NOTIFICATION NO: 2/2016   **DATED: 12.02.2016**
ADVERTISEMENT NO.: 429/2016

Applications are invited <u>only through online mode</u> upto 14.03.2016 for Direct Recruitment to the vacancies in the following post:-

Candidates have to Register their basic particulars through One - Time Registration which is mandatory on payment of Rs.50/- towards registration fee.

Name of the Post and Post Code No.	Name of the Service and Code No.	Number of vacancies	Scale of pay
Block Health Statistician in the Family Welfare Department (2007-2011) (Post Code. 2010)	Tamil Nadu Medical Subordinate Service (Code No.049)	172	Rs.5,200 - 20,200/- (PB1) + Grade Pay 2,800/-

2. DISTRIBUTION OF VACANCIES:-

Rule of reservation of appointment applies to this post and the distribution of vacancies is as follows:-

Category	G	W	G - PSTM	W - PSTM	DW	Ex - Ser	Ex-PSTM	G - BLIND	G- ORTHO	W-ORTHO	G - DEAF	W - DEAF	Total Vacancies
GT	28	10	7	3	1	2	--	--	--	1	--	--	52
BC	23	10	7	2	1	1	1	--	1	--	--	1	47
BC(M)	3	2	1	--	--	--	--	--	--	--	--	--	6
MBC/ DC	17	7	5	2	1	1	--	--	--	-	1	--	34
SC	12	6	3	2	--	2	--	1	--	-	--	--	26
SC(A)	3	1	--	1	--	--	--	--	--	-	--	--	5
ST	1	--	1	--	--	--	--	--	--	-	--	--	2
Total	87	36	24	10	3	6	1	1	1	1	1	1	**172**

Abbreviation:-
GT-General Turn, BC -Backward Class, BCM -Backward Class Muslim, MBC/DC - Most Backward Class/ Denotified Community, SC - Scheduled Caste, SC(A) - Scheduled Caste (Arunthathiyars), ST - Scheduled Tribe, G - General, W - Women, PSTM- Persons Studied in Tamil Medium, DW - Destitute Widow, Ex-Ser - Ex-Servicemen.

Unfilled vacancies if any arises in the previous recruitment will be added in this recruitment.

3. FEES:-

One - Time Registration fee	Examination fee
Rs.50/-	**Rs.100/-**

Candidates who have already registered in one time Registration System it is enough to pay the Examination Fee.

EXAMINATION FEE CONCESSION:-

Category	Concession	Condition
Scheduled castes / Scheduled Caste (Arunthathiyars)	Full Exemption	--
Scheduled Tribes	Full Exemption	--
Most Backward Class / Denotified Communities	Three free Chances	For Degree Holders
Backward Classes(Other than Muslim) / Backward Classes (Muslim)	Three free Chances	For Degree Holders
Ex-Servicemen	Two free Chances	Minimum General Educational Qualification
Differently Abled Persons	Full Exemption	--
Destitute Widow	Full Exemption	--

- The three / two free chances allowed are not for **EACH POST** but for **ANY THREE /TWO APPLICATIONS ONLY.** The claim for exemption from payment of fee made in any application which is rejected / admitted or withdrawn will be counted as a free chance.
(Further details regarding Fee Concession is mentioned at para 12 of "Instructions to the Candidates")

3. IMPORTANT DATES:-

A	Date of Notification	12.02 .2016
B	Last date for submission of applications	14.03.2016
C	Last date for payment of Fee	16.03.2016

	Date and Time of Written Examination		
D	Paper - I (Subject of Examination)	05.06. 2016 FN	10.00 A.M. to 01.00 P.M.
	Paper - II (General Studies)	05.06.2016 AN	02.30 P.M. to 04.30 P.M.

4. QUALIFICATIONS:-

(A) AGE (as on 01.07.2016)

Sl. No.	Category of Candidates	Minimum Age (Should have completed)	Maximum Age
1	SCs, SC(A)s, STs, MBCs/DCs, BCs (OBCM)s, BCMs and DWs of all castes	18 Years	No Maximum Age Limit
2	"Others" [i.e. Candidates not belonging to SCs, SC(A)s, STs, MBCs/DCs, BCs and BCMs]	18 Years	30 Years (Should not have completed)

Note:-

"Others" [i.e. Candidates not belonging to SCs, SC(A)s, STs, MBCs/DCs, BCs and BCMs] who have put in 5 years and more of service in the State / Central Government are not eligible even if they are within the age limit.

