Tamil Nadu Public Service Commission
Syllabus
Evaluation and Applied Research
(PG Degree Standard)

Code: 607

Unit I: Economics (20 Questions)

Indian Economy– Economic Growth and Development: Concepts, distinction between the two, and contemporary measures (GDP vs. GVA, HDI, Gender–related Development Index, Multidimensional Poverty Index) – National Income Accounting: Concepts of GDP, GNP, NNP, NDP, Per Capita Income, methods of calculation, and recent estimates – Planning in India: Evolution from the Planning Commission to the role and functions of NITI Aayog; transition from central planning to indicative planning and cooperative federalism – Inclusive Growth: Concept, issues, strategies, and the role of social welfare schemes and government programs – Sustainable Development: Concepts, relevance of Sustainable Development Goals (SDGs), climate finance, and environmental policies – Sectoral Trends and Structural Changes – Agricultural – growth and development – green revolution – Industry – Industrial Policy changes and their effects on growth. Role of Public Sector –(disinvestment, privatization) and MSMEs – problems, government support – Investment Models: Public–Private Participation (PPP), National Infrastructure Pipeline (NIP), and National Monetisation Pipeline (NMP) – Infrastructure: Focus on new–age infrastructure (energy, transport, logistics, digital and National Bank for Financing Infrastructure and Development (NaBFID) – FDI: Trends, policy liberalization, and "Make in India" initiatives.

Service Sector: Types of services, changing sectoral contributions, and the role of IT/ITES. Labour: Skilled, semi–skilled, and unskilled labour dynamics; integration of e–Shram portal and new labour codes/laws. Human Development: Concepts, trends, issues, health – Public Health, National Health Mission, education, drinking water and sanitation, housing, nutrition, and social sector initiatives – Employment, Unemployment, and Underemployment: Concepts, measurement (Labour Force Participation Rate, Worker Population Ratio), and recent trends (Periodic Labour Force Survey data). Employment in organized and unorganized sectors (informalization of the workforce).Strategies for Employment Generation and skill development programs (PMKVY).Poverty: Concepts, measurement (Tendulkar and Rangarajan committees), trends, and poverty alleviation programs (MGNREGA) – Fiscal Policy and Budgeting: Union Budget, recent trends, fiscal consolidation path. FRBM Act (Fiscal Responsibility and Budget Management Act) and its review/current status. Taxation: Goods and Service Tax (GST), tax administration reforms, and fiscal federalism (role of the Finance Commission).Parallel economy in India (Black Money).Inflation and Definition: trends, estimates, consequences, and remedies. Wholesale Price Index (WPI) vs. Consumer Price Index (CPI) as primary inflation measures (focus on CPI for policy) – Monetary Policy and Banking: RBI (functions, autonomy debate) and the Monetary Policy Committee (MPC) framework for inflation targeting. Monetary policy tools (Repo, Reverse Repo, CRR, SLR, MSF, OMO, MCLR, etc.).Banking Sector Reforms – Non–Performing Assets (NPAs) resolution (IBC, Bad Bank concept – NARCL), Public Sector Bank consolidation/recapitalization, and financial inclusion initiatives. Digitalization of Finance: Unified Payments Interface (UPI), Payment Banks, Small Finance Banks, and FinTech developments – External Sector and Global Linkages – India's Foreign Trade – Composition, direction, and recent changes in trade policy – trade agreements (FTAs).Balance of Payments (BoP): Current and Capital Account components, change rate management (fixed vs. flexible, NEER/REER).Global Financial Crisis: Impact on India and lessons learned. International Economic Organizations: India and WTO requirements (subsidies, IPR issues like TRIPS, TRIMS, GATS), IMF, World Bank, BRICS.

