOGY OF FRUIT CROPS**

Scope and importance of fruit crops - Composition and uses - Origin and distribution – Species – Season - Climate and soil requirement – Varieties and hybrids – Propagation techniques - Planting systems and planting density -Including High density planting (HDP) and ultra high-density planting (UHDP) –spacing – Water and nutrient management – Fertigation - Weed management - Canopy management - Training and pruning – Intercultural practices - Off season production - Special horticultural techniques – Use of plant growth regulators – Maturity indices - Harvest and yield – Nutrient deficiencies and physiological disorders and its corrective measures and management of important pest and diseases of important fruit crops :- Mango, Banana, Acidlime, Sweet orange, Mandarin, Grapes, Papaya, Guava, Sapota, Pineapple, Jackfruit, Pomegranate, Aonla, Annona, Ber, Apple, Pear, Plum, Peach, Strawberry, Litchi, Avocado, Walnut and Almond and minor tropical, arid and temperate fruit crops.

## **UNIT- VI: PRODUCTION TECHNOLOGY OF VEGETABLE CROPS**

Scope and importance of vegetable crops - Composition and uses - Origin and distribution – Area and production - Soil and climatic requirements - Varieties and hybrids – Propagation methods - Seed rate – Sowing and nursery practises – Containerized seedling production - Season – Planting methods – Water, nutrient and weed management – Fertigation – Training for vegetables – Intercultural practices - Maturity indices – Harvest and yield – Nutrient deficiencies and physiological disorder and its corrective measures of important vegetable crops: Tomato, Brinjal, Chilli and Capsicum (Sweet Pepper), Bhendi, Leguminous vegetables (Beans, Peas, Cluster beans, Cowpea, Dolichos bean); Bulbous vegetables (Onion, Garlic); Tuber crops - (Potato, Tapioca, Sweet potato, Elephant footyam, Colacassia); Cucurbitaceous vegetables (Cucumber, Bittergourd, Snakegourd, Ridgegourd, Ashgourd, Muskmelon, Watermelon, Pumpkin) - Cruciferous vegetables (Cabbage, Cauliflower and Knolkhol); Root vegetables (Carrot, Radish, Beetroot, Turnip) - Leafy vegetables (Spinach, Lettuce, Palak, Amaranthus) – Perennial vegetables (Drumstick, Coccinea) – Protected cultivation of vegetable crops - Precision farming of important vegetable crops and seed production.

## **UNIT – VII: FLORICULTURE & LANDSCAPE GARDENING**

Scope and importance of flower crops production - Uses - Origin and distribution – Area and production - Climate and soil requirement - Species and varieties - Propagation, season - Spacing and planting methods - Irrigation, nutrient management – Fertigation – Weed management - Training and pruning – Intercultural operations – Special horticultural techniques – Growth regulators – Off season production - Maturity indices – Harvest and yield and management of important pest and diseases for important loose flower crops: Jasmine, Rose, Tuberose, Chrysanthemum, Marigold, Nerium and Crossandra - Cut flowers - Rose, Carnation, Anthurium, Orchid and Gerbera – Cutfoliage and fillers. Principles of Landscape designing – Styles of gardening - Types of gardening viz.,Hindu, English, Mughal, Japanese, Persian, Italian, French gardening -Garden components – Trees foliage flowering and avenue trees – Burlapping –Shrubs – Flowering annuals creepers and Climbers - Cacti and succulents -Lawn – Astroturf - Types of grasses – Layout, planting and maintenance of lawn – Hedge and edge plants - Indoor plants and interior scaping – Garden adornments - Principles and styles of flower arrangements – Bonsai styles and culture – Industrial, Institutional, Public and Private landscaping - Special types of gardening – Bog garden, dish, terrarium, bottle, roof, vertical gardening and green wall.

## **UNIT – VIII: PRODUCTION TECHNOLOGY OF SPICES AND PLANTATION CROPS**

Scope and Importance of spices and plantation crops - Composition and uses - Origin and distribution – Area and production – Climate and soil requirements - Species and varieties - Season, seed rate / propagation methods – Spacing - Planting system – High density planting – Irrigation and nutrient management – Fertigation and weed management – Training and pruning – Cropping systems – Multitier cropping – Cover cropping – Inter cropping - Growth regulators – Mulching - Shade and canopy regulation – Maturity indices, harvest, yield and management of important pest and diseases and processing methods of important plantation and spice crops: Major, seed, tree, herbal spices and minor spices - Black Pepper, Cardamom, Turmeric, Ginger, Curry leaf, Clove, Nutmeg, Cinnamon, Coriander, Fenugreek, Cumin, Tamarind, all spice and vanilla – Plantation crops - Tea, Coffee, Rubber, Cocoa, Coconut, Oilpalm, Cashew, Palmyrah, Arecanut.

