



# TAMIL NADU PUBLIC SERVICE COMMISSION

**Advertisement No.544**  
**Notification No. 15 / 2019**

**DATED:12 .04.2019**

Applications are invited from eligible candidates only through online mode upto **12.05.2019** for direct recruitment to the posts of **Drugs Inspector** in the Tamil Nadu Medical Service and **Junior Analyst** in the Tamil Nadu Medical Subordinate Service.

Name of the post	Name of the service	No. of vacancies	Scale of pay
<b>Drugs Inspector (Post Code No. 1972)</b>	<b>Tamil Nadu Medical Service (Service Code No. 048)</b>	<b>40</b> (2017-2019)	<b>Rs.37700 - 119500</b> (Level 20) as per the Tamil Nadu Revised Pay Rules, 2017
<b>Junior Analyst in the Drugs Testing Laboratory (Post Code No. 2006)</b>	<b>Tamil Nadu Medical Subordinate Service (Service Code.049)</b>	<b>9</b> (2017-2019)	<b>Rs.36400 - 115700</b> (Level 16) as per Tamil Nadu Revised Pay Rules 2017

The number of vacancies is only approximate and is liable for modification including reduction with reference to vacancy position at any time before admitting the applicants to oral test.

It is mandatory for 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 they should apply online for this recruitment. [The one-time registration will be valid for five years from the date of registration. Thereafter, the registration should be renewed by paying the prescribed fee. **One Time Registration will not be considered as an application for any post.**]

## 2. DISTRIBUTION OF VACANCIES

The category wise breakup details, in respect of the vacancies for the posts of Drugs Inspector and Junior Analyst are as follows;

### i) For the post of Drugs Inspector

GT(G)	GT(G)(PSTM)	GT(W)	BC(OBCM)(G)	BC(OBCM)(G) (PSTM)	BC(OBCM)(G) (DAP - LV)	BC(OBCM)(W)	BC(M)(W)	MBC/DC(G)	MBC/DC(G) (PSTM)	MBC/DC(W)	MBC/DC(W) (PSTM)	SC(G)	SC(G)(PSTM)	SC(G)(DAP - LD, CP,LC,DF,AC)	SC(W)	SC(A)(G)	ST(G)	TOTAL
7	2	3	6	1	1	3	1	5	1	1	1	2	1	1	2	1	1	40

## ii) For the post of Junior Analyst

GT(G)	GT(W)(PSTM)	BC(OBCM)(G)	BC(M)(W)	MBC/DC(G)	MBC/DC(W)	SC(G)	TOTAL
2	1	2	1	1	1	1	9

### Abbreviations:-

GT - General Turn; BC(OBCM) - Backward Classes (Other than Backward Class Muslims); BC(M) - Backward Class Muslims; MBC/DC - Most Backward Classes / Denotified Communities; SC - Scheduled Castes; SC(A) - Scheduled Castes (Arunthathiyars); ST-Scheduled Tribes; G – General; W – Women; PSTM- Persons Studied in Tamil Medium; DAP – Differently Abled Persons; LV – Low Vision; LD – Locomotor Disability; CP – Cerebral Palsy; LC – Leprosy Cured; DF – Dwarfism; AC – Acid Attack Victims.

### 3. IMPORTANT DATES AND TIME:

Date of notification		12.04.2019	
Last date for submission of application		12.05.2019	
Last date for payment of fee through Bank (State Bank of India or Indian Bank)		14.05.2019	
<b>Date of written examination</b>			
<b>Drugs Inspector &amp; Junior Analyst</b>	<b>Paper – I (Subject papers)</b> (Degree / Post Graduate Degree standard depending upon the concerned subjects)	<b>23 .06. 2019</b>	<b>10.00 A.M. to 01.00 P.M.</b>
	<b>Paper – II (General studies)</b> (Degree standard)	<b>23 .06. 2019</b>	<b>02.30 P.M. to 04.30 P.M.</b>

### Note

Refer Annexure-V of this notification regarding tentative timeline for the recruitment process.

#### 4. QUALIFICATIONS:

##### (A) AGE LIMIT (as on 01.07.2019):

For both the posts of **Drugs Inspector** and **Junior Analyst**

Sl. No.	Category of Applicants	Minimum Age	Maximum Age
1.	SCs, SC(A)s, STs, MBCs/ DCs, BC(OBCM)s, BCMs and Destitute Widows of all castes.	18 years	No age limit
2.	'Others' [i.e. applicants not belonging to SCs, SC(A)s, STs, MBCs/DCs, BC(OBCM)s and BCMs]		Should not have completed 30 Years

**Explanation:** No maximum age limit shall mean that the applicants should not have completed 58 years of age either on the date of notification or at the time of selection /appointment to the post.

##### 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 to para 5 of "[Instructions to Applicants](#)", Section 3(r) and Section 20(8) of Tamil Nadu Government Servants (Conditions of Service) Act, 2016)

##### AGE CONCESSION:

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

Differently Abled Persons are eligible for age concession upto 10 years over and above the maximum age limit prescribed.

(Section 64 of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016)

###### (ii) For Ex-servicemen :

a) The maximum age limit for ex-servicemen is 48 years.

(Section 63 of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016)

b) The above mentioned age concession **will not apply** to the ex-servicemen applicants who have already been recruited to any class or service or category.

(Section 3(j) of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016)

##### (B) EDUCATIONAL QUALIFICATION (as on 12.04.2019)

Applicants should possess the following or its equivalent qualification awarded by any University or Institution recognized by the University Grants Commission:

###### I.FOR THE POST OF DRUGS INSPECTOR

Must possess a degree in <b>Pharmacy</b> or <b>Pharmaceutical Science</b> or <b>Medicine with specialization in Clinical Pharmacology or Microbiology</b> from a University or Institution recognized by the University Grants Commission for the purpose of its grant
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## II . FOR THE POST OF JUNIOR ANALYST

Name of the post	Educational Qualification	Experience
<b>JUNIOR ANALYST</b>	<p style="text-align: center;"><b>A Degree in Pharmacy or A Degree in Pharmaceutical Chemistry or Degree in Chemistry</b></p>	Experience in the analysis of drugs for a period of not less than one year in the case of persons possessing a degree in Pharmacy or a Post Graduate Degree in Chemistry with Analytical Chemistry as a special subject and for a period of not less than two years in the case of persons possessing a degree in Chemistry or Pharmaceutical Chemistry.

### Note:

- (i) The qualification prescribed for the posts should have been obtained by passing the required qualification in the following order of studies: 10<sup>th</sup> + HSC or its equivalent + Bachelor's degree + Post-graduate degree as required under Section 25 of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016. Results of the examination should have been declared on or before the date of notification. (Section 20(4)(iv) of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016).
- (ii) With respect to the post of **Junior Analyst**, the qualifications considered equivalent are indicated in **Annexure-I** to this notification.
- (iii) Applicants claiming equivalence of qualification should upload and submit evidence for equivalence of qualification, in the form of government order issued on or before the date of this notification, and produce it when called for, failing which, their application **will be summarily rejected**. The government orders regarding equivalence of qualification issued after the date of this notification will not be accepted. (For further details regarding equivalence of qualification refer to [para.10 of the "Instructions to Applicants"](#)).
- (iv) With respect to the applicants who are applying for the post of **Junior Analyst**, they should upload or submit experience certificate as provided in **Annexure-II** to this notification when called for.