(B) EDUCATIONAL QUALIFICATION: (as on 12.02.2016) :–

Candidates should possess the following or its equivalent qualification on the date of this Notification.

A Second Class degree in Mathematics with Statistics as an ancillary subject.

(OR)

A Second Class degree in Statistics with Mathematics as an ancillary subject.

Other things being equal preference shall be given to persons with experience* in Collection and Compilation of statistics for a period of not less than 3 years.

> * The certificates for having the above experience issued by the various departments of state and central Governments and related public sector undertakings, Educational and Research Institutions and autonomous institutions obtained from the Principal / Head of the Department / Dean.

Note:-

(i) The prescribed UG Degree qualification should have been obtained in the order of S.S.L.C., H.Sc/. Diploma or its equivalent and U.G. Degree respectively.

(ii) Candidates claiming equivalence of qualification to the prescribed qualification should furnish evidence for such claim in the form of Government Order (G.O.) issued prior to the date of this Notification. The G.O. issued after the date of Notification will not be accepted. (Refer also to the disclaimer annexed to the notification).

(Further details are at paragraph 10 of the "Instructions to the Candidates")

C) KNOWLEDGE OF TAMIL :-

Candidates should possess adequate knowledge of Tamil on the date of this Notification

(Further details are at para 11 of the 'Instructions to the candidates")

5. <u>SCHEME OF EXAMINATION (OBJECTIVE TYPE) AND ORAL TEST (OMR METHOD):-</u>

Subject	Duration	Maximum Marks	Minimum Qualifying Marks for selection	
			SCs, SC(A)s, STs, MBCs/DCs, BCs and BCMs	Others
I. Paper-I (200 questions) (Degree Standard) <u>**One of the following Subjects**</u> **1. Statistics (**Code No.**111) 2. Mathematics** (Code No. **073)**	3 hours	300	171	228
II. Paper-II (100 questions) **General Studies** (Degree Standard)	2 hours	200		
Interview and Records		70		
Total		**570**		

Note:

i. The candidates should opt only the subject in which they have obtained the degree.

ii. The question paper in Paper - I & Paper-II will be set both in English and Tamil.

iii. The syllabi for Paper - I & Paper-II have been furnished in Annexure-IIA & IIB to this Notification and also available in the Commission's Website 'www.tnpsc.gov.in'.

Note:-

1. To use either blue or black ink Ball Point pen only.

2. Answer sheet will be invalidated if shaded in pencil.

3. The answer sheet will be invalidated if the box provided for booklet series mentioned in the Question Paper is not shaded / incorrectly shaded.

4. Answer sheet answered in a subject other than the subject opted by the candidates in his application / specified in the Hall Ticket will be invalidated.

5. Each one mark will be deducted for incorrect or absence of shading Register Number.

6. <u>CENTRES FOR EXAMINATION:-</u>

Examination will be held at the following 9 centres.

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.	Salem	1700	7.	Tirunelveli	2600
2.	Coimbatore	0200	5.	Thanjavur	1900	8.	Vellore	2700
3.	Madurai	1000	6.	Tiruchirappalli	2500	9.	Villupuram	2800

Note:-

    (I) Candidates will be required to appear for the Examination/ Certificate verification and Counselling at their own expenses.

    (ii) Request for change of centre will not be complied with.

    (iii) The Commission reserves the right to increase / decrease the number of Examination Centres and to re-allot the candidates.

7. MODE OF PAYMENT OF EXAMINATION FEE:-

- Examination fee Rs.100/- (Rupees One Hundred only)

- Candidates have to register their basic particulars through One-Time Registration which is mandatory on payment of Rs.50/- towards registration fee. The registration shall be valid for a period of five years from the date of one-time registration.

- Candidates should also to pay the service charges applicable to the Bank (State Bank of India/Indian Bank).

- Candidates can avail exemption from paying Examination Fees as per eligibility criteria.

- **Offline mode of payment in the form of DD/Postal Order etc., will not be accepted and the applications forwarded with such modes of payment will be summarily rejected.**

- Those who have already registered in the **one time** registration system and paid the registration fee of Rs.50/- and received the registration ID **need not pay** the application fee i.e. Rs.50/- . It is enough to pay the Examination Fee of Rs.100/- alone.

- Candidates who have made **one Time Registration must apply for this post also. one Time Registration** is only to avail exemption for application fee for a period of 5 years from the date of registration.

8. PROCEDURE OF SELECTION:-

    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 at the Written Examination and Oral Test taken together and subject to the rule of reservation of appointments. Appearance in both the papers of the Written Examination and 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.