## **UNIT – IX: PRODUCTION TECHNOLOGY OF MEDICINAL AND AROMATIC CROPS**

Scope and importance of medicinal and aromatic crops - Composition and uses - Origin and distribution – Area and production - *Ex situ* and *insitu* conservation – Classification of medicinal and aromatic crops – Constraints in medicinal plant cultivation - Climate and soil – Varieties – Propagation - Nursery practices - Planting methods - Cropping systems – Manures & fertilizers – Irrigation – Intercultural operations – Harvest indices – Harvest & yield and management of important pest and diseases - Production systems - Contract farming – GAP – GCP – GMP - Organic production and certification – Classification and distillation methods of essential oils – Secondary metabolite production - Value addition - Organisational support for promotion of medicinal and aromatic crops - Medicinal crops: Senna, Periwinkle, Glory lily, Aswagandha, Medicinal coleus and Solanum, Sweet flag, Aloe, Isabgol, *Phyllanthus*, *Stevia*, Opium poppy. Aromatic crops: Lemon grass, Citronella, Vetiver, Ocimum, Davana, Mint, Geranium, Patchouli and Eucalyptus.

## **UNIT - X: POST- HARVEST TECHNOLOGY OF HORTICULTURAL CROPS**

Importance of post-harvest handling in horticultural crops – Maturity indices – Post-harvest handling methods – Washing – Grading - Waxing – Grades and standards – Methods of packing - Types of containers and their advantages and disadvantages – Storage - Principles and methods of refrigerated and gas storage - Storage methods - Pre-cooling - Controlled atmospheric storage, Modified atmospheric storage – Low pressure storage and

cold chain concept - Importance and scope of processing industry in India, general principles of fruit and vegetable preservation like canning, dehydration, freezing, fermentation - Use of chemicals(preservatives) and irradiation – GMP – Food safety and quality control.

**PAPER-II****GENERAL STUDIES (DEGREE STANDARD/OBJECTIVE TYPE)****(Code No: 003)****UNIT-I: GENERAL SCIENCE**

**Physics** Universe-General Scientific laws-Scientific instruments-Inventions and discoveries-National scientific laboratories-Science glossary-Mechanics and properties of matter-Physical quantities, standards and units-Force, motion and energy-Electricity and Magnetism, Electronics and Communication -Heat, light and sound-Atomic and nuclear physics-Solid State Physics – Spectroscopy- Geophysics - Astronomy and space science.

**Chemistry** Elements and Compounds-Acids, bases and salts-Oxidation and reduction-Chemistry of ores and metals-Carbon, nitrogen and their compounds-Fertilizers, pesticides, insecticides-Biochemistry and biotechnology-Electrochemistry-Polymers and plastics.

**Botany** Main Concepts of life science-The cell-basic unit of life-Classification of living organism-Nutrition and dietetics-Respiration-Excretion of metabolic waste-Bio-communication.

**Zoology** Blood and blood circulation-Endocrine system-Reproductive system-Genetics the science of heredity-Environment, ecology, health and hygiene, Bio- diversity and its conservation-Human diseases-Communicable diseases and non- communicable diseases-prevention and remedies- Alcoholism and drug abuse-Animals, plants and human life

**UNIT- II: CURRENT EVENTS**

**History** Latest diary of events – National--National symbols-Profile of States-Defence, national security and terrorism-World organizations-pacts and summits-Eminent persons & places in news-Sports & games-Books & authors -Awards & honours-Cultural panorama-Latest historical events - India and its neighbours - Latest terminology- Appointments-who is who?