### (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.	Drugs Inspector	Standard-III or better	Form prescribed for posts other than Executive and Ministerial posts
2.	Junior Analyst		

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 to Section 21 of the Tamil Nadu Government Servants ( Conditions of Service) Act, 2016 and [para. 11 of the Commission's 'Instructions to Applicants'](#)).

**5. FEES:**

a)	<p><b><u>Registration Fee</u></b></p> <p>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><u>Note</u></b></p> <p>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><u>Examination Fee</u></b></p> <p>i) For candidates who are applying only for the post of <b>Junior Analyst</b></p> <p>ii) For candidates who are applying only for the post of <b>Drugs Inspector</b></p> <p>iii) For candidates who are applying for both the posts of <b>Drugs Inspector</b> and <b>Junior Analyst</b>.</p> <p><b><u>Note</u></b></p> <p>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>	<p>Rs.150/-</p> <p>Rs.200/-</p> <p>Rs.200/-</p>

**Note:**

- (i) Applicants who have registered under one - time registration system must pay the prescribed examination fee for this recruitment. (One – time registration is only to avail exemption from payment of registration fee for a period of five years from the date of registration and it will not be considered as prescribed examination fee for this recruitment)
- (ii) Applicants who had already registered under one time registration system by paying Rs.50/- before 01.03.2017 and having validity are exempted from paying the registration fee for this recruitment.

**EXAMINATION FEE CONCESSIONS :**

Applicants can avail exemption from payment of the examination fee as per the following eligibility criteria:

<b>Category</b>	<b>Concession</b>	<b>Condition(s)</b>
(i) Scheduled Castes/ Scheduled Caste (Arunthathiyars) and Scheduled Tribes	Full Exemption	Community certificate must have been obtained from Competent Authority

(ii) Differently Abled Persons and 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 Classes / Denotified Communities/ Backward Classes (Other than Muslims) / 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.
(i) 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 APPLICATIONS ONLY**. The claim for exemption from payment of examination fee made in any application which has been 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 result in the 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 applications 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 the previous applications submitted through One Time Registration and / or submitted directly without One Time Registration.

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

**6. MODE OF PAYMENT OF FEE:**

- Examination fee of Rs.150/- (Rupees One hundred and fifty only) or Rs.200/- (Rupees Two hundred only), as the case may be, is payable online through Net Banking / Credit card / Debit card or it can be paid offline at the State Bank of India / Indian Bank within two days from the date of submission of online application by choosing the option in the online application.
- Applicants have also to pay the service charges as applicable.
- 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.

**7. CONCESSIONS:**

- (i) Concessions with regard to age and examination fees allowed to SCs, SC(A)s, STs, MBCs/DCs, BC(OBCM)s, BCMs, Destitute Widows, Differently Abled Persons and Ex-servicemen are given in [paras. 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 claims when called for, otherwise their application will be **rejected**.

**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 the Tamil Nadu Government Servants (Conditions of Service) Act, 2016)

**8. SCHEME OF EXAMINATION (OBJECTIVE TYPE-OMR METHOD) AND ORAL TEST:**

For the posts of DRUGS INSPECTOR & JUNIOR ANALYST:

Subject	Duration	Maximum marks	Minimum qualifying marks for selection	
			SCs, SC(A)s, STs, MBCs/ DCs, BCs & BCMs	Others
<b><u>Paper –I (SUBJECT PAPER)</u></b> <b>(200 questions)</b> (Candidate should choose any one of the following subjects based on his/her educational qualification) <b>i) Pharmacy/ Pharmaceutical Sciences</b> (Code No.246) <b>(Degree standard)</b> <b>ii) Clinical Pharmacology</b> (Code No.352) <b>(P.G.Degree standard)</b> <b>iii) M.D. Microbiology</b> (Code No.351) <b>(P.G.Degree standard)</b> <b>iv) Pharmaceutical Chemistry</b> (Code No.245) <b>(Degree standard)</b> <b>v) *Chemistry</b> (Code No.243) <b>(Degree standard)</b>	3 Hours	300	171	228
<b>ii. Paper - II (GENERAL STUDIES)</b> (Code No.003) <b>(100 Questions)</b> General Studies (Degree standard) – 75 questions and Aptitude and Mental Ability Test (SSLC Standard) – 25 questions.	2 Hours	200		
<b>iii. Interview and Records</b>		70		
<b>Total</b>		<b>570</b>		

**\* For those who have studied PG Degree in Chemistry with Analytical Chemistry as a special subject.**

**Note:**

- The questions in **Paper-I** (subject paper of all the above mentioned subjects except Chemistry) will be set in English only and questions in **Paper-I** with respect to the subject **Chemistry** and **Paper-II** "General Studies" will be set both in English and in Tamil.
- Refer to [para 22 of "Instructions to Applicants"](#) in regard to Instructions to be followed while appearing for competitive Examinations conducted by the Commission.
- The syllabus for the subject papers (Paper-I) and "General Studies" (Paper-II) are available in **Annexure-IV** to this Notification.

**9. 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. The 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. Applicants' appearance in the written examination and oral test is compulsory. The applicant who has not appeared for any of the subjects in the written examination will not be considered for selection even if he/she secures the minimum qualifying marks for selection.

(For further details refer to [para. 23 \(b\) of the "Instructions to Applicants"](#))

**10. CENTRES FOR EXAMINATION:**

Sl. No.	Name of the Centre	Centre Code	Sl. No.	Name of the Centre	Centre Code	Sl. No.	Name of the Centre	Centre Code
1.	Chennai	0100	4.	Tiruchirappalli	2500	7.	Thanjavur	1900
2.	Madurai	1000	5.	Tirunelveli	2600	8.	Vellore	2700
3.	Coimbatore	0200	6.	Salem	1700	9.	Villupuram	2800

**Note:**

- Request for change of examination centre / venue will not be entertained (For further details refer to the "[Instructions to Applicants](#)").
- The Commission reserves the right to increase or decrease the number of examination centres and to re-allot the applicants accordingly.
- Applicants should appear for the written examinations / certificate verification / oral test at their own expenses.

**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 the same will lead to rejection of application.

For details refer to [para. 15 \(g\) of the 'Instructions to Applicants'](#). Any violation of this instruction will result in rejection of application and forfeiture of his / her candidature.



## 12. GENERAL INFORMATION:

- (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 20% of all vacancies in direct recruitment on preferential basis with persons who have studied the prescribed qualification in Tamil Medium. The 20% reservation of vacancies on preferential allotment to Persons Studied in Tamil Medium (PSTM) will apply to this recruitment. (Applicants claiming this reservation should have joined and studied the prescribed qualification in Tamil Medium and should have the certificate for the same. **Having written the university examinations in Tamil language alone will not qualify the candidate to claim this reservation.** If applicants who have studied the prescribed qualification in Tamil medium are not available for selection for appointment against the vacancies reserved for PSTM, such vacancies shall be filled by Non-PSTM applicants, but belonging to the respective communal category. The PSTM certificate shall be produced / uploaded by the applicants in the prescribed format / proforma available on the Commission's website at '[www.tnpsc.gov.in](http://www.tnpsc.gov.in)' which shall be obtained from the Head of the Institution and to be submitted when called for by the Commission.