  (Further details are at paragraph 23(b) of the 'Instructions to the candidates').

9. NO OBJECTION CERTIFICATE:-

    For details refer para 15 (g) of the Commission's 'Instructions to the candidates'. Any violation of the instructions will be liable for or end in rejection of his / her candidature.

10. **CONCESSIONS**:-

Concessions in the matter of age and / or fees allowed to SCs, SC(A)s, STs, MBCs/DCs, BCs, BCMs, Destitute Widows, Ex-servicemen and Differently Abled persons, other categories of persons etc. are given in paragraphs 12 to 14 of the 'Instructions to the candidates'.

11. **HOW TO APPLY:**

Click here www.tnpscexams.net / www.tnpscexams.in

12. **GENERAL INFORMATION**:-

A. The rule of reservation of appointments applies to this post.

B. In G.O. Ms. No. 145, Personnel and Administrative Reforms (S) Department, dated 30.09.2010, the Government have issued orders to fill up 20% of all vacancies to be filled by direct recruitment shall be set apart on **preferential basis** to persons studied the above prescribed qualification in Tamil Medium. The 20% reservation of vacancies on preferential allotment to **Persons Studied in Tamil Medium (PSTM)** will apply for this recruitment. The turns for PSTM has been ordered in G.O. Ms. No. 40, Personnel and Administrative Reforms (S) Department, dated 30.04.2014. (Candidates claiming this reservation should have studied the above prescribed qualification for the post in Tamil Medium and should have the certificate for the same. Having written the examinations in Tamil language alone will not qualify for claiming this reservation). If the candidates with PSTM are not available for selection for appointment against reserved turn such turn shall be filled up by Non-PSTM candidates but belonging to the respective communal category.

(Further details are at para 29 (xix) of the 'Instructions to candidates')

C. The number of vacancies advertised is only approximate and is liable for modification including reduction with reference to the vacancy position at any time before finalisation of selection.

D. If no qualified and suitable women candidates are available for selection against the vacancies reserved for them, those vacancies will be filled by male candidates belonging to the respective communal categories.

E. As per G.O. No. 99, Personnel and Administrative Reforms Department Dated 26.02.1988, 3% reservation to Differently Abled persons will apply for this recruitment. If no suitable Differently Abled Persons belonging to a particular Differently Abled Category is available for selection against the vacancies reserved for them, it will be filled as per rule in force.

The Differently Abled person when comes up for selection will be required to produce a certificate of physical fitness from the Medical Board to the effect that his/her handicap will not render him/her incapable of efficiently discharging the duties attached to this post to which he/she has been selected before appointment. Percentage of disability should be specifically mentioned.

(Further details are at paragraph 14(f) of the "Instructions to the candidates".)

F. CERTIFICATE OF PHYSICAL FITNESS:-

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

Form of Certificate of Physical Fitness	Standard of Vision Prescribed
Form prescribed for other than Executive and Ministerial posts	Standard-III or Better

Candidates with defective vision should produce Eye Fitness Certificate from a qualified Eye Specialist.

G. As per G.O.Ms.No.32, Personnel and Administrative Reforms (S) Department, Dated 22.03.2013, reservation to Destitute Widows will apply for this recruitment. 10% of vacancies set apart for Women candidates in direct recruitment are reserved for Destitute Widows who possess the prescribed Qualification for this recruitment. If no suitable Destitute Widows belonging to a particular category is available for selection against the vacancies reserved for them, it will be filled as per rule in force.

H. As per G.O.Ms.No.18, Personnel and Administrative Reforms (S) Department, Dated 22.01.2007, reservation to Ex-Servicemen will apply for the said post. 5% of vacancies for Ex-Servicemen will apply for this recruitment. If no qualified and suitable Ex-Servicemen belonging to a particular category is available for selection for appointment against reserved turn, such turn shall be filled up by a candidate other than Ex-Servicemen but belonging to the particular communal category.

I. Even after filling up of the post 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 candidates, it shall be filled up by Scheduled Castes other than Arunthathiyars.

J. Any claim relating to the selection (not related to candidature or / and claims made in the application) should be sent when called for documents / uploading document is made. Any claim received thereafter will not be entertained.

K. Correct and true information regarding arrest, convictions/debarment/disqualification by any recruiting agency, criminal or any disciplinary proceedings initiated or finalised, participation in agitation or any Political Organization, candidature in election for Parliament/State Legislature/Local Bodies etc., if any, should be furnished to the Commission at the time of application i.e. the details thereof, originals of the Judgement of Acquittals, order/ or G.O. dropping further action in Departmental proceedings or any document that may prove the suitability of such candidates for a Government appointment in such cases must be produced at the stage/ time of Certificate Verification without fail.