Unit II: Econometrics (20 Questions)

Definition and methodology of Econometrics. Data types and Structure: Cross–section, time–series, and panel data. Definition and Measurement of variables – Measurement scales of

variables – Ratio, interval, ordinal, and nominal scales. Correlation: Simple and multiple correlation – Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient. Regression Analysis (Simple and Multiple): Ordinary Least Squares (OLS) Principle and Properties of regression coefficients (Gauss–Markov theorem and BLUE – Best Linear Unbiased Estimators) – Coefficient of Determination – R^2 and adjusted R^2 Assumptions of Classical Linear Regression Model (CLRM): linearity, exogeneity, homoscedasticity, no–autocorrelation and normality of errors. Functional Forms of regression models: Log–linear – double–log, Semi–Log models – Elasticity and Growth Rate computations. Violation of Assumption of CIRM: Heteroscedasticity, Multicollinearity, Autocorrelation – Definition consequences and Remedial Measures. Dummy Variables and Qualitative Response Regression Models: Linear Probability Model (LPM), Logit and Probit Models – Binary, ordinal and Multinomial – Odds ratios and Marginal effects – Interaction effects – cautions of using dummy variables – Dummy variable trap. Basics of Time–Series Analysis and Forecasting: Time–Series Decomposition – Components of Time series data – Stationarity of Time Series data – Tests of Stationarity – Unit Root Test – Dickey–Fuller (DF) and Augmented Dickey–Fuller (ADF) test, Phillips–Perron (PP) test – Methods of time series forecasting : AR, MA, ARMA, and ARIMA models – Box–Jenkins Methodology (identification, estimation, diagnostic checking and forecasting). Simultaneous Equation models: Methods of Indirect Least Squares model and Two Stage Least Squares. Panel Data Models: Fixed effect model and Random affect model.

Unit III: Statistics (20 Questions)

Compilation and Tabulation of data Collected – Classification – Types of Classification – Formulation of discrete and continuous frequency distribution (uni–variate and Bi– variate). Pictorial Representation of data: Bar diagrams – Pie diagrams – Histogram – Ogives and Lawrence Curve Measures of Location – Mean, Median, Mode, Harmonic Mean and Geometric Mean – Quartiles – Measures of variation: Range, Quartile deviation, Mean deviation, Variance and Standard deviation. Coefficient of variation, skewness and Kurtosis. (All the calculation of measures are for both grouped and ungrouped data) – Moments (raw and central) – outlier detection. Probability and Distribution: Introduction to probability: Random Experiments, Sample Space and events, Definition of probability. Classical, Empirical and Axiomatic approach to probability; Addition and Multiplication Theorem, Conditional probability and Baye's Theorem. Random Variables and Distribution function – Mathematical Expectation and conditional Expectation. Convergence in Probability – Weak Law of large Numbers and strong law of large Number – Central limit Theorem – Discrete distributions: Binomial, Poisson. Continuous Distributions: Normal Distribution Chi–Square, t and F distributions and their properties.

Application of Statistical Methods – Sampling Theory: Introduction to the theory of Sampling: Sampling designs – Simple Random Sampling with and without replacement – Systematic, Stratified, Ratio and Regression Sampling methods – Determination of sample size – Sampling and non – sampling errors – Cluster sampling, Purposive Sampling Quota Sampling. Testing of Hypothesis: Introduction to Testing of Hypothesis: Simple, Null and Alternative hypotheses, composite hypothesis, two kinds of Errors – Degrees of freedom – Critical Region – One–tailed and Two–tailed tests – P–Value – Confidence Intervals –Power function. Testing of significance using chi–square, t and F tests. (simple problems) – Non–Parametric Tests ANOVA – One way and Two way classifications. Application of Statistical Methods through MS–Excel – Language : Over view of MS–Excel: Construction of charts and diagrams – Sorting – Filtering – Removing duplicates – Calculation of Measures of Central tendency, Measures of dispersion, correlation Regression and curve fitting using – Excel. Linear Programming Problem: Graphical Methods – Travelling Salesman Problem – Assignment Problem – Simplex Methods.