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

- (C) The selection for appointment to the said posts is purely provisional subject to the final orders in the writ petitions, if any, pending on the files of the Hon'ble High Court of Madras and its Madurai Bench.
- (D) With respect to the posts of **Drugs Inspector and Junior Analyst**, as per Sections 26 and 27(c) of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016, reservation of appointment to "**Destitute Widows**" and "**Ex-servicemen**" **will not apply.**
- (E) The post of **Drugs Inspector** has been identified as suitable for differently abled persons with the following disabilities - LV, HH, LD, CP, LC, DF, AC as ordered in (G.O.(Ms.) No.20, Welfare of Differently Abled Persons (DAP 3.2) Department, dated 20.06.2018). **[LV – Low vision; HH – Hard of hearing; LD - Loco-motor disability; CP – Cerebral Palsy; LC – Leprosy Cured; DF – Dwarfism; AC – Acid Attack Victims].**
- (F) The post of **Junior Analyst** has been identified as suitable for differently abled persons with the following disabilities - LV, HH, LD, LC, DF, AC, ASD and SLD as ordered in (G.O.(Ms.) No.20, Welfare of Differently Abled Persons (DAP 3.2) Department, dated 20.06.2018). **However, the turns allotted for differently abled persons have not arisen among the turns to be utilized for this recruitment.**
- (G) Differently Abled Persons should submit / upload a copy of Differently Abled Certificate obtained from the competent authority specifying the nature of physical handicap, the degree of disability and their capability to discharge the duties of this post as instructed in para. 14(b) of the ["Instructions to Applicants"](#) when called for by the Commission. (Section 20 (5) of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016)
- (H) Wherever vacancies are reserved for women, if no qualified and suitable women applicants are available for selection against the vacancies reserved for them, those vacancies will be filled by other eligible applicants belonging to the respective communal categories. (Section 26(5) of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016).

- (I) Wherever vacancies are reserved for Arunthathiyars on preferential basis, even after filling 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 by Scheduled Castes other than Arunthathiyars.  
(Section 27 of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016).
- (J) Any claim made after the submission of online application will not be entertained. Evidence for all the claims made in the online application should be uploaded / submitted in time when the same are called for. Failure to upload / submit the documents within the stipulated time limit will entail rejection of application.
- (K) Correct and true information regarding arrest, convictions, criminal or any disciplinary proceedings initiated / pending or finalised, debarment / disqualification by any recruiting agency, 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. The details thereof, i.e. originals of the judgement / order / G.O. dropping further action in the departmental proceedings or any document that may prove the suitability of such applicants for appointment in such cases must be produced at the stage / time of certificate verification without fail. All such events that occur after the submission of application and till the date of his / her selection and appointment shall be reported to the Commission forthwith. Failure to report on the part of the applicant will be considered as suppression of material information and will attract suitable penal action.
- (L) **Incomplete applications and applications containing wrong claims or incorrect particulars relating to category of reservation / eligibility / age / communal category / educational qualification / medium of instruction / physical qualification / other basic qualifications 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 have already been furnished by the applicants under One Time Registration system, **the claims made in the online application for this recruitment alone will be taken into consideration.** The 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.
- (N) Refer **Annexure-III** of this notification regarding determination of community and reservation in employment for third gender.

### 13. OTHER IMPORTANT INSTRUCTIONS:

- a) **Applicants should ensure their eligibility for the recruitment.** Applicants applying for the recruitment should go through all the instructions carefully and ensure that they fulfil all the eligibility conditions for admission to the recruitment. Their admission to all stages of the recruitment will be purely provisional subject to satisfaction of the eligibility conditions. Mere issue of memo. of admission to the applicants will not imply that their candidature has been fully cleared by the Commission.
- b) Hall Tickets for eligible applicants will be made available on 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) so as to enable the applicants to download the same. **Hall Tickets will not be sent by post.** Hence, applicants should watch the Commission's 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 the Commission's office in person or over Telephone No. 044-25332833 / 25332855 or the Commission's Toll-Free No. 1800 425 1002 on all working days between 10.00 a.m. and 05.45 p.m. or Commission's e-mail id [contactnpsc@gmail.com](mailto:contactnpsc@gmail.com).

d) **COMMUNICATION TO APPLICANTS:**

*Individual communication regarding the date and time of certificate verification, oral test and counselling (as applicable) 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 the Commission's website in this regard.*

- e) **After notification, during the process of recruitment till publication of result, no information under Right to Information Act would be furnished.**

f) **MOBILE PHONES AND OTHER ARTICLES BANNED :**

- i) Except the permitted writing material (i.e. pen), applicants are not allowed to bring cellular phones, electronic or any other type of calculators, watches and rings with inbuilt memory notes, recording devices either as a separate piece or part of something used by the applicant such as watch or ring etc or any other electronic devices and non - electronic devices such as P&G design data book, mathematical and drawing instruments, log tables, stencils of maps, slide rules books, notes, loose sheets, rough sheets, hand bags etc., into the examination hall / room.
  - ii) If they are found to be in possession of any such things or instruments, 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"](#)).
  - iii) Applicants are advised, in their own interest, not to bring any of the banned items including mobile phones to the venue of the examination, as arrangements for safekeeping of the same cannot be assured.
- g) 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, physical disability etc.,) which should be submitted when called for by the Commission. Applicants applying for the recruitment should ensure that they fulfil all the eligibility conditions for admission to the recruitment. Their admission at all the stages of recruitment for which they are admitted by the Commission will be purely provisional, subject to their satisfying the prescribed eligibility conditions. If, on verification at any time before or after the written examination / certificate verification / oral test , it is found that they do not fulfil any of the eligibility conditions, their candidature for the recruitment will be liable for rejection / cancellation by the Commission. ([For further details refer to "Instructions to Applicants"](#))
- h) If any of their claims is found to be incorrect, it will lead to rejection of their candidature and suitable penal action including debarment.
- i) **UNFAIR MEANS STRICTLY PROHIBITED:** No applicant shall copy from the papers of any other applicant or permit his / her 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 to "Instructions to Applicants"](#))

- j) CONDUCT IN THE 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 viewed seriously and penalised. (For further details refer to [“Instructions to Applicants”](#))
- k) 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) or [www.tnpscexams.net](http://www.tnpscexams.net) or [www.tnpscexams.in](http://www.tnpscexams.in)
- 2) “One Time Registration” (OTR) and “Applicant’s 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 five 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) To apply under One Time Registration system, applicants should have a scanned image of their photograph, certificates specified, if any, and signature in CD/DVD/Pen Drive to upload the same, as per the specifications given in the guidelines for scanning and uploading of photograph and signature.
- 4) Applicants who have already registered under One Time Registration system on or before 29.09.2015 shall use their existing user ID and password to create the applicant’s dashboard in the new One Time Registration system. No applicant is permitted to create more than one registration ID under One Time Registration system.
- 5) Applicants should 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 a collection of information from the applicants and giving a separate dashboard to each applicant to facilitate them to maintain their own profile. Applicants 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) Applicants should select the name of the post (s) and service to which they wish to apply.
- 8) Online applications uploaded without the photograph, specified documents and signature will be rejected.
- 9) All the particulars mentioned in the online application including name of the applicant, post applied, educational qualifications, communal category, date of birth, address, e-mail ID, examination centre 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 the online application form with utmost care and caution as no correspondence regarding change of details will be entertained.
- 10) PRINT OPTION:
  - a) After submitting the application, applicants can save / print their application in PDF format.
  - b) On entering user ID and password, applicants can download their application and print, if required.
  - c) Applicants need not send the printout of the online application or any other supporting documents to the Commission. Application and all the required certificates will be verified only when the applicants come up for certificate verification.