L. The selection for appointment to the above said post is purely provisional subject to final Orders on pending Writ Petitions, if any, filed in Madras High Court and Madurai Bench of Madras High court.

M. **Applications containing wrong claims relating to other basic qualifications / communal categories / eligibility criteria / age / educational qualification will be liable for rejection.**

13. OTHER IMPORTANT INSTRUCTIONS:-

a. **Candidates should ensure their eligibility for examination:** The candidates applying for the examination should 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 satisfying of the eligibility conditions**. Mere issue of memo of admission to the candidate 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 **www.tnpsc.gov.in** or www.tnpscexams.net for downloading by candidates. No Hall Tickets will be sent by post. So the candidates / applicants should watch Tamil Nadu Public Service Commission website since ahead/ before the scheduled date of examinations.

c. **Facilitation Counter for guidance of candidates:** In case of any guidance/ information / clarification of their applications, candidature, etc. candidates can contact Tamil Nadu Public Service Commission's Office in person or over Telephone No.044-25332833/ 25332855 or the Commission's Office Toll-Free No.1800 425 1002 on all working days between 10.00 a.m. and 05.45 p.m.

d. **Mobile phones and other articles banned:-**

i. Candidates are not allowed to bring to the venue of the Examination Cellular phone, Calculator, memory notes and books etc. or any other Electronic device or Recording device either as separate piece or part of something used by the candidate such as Watch or Ring.

ii If they are found to be in possession of any such thing or instrument they will not be allowed to attend 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.

iii. Do not bring into the Examination Hall any article such as books, notes, loose sheets, mathematical and drawing instruments, Log Tables, stencils of maps, slide rules, Text Books, rough sheets etc. except the permitted writing material i.e. pen. No colour pen or pencil must be used.

e. Candidates are not required to submit along with their application any certificates in support of their claims regarding age, educational qualifications, community certificates and certificates regarding their physical disability, etc., They should be submitted when called for by the Tamil Nadu Public Service Commission. The candidates applying for the examination should ensure that they fulfil all the eligibility conditions for admission to the examination. Their admission at all the stages of examination for which they are admitted by the Commission viz. Written Examination will be purely provisional, subject to their satisfying the prescribed eligibility conditions. If on verification at any time before or after the Written Examination and Certificate Verification, it is found that they do not fulfil any of the eligibility conditions their candidature for the examination will be cancelled by the Commission.

f. If any of their claims is found to be incorrect, or false it will lead to rejection / debarment

g. **Unfair means strictly prohibited:** No candidate shall copy from any other candidate nor permit to be copied nor give nor attempt to give nor obtain nor attempt to obtain irregular assistance of any description.

h. **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 penalized.

The on-line application can be submitted upto 14.03.2016 till 11.59 p.m., after which the link will be disabled.

(For detailed information the candidates may refer Commission's "Instructions to the candidates" at the Commission's website www.tnpsc.gov.in)

Secretary

DISCLAIMER

"The candidates claiming Equivalence of qualification should furnish the equivalence of qualification in the form of Government order, if any, while applying for the examination and produce the same when called for by the Tamil Nadu Public Service Commission".

Secretary

Statistics

DEGREE STANDARD

UNIT I
Uses, Scope and lidmitation of Statistics, Collection Classification and tabulation of data, Diagramatic and Graphical representation, Measures of location, dispersion, Skewness and Kurtosis.

UNIT II
Probability - Addition, multiplication and Bay's Theorems and their application. Tchebychev's inequality. Random variables - Univariate and Bivariate - probability distributions - Marginal and conditional distributions - Expectations - Moments and cumulants genevating fucntions Discrete distributions - Binomial, poisson, Geometric and Hypergemetric. Continuos distributions - Uniform, exponential and normal.

UNIT III
Curve Fitting - Linear and Quadratic equation by the method of least squares. Correlation and regression.

UNIT IV
Population and sample - Parameter and statistic, sampling distributions and standard error, student's 't' Chi-square and F statistic - distributions and their applications.

UNIT V
Estimation - Point estimation - properties of estimates Neyman - Fisher Factorization theorem(without proof) Cramer - Rao inequality, Rao - Blackwell theorem - MLE and method of Moments estimation - Interval estimation - for population mean and variance based on small and large samples.