Unit IV: Mathematics (20 Questions)

Algebra: Groups – Sub groups – Permutation groups – Normal subgroups and Quotient groups – Homomorphisms – Automorphisms – Cayley's Theorem.
Rings: Rings – Sub rings – Integral Domain – Field – Homomorphisms – Ideals and Quotient Rings.
Linear Algebra: Vector Spaces – Basic Concepts – Linear Transformations – Linear Independent and Bases – Inner Product Spaces.
ODE: ODE with constant coefficients – ODE with variable coefficients – Higher order ODE's.
PDE: First order PDE – Second order PDE – Elliptic – Parabolic and Hyperbolic PDE's.
Real Analysis: Properties of monotonic functions – Functions of bounded variations – Total variations – Additive property of total variation – Total variation on [a,x] as a function of x – Continuous functions of bounded variations – Infinite Series: Absolute and conditional convergence – Dirichlet's test and Abel's test Rearrangement of series – Riemann's theorem on conditionally convergent series.
Complex Analysis: Differentiability and Cauchy–Riemann Equations – Harmonic Functions – Power Series as an Analytic Function – Complex Integrations – Cauchy Integral Formula – Morera's Theorem – Existence of Harmonic Conjugate – Taylor's Theorem – Conformal mappings.
Functional Analysis: Metric Spaces and continuous functions – Normed Spaces – Convergence, completeness and Baire's Theorem – Bounded Linear Maps on Banach Spaces – Bounded Operators on Hilbert Spaces.
Topological Spaces: Basis for a Topology – The Product Topology – The Metric Topology – Connected Spaces – Connected Subspaces of the Real Line Components – Urysohn's lemma.
Measure Theory:Measure on the Real Line – Measurable Functions – Measure Spaces – Convergence.

Unit V: Business Administration (20 Questions)

Management – Concept and Foundations of Management – Managerial Functions – Decision making and Models – Authority and Responsibilities – Business ethics – Organizational behaviour concept – Leadership and power – Organizational Climate and Culture – Groups Dynamics in organization – HRM – Functions – Job Analysis – Job Evaluation – Recruitment and Selection – Training and Development – Performance appraisal and 360 degree feedback – Promotion and Transfer – Compensation – HR Audit – Organizational Misbehaviour – Current trends and issues in HRM – Quality of work life balance – Conflicts in organization – Fundamentals of operations management – Production Planning – Capacity Planning – Plant Layout and Design – Morden Production concept – JIT, Kaizen, Japanese 5's framework – Quality Management – TQM – Six Sigma – Resources Optimization Modals – PERT – CPM – Linear Programming Modals – Nature and Scope of Financial Management – Finance Function – Sources of Finance – Financing Decision – Risk Management – Cost of Capital and Capital Structure – Investment Decisions – Valuation Concepts and Valuation of Securities – Capital Budgeting – Working Capital Management – Dividend Decisions – Cost functions – Break even analysis – Marketing Management – Scope and Evolution – Marketing Strategy Formulation and Components of Marketing Plants – Segmenting and Targeting the Market – Product Positioning and Differentiating of the Market – Analysing Competition and Consumer Market – Consumer Behaviour – Industrial buyer Behaviour – Marketing Research – Product and Pricing Strategy – Marketing Channels – CRM (Customer Relationship Management) Process – Customer Satisfaction – Rural Marketing – Basics of Business Law and Labour Law – Vision and Mission – Nature and Scope of Strategic Management – Strategic Indent– Process of Strategic Planning and Implementation – SWOC (Strength, Weakness Opportunity and Challenge) Analysis – BCG

Matrix – Balanced Score Card – Business Analytics and Visualisation – Block Chain Technologies – ERP and MIS (Enterprise Resource Planning and Management Information System) Supply Chain Concept – Business Intelligence – E–Business and E–Commerce – AI in Management.

Unit VI: Sociology and Social Work (20 Questions)

Sociology: Meaning, Nature and Scope of Social Thought. Auguste Comte: Law of Human Progress. Hierarchy of the Sciences. Social Statics and Dynamics, Positivism. Herbert Spencer: Theory of Evolution, Types of Society, Organic Analogy. G. F. Tonnies: Gemeinschaft and Gesellschaft and Public Opinion–Emile Durkheim: Social Facts, Rules of Sociological Methods, Division of Labour, Theory of Suicide, Religion and Society. Structuralism: Claude Levi Strauss – Structural Anthropology – Binary Opposition, Bronislaw Malinowski–Bio–cultural functionalism. Structural–Functionalism: A.R. Radcliffe– Brown – Study of Social Relationship as Integrated Social System–Karl Marx: Historical Materialism, Mode of Production, Surplus Value, Class Struggle, Alienation– Max Weber: Social Action, Ideal Type, Authority, Bureaucracy, Protestant Ethic and the Spirit of capitalism. Vilfredo Pareto: Logical and non–logical Action, Circulation of Elites. George Simmel: Formal Sociology. Social Types. Philosophy of Money. Karl Manheim: Sociology of Knowledge.