**15. UPLOAD / SUBMISSION OF DOCUMENTS:**

Applicants should upload / submit the required documents for proof in respect of all the claims made in the application with reference to this notification as and when called for. If the required certificates are not uploaded or submitted by the applicants, within the stipulated time, their applications will be rejected.

**16. LAST DATE FOR SUBMISSION OF APPLICATION:**

Online application can be submitted upto 12.05.2019 till 11.59 p.m., after which the link will be disabled.

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

**17. WARNING**

- All recruitments by the Tamil Nadu Public Service Commission are purely merit based.
- Tamil Nadu Public Service Commission hereby cautions the candidates against touts and agents cheating by making false promises of securing job through unfair means.
- Tamil Nadu Public Service Commission shall not be responsible or liable for any loss that may be caused to any candidate on account of indulging in any sort of actions with such unscrupulous elements.

**எச்சரிக்கை**

- தேர்வாணையத்தின் தெரிவுகள் அனைத்தும் விண்ணப்பதாரர்களின் தர வரிசைப்படியே மேற்கொள்ளப்படுகின்றன.
- பொய்யான வாக்குறுதிகளை சொல்லி, தவறான வழியில் வேலை வாங்கி தருவதாக கூறும் இடைத்தரகர்களிடம் விண்ணப்பதாரர்கள் மிகவும் கவனமாக இருக்குமாறு எச்சரிக்கப்படுகிறார்கள்.
- இதுபோன்ற தவறான மற்றும் நேர்மையற்ற நபர்களால் விண்ணப்பதாரர்களுக்கு ஏற்படும் எந்தவொரு இழப்புக்கும் தேர்வாணையம் எந்தவிதத்திலும் பொறுப்பல்ல.

**Secretary**

**DISCLAIMER**

“Government orders relating to equivalence of qualification are available in the Tamil Nadu Public Service Commission’s website. However, the applicants while applying for the Examination should furnish the details of equivalence of qualification declared in the form of government orders issued on or before the date of this notification, if any, which are not mentioned in Annexure-I to the notification and produce the same while submitting the documents, failing which their application will be **rejected**. **The government orders issued regarding equivalence of qualification after the date of this notification will not be accepted**”

**Secretary**

**ANNEXURE- I****EQUIVALENT QUALIFICATIONS WITH RESPECT TO THE  
POST OF JUNIOR ANALYST**

<b>Sl. No.</b>	<b>Equivalent Qualifications</b>	<b>Government Orders</b>
1.	M.Sc., (Chemistry 5 years Integrated Course) offered by Annamalai University is considered eligible wherever B.Sc, Chemistry is prescribed.	G.O.Ms.No.75, Personnel and Administrative Reforms (M) Department, dated 30.06.2011.

**ANNEXURE-II****EXPERIENCE CERTIFICATE**

1.	Name and address of the Institution / Organisation	:	
2.	Whether the said Institution / Organisation is a recognized one?	:	
3.	Registration number of Institution / Organisation if any	:	
4.	Name of the employee and date of birth	:	
5.	Qualification possessed by the employee on the date of joining Service in the above said Institution / Organisation	:	
6.	Designation and period of experience of the employee	:	
7.	Nature of the work/duty performed by the employee (To be mentioned in brief)	:	
8.	Whether the employee possesses experience as laid down in para. 6(B) of the notification for the post of (relevant post may mentioned)	:	Yes / No
9.	Whether Attendance Register / Attendance Rolls / Pay Register and other records available for this employee	:	Yes / No
10.	Certificate from the Institution / Organisation	:	The above said employee having experience in this Institution / Organisation as stated above. The above particulars furnished by us are correct

Office seal:

Date:

Place:

Signature

Name & Designation of  
Issuing Authority**Note:**

Institution / Organisation which issues the certificate is cautioned that issuing of any certificate containing false details will lead to legal / penal action on them.



**ANNEXURE-III****Abstract**

Social Welfare and Nutritious Meal Programme Department – Third Gender Welfare – Determination of the Community and Reservation in Employment for Third Gender – Orders – Issued.

**Social Welfare and Nutritious Meal Programme [SW8 (2)] Department****G.O.(Ms) No.90****Dated 22.12.2017**

ஹேவிளம்பி, மார்கழி 7

திருவள்ளூர் ஆண்டு 2048

**Read:**

1. G.O. (Ms) No.127, Labour and Employment Department, dated 27.10.2014
2. G.O. (Ms) No.28, Backward Classes, Most Backward Class and Minorities Welfare Department, Dated 06.04.2015
3. G.O. (Ms) No.71, Social Welfare and Nutritious Meal Programme Department, Dated 06.11.2015

**Read also:**

4. From the Secretary, Tamil Nadu Public Service Commission, D.O.Letter No.4471/RND-D2/2013, dated 12.07.2016
5. From the Director of Social Welfare, Letter Roc.No.21096/WW.1(3)/2017, dated 31.07.2017

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**ORDER:-**

In the Government Order first read above, orders were issued that Third Gender may register their names in Employment Exchange offices based on the certificate identifying them as Transgender issued by the Tamil Nadu Transgender Welfare Board (TGWB) and to sponsor their names for appointment in the vacancies reserved for women category namely 30% and as well as vacancies reserved for General Category (both Men and Women) namely 70%.

2. In the Government Order second read above, orders were issued classifying the "Transgender of Eunuch (Thirunangal or Aravani)" as Most Backward Class by including at Sl.No.36-C in the list of Most Backward Classes.

3. In the Government Order third read above, among other things orders were issued, that Transgender will be identified as 'Third Gender' apart from the Binary Gender System and they have the right to decide their self-identified gender as male or female or as the third gender.

4. The Secretary, Tamil Nadu Public Service Commission in the D.O. letter fourth read above has sought for following clarifications in this matter with regard to:-

- (i) Considering the Transgender under 30% reservation for Women

- (ii) Treating the Transgender candidates who have claimed communal status under Scheduled Caste/ Scheduled Caste (A)/ Scheduled Tribe by producing respective Community Certificate confirming their claim.

5. After careful examination, in consultation with the concerned departments and the Director of Social Welfare, the Government hereby issue the following order regarding the determination of community and reservation in employment for the Third Gender in order to streamline the procedures to be followed by the recruiting agencies like Tamil Nadu Public Service Commission, Teachers Recruitment Board, Uniformed Services Recruitment Board, Medical Recruitment Board, etc., and Employment Exchange offices / appointing authorities, in sponsoring / recruiting / selecting the Third Gender candidates for appointment in Government Service:-

**Determination of the Community:-**

- (i) The Third Gender candidates, who do not possess any community certificate may be considered under Most Backward Class as per G.O.(Ms).No.28, Backward Classes, Most Backward Class and Minorities Welfare Department, dated 06.04.2015.
- (ii) The Third Gender candidates who belong to Scheduled Caste/Scheduled Caste (A)/Scheduled Tribe communities, and possess community certificate as such, may be considered as per their respective community.
- (iii) The Third Gender candidates who belong to the communities other than Scheduled Caste/Scheduled Caste (A)/Scheduled Tribe and possess community certificate as such (not covered under point (i) above) may be considered as per their own community or as Most Backward Class whichever is advantageous to them as per their option and once the individual exercises option for community selection it should be crystallized and this option should not be changed in future.