UNIT VI
Tests of Hypothesis - Null and Alternative - Types of errors _ Power of test, Neyman - Pearson lemma, UMP and Likelihood ratio tests, Test procedures for large and small samples - Independence of attributes, Chi-square test - Goodness of fit.

UNIT VII
Simple random sample - stratified, systematic, Cluster (Single stage) Estimation of mean and variance in SKS - Sample Survey - Organisation - CSO and NSSO - Sampling and Non-Sampling errors.

UNIT VIII
Analysis of Variance - Principles of design CRD, Rbd and LSD - Factorial experiments 22, 23 and 32 (Without confounding) Missing plot techniques.

UNIT IX
Concept of SQC - Control Charts - X,R, p and C-Charts Acceptance sampling plan - single and double - oc curves Attributes and Variables plan, Reliability.

UNIT X
Time series - Different Components - Trend and Seasonal Variations - Determination and elimination.

UNIT - XI
Index Numbers - Construction and uses - Different kinds of simple and weighted index numbers - Reversal tests - construction and use of cost of living index numbers.

UNIT-XII
OR Models - Linear Programming problems - Simples method Dual - Primal, Assignment problems, Net work - CPM and PERT.

Statistics

UNIT XIII
Basic programming - variables, constants and strings, flow charts - Basic expression and control statements, standard Library functions, subscripted variables DIM and DATA statements simple programming problems. Birth and death rates - Crude and standard death rates, Fertility rates - Life table construction and uses.

ANNEXURE- IIA

Mathematics

DEGREE STANDARD

UNIT I
Basic Mathematics:
Binomial, Exponential, Logrithmic series, summation of infinite series and approximation promblems. L Hospitals' rule, point wise convergence of sequence of functions, uniform convergence of sequences of funcitons, Consequences of Uniform convergence, Taylor's series.
Theory of numbers :
Prime and Composite numbers - Decomposition of composite number, Divisor of N, Euler function (N), Highest power of prime p contained in N. Divisibility of the product of r consecutive integers by r! Format's & Wilson's Theorems.
Vector Spaces & Inner product spaces :
Definitions and euqation of Vector space, subspace, liner Independence - bases - Dimension, Dual spaces, Inner products Spaces Orthogonality - Orthogonal complement.

UNIT II
ANALYTICAL GEOMETRY:
Pairs of Straight lines - Angle between them - related problems - conditions for second degree equation to represent pair of straight line or Circle - System of Circles - Orthogonal and Coaxial system - Radical axis and radical centre - Limiting point - conics - parabola, ellipse and hyperbola - polar equations to straight line, circle and conic.
Dimensions :
Equation of a sphere with given centre and radius - General form of the euqation of a sphere - Diameter from - Circular section, tangent plane to a sphere - Radical plane - Coaxial system of spheres - Orthogonality - Equation of a Cone with its Vertex at the origin - Equation of a quadratic cone with given vertix and given guiding curve - necessary and sufficient condition for a general second degree equation to represent a cone, right circular cone - euqation of enveloping cone - general equation of a cylider - right circular cylinder.

UNIT III
CALCULUS:
Differential:-
Higher order derivatives Leibnitz's theorem - simple problems using the above theorem. Maxima and Minima - conditions for external value - Standard function only - curvature - radius of curvature (Cartesian Co-ordinates only)
Partial Differentiation:
Total differentiation Coefficieng, Valvue of dy/dx and d2y/dx2 in case of implicit functions in x and y in terms of partial derivatives, Total differential, Jacobians.
Integral:
Methods of integration, Integration of rational and irrational algebraic functions, Bernaulli's formula for Integration by parts, reduction formulae - properties of difinite Integrals.
Evaluation of double and triple integrals, change of order of integration, Double Integrals in polar Co-ordinates, application of double & triple Integrals to area, volume. Evaluation of Define integrals using Beta and gamma functions.

UNIT IV
STATICS:
Gradient, Divergence, Curl, solenoidal & irrotational vectors, Directional derivative, Unit vector normal to a surface, tangent and normal planes to a surface 2, expansion formulea, Ordinary integrals of Vectors, line integrals, surface intergrals and volume Integrals. Gass stock, Green's theorems.
Parallelogram and Triangle laws of force, Lamis theorem, parallel forces, moments, couples, three forces acting on a rigid body, conditons for equiliburium of Co-planar forces.
Forces in 3 dimensions, Invariance of F2, Friction, Centre of Gravity, method of symmetry for uniformbodies like thin rod, thin parallelogram, Circular ring & lamina triangular lamina, trapezium lamina.