Definition of Scientific Research: Science and Its Characteristics. Features, Purpose, and Assumptions of Scientific Method. Steps in Scientific Method. Applicability of Scientific Method to the Study of Social Phenomena. Theory – research relationship (Induction, deduction and abduction). Philosophy of Social sciences: Ontology: Objectivism, Constructivism, Realism, Idealism; Epistemology: Positivism, Interpretivism, Critical Epistemologies, Standpoint Theory; Axiology: Values In Research, Ethics, Reflexivity, Positionality –Paradigms: Positive, Interpretive, Critical, Feminist, Postcolonial, Queer–Ethics in Social Research – informed consent, confidentiality, anonymity, digital research ethics– Quantitative Methods and Survey Research –Nature, Scope and limitations of quantitative research methods–Qualitative Research – Case study – Ethnography – Phenomenology – Ethnomethodology – Grounded. Mixed Method Research Design – Types – Triangulation Method. Sociometry, Survey techniques, participant observation – In – depth interviews, life histories, oral narratives –Focus group discussions – Field notes, thick description, reflexive journals – Measurement and Scaling Techniques: Need for Scales, Problems of Scaling, Methods of Scale Construction –Content analysis, Thematic analysis, Narrative analysis, Interpretative Phenomenological Analysis (IPA),Descriptive Phenomenological Analysis (DPA) Discourse analysis–Mixed Method–data analysis – Secondary Data Analysis – Strategies for data integration –Introduction to data analysis software – SPSS, Nvivo, ATLAS.ti

Social Work: Concept, objectives, Definition, Principles –methods, values and Historical development of Social Work in UK, USA and India. Professional Social Work vs Voluntary Social Work. Social Work Practice in Community, Industry, Hospital, School, correctional institution and rehabilitation institutes. Social Work administration: Meaning, purpose, functions. Social Welfare administration in National, State and local level. Social Agency: Types and Models of NGOs. Social Policy: Need, Evolution, Constitutional base. Policy and programme for Women, Children, Youth, Aged, Handicapped , SC, ST and OBC. Fundamental Rights, Directive principles of State policy. NITI Aayog. PRA and PLA. Project Evaluation: Identification and Formulation. Project appraisal methods, Project Evaluation tools. Community Impact assessment, Vulnerability Assessment and SDGs Assessment.

Unit VII: Anthropology (20 Questions)

Anthropology: Introduction–Origin and History; Meaning, Definitions and Uniqueness; Scope–Utility and Branches; Relationship with other disciplines–Archaeology, History, Sociology, Psychology, Economics and Politics; Foundations of Society and Culture–Definitions, Elements and Characteristics, Social Institutions and Organizations– Marriage, Family, Descent and Kinship; Rite–de–Passages, Magic and Religious organization, Economic and Political organization; Emergence and Dispersal of Homo sapiens–Out of Africa Theory; Stages of Human Evolution; Peopling and People of India; Practicing Anthropology– Applied, Advocacy and Public Anthropology.

Indian Culture and Civilization: Palaeolithic, Neolithic, Megalithic and Indus Valley Harrappan and Lothal cultures; Demographic profile of India–Ethnic and Linguistic elements in the Indian population and their distribution; Concept of Tribe, Scheduled Tribes–Tribal cultures of India, Brief Ethnographic details of Tribes of Tamil Nadu, Problems of the tribal communities, Tribal Development and Administration; Community, Caste, Scheduled Caste and Minorities–Caste–system in India: Structure and characteristics, theories of origin of caste, Dominant caste. Indian village: Social stratification and Indian village as a social system, Peasant cultures – Folk–Urban Continuum; Cultural change in Indian Society: Sanskritization, Westernization, Modernization; Egalitarianism, Cultural relativism, Multiculturalism, Enculturation, Acculturation; Post Modernism and Globalization; Constitutional safe guards for STs/SCs, Role of Anthropology in Tribal, Rural and Urban development. Status of Women and Gender issues in India and Tamil Nadu.

