



TAMIL NADU PUBLIC SERVICE COMMISSION

Advertisement No.531
Notification No. 04/2019

DATED: 10.01.2019

As per the orders of the Hon'ble High Court of Judicature at Madras in W.P.No.2937 of 2018, Cont.P.No.1773 of 2015 and W.M.P.No.3599 of 2018, applications are invited from eligible candidates belonging only to the **Scheduled Castes (SC)** category through online mode up to **10.02.2019** for direct recruitment to the post of **Sub-Inspector of Fisheries** in the Tamil Nadu Fisheries Subordinate Service against the following shortfall vacancies :-

Name of the Post and Post Code	Name of the Service and Service Code.	No. of vacancies	Scale of Pay
Sub-Inspector of Fisheries in Fisheries Department. (Code No.1760)	Tamil Nadu Fisheries Subordinate Service (Code No.031)	6 SC(G)	Rs.35,900 - 1,13,500/- (Level 13)

Note:

The selection against shortfall vacancies will be made from among Scheduled Castes / Scheduled Caste (Arunthathiyars) applicants only. The reservation for Women, Ex-serviceman and Differently Aabled Persons will not be applicable for the recruitment of shortfall vacancies. [Section 27(h) of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016]. Further, the reservation of vacancies to Persons Studied in Tamil Medium (PSTM) also will not apply for this recruitment.

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]. **One Time Registration will not be considered as an application for any post.**

2. RULE OF RESERVATION

The reservation of appointment is applicable only for the **Scheduled Caste (General)** candidates. The **Scheduled Caste (Arunthathiyar)** candidates are also eligible to apply for Direct Recruitment to this post based on the inter-se merit between the Scheduled Caste candidates.

3.IMPORTANT DATES AND TIME

Date of Notification	10.01.2019	
Last date for submission of online application	10.02.2019	
Date of Written Examination		
Paper – I Subject Paper (Degree / Diploma Standard) in concerned subject	04.05.2019 FN	10.00 A.M. to 01.00 P.M
Paper – II General Studies (Diploma Standard)	04.05.2019 AN	02.30 P.M. to 04.30 P.M

4. FEES

<p><u>Registration Fee</u></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><u>Note</u></p> <p>Those who have registered in the One -Time Registration system and paid the Registration fee of 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.</p>	Rs.150/-
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Note :

Failure to pay the prescribed fee along with the application in-time, will result in the rejection of application.

5. ONE TIME REGISTRATION

- 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 on or after 01.03.2017 by paying Rs.150/- towards One-Time Registration 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.
- **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.**

[For further details refer para 2 (13-23) of "[Instructions to Applicants](#)"]

6. QUALIFICATIONS

(A) AGE LIMIT (As on 01.07.2019)

Category of Applicants	Maximum Age
SCs and SC(A)s	No maximum age limit

Note

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

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

(B) EDUCATIONAL QUALIFICATION (As on 10.01.2019)

The candidates should possess the following or its Equivalent qualification as on 10.01.2019 i.e. date of this Notification.

(i) Must possess the Associate Diploma in Fisheries Science of the Central Institute of Fisheries Education, Bombay.

OR

(ii) Must possess a Certificate of successful completion of the full course of Inland or Marine Fisheries classes conducted by the Government of India.

OR

(iii) Must possess a diploma in Fisheries Technology and Navigation awarded by the State Board of Technical Education and Training, Tamil Nadu.

OR

(iv) Must possess a Science Degree with Zoology as main subject awarded by any University or Institution recognised by the University Grants Commission.

OR

(v) Must possess a Degree of Bachelor of Fisheries Science awarded by any University or Institution recognised by the University Grants Commission.

Note:

In respect of 6 vacancies for the post of Sub Inspector of Fisheries, 60% of the vacancies (i.e. 4 vacancies) is to be filled by the holders of B.F.Sc Degree and 40% of the vacancies (i.e. 2 vacancies) is to be filled by the holders of other Qualifications specified above.

Special Qualification

In order of priority for appointment Engineers / Diploma holders / Craftsman direct recruitment first preference shall be given to persons who have completed one year of apprenticeship under the Government of India scheme or one year of training under the State Government Apprenticeship Scheme.

Note

i. The Degree qualification prescribed for this post should have been obtained by passing the required qualification in the order of studies, viz., SSLC+ HSC or its equivalent + UG Degree and the Diploma qualification prescribed for this post should have been obtained by passing S.S.L.C/H.S.C from the recognised Institutions 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 this Notification).

ii. Candidates claiming Equivalence of qualification to the prescribed qualification should submit evidence for Equivalence of qualification in the form of Government Order issued on or before the date of this Notification, failing which their application **will be summarily rejected**. The Government Orders issued declaring Equivalence of prescribed qualification after the date of this Notification will not be accepted. A list of Equivalence of qualification in the related subject is available in **Annexure - I** to this Notification. (Refer also to the Disclaimer annexed to this Notification).