UNIT V
REAL ANALYSIS:
Set and functions, sequences of real numbers - Definition, Limit, Convergent and divergent sequences, bounded sequences, monotonice sequence, series of real numbers, limit superior, Limit inferior, Cauchy, Sequence, convergent & divergent sequence, series with non-negative terms, alternating series.
Series of real numbers:
rearrangement of series, Tests of absolute Covergence.
Limits & matric spaces:
Limit of a function on the real line, matric spaces, limits in matric spaces. Continuous functions on matric spaces, functions continuous at a point on the real line, reformulation, function continious on a matric space, open sets, closed sets, Discontinuous functions on 'R' Connectedness, Complexness and Compactness.

UNIT VI
OPERATIONS RESEARCH AND LINER PROGRAMMING:
Origin and development of O.R. - Nature and characteristics of O.R. Models in O.R. General solutions, methods for O.R. models - uses and limitations of O.R.
Linear Programming:
Formulation of problems, Graphical solution - standard form. Definition of basic solution. degenerate Simplex method, Definition of artifical variable.
Tranportation problem:
Definition solutions to transport problem - intial feasible solution - optimality test - Degenerary - Travelling sales man problem
Sequencing:
Processing n jobs through m machines.

UNIT VII
ALGEBRA:
Set theory - Relations - types of relations - Venn diagram - Groups - Sub group - order of an element - cyclic groups - normal groups-quotient groups - order of a Group Lagrange's theorem - homomorphism, automorphims, Cayley's theorm of permutation groups.
Rings:
Definition, examples - special classes of rings - Homomorphism, ideals and quotient rings - field of quotients of an integral domain - Euclidean rings.
Matrices:
Types of matrices - operation on matrices, singular and non singular matrices - Rank of a matrix and consistence of equation, eigen values & eigen vectors. Cayley - Hamilton theorem. Similar matrices, Diagonalisation of a matrix.

UNIT VIII
DIFFERENTIAL GEOMETRY:
Curvature, Radius and centre of curvature in Cartesian Co-ordinates, Evalute - curvature in Polar Co-ordinates, p-r equations, Angle between radius vector and tangent, Angle of intersection of two curves. Pedal equation of a curve, Envelopes, Asymptotes.
Polar Co-ordinates :
Equations of straight line, Circle in polars - equations of tangent, normal & polar Equations of Conics in polars - equations of tangent, normal, polar & asymptotes.

UNIT IX
DIRRERENTIAL EQUATIONS:
Ordinary differential equations - first order but not of first degree. Total differntial equation Pdx + Qdy + Rdz = 0, second order differential equations with constant Co-efficients. P.I. for the polynomials and $e^{ax}v$, where V is X^n, Cos mx, Sin mx, n and m are constants. Differential equations of second order with variable Co-efficients. Partial differential equations - formation of partial differential equations by elimination - Laplace transforms - Inverse laplace transform.

UNIT X
Dynamics:
Virtual displacement, Principle of Virtual work.
Kinematic:
Velocity, Acceleration, components of velocity and acceleration work power, energy, Ractilinear motion - motion with constant acceleration - motion under gravity - motion along an inclined plane, motion under gravity in a resisting medium.
Implusive forces and Impact:
Implusive forces and Impact, Principles of Conservation of linear momentum, Collison of two smooth spheres - Direct impact of sphere on a fixed plane.
Projectiles: Two dimensions motion of a particle - projectile, range on a horizontal plane - range on an inclined plane.
Circular motion of a particle:
Motion of a particle constrained to move along a smooth verticle circle under gravity - circular pendulum - simpel pendulum.
Moments of Inertia:
Momentsof Inertia of simple bodies of paralle and perpendicular axed theorem. Motion of a rigid body about a fixed axis.

UNIT XI
STATISTICS:
Frequency distributions - Graphs of frequency distribution, measures of central tendency, measures of dispresion, normal probability curve, skewness, kur tosis, Probability - Addition and multiplicaiton theorem. Baye's theorem.
Probability Distributions :
Binomial, Poisson, Normal Bivariate data, Curve fitting - Method of least squares. Correlation and regression Coefficient - Regression lines - rank Correlation. Test of hypothesis - uses of X2 - F tests - Tests involving means - Variances and proportions test of fit, test of independence in contingency table.

All TECHNICAL POST MAIN EXAMINATION
General Studies
Degree / P.G Degree Standard
Topics for Objective Type

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-VI. 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-VII. APTITUDE & 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-Behavioral 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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