**Political Science** 1. India's foreign policy 2. Latest court verdicts – public opinion 3. Problems in conduct of public elections 4. Political parties and political system in India 5. Public awareness & General administration 6. Role of Voluntary organizations & Govt., 7. Welfare oriented govt. schemes, their utility

**Geography** Geographical landmarks-Policy on environment and ecology.

**Economics** Current socio-economic problems-New economic policy & govt. sector

**Science** Latest inventions on science & technology-Latest discoveries in Health Science-Mass media & communication.

**UNIT-III : GEOGRAPHY**

Earth and Universe - Solar system-Atmosphere hydrosphere, lithosphere - Monsoon, rainfall, weather and climate - Water resources - rivers in India-Soil, minerals & natural resources - Natural vegetation - Forest & wildlife-Agricultural pattern, livestock & fisheries -Transport including Surface transport & communication - Social geography – population -density and distribution-Natural calamities – disaster management-Climate change - impact and consequences - mitigation measures - Pollution Control.

**UNIT-IV: HISTORY AND CULTURE OF INDIA**

Pre-historic events -Indus valley civilization-Vedic, Aryan and Sangam age-Maurya dynasty-Buddhism and Jainism-Guptas, Delhi Sultans, Mughals and Marathas-Age of Vijayanagaram and the bahmanis-South Indian history - Culture and Heritage of Tamil people-Advent of European invasion-Expansion and consolidation of British rule - Effect of British rule on socio-economic factors-Social reforms and religious movements - India since independence-Characteristics of Indian culture-Unity in diversity – race, colour, language, custom-India-as secular state-Organizations for fine arts, dance, drama, music-Growth of rationalist, Dravidian movement in TN-Political parties and populist schemes- Prominent personalities in the various spheres – Arts, Science, literature and Philosophy – Mother Teresa, Swami Vivekananda, Pandit Ravishankar , M.S.Subbulakshmi, Rukmani Arundel and J.Krishnamoorthy etc.

**UNIT-V: L INDIAN POLITY**

Constitution of India - Preamble to the constitution- Salient features of constitution- Union, State and territory- Citizenship-rights amend duties- Fundamental rights- Fundamental duties- Human rights charter- Union legislature – Parliament- State executive- State Legislature – assembly- Status of Jammu & Kashmir- Local government – panchayat raj – Tamil Nadu- Judiciary in India – Rule of law/Due process of law- Indian federalism – center – state relations -. Emergency provisions - Civil services in India - Administrative challenges in a welfare state - Complexities of district administration - Elections - Election Commission Union and State. Official language and Schedule-VIII- Amendments to constitution- Schedules to constitution-. Administrative reforms & tribunals- Corruption in public life- Anti-corruption measures – Central Vigilance Commission, lok-adalats, Ombudsman, - Comptroller and Auditor General of India- Right to information - Central and State Commission- Empowerment of women- Voluntary organizations and public grievances Redressal- Consumer protection forms

**UNIT- VI: INDIAN ECONOMY**

Nature of Indian economy-Need for economic planning-Five-year plan models-an assessment-Land reforms & agriculture-Application of science in agriculture Industrial growth-Capital formation and investment-Role of public sector & disinvestment-Development of infrastructure- National income- Public finance & fiscal policy- Price policy & public distribution- Banking, money & monetary policy- Role of Foreign Direct Investment (FDI)-

WTO-globalization & privatization- Rural welfare oriented programmes- Social sector problems – population, education, health, employment, poverty-HRD – sustainable economic growth- Economic trends in Tamil Nadu -Energy Different sources and development- Finance Commission -Planning Commission- National Development Council

### **UNIT-VII: INDIAN NATIONAL MOVEMENT**

National renaissance-Early uprising against British rule-1857 Revolt- Indian National Congress-Emergence of national leaders-Gandhi, Nehru, Tagore, Nethaji -Growth of militant movements -Different modes of agitations-Era of different Acts & Pacts-World war & final phase struggle-Communalism led to partition-Role of Tamil Nadu in freedom struggle - Rajaji, VOC, Periyar, Bharathiar & Others-Birth of political parties /political system in India since independence.

### **UNIT-VIII: APTITUDE AND MENTAL ABILITY TESTS**

Conversion of information to data-Collection, compilation and presentation of data - Tables, graphs, diagrams-Parametric representation of data-Analytical interpretation of data - Simplification-Percentage-Highest Common Factor (HCF)-Lowest Common Multiple (LCM)- Ratio and Proportion-Simple interest-Compound interest-Area-Volume-Time and Work-Behavioural ability -Basic terms, Communications in information technology-Application of Information and Communication Technology (ICT)- Decision making and problem solving- Logical Reasoning-Puzzles-Dice-Visual Reasoning-Alpha numeric Reasoning-Number Series-Logical Number/Alphabetical/Diagrammatic Sequences.