[For further details regarding Equivalence of Qualification refer para 10 of the ["Instructions to Applicants"](#)]

(C) CERTIFICATE OF PHYSICAL FITNESS

Candidates selected for appointment to this post will be required to produce a Certificate of Physical Fitness in the form prescribed below before their appointment.

Standard of Vision	Form of Certificate of Physical Fitness
Standard III or Better (Applicants with defective vision should produce eye fitness certificate from qualified eye specialist.)	Form prescribed for 'Other than Executive and Ministerial posts'

(D) KNOWLEDGE IN TAMIL

Applicants should possess adequate knowledge in Tamil on the date of this Notification.

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

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

Subject	Duration	Maximum Marks	Minimum Qualifying Marks for selection
			SCs & SC(A)s
<u>Paper – I: Subject Paper</u> <u>(Any one of the following subjects in which the candidate acquired has the Degree / Diploma Qualification)</u> (200 Questions) (i) Zoology (Code No.270) (Degree Standard) (ii) Fisheries Science (Code No. 328) (Degree Standard) (iii) Fisheries Science (Code No. 327) (Diploma Standard)	3 hours	300	171
<u>Paper – II: General Studies</u> (100 Questions) General Studies (Diploma Standard) – 75 Questions AND Aptitude and Mental Ability (SSLC Standard) – 25 Questions	2 hours	200	
iii. Interview and Records	---	70	
	Total	570	

Note

- (i) The Syllabi for Examination is furnished in the [Annexure II](#) of the Notification and also available in the Commission's website www.tnpsc.gov.in
- (ii) The Question paper for subjects in Fisheries Science (Both Degree and Diploma) mentioned in Paper – I will be set in English only and Question paper for Zoology (Degree Standard) mentioned in Paper – I and Paper - II will be set both in English and Tamil.
- (iii) In the online application, applicants should choose and specify any one of the subjects mentioned on the 'Scheme of Examination' in which they had obtained the Degree or Diploma qualification.

8. EXAMINATION CENTRES

Examination will be held at the following centres :-

Name of the Centre	Centre Code
Chennai	0100
Madurai	1000
Coimbatore	0200

Note

- (i) Candidates will be required to appear for the Written Examination / Certificate Verification / Oral Test at their own expenses.
- (ii) The Commission reserves the right to increase / decrease the number of Examination Centres and to re-allot the candidates with respect to the number of candidates opted for each centre.

[For further details refer paragraph 22 (b) of "[Instructions to Applicants](#)"]

9. SELECTION PROCEDURE

Selection will be made in two successive stages i.e., (i) Written Examination and (ii) Oral Test in the form of an interview. Final selection will be made on the basis of total marks obtained by the candidates in the Written Examination and Oral Test taken together subject to the rule of reservation of appointment. Candidate's appearance in both the papers of the Written Examination and in the Oral Test is compulsory. A candidate who has not appeared in any one of the papers in Written Examination or Oral Test will not be considered for selection, even if he/she secures qualifying marks in the Written Examination or Oral Test. Based on the marks obtained by the candidates in the Written Examination, the tentative list of eligible candidates for Certificate Verification will be announced in the Commission's website. After verification of the original certificates, the eligible candidates will be summoned for Oral Test following the rule of reservation of appointment.

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

Note :

The selection against shortfall vacancies will be made from among SC/SC(A) applicants only. The reservation for Women, Ex-serviceman and Differently Abled Persons will not be applicable for the recruitment of shortfall vacancies. [Section 27(h) of the Tamil Nadu Government Servants (Conditions of Service) Act, 2016]. Further, the reservation of vacancies to Persons Studied in Tamil Medium (PSTM) also will not apply for this recruitment.

(For further details refer paragraph 23 (b) of the 'Instructions to the candidates')

10. NO OBJECTION CERTIFICATE / INFORMATION TO THE EMPLOYER

No Objection Certificate obtained from appropriate authority shall be produced at the time of Certificate Verification/ Counselling. No Objection Certificate should be produced in the format prescribed under para 15 (g) of Commission's "[Instructions to Applicants](#)". Any violation of this instruction will be liable for rejection of application and forfeiture of his/her Candidature.