**Reservation in Employment:-**

- (i) The Third Gender candidates who identify themselves as "Female" by self-declaration supported by the certificate (ID card) issued by the Tamil Nadu Third Gender Welfare Board (TNTGWB) may be considered against both 30% reservation for women as well as 70% reservation for the General category (both Men & Women).
- (ii) The Third Gender candidates, who identify themselves as "Male" or "Third Gender", may be considered against the 70% reservation for General category (both Men & Women) as the case may be.

The above concessions may be granted subject to production of certificate identifying them as Third Gender or Third Gender (Male) or Third Gender (Female) issued by the Tamil Nadu Third Gender Welfare Board (TNTGWB), as the case may be.

(By Order of the Governor)

K. Manivasan,  
Principal Secretary to Government

To  
The Director of Social Welfare, Chennai-15  
The Commissioner of Social Defence, Chennai-10

The Director, Integrated Child Development Services Scheme, Chennai-113  
The Secretary, Tamil Nadu Public Service  
Commission, Chennai-3

✓ All District Collectors

All Departments of the Secretariat, Chennai-9

The Commissioner of Backward Classes and Minorities Welfare, Chennai-5

The Director of Most Backward Class and Denotified Communities, Chennai-5

The Director of Adi Dravidar Welfare, Chennai-5

The Director of Tribal Welfare, Chennai-5

The Member Secretary, Tamil Nadu Backward Classes Commission, Chennai-4

The Teacher Recruitment Board, Chennai-6

The Tamil Nadu Uniformed Services Recruitment  
Board, Chennai-8

The Medical Services Recruitment Board, Chennai -6

The Director of Employment and Training, Chennai-32

The Secretary to Government of India, Ministry of Social  
Justice and Empowerment, New Delhi

**Copy to:**

The Hon'ble Chief Minister's Office, Chennai-9

The Senior Personal Assistant to the Minister for Social Welfare and Nutritious Meal  
Programme, Chennai-9

All Sections in Social Welfare and Nutritious Meal Programme Department, Chennai-9  
Stock file/Spare copy

// Forwarded by Order //

V. T. *[Signature]*  
Section Officer

Div 8  
27.12.17

4/5

**ANNEXURE-IV****SYLLABUS FOR WRITTEN EXAMINATION FOR PAPER-I (Objective type)****SUBJECT PAPER: PHARMACY/ PHARMACEUTICAL SCIENCES****(DEGREE STANDARD)****SUBJECT CODE: 246****UNIT- I:**

- a) The physical, physico-chemical and engineering principles governing design, layout and operation of plants for the process employed in pharmaceutical industry.
- b) Unit operations: size reduction, size separation, mixing, compression, filtration, centrifugation, extraction, evaporation, drying, distillation, crystallization.
- c) Industrial Hazards and Safety Precautions: Mechanical, Chemical, Electrical, Fire and Dust hazards, Industrial dermatitis, Accident records.
- d) Containers, closures and packaging materials.
- e) Preformulation Studies
- f) Pharmaceutical excipients: Antioxidants, preservatives, Colouring, Flavouring and Sweetening agents, Solvents.
- g) Facts related with formulation:- Physical properties, particle size. Crystal form, flow cohesiveness. Solubility. Chemical properties, Hydrolysis. Oxidation racemization, enzymatic decompositions.
- h) pH determination, application, buffer equation, buffer capacity, buffered isotonic solutions; Micrometrics: Particle size determinations, derived properties of powders; Interfacial phenomenon : HLB values surfactants, factors influencing interfacial phenomenon, Critical micellar concentration, Electrical properties at interface; Coarse dispersions: Suspensions and emulsions, Theories of emulsification, multiple emulsions.
- i) Pharmaceutical calculations: Calculations of doses, alcohol dilutions, proof spirit, isotonic solutions.
- j) Nuclear Pharmacy- Introduction to Radiopharmaceuticals, radioactive half-life, units of radioactivity. Production of radiopharmaceuticals, methods of isotopic tagging, preparation of radioisotopes in laboratory using radiation dosimetry and radioisotope generators. Permissible radiation dose level, radiation hazards, their prevention and specifications for radioactive laboratory.
- k) Good Manufacturing Practice.

- l) Quality control of the following formulations: Semisolids, Solid dosage forms, Liquid dosage forms, Parenteral and ophthalmic preparations.
- m) New Drug Delivery Systems- Aerosols, Ocusert, Transdermal Drug Delivery Systems, Osmotic Drug Delivery Systems, Targeted Drug Delivery Systems, Prolonged Drug Delivery Systems.
- n) Cosmetics- Dentifrices, Lipsticks, Face powders, shampoos, depilatories and Manicure preparations.

### **UNIT- II:**

- a) **Blood Products and Plasma Substitutes:** Collection, processing and storage of whole human blood, concentrated human RBCs, dried human plasma, human fibrinogen, human thrombin, human normal immunoglobulin, human fibrin foam, plasma substitutes, ideal requirements of PVP, dextran, etc. Control of blood products as per IP.
- b) Basics of pharmacokinetic studies and their importance
- c) Pharmaceutical Biotechnology- General principles of immunology, immunological techniques used in pharmacy; Sterilization of different pharmaceutical dosage forms; Sterility Testing; Methods of preparation of official sera and vaccines; Microbiological assays of antibiotics and vitamins of the pharmacopeia; Disinfectants- Classification, Mechanism and uses of disinfectants in brief. Factors affecting disinfection and methods of disinfectant evaluation.
- d) Immunologicals: Preparation and quality control of products representing various categories like
 

Toxoids	– Diphtheria and Tetanus Live
Bacterial Vaccines	– BCG
Killed Bacterial Vaccines	– Cholera, DPT
Viral Vaccines	– Polio, Rabies and small pox
Antitoxins	– Diphtheria

### **UNIT – III:**

- a) Chemistry of Alkaloids, Vitamins, Flavanoids, Glycosides, steroids, terpenes, vitamins and hormones.
- b) Catalytic hydrogenation, dehydrogenation, metal hydride reduction. Reduction with hydrazine and its derivatives, Birch reduction, Clemenson's reduction, Meerwin – Ponndrof reduction, oxidation with periodic acid, lead tetra acetate,

mercuric acetate and selenium oxide. Beckmann rearrangement, Schmidt rearrangement and Darzen's reaction.

#### **UNIT – IV:**

Synthesis, properties, test for purity, storage of the following categories of drugs - Analgesics and Antipyretics, Anti-inflammatory, Hypnotics and sedatives, Anti convulsants, Anti-psychotics, Anti-histamines, Sympathomimetics, Adrenergic antagonists, Cholinomimetics and anti-cholinergic, Local Anaesthetics, Anti-hypertensives, Anti-anginal, Sulphonamides, antibiotics, Anti-TB, Anti-Viral, Anti-Fungal, Antimalarials, Anti-Neoplastics.