Anthropological Research Methodology–Qualitative, Quantitative and Mixed Methodology–Empirical and Scientific Research; Research Methodology, Method and Techniques, methods, methodology; Fieldwork and Ethnography; Tools of data collection–Participant observation, Interview, Schedules, Case study, Genealogy, Transect–walk, Social mapping, etc.

Unit VIII: Agricultural, Resource and Environmental Economics (20 Questions)

Economic Theory

Microeconomics – Consumer Behaviour and Markets: Theory of Consumer Behaviour: Utility theory (cardinal/ordinal), Gossen's fist and second laws– utility measurement, indifference curve analysis, Consumer Surplus. Demand and Supply: Demand and supply functions, factors affecting demand and supply, elasticity of demand and supply (price, income, cross–price elasticity). Market Structures: Types of Market Structures: Perfect Competition, Monopoly, Monopolistic Competition, and Oligopoly (including modern topics like game theory basics in oligopoly). Price Determination: Price determination under different market structures. Macroeconomics – National Income Concepts and measurement – circular flow of income.

Agricultural Marketing, Prices and international trade: Producer surplus– Marketable and Marketed surplus, Price spread– marketing cost and marketing margin, Marketing Efficiency. Market integration, Marketing Intelligence. Institutions and Policies : Institutions: APMC Act and recent reforms, e–NAM, Regulated Markets, Cooperatives, Commodity Boards, warehouses–SWCs and CWCs, Contract Farming, Farmers' Markets (Uzhavar Santhais), Farmers Producers Organizations (FPOs). Price Policies: Commission on Agricultural Costs and Prices (CACP), Agricultural Prices– Minimum Support Price, State Administered Prices, Procurement Price, and price support programs/policies. PDS, TPDS, buffer stock operations. Trade Theory: Theory of absolute and comparative advantage. Trade Policy: Terms of Trade and Instruments of Trade Policy; Tariffs and Non–tariff barriers, Balance of Trade vs. Balance of Payments.

Rural Finance

Rural Indebtedness. Sources of finance– Financial institutions– Cooperatives, Commercial Banks, and Regional Rural Banks (RRBs), Priority Sector Lending: Differential Rate of Interest Scheme. Lead Bank Scheme, Higher financial institutions– NABARD and RBI, District Credit Plan. Financial Management– Discounted and undiscounted measures – Financial statements and ratio analysis. Partial and complete budgeting Micro–Financing: Role of MFIs, NGOs, and Self–Help Groups (SHGs). Financial Inclusion. Relief measure of rural indebtedness – Nationalisation of banks. Risk and Insurance: Risk in agriculture and different Crop Insurance Schemes

Production Economics: Types and forms of production functions. Returns to scale vs. Economies of scale. Classical production function, production relationships, Cost Concepts: Fixed Cost (TFC), Variable Cost (TVC), Total Cost (TC), Average Cost (AFC, AVC, ATC), and Marginal Cost (MC). Cost of cultivation vs. Cost of Production. Efficiency Measures: Technical Efficiency, Economic Efficiency, and Allocative Efficiency.

Natural Resource Economics

Concepts and Classification: Concepts, classification (exhaustible, renewable, recyclable), and problems of Natural Resource Economics. Economy–Environment Interaction: Fundamental interactions and the concept of a circular economy. Resource Scarcity: Resource scarcity definitions (absolute, relative), Limits to Growth debate, measuring and mitigating natural resource scarcity, scarcity indices, and Malthusian vs. Ricardian Scarcity. Optimal Resource Management: Theory of optimal extraction of exhaustible (Hotelling's rule) and renewable resources (e.g., fisheries models, forestry models). Property Rights and Management: Issues in natural resource management; private property, common property, and open access resources (Tragedy of the Commons). Collective action in common property resource management (Elinor Ostrom's principles). Spatial Planning: Land use planning; optimal management of land, water, forests, and fisheries. Technology: Resource mapping; modern applications of GIS (Geographic Information Systems) and Remote Sensing in resource management.