11. GENERAL INFORMATION

- A. The selection for appointment to this post is purely provisional subject to final orders pending on the Writ Petitions, if any, filed before the Hon'ble Madras High Court and Madurai Bench of Madras High Court.
- B. The Differently Abled Persons who apply under other eligible category should submit / upload a copy of Differently Abled Certificate from the competent authority specifying the nature of physical handicap and the degree of disability as per para 14(b) of "[Instructions to Applicants](#)" for their claim, when called for by the Tamil Nadu Public Service Commission.
- C. Evidence for claims made in the online application should be uploaded / submitted within stipulated time when the documents are called for by the Tamil Nadu Public Service Commission. 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 the application.**
- D. Correct and True information regarding arrest, convictions / debarment / disqualification by any recruiting agency, criminal or any disciplinary proceedings initiated / pending or finalized, participation in agitation or any Political Organization, candidature in election for Parliament/State Legislature/Local Bodies etc., if any, should also be furnished to the Commission at the time of submission of online 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 candidate for a Government 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 then and there. Failure to report on the part of candidate will be considered as suppression of material information and will attract suitable penal action.
- E. Incomplete applications and applications containing wrong claims or incorrect particulars relating to category of reservation / age / communal category / educational qualification / PSTM / physical qualification and other basic eligibility criteria **will be liable for rejection.**
- F. **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 submitted 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.

12. OTHER IMPORTANT INSTRUCTIONS

- a) **Candidates 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 applicant will not imply that his/her Candidature has been fully cleared by the Commission.

- b) The **Hall Tickets** for eligible candidates will be made available in the Commission's website <http://www.tnpsc.gov.in> or www.tnpscexams.net or www.tnpscexams.in for downloading the same by candidates. **Hall Tickets will not be sent by post.** Hence, the candidates should watch Commission's website before the scheduled date of Examination. The candidates must comply with each and every instruction given in the Hall Ticket.
- c) **Grievance Redressal Cell for guidance of applicants:** In case of any guidance/ information / clarification of their 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 or the Commission's e-mail id contacttnpsc@gmail.com.
- d) **After Notification, during the process of recruitment till publication of result, no information, under Right to Information Act, would be furnished.**
- e) **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 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](#)").
 - iii. Candidates 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 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, physical disability etc.) which should be submitted when called for by the Commission. 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 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 Examination will be liable for rejection / cancellation by the Commission. (For further details refer to the "[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 candidate shall copy from the papers of any other candidate 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 "[Instructions to Applicants](#)".]

- i) **CONDUCT IN EXAMINATION HALL:** No candidate 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.

13. HOW TO APPLY

- (i) Applicants should apply only through online mode in the Commission's Website <http://www.tnpsc.gov.in> , <http://www.tnpscexams.net> , <http://www.tnpscexams.in>
- (ii) '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 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.
- (iii) To apply under One-Time Registration, applicants should have scanned image of their photograph, certificate 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.
- (iv) 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 applicant Dashboard in the new One-Time Registration system. No applicant is permitted to create more than one registration ID in One-Time Registration.
- (v) Applicants should enter the Unique ID and password to view the already available information and update them.
- (vi) 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. Applicant who wishes to apply for any post shall click "[Apply](#)" against the post notified in the Commission's Website and use the same USER ID and PASSWORD given for ONE-TIME REGISTRATION.
- (vii) An online application uploaded without the photograph, specified documents and signature will be rejected.
- (viii) 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, 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 utmost care and caution as no correspondence regarding change of details will be entertained.

(ix) PRINT OPTION

- a) After submitting the online application, applicants can print / save their Application in PDF format.
- b) On entering user ID and password, applicants can download their application and print the same if required.
- c) Candidates 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 candidates come up for Certificate Verification.

(x) One-Time Registration will not be considered as an application for any post.

14. UPLOAD / SUBMISSION OF DOCUMENTS

The candidates must upload/submit the necessary documents **whenever called for specifically** by the Tamil Nadu Public Service Commission

15. LAST DATE FOR SUBMITTING ONLINE APPLICATION

The Online Application can be submitted up to 10.02.2019 till 11.59 p.m., after which the link will be disabled.

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

Warning

- All the Recruitments conducted by the Tamil Nadu Public Service Commission are purely merit based.
- Tamil Nadu Public Service Commission hereby cautions the candidates against touts and agents who cheat 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 into any sort of actions with such unscrupulous persons.

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

“The 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 prescribed qualification after the date of this Notification will not be accepted.”

Secretary

ANNEXURE- I

The following qualifications are declared as Equivalent.