#### **UNIT- V:**

- a) Principles and Pharmacopeial Assay Procedures involving Non-aqueous Titration, Oxidation-Reduction, Diazotization, complexometric methods, electrometric titration, gravimetric analysis.
- b) Polarimetry and refractometry, and gasometric analysis of oils, fats and waxes.
- c) Chromatography- TLC, Column, Paper, GC, Ion exchange, HPLC, HPTLC, Gel electrophoresis.
- d) Theory, principle, instruments and applications of colorimetry, UV- Visible Spectrometry, Fluorimetry, Nephelometry, Turbidometry, IR, Mass, NMR, RIA.

#### **UNIT- VI:**

- a. General Pharmacology:- Routes of administration, Absorption, distribution, Biotransformation and Excretion of drugs, Bioavailability and bio equivalence, Factors affecting bioavailability, Mechanism of action of drugs at receptor level, adverse drug reaction.
- b. Drugs acting on Central Nervous system: Analgesics, Nonsteroidal anti inflammatory drugs, Sedatives and Hypnotic, Anti convulsants and Antipsychotic drugs. Drugs used in parkinsonism.
- c. Drugs acting on Autonomic Nervous system: Drugs which influence the working of autonomic nervous system, Adrenergic drugs (or) sympathomimetic drugs, Adrenergic blocking drugs, Cholinergic drugs and cholinergic blocking drugs, Drugs acting on autonomic ganglia.
- d. Drug acting on cardiovascular system: cardiac glycosides, Anti hypertensive, anti arrhythmic and anti anginal drugs.
- e. Diuretics & anti diuretics.

**UNIT- VII:**

- a. Drugs acting on GIT.
- b. Insulin and oral anti diabetic drugs, Thyroid and anti-thyroidal drugs, oral contraceptives. Hormone replacement therapy, drugs acting on uterus.
- c. Antihistaminic drugs and Drugs used in Migraine.
- d. Chemotherapy- sulphonamides penicillins, cephalosporins, quinolones, Tetracyclines, Aminoglycosides, Chemotherapy of Tuberculosis, leprosy, malaria, cancer , Ameobiasis, Helminthiasis.
- e. Toxicology- Systematic & local treatment of poisoning and their treatment.

**UNIT- VIII:**

- a. General principles of cultivation and collection of drugs from wild & cultivated sources, their merits and demerits, factors affecting cultivation, adulterants and their detection.
- b. Plant growth regulators.
- c. Source, synonym, cultivation, collection, preparation for market, diagnostic characters (both macroscopical and microscopical). Constituents, substitutents, adulterants and uses of Cinnamon, Cinchona, Senna, digitalis, Clove, Saffron, Pyrethrum. Cochineal, Ergot, opium, Aloe, Acacia, Tragacanth, Benzoin, Ginseng, Brahmi, Dioscorea, Cascara, Gelatin, umbelliferous fruits, spirulina, nuxvomica, ginseng, belladonna, taxol , vinca.
- d. Principle and application plant tissue culture.
- e. Basics of fermentation technology & production of Antibiotics, Vitamins.

**UNIT- IX:**

- a. Biosythetic pathways of Tropane alkaloids, Cholesterol, amino acids.
- b. WHO Guidelines for herbal medicines.

**UNIT- X:**

- a. Drugs and Cosmetics Act 1940 and Rules 1945.
- b. Pharmacy Act 1948.

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**PAPER - I****SUBJECT PAPER: CLINICAL PHARMACOLOGY**  
**(POST GRADUATE DEGREE STANDARD)****Objective Type****SUBJECT CODE: 352****UNIT- I : GENERAL PHARMACOLOGY**

Sources of drugs, Routes of drug administration, Dosage formulations, Pharmacokinetics, Pharmacodynamics - Good Clinical Practice & Good Manufacturing Practice - Patient compliance, and self medication, Placebo medicines and pharmacoconomics.

Discovery and development of drugs - Preclinical studies in animals - Clinical trials - Official regulatory guidelines.

Orphan drugs and diseases, Spurious drugs, Counterfeit drugs - Pharmacoepidemiology and Pharmacovigilance – Pharmacogenetics - Adverse drug reactions and monitoring - Clinical importance of drug interactions (both pharmacokinetic and pharmacodynamic interactions with special reference to antibiotics, anti-bacterials, NSAIDs and cardiovascular drugs) - Therapeutic drug monitoring.

**UNIT - II : DRUG THERAPY IN SPECIAL SITUATIONS**

Geriatrics – Pediatrics - Pregnancy and Lactation.

**UNIT - III : CHEMOTHERAPY**

Chemotherapy of bacterial (including Tuberculosis & Leprosy) - viral – fungal - protozoal - helminthic infections - Neoplastic diseases.

**UNIT IV : DRUGS ACTING ON NERVOUS SYSTEM - CENTRAL NERVOUS SYSTEM**

General anaesthetics – Narcotics – Antiepileptics - Sedatives and Hypnotics - Psychopharmacological drugs - CNS Stimulants - Neurodegenerative disorders – Hallucinogens - Deaddiction for alcohol and other drugs of abuse.

**UNIT V : PERIPHERAL NERVOUS SYSTEM & AUTONOMIC NERVOUS SYSTEM**

Local Anaesthetics - Skeletal Muscle Relaxants – Atropine & Substitutes – Adrenaline & Derivatives – Drugs in Glaucoma.

**UNIT VI : CARDIOVASCULAR DRUGS**

Hypertension - Angina & Myocardial Infarction - Congestive Heart failure - Arrhythmias.



**UNIT VII : ENDOCRINOLOGY**

Anterior pituitary Hormones - Thyroid Hormones – Corticosteroids-Insulin & Oral Hypo glyemic drugs -Male & Female sex Hormones - Oral contraceptives - Uterine stimulants & relaxants.

**UNIT VIII : DRUGS ACTING ON HEMOPOEITIC SYSTEM, RENAL AND GIT**

Haematinics- Coagulants & Anticoagulants – Fibrinolytics & Antifibrinolytics - Antiplatelets, Hypolipidemic Drugs – Diuretics - Drugs Acting on GIT.

**UNIT IX : IMMUNOPHARMACOLOGY& AUTACOIDS**

Cell and biochemical mediators involved in allergy, immuno modulation and inflammation, hypersensitivity reactions - therapeutic agents for allergy, asthma and COPD - NSAIDs & DMARDs & gout – Antihistamines - Serotonin agonists & Antagonists.

**UNIT X : MISCELLANEOUS**

Vaccines - Dermatological preparations - Chelating Agents – Nutraceuticals - Supplementary & formula feeds – Toxicology.