Environmental Economics

Environmental Problems and Quality: Economics of the environment; Externalities– theory of externality (Pigouvian taxes/subsidies, Coase theorem). Pollution: Sources and types of pollution (air, water, solid waste, land degradation); environmental and economic impacts. Pollution Control: Economics of pollution control; efficient reduction in environmental pollution (Marginal Abatement Cost). Regulation: Environmental regulation; economic instruments (e.g., cap–and–trade, pollution taxes, subsidies) and indirect instruments (command and control policies, performance standards).Legislation: Environmental legislations in India.

Unit IX: Public Administration (20 Questions)

Public Administration: Definition, Meaning, Scope and Significance – Public Administration Principles and Practices – Evolution of Present Status of the Discipline – Dichotomy – Public vs Private Administration – Approaches to the Study of Public Administration: Kautilya, Tiruvalluvar, F.W.Taylor, Luthur Gulick and Urwick – Comparative Public Administration – Development Administration – New Public Administration – New Public Management – Personnel Administration – Principles of Organization and Administration – Classical theories – Human Relation theories – Modern theories of Administration – Administrative Responsibility and Ethics .

Public Financial Administration: Budgetary process and accountability – Types of Budget – Resource Moblization, Tax Administrations and Financial Control – Union – State financial relations in India – Good Governance: Social welfare schemes in Tamil Nadu, Women Empowerment schemes in Tamil Nadu, Health care Policy in Tamil Nadu – E. Governance : ICT

application in government – IT parks in Tamil Nadu – District administration: e–governance in Districts, THAI scheme, Pudhuvazhvu Scheme – Special Economic Zones – Panchayat Raj: Rural Development Programmes in Tamil Nadu, Environmental Protection in Tamil Nadu – Administrative Reforms in India – Urban Governance: Urban Local Bodies in Tamil Nadu, Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in Tamil Nadu – Tamil Nadu Urban Development Project – Central Human Rights Commission and State Human Rights Commission.

Unit X: Research Methodology (20 Questions)

Research Methods: Research Problems – Formulation, Conditions and Considerations – Meaning, Categories, and Operationalization – Variables: Meaning, Types, and Measurement – Review of literature: Scope and Purpose of literature review, Processes and sources of reviewing the literature – Types of reviews – narrative, systematic, scoping, meta – analysis, critical, meta – synthesis – Quantitative Methods and Survey Research – Nature, Scope and limitations of quantitative research methods – Qualitative Research Design: Need for Research Design, Features. Types: Exploratory, Descriptive, Explanatory, Experimental, Evaluative, and Action – Sources of Data: Primary and Secondary Data – Sampling: Introduction to the theory of sampling; Probability and non–probability methods – sampling and non–sampling errors – Hypothesis: Functions, Conditions for a Valid Hypothesis, Formulation of Hypothesis, Forms of Hypothesis, Hypothesis Testing: Simple, Null and alternative hypotheses, composite hypothesis– Tools of quantitative data collection– structured, unstructured – open ended and closed ended questions– Qualitative data collection– interview guide– questionnaire– Rule of translation of interview schedule and questionnaire– rule of translation and back translation– Pilot study– Methods of Data Collection: Interview–Secondary Data collection – Observation Methods: Direct Personal Observation (participant and non–participant observation).Mechanical/Electronic Devices (e.g., cameras, sensors, GPS)– Other Contemporary Methods: Case Studies, Experiments, Projective Techniques, and Delphi– Reliability and validity of data – limitations of data collection method (errors in data collection) Technique Data analysis – Organizing, Analysing, and Summarizing quantitative data, Editing–Coding, Classification, Tabulation, Interpretation– Report writing– Format, Footnotes, Figures,– Reference Material: References/Bibliography: A comprehensive list of all sources cited, following a consistent citation style (e.g., APA, MLA). Appendices: Supplementary materials like raw data, sample questionnaires, detailed maps, or complex tables. Evaluation Criteria for a Good Report: Objectivity and lack of bias. Logical structure and clear, formal language. Reliability and validity of data and findings. Proper documentation and ethical considerations (e.g., informed consent, confidentiality).

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