S.No	Qualification	G.O in which ordered
1.	பாரதியார் பல்கலைக்கழகத்தால் வழங்கப்படும் நுண்ணுயிரியல் (B.Sc Microbiology) பட்டப்படிப்பானது தாவரவியல் /விலங்கியல் (B.Sc Botany/Zoology) பட்டப்படிப்பிற்கு இணையானது.	G.O.(Ms).No.254, Personnel and Administrative Reforms (R) Department, dated 22.10.98
2.	Five year integrated course offered by Annamalai University as equivalent to corresponding UG degree B.Sc Zoology.	G.O.(Ms).No.75, Personnel and Administrative Reforms (M) Department, dated 30.06.2011.
3.	B.Sc (Animal Science and Bio-Technology) in the academic year of 2002-03, B.Sc (Advanced Zoology and Bio-Technology) in the Academic year of 2005-06 and B.Sc (Zoology with Bio-Technology) in the academic year of 2008-09 as equivalent to B.Sc Zoology.	G.O.(Ms).No.104, Higher Education (H2) Department, dated 22.06.2012.
4.	B.Sc Environmental Zoology awarded by Bharathidasan University as equivalent to B.Sc Zoology.	G.O.(Ms).No.58, Higher Education (K2) Department, dated 15.04.2013.
5.	B.Sc Advanced Zoology and Bio- Technology awarded by University of Madras equivalent to B.Sc degree in Zoology.	G.O.(Ms).No.117, Higher Education (K2) Department, dated 02.07.2013.
6.	B.Sc Zoology Specialisation in Bio-Technology offered by Holy Cross College (Autonomous), Trichy awarded by Bharathidasan University as equivalent to B.Sc Zoology, University of Madras. B.Sc Applied Zoology semester course awarded by Madurai Kamaraj University as equivalent to B.Sc Zoology semester course.	G.O.(Ms).No.270, Higher Education (K2) Department, dated 31.12.2013.
7.	B.Sc (Special) Zoology (Special in Bio-Technology) awarded by Lady Doak College affiliated to Madurai Kamaraj University is equivalent to B.Sc Zoology. B.Sc Advanced Zoology and Bio-Technology awarded by Manonmaniyam Sundaranar University till 2009-10 (Subsequently the nomenclature of the said post has been changed as B.Sc Zoology) is equivalent to B.Sc Zoology.	G.O.(Ms).No.27, Higher Education (K2) Department, dated 13.02.2014.
8.	B.Sc Zoology with Bio-Technology awarded by A.V.V.M Sri Pushpam College (Autonomous), Bharathidasan University is equivalent to B.Sc Zoology.	G.O.(Ms).No.112, Higher Education (K2) Department, dated 18.07.2014.
9.	B.Sc Advanced Zoology and Bio-Technology course awarded by Vivekananda College affiliated to Madurai Kamaraj University is equivalent to B.Sc.Zoology.	G.O.(Ms).No.116, Higher Education (K2) Department, dated 22.07.2014.

ANNEXURE- II
SYLLABUS
PAPER- I
ZOOLOGY (DEGREE STANDARD)

CODE NO: 270

UNIT I

Non-Chordata: General organisation - Classification with diagnostic features upto classes. Evolutionary relationship among taxa, symmetry.

Protozoa: Structure, reproduction and life history of Amoeba, Paramecium, Trypanosoma, Plasmodium, Monocystis, Leishmania - locomotion, nutrition, economic importance. Porifera: Sponges canal system, skeleton, reproduction and economic importance.

Coelenterata: Diploblastic organization - life history of obelia and Aurelia, Metagenesis - Polymorphism in Hydrozoa. Corals and Coral formation - relationships of Cnidaria and Acnidaria.

Helminthes: Structure and life history of Planaria, Fasciola, Teania, Ascaris and Wuchereria - parasitic adaptations - Helminthes in relation to man.

Annelida: Nereis, earthworm and leech - Coelom and metamerism - modes of life in polychaetes. Onychophora: Structure, affinities and distribution of Peripatus.

Arthropoda: Prawn, Scorpion and Cockroach - Larval forms and parasitism in Crustacea - Mouth parts, vision, respiration and excretion. Metamorphosis and social life in insects.

Mollusca: Freshwater mussel, pila, sepia. Echinodermata: General organisation - Water vascular system. Larval forms and affinities.

UNIT II

Prochordata: Amphioxus, Balanoglossus - Ascidian retrogressive Metamorphosis, neoteny and affinities.

Chordata: General Organisation - Characters, Outline, classification upto class level.

Pisces: Locomotion, migration, respiration, Parental care, economic importance; structure and affinities of dipnoi.

Amphibia: Origin of amphibians – Respiration, Parental care - South Indian amphibians.

Reptiles: Origin - Conquest of land - adaptations to live on land, adaptive radiation - Temporal Vacuities - identification of poisonous and non-poisonous snakes - poison apparatus – South Indian snakes.

Birds: Origin - flight adaptations - mechanism of flight - double respiration - migration - Flightless birds.