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**PAPER - I****SUBJECT PAPER: M.D.MICROBIOLOGY**  
**(POST GRADUATE DEGREE STANDARD)****Objective Type****SUBJECT CODE:351****UNIT – I: GENERAL MICROBIOLOGY**

1. History & Milestone in Microbiology
2. Microscopy
3. Sterilization and disinfection
4. Bio Safety in Microbiology Laboratory
5. Bacterial morphology
6. Staining of Bacteria
7. Nutrition and growth of Bacteria
8. Culture Media & Cultivation of Bacteria
9. Identification of Bacteria & Bacterial Classification
10. Normal Microbial flora
11. Bacterial Genetics

**UNIT – II: IMMUNOLOGY**

- 1 Immunity
- 2 Structures and functions of Immune system
- 3 Cells of Immune System
- 4 Immune Response/Immunity
- 5 Antigen
- 6 Antibody
- 7 The complement System
- 8 Antigen - Antibody reactions
- 9 Hypersensitivity
- 10 Auto Immunity
- 11 Histo-Compatibility complex
- 12 Transplantation Immunity
- 13 Tumour Immunity
- 14 Immuno Deficiency diseases
- 15 Immuno Hematology
- 16 Immuno Prophylaxis against infectious Diseases

**UNIT – III: SYSTEMATIC BACTERIOLOGY**

- 1 Staphylococcus
- 2 Streptococcus
- 3 Neisseria
- 4 Coryne bacteria

- 5 Bacillus
- 6 Mycobacteria
- 7 Actinomyecetes & Nocardia
- 8 Coliform bacteria-Escherichia coli & kelsiella 9 Proteus
- 9 Salmonella
- 10 Shigella
- 11 Yersinia
- 12 Pasteurella & Francisella
- 13 Haemophilus
- 14 Bordetella
- 15 Brucella
- 16 V. Cholerae
- 17 Pseudomonas
- 18 Spirochetes
- 19 Rickettsiae
- 20 Chlamydia
- 21 Mycoplasma
- 22 Miscellaneous Bacteria

#### **UNIT - IV PARASITOLOGY**

- 1 Classification
- 2 General principles of Diagnosing parasites & treatment of parasitic infection.
- 3 *Protozoology*  
Pathogenic and Non-pathogenic amoebae and free living amoebae  
Intestinal, Blood & Tissue flagellates Plasmodium, Toxoplasma, Isospora
- 4 Balantidium coli
- 5 Helminthology  
Cestodes, Trematodes, Nematodes

#### **UNIT - V GENERAL VIROLOGY**

- 1 Classification of viruses
- 2 Replication of Viruses
- 3 Cultivation of Viruses
- 4 Identification of Viruses & Lab diagnosis
- 5 Pathogenesis & Host response to Viral infection
- 6 Bacteriophage
- 7 Antiviral Agents
- 8 Viral Vaccines

#### **UNIT – VI: VIRUSES**

- 1 Pox
- 2 Adeno
- 3 Herpes

- 4 Papova
- 5 Parvo
- 6 Picorna
- 7 Orthomyxo
- 8 Paramyxo
- 9 Rota virus
- 10 Rhabdovirus
- 11 Hepatitis
- 12 Arbo
- 13 Retro
- 14 Slow-viruses
- 15 Oncogenic virus
- 16 Miscellaneous  
virus

### **UNIT - VII Mycology**

- 1 Classification of fungi
- 2 Fungal Mycotoxins
- 3 Pathogenesis & Lab diagnosis of Mycotic infections
- 4 Superficial Mycosis
- 5 Cutaneous Mycosis
- 6 Subcutaneous Mycosis
- 7 Systematic Mycosis
- 8 Opportunistic Mycosis and common lab contaminants
- 9 Antifungal Agents

### **UNIT- VIII Clinical Microbiology**

- 1 C.N.S infection
- 2 Respiratory Infections
- 3 Urinary Tract Infection
- 4 Gastro intestinal Infection
- 5 Genital Tract Infection
- 6 Congenital Infection
- 7 Infections of Eye, Ear & Skin
- 8 Infections of Cardiovascular System
- 9 P.U.O
- 10 Zoonotic Infections

### **UNIT - IX Applied Microbiology**

- 1 Collection ,Transport and Disposal of Specimens
- 2 Environmental Microbiology (Food, Water, Milk and Air)
- 3 Hospital Infections Prevention & Control
- 4 Microbial Control- anti microbial susceptibility testing
- 5 Bio medical waste management
- 6 Basic molecular biology related to infections
- 7 Emerging and reemerging infections - Bio Terrorism

**UNIT - X Recent Advances in Microbiology**

- 1 Advanced Molecular Techniques in Relation to Diagnosis of Infectious diseases
- 2 Scope of Medical Microbiology
- 3 Automation in Microbiology
- 4 Anti microbial resistance and antibiotic policy
- 5 Newer Vaccines
- 6 Quality Control, Audit and Accreditation of Standard Microbiology Laboratory

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**PAPER – I****SUBJECT PAPER: PHARMACEUTICAL CHEMISTRY (DEGREE STANDARD)****Objective Type****SUBJECT CODE.245****UNIT I**

- 1) Atomic structure and valency, Radioactivity, Radio isotopes and Pharmaceutical applications of Radio Pharmaceuticals, hazards and precautions.
- 2) Sources of impurities in Pharmaceutical substances; Limit test as per I.P; Fundamentals of volumetric Analysis.
- 3) A systematic study of inorganic compounds for their preparation, assay and use which includes Gastrointestinal agents, Topical agents and Dental products.

**UNIT II**

- 1) Assay, test for purity of sodium, calcium, iron, aluminium and ammonium compounds. Major intracellular and extra cellular electrolytes.
- 2) Preparation and use of Chemical reagents and Volumetric Solutions as per Pharmacopia in Pharmaceutical Analysis.
- 3) Theory of Co-ordination Compounds with special reference to application in Pharmaceutical Analysis via EDTA, Dimercaprol, Pencillamine.

**UNIT III**

- 1) Physiochemical properties of gases, liquids and solids. Density, Surface tension, Viscosity and physical properties.
- 2) Osmosis, osmotic pressure, vapour pressure, Raoult's law, Ostwalds dilution law, Molecular weight determination by osmotic pressure.
- 3) Non- aqueous and complexometric titrations, analysis of fats, oils and waxes. Importance of quality control, Different types of titrations, Gasometric analysis and determination of Nitrogen.

**UNIT IV**

- 1) Gases in liquids, liquids in liquids, partially miscible, completely miscible and completely immiscible liquids.
- 2) Thermochemistry: Heat of reaction, heat of solution, heat of formation and heat of neutralization and Hess law.
- 3) Stereo chemistry, optical isomerism, Geometrical isomerism.
- 4) Theory of Polarimetry, Refractometry and catalyst.

**UNIT V**

- 1) Electronic configuration and electron displacement effects, chemical bonds and polarity.
- 2) Chemistry and medicinal uses of cardiac glycosides and vitamins.
- 3) Synthetic utility of acetoacetic ester, Grignard reagent and Diazonium compounds.

**UNIT VI**

- 1) Aromaticity, concept of resonance, Nucleophilic, Electrophilic substitution reaction, Elimination reactions in aliphatic and aromatic compounds.
- 2) Anti-infective agents comprising of Anti-fungal agents, synthetic antibacterial agents, anti-tubercular Agents, and Anthelmintics agents.

**UNIT VII**

Chemical structure, Synthesis, assay and therapeutic uses of organic synthetic drugs like, Antidepressants, General anesthetics, Sedatives and hypnotics, Narcotic analgesics, Anti-histaminics, Antimalarials., Sulphonamides, Drugs acting on CVS.