Mammals: Dentition, skin derivatives - distribution - adaptive radiation. Protothria, Metatheria, eutheria and their Phylogenetic relationships.

UNIT III

Cell and Molecular Biology: Cellular Organelles - Structure and function - Plasma membrane, Mitochondria, Golgi bodies, Endoplasmic reticulum and Ribosomes – Nucleus and Nucleolus. Cell division, cell cycle; Chromosomes - DNA structure and function, replication of DNA, Genetic code - RNA and protein synthesis. Gene expression, regulation of gene expression in prokaryotes and Eukaryotes. Recombinant DNA - Genetic engineering, its uses in agriculture, industries and medicine.

UNIT IV

Genetics: Mendelian concepts, multiple alleles, blood groups, Rh-factor. Linkage, crossing over - mutation (Natural and induced); Sex chromosomes, Sex determination and Sex Linked inheritance - Chromosome number and form ploidy - cytoplasmic inheritance – Karyo types – chromosome mapping, Normal and abnormal genetic disorders; Bio-chemical genetics – Eugenics. Human genome Project. Bio-statistics: Mean, Median and standard deviation. **Bio-informatics:** DNA and Protein sequence analysis, Prediction functional structure, protein folding, Phylogenetic tree construction.

UNIT V

Bio Chemistry: Bio-molecules, Structure and role of carbohydrates, lipids, proteins and amino acids - Glycolysis and kreb's cycle - oxidation, reduction - oxidative phosphorylation - energy conservation and release, cyclic AMP, ATP; enzymes – mechanism; Hormones-classification biosynthesis and function. Physiology: With reference to mammals, digestion, nutrition, balanced diet - assimilation, intermediary/metabolism. Composition of blood - Coagulation, Transport of oxygen, Carbon dioxide, Blood pigments, Mechanism of respiration. Muscles, mechanism of muscle contraction. Temperature regulation, Acid base balance and homeostasis, Nerve impulses and conduction, neurotransmitters.

Receptors- photo, phono and chemo reception. Nephron and urine formation. Endocrine glands, testis, ovary and pituitary organs and their inter relationship. Physiology of reproduction in humans, Hormonal development in insects, pheromones and their uses. Bioluminescence. Biological clock. Physiology of immune response- Antigens – Immuno globulins - humoral and cell mediated immunity. T and B cells, mechanism of antibody formation - Immunodeficiency diseases; vaccination.

UNIT VI

Development Biology: Gametogenesis – fertilization, Parthenogenesis, type of eggs – blastulation, cleavage and gastrulation in frog and chick. Morphogenetic movements – organizer, potency, organogenesis with reference to ear, eye, kidney, brain. Formation and fate of extra embryonic membranes in chick.

Placentation- types, functions. - metamorphosis in Frog – Regeneration. Stem cells-sources, types and their uses in human welfare, IVF, embryo transfer and cloning - Aging and senescence.

UNIT VII

Environmental Biology: Biotic and abiotic factors, their role, Intra and inter specific association. Biogeochemical cycles. Ecosystem- structure and function of ecosystems, types of ecosystems. Ecological succession, Community structure - Stratification. Population and Population dynamic - Habitat ecology. Wild life, need for conservation management and methods of conservation. Sanctuaries with special reference to Tamil Nadu. Pollution - air, water and land - Perspective policy planning for the environment.

UNIT VIII

Evolution: Origin of life - Evolutionary theories - Contributions of Lamarck, Darwin and De Vries - present status of Darwinism and Lamarkism - modern synthetic concept - Hardy Weinberg Law - Polymorphism and mimicry in evolution. Speciation: evolutionary species concept – Isolation, mechanisms and their role, role of hybridization in evolution. Fossils and Fossilization, Indian fossils, Geological time scale. Origin and evolution of horse and man - Culture evolution and Biochemical evolution.

Animal distribution: Zoogeographical distribution - Continental and island fauna - Continental drift - Discontinuous distribution, adaptive radiation. Natural resources and their conservation. Alternative sources of energy.

UNIT IX

Economic Zoology: Parasitism and Commensalism - Protozoan Parasites and diseases, helminthes parasites and diseases of man and domestic animals; Beneficial and harmful insects. Insect pests on crops and stored products - Control methods. IPM. Sericulture, apiculture, lac culture, seaweed culture, vermiculture, - oyster culture and pearl formation, poultry, pisciculture and induced breeding, Shell fisheries, Aquaculture practices in Tamil Nadu and their impact on the environment and on agriculture.

UNIT X

Instrumentation and Bio-techniques: Microscopy-Phase contrast, fluorescent, TEM, SEM. Colorimetric techniques, Centrifugation techniques. Fixation, staining techniques. Electrophoretic techniques: Principles, AGE and PAGE. DNA finger printing, RFLP, RAPD and AFLP.

PAPER- I
FISHERIES SCIENCE (DEGREE STANDARD)

SUBJECT CODE: 328

UNIT- I: FISH BIOLOGY, FISH PHYSIOLOGY & FISH GENETICS

Systematics – Binomial nomenclature: classification of elasmobranchs, teleost's, crustaceans, and molluscs; external morphology – morphometric – meristic and anatomy of finfish and shellfish, DNA bar coding –Karyo taxonomy, Food and feeding habits –Gastro somatic index length weight relationships – age and growth – reproductive strategies – breeding – maturation and spawning –Gonado- somatic index fecundity and development biology of commercially important finfish and shellfish – physiology – respiration, circulation, digestion, excretion, osmoregulation--reproductive physiology -endocrine glands and sex hormones. Fish genetics : Sex determination, hybridization, fish breeding techniques.- Chinese hatchery, cryopreservation of gametes.

UNIT- II: MARINE FISHERIES AND POPULATION DYNAMICS

Commercially important marine fisheries of world; India, shellfish, crustacean and seaweed resources of India; fish population dynamics – Vonbertalanfy's growth equations- growth and mortality parameters – Maximum sustainable yield –Maximum economic yield- CPUE-Yield per recruit- fish stock assessment softwares - growth overfishing-recruitment overfishing - Closed season –mesh size regulation.

UNIT- III: AQUACULTURE, ORNAMENTAL FISH CULTURE AND FISH DISEASES

Site selection for fish culture – cultivable fishes for fresh water- Pond chemistry – Dissolved Oxygen – Alkalinity, Hardness aquaculture , fish feeds – Pond disinfection with lime -Water quality management, integrated fish farming – sewage – fed fish culture, brackish water aquaculture, - Shrimp culture — shrimp feed formulation – shrimp hatchery and nursery rearing- culture techniques of bivalves, Mari culture- candidate species for Mariculture, Open water cages –Ornamental fish culture – Live bearers-Egg layers- culture of Fish food organisms- aquarium keeping –Fish diseases –fish parasites-Bacterial and viral diseases-remedial measures.

UNIT-IV: LIMNOLOGY, AQUATIC ECOLOGY AND BIODIVERSITY, FISHERY OCEANOGRAPHY, AQUATIC POLLUTION, COASTAL ZONE MANAGEMENT

Physico – chemical characteristics of fresh water bodies; lentic and lotic systems, flora and fauna, classification of lakes based on origin, productivity & mixing of water; phytoplankton and zooplankton, nekton, benthos, Estimation of primary production; Components of aquatic ecosystems, food chain, energy flow, animal association; Ecological niches – lagoons, estuaries, mangroves, coral reefs, flood plains, wet lands- exotic species- endangered species, conservation of habitats Marine zones – physical properties of sea water –chemistry of sea water- waves, tides, currents, El -Nino, Ekmanspiral, upwelling; Aquatic pollution - BOD,COD, oxygen demanding waste, eutrophication-sewage pollution, red tide- oil pollution, pesticide pollution, thermal pollution, radioactive pollution- biological indicators of pollution; Application of GIS in aquatic resource identification- remote sensing for coastal management- CRZ - Environmental Impact Assessment.

UNIT- V: FISHERIES ECONOMICS, STATISTICS, FISHERIES MARKETING & FISHERIES EXTENSION

Theories of demand and supply, market equilibrium, production function in capture and culture fisheries, Economics of fishing and fish farming, fish marketing; marketing channel, export and import policies; mean, median, mode standard deviation, bar diagram, pie diagram, histogram, frequency polygon, primary and secondary data for statistical analysis, correlation co-efficient, linear regression; extension teaching methods and use of audiovisual aids in extension activities, individual group and mass contact methods.

UNIT - VI: FISHING GEAR TECHNOLOGY, FISHING CRAFT TECHNOLOGY & NAVIGATION AND SEAMANSHIP

Types of fishing gears – fishing gear materials and their properties– yarn numbering system – Fishing gear accessories, floats, sinkers, etc.-design and construction of gill nets longline, trawls and purse seine. Principles of hydrostatics , law of floatation –Archimedes principle – Simpson’s rules Fishing craft materials – wood, steel, FRP- form co-efficients, TPC– ship’s stability– state of equilibrium care and maintenance of vessels; types of propeller and rudder; Principles of navigation and seamanship – chart reading and fixing positions- chart symbols Compass, GPS–EPIRB- Rules of road related to fishing vessels – navigational lights- International code flags-life saving devices- buoyage system, storm signals, distress signals.