**UNIT VIII**

- 1) Structural elucidation of natural products - General methods.
- 2) Structure, chemistry, methods of estimation, and uses of Alkaloids, Carbohydrates, and Proteins.
- 3) Chemistry of steroids and natural hormones, currently used steroidal drugs.

**UNIT IX**

- 1) Study of separations and determination involving TLC, HPTLC, and column chromatography.
- 2) Colorimetry, UV and Visible Spectrophotometry, Spectrofluorimetry-Theory, Principle, Instrumentation and working.
- 3) Theory and principles of separation techniques involving Ultra centrifugation, HPLC and Gel filtration.

**UNIT X**

- 1) Conductometry, Potentiometry and Amperometric titrations, Basic concepts and application in pharmaceutical analysis.
- 2) Radio Immuno Assay and Electrophoresis.
- 3) Theory, Principle and application of NMR, MS, IR spectroscopy.

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**PAPER – I****SUBJECT PAPER: CHEMISTRY (DEGREE STANDARD)****Objective Type****SUBJECT CODE.243****UNIT - I****PHYSICAL CHEMISTRY:-**

- a) Gas law and Kinetic Theory:- Ideal gas equation - Deviation from ideal behaviour - vander waals equation for real gases - Molecular velocities - the Maxwell's distribution of molecular velocities –heat capacity and viscosity of gases.
- b) Solid State:- Crystal systems - Bravaislattice - Unit Cell - Miller Indices - Symmetry elements in crystals - Bragg's equation - Radius ratio's and packing in crystals – Determination of crystal structures by Braggs method – structure of Nacl, Kcl, Zns and spinals.
- c) Thermodynamics:- Intensive and extensive variables - First law of thermodynamics – CP and CV relation - Hess's law of constant heat summation - Kirchoff's equation - Second law of thermodynamics - Carnot theorem - entropy and probability, Joule Thomson effect -Free energy and Chemical equilibrium - Temperature and pressure dependence and - Gibb's and Helmholtz functions – Heterogeneous equilibrium and Le – Chatlier principle.

**UNIT – II**

- d) Chemical Kinetics:- Rate laws - rate constant - order and molecularity of reactions I, II, III, and Zero order reaction Arrhenius theory - collision theory and Transition state theory - catalysis.
- e) Electro-Chemistry:- Types of reversible electrodes - Nernst equation - reference electrode and standard hydrogen electrode - computation of cell e.m.f. calculations of thermodynamic quantities of cell reactions (DG, DH, DS and K) - Over potential and hydrogen over voltage - Arrhenius theory - Debye 'Huckel equation - Kohlraush's law - Ostwald's dilution law - Determination of PH and Pka of acids by potentiometric methods.

**UNIT – III**

- f) Chemical spectroscopy:- Elementary ideas of microwave, infrared, Raman, uv, NMR, ESR and Mass spectroscopy.
- g) Pharmaceutical chemistry: Terminology pharmacology, pharmacotheraies, toxicology, chemotherapy, classification, and nomenclature of drugs, sources of drugs, assay of drugs by biological, chemical and immunological methods, physiological effects of functional groups of drugs different types of drugs like analgesics, antibiotics, antiseptics, disinfectants, anesthetics, antidepressants, antipsychotic etc.



**UNIT - IV**

h) Colloids and surface Chemistry:- Classification – preparation, purification - properties - Tyndall effect- Gels - Emulsions Absorption - Langmuir isotherms - Heterogeneous catalysis.

i) Physical properties and Chemical constitution:- Surface tension - parachor and its application to structural problems – Dipole moment - applications of dipole moment measurements to structural studies of simple inorganic and organic molecules - magnetic properties of matter, diamagnetism, paramagnetism, ferromagnetism and anti-ferromagnetism - Applications to structural problems.

**UNIT - V****INORGANIC CHEMISTRY:-**

j) Periodic classification:- Classification based on electronic configuration - periodic properties - atomic and ionic radii, ionisation potential, electron affinity and electronegativity- various scales - trend along periods and groups.

k) Chemical bond:- Lattice energy - VSEPR Theory and its applications - partial ionic character from electronegativity - Fajan's Rules.

l) Compounds of Boron:- Electron deficient nature of boron compounds - preparation and properties of halides and nitrates of boron - diborane – Borazine, silicones and structures of silicates

**UNIT - VI****LANTHANIDES AND ACTINIDES:-**

m) Occurrence Electronic configuration oxidation state, magnetic properties and complexation behaviour - comparison of lanthanides and actinides, lanthanide contraction and their position in the periodic table.

n) Fertilisers:- Ammonium nitrate, ammonium phosphate, Superphosphate and Diammonium Phosphate, NPK fertilisers.

o) Nuclear Chemistry:- Radio activity – detection and measurement – half life period - Nuclear stability, - n/p ratio - isotopes, isobars and isotones Nuclear reactions Spallation - Nuclear fission and fusion – stellar energy uses of nuclear energy - nuclear power projects in India - applications of tracers in industry, medicine, agriculture.

**UNIT - VII**

p) Co-ordination Chemistry:- Redox Nomenclature - theories of co-ordination compounds - Werner, valence bond, crystal field and ligand field theories - Effective atomic number - isomerism - Metal Carbonyls of iron and Nickel.

q) Analytical Chemistry:- i) Principles of volumetric analysis - different types of titrations gravimetric analysis - separation and purification techniques.

**UNIT - VIII****ORGANIC CHEMISTRY:-**

- r) Types of reactions:- Nucleophilic, electrophilic, free radicals, addition and elimination reactions.
- s) Electron displacement effects:- Inductive, inductometric, electromeric, mesomeric, resonance, hyperconjugation and steric effects.

**UNIT - IX**

- t) Nature of Bonding:- Hybridisation ( $Sp$ ,  $Sp^2$  &  $Sp^3$ ) and Geometry of molecule - cleavage of bonds - homolytic and heterolytic fission of carbon – carbon bonds - Reaction intermediates - free radicals, carbocations and carbonions - their stability.
- u) Stereo Chemistry:- Optical isomerism and Geometrical isomerism - chirality - optical isomerism of lactic and tartaric acid - Racemisation - Resolution - Asymmetric synthesis - walden inversion - cis and trans isomerism of maleic and fumaric acids - R-S-Notations - conformational analysis of cyclohexane - applications of ORD and CD Techniques.

**UNIT - X**

- v) Dyes:- Classification and Properties of dyes – methyl orange, congo red, malachite green, fluorescein and indigo.
- w) Carbon hydrates:- Classification and reactions - Glucose, Fructose, Sucrose and lactose- structure of glucose and fructose.
- x) Aromatic Substitution:- Mechanism of nitration, Halogenation, sulphuration and Friedel Crafts reaction - Orientation effects - nucleophilic substitution - Benzyne mechanism.

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**PAPER-II****GENERAL STUDIES (DEGREE STANDARD)****Objective Type****SUBJECT CODE : 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: 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.

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**ANNEXURE - V****TENTATIVE TIMELINE FOR THE RECRUITMENT PROCESS**

<b>Sl. No.</b>	<b>Process</b>	<b>Timeline</b>
1.	Publication of Results	July 2019
2.	Certificate upload for C.V.	August 2019
3.	Certificate Verification	August 2019
4.	Date of Oral Test	September 2019
5.	Final Selection List	September 2019

**Secretary**