UNIT – VII: REFRIGERATION AND EQUIPMENT ENGINEERING, MARINE ENGINES

Laws of thermodynamics-vapour compression refrigeration- vapour absorption refrigeration- Compressor, evaporator, condenser – Freezers – plate, blast, tunnel- refrigerated- coefficient of performance sea water systems; Types and functions – operation and maintenance of various processing equipments-types of diesel engines and their working principles – outboard engines.

UNIT – VIII: FISH IN NUTRITION, FISH PROCESSING TECHNOLOGY

Nutritional value of fish- protein, non -protein, nitrogen, lipid, minerals, micro and macro element, trace elements, other functional biomolecules in fishes. Freshness of fish and rigor mortis – mechanisms of fish spoilage – fish drying methods – principles of salting and salt curing methods – smoking of fishes. Canning materials – canning media – methods of canning – quality of canned fishery products. Spoilage of canned foods, types, causes and preventive measures-packaging materials for canned foods. Fish preservation by chilling and icing – preparation of ice-chemicals used in freezing – types of freezing changes during frozen storage– method of thawing. Microbiological and biochemical changes in freezing – packaging and transport of frozen fishery products – freeze drying.

UNIT- IX: FISH PACKAGING TECHNOLOGY, FISH PRODUCTS AND VALUE ADDITION

Packaging materials and their properties-packaging for retail sale and storage- retort pouch packing, vacuum packaging, active packaging, MAP. Fishery by products – Fish meal- fish oil-shrimp waste- chitin –chitosan-fish protein concentrate- fish hydrolysate- fish silage – fish maws, fish glue- gelatin-isinglass-utilization of seaweeds –agar agar – algin – carrageenan.

UNIT- X: MICROBIOLOGY OF FISH AND FISHERY PRODUCTS, QUALITY ASSURANCE OF FISH AND FISHERY PRODUCTS

Source and types of microorganisms in fish and fishery products-Indicators of microbiological quality of fish and fishery products-nutritive values of processed seafood. Quality dimensions of sea food-assessment of quality changes in fresh and iced fish and during processing-application of HACCP concept in quality assurance-Role of EIA and MPEDA in fish and fishery products- Certification system for fish and fishery products –sea food safety – authenticity – traceability.

PAPER- I
FISHERIES TECHNOLOGY / FISHERIES SCIENCE /
FISHERIES TECHNOLOGY AND NAVIGATION ENGINEERING
(DIPLOMA STANDARD)

SUBJECT CODE: 327

UNIT –I: FISHERY BIOLOGY

Classification of fishes – Morphometric and Meristic Characters – Length weight Relationship- Food and Feeding Habits – Reproductive Biology- Fish Physiology – Developmental Biology of Fin Fish, Shell fishes – Aquatic Ecology.

UNIT –II: INLAND & MARINE FISHERIES

Capture fishery resource of India – Major Riverine fisheries of India – Lake Fisheries Reservoir Fisheries – Cold Water Fisheries – Pollution in Inland Waters.

Principal Marine Fisheries of Indian Coasts–Crustacean fishery resources-shrimps, lobsters- Molluscan resources-Gastropods, Bivalves- Sea weed Resources — Von Betalanffy's Growth equation –growth parameters – mortality parameters-Maximum Sustainable Yield-Distribution of living organisms in the Sea.

UNIT –III: NAUTICAL TECHNOLOGY

Compass – Navigational Charts – Mercator Projections – Buoyage System – International Codeflag signals –Navigational lights-Firefighting –Strom Signals – Distress Signals – Life Saving Appliances-Life buoy-Life jackets-Life raft.

UNIT – IV: FISH PROCESSING TECHNOLOGY

Proximate composition of fish –principle of fish spoilage– Rigor Mortis – Drying, Salt drying, Icing, Freezing, Canning, Fishery by products, Fish packaging technology.

UNIT –V: AQUACULTURE

Site selection for fish culture –composite fish culture– Plankton – Fertilization – Aqua feeds – Pond disinfection with lime -Water quality management – Disease control-common fresh water ornamental Fishes.

UNIT – VI: OCEANOGRAPHY AND METEOROLOGY

Waves- Tides- Currents- El – Nino – Salinity – Tsunamis – Weather – Climate – humidity- Tropical Cyclones – Atmospheric pressure.

UNIT –VII: FISHING GEAR AND CRAFT TECHNOLOGY

Classification of Fishing Gear – Fishing Gear Materials –Modern Fishing gears – Trawls, Gill, Nets, Longlines Fishing Gear Accessories – Fishing Crafts of Indian Coast – Wooden boat construction – Steel boat construction – FRP boat Construction-Dry docking.– Boat building yards.

UNIT –VIII: FISHERY ECONOMICS

Basic Economic terminologies – Elasticity – Price, Income – Cost, returns – Marketing – Co-operatives – Socio economic Survey – economics of fish and fish seed production system- economics of marine capture fisheries.

UNIT –IX: FISHERIES RESOURCE MANAGEMENT AND ADMINISTRATION

Open Access Fisheries- Maximum Sustainable Yield (MSY),– Fishing holidays, Mesh size regulations- Growth over fishing – Recruitment over fishing – Ecosystem approach for fisheries management -EEZ-Marine fisheries regulations.

UNIT –X: FISHERY ELECTRICAL AND ELECTRONIC ENGINEERING

Site selection for fish farm- types of ponds-Pumps, Aerators, Sluice, Monk- canals-types of dykes –Classification of Engines – Marine diesel Engines – parts of IC engines – Fishing machineries -Net hauler, Winch,.– Fish processing machineries.-Canning machineries- Refrigeration machineries.

Principles of electricity-Batteries- Principles of Radio Transmission-RADAR –sound propagation in water - Fish finding Equipments – Echo Sounder – SONAR — Communication Equipments – Radio Telephone.

PAPER- II**GENERAL STUDIES (DIPLOMA STANDARD)****Unit-I GENERAL SCIENCE**

Physics - Nature of Universe-General Scientific laws-Inventions and discoveries-National scientific laboratories-Mechanics and properties of matter-Physical quantities, standards and units-Force, motion and energy-Magnetism, electricity and electronics- Heat, light and sound.

Chemistry - Elements and Compounds-Acids, bases and salts-Fertilizers, pesticides, Insecticides.

Botany-Main Concepts of life science-Classification of living organism-Nutrition and dietetics-Respiration.

Zoology-Blood and blood circulation-Reproductive system-Environment, ecology, health and hygiene-Human diseases, prevention and remedies-Animals, plants and human life.

Unit- II. CURRENT EVENTS

History- Latest diary of events-national -National symbols-Profile of States-Eminent persons & places in news-Sports & games-Books & authors -Awards & honors'-India and its neighbours.

Political Science-Problems in conduct of public elections-Political parties and political system in India-Public awareness & General administration-Welfare oriented govt. schemes, their utility.

Geography-Geographical landmarks.

Economics -Current socio-economic problems.

Science- Latest inventions on science & technology.

Unit- III. GEOGRAPHY

Earth and Universe-Solar system-Monsoon, rainfall, weather & climate-Water resources - rivers in India-Soil, minerals & natural resources-Forest & wildlife-Agricultural pattern-Transport & communication-Social geography – population-density and distribution-Natural calamities – Disaster Management.

Unit-IV. HISTORY AND CULTURE OF INDIA AND TAMIL NADU

Indus valley civilization-Guptas, Delhi Sultans, Mughals and Marathas-Age of Vijayanagaram and the bahmanis-South Indian history-Culture and Heritage of Tamil people-India since independence-Characteristics of Indian culture-Unity in diversity – race, colour, language, custom-India-as secular state-Growth of rationalist, Dravidian movement in TN-Political parties and populist schemes.

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- Local government – panchayat raj – Tamil Nadu- Judiciary in

India – Rule of law/Due process of law-. Elections-. Official language and Schedule-VIII-. Corruption in public life-. Anti-corruption measures –CVC, Lokadalats, Ombudsman, CAG- Right to information- Empowerment of women- Consumer protection forums.

Unit-VI. INDIAN ECONOMY

Nature of Indian economy- Five-year plan models-an assessment-Land reforms & agriculture-Application of science in agriculture-Industrial growth-Rural welfare oriented programmes-Social sector problems – population, education, health, employment, poverty-Economic trends in Tamil Nadu.

Unit-VII. INDIAN NATIONAL MOVEMENT

National renaissance--Emergence of national leaders-Gandhi, Nehru, Tagore-Different modes of agitations-Role of Tamil Nadu in freedom struggle Rajaji, VOC, Periyar , Bharathiar & others.

Unit-VIII - APTITUDE & MENTAL ABILITY TESTS (SSLC STANDARD)

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 - Logical Reasoning-Puzzles- Dice-Visual Reasoning-Alpha numeric Reasoning-Number Series.

Annexure - III**Tentative Timeline for the Recruitment Process for the post
of Sub-Inspector of Fisheries**

Sl. No.	Process	Timeline
1.	Publication of Written Examination results	June 2019
2.	Certificate Verification	July 2019
3.	Oral Test	July 2019
4.	Final Result	July 2019

Secretary