

**DETAILED SYLLABUS FOR THE POST OF CHIEF (PLAN CO-ORDINATION
DIVISION) (KERALA STATE PLANNING BOARD)**

(CAT.NO.: 658/2022)

PAPER I – ECONOMIC PLANNING AND DEVELOPMENT (100 Marks)

I Meaning and Measurement of Growth and Development (10 Marks)

Concepts of Economic Growth and Development, Characteristics of developing economics, National Income Concepts (GNI, NNI, GDP, GVA, GSDP, GNP, NNP, Personal Income, Personal Disposable Income, Transfer Payments, Subsidies). National Income Estimation, Price Level and Inflation, CPI and WPI

**II Indian Economic Planning since independence and Kerala development since 1956
(10 Marks)**

Rationale for Planning, Features and objectives of Economic Planning, Mahalanobis Strategy, New Development Strategy (Resource Allocation 1951-85 and 1985-2017), Sectoral Allocations in Five Year Plans (India and Kerala), Financing Pattern of 11th and 12th Plan, New Initiatives and Policies – NITI Aayog, Black Economy, Demonetization, Regional Planning in India and Kerala.

**III Government Planning Process, Project Formulation, Appraisal, Implementation and
Monitoring (10 Marks)**

State and Decentralized planning process of Kerala, Budget process in Kerala – Role of the state and market – Gender Budgeting, Resource Mobilization and Allocation of Funds in Kerala, Major Centrally Sponsored Schemes (CSS), Role and functions of NITI Aayog and State planning Commissions/Boards. Types of Planning - Indicative versus Perspective Planning. Project Management – Pre – investment phase – Implementation Phase-Operational Phase-Aspects of Appraisal – Market, Technical and Financial Economic -Basic considerations of risk and return. Project Planning Techniques – Life cycle of a project- tools of project panning, preparation of DPR, Types of Budgeting, Project Monitoring and Evaluation – Outcome Budgeting.

IV Research Methodology and Statistical Approaches (10 Marks)

Objectives and Types of Research Methods vs Methodology, Identification and formulation of a Research Problem, Critical Research Gap, Review of literature, and Research design and methods, Methods of Sampling Techniques, Descriptive and Inferential statistics, Basic knowledge of statistical packages-SPSS, STATA, Data analyzing, R-Programming, E Views. Ethical Considerations. Extraction of Data from Robust Data Base. Concept of Data Base Management System.

V Industrial and Infrastructure Development (10 Marks)

Development of Industries in Kerala -Industrial structure - Traditional Industries, MSMEs – PSU, Industrial Policies

Nature and structure of Infrastructure development in Kerala including Transport, Communication, Science and Technology. Trends, patterns and growth of infrastructure in Kerala in the post liberalization period.

VI Labour, Employment and Migration in India and Kerala (10 Marks)

Occupational structure and Economic Development, Age structure of population and its demographic dividend in India and Kerala, Urbanization in India and Kerala, Socio-economic profile of Labourers in the Un-organized sectors in Kerala. Migration-Emigration and In migration – Dynamics of domestic labour market in Kerala, Entrepreneurialship – Micro enterprises -skill development – Incubation centres, Employment and Poverty, Innovation and Value additions, Rural wages, Employment Generation, Social Security initiatives in Kerala, poverty Alleviation schemes of India and Kerala

VII Service delivery and good governance – social audit – gender audit (10 Marks)

Emerging trends in governance, good governance practices, e- governance, use of information technology and communication technology in government business, role and impact of social media in governance, citizen's charter, transparency in governance including policies and initiatives of the government in furtherance of this objective viz., RTI, Lokpal, etc., quality of service delivery, policies and initiatives of the government for inclusive growth & women's empowerment, disaster management, utilization of public funds and such other knowledge of governance which a civil service officer is expected to possess., Governance initiatives through decentralized governance – inclusiveness in governance – Initiatives and Schemes, Administrative Reforms Committee Report, Right based Approach in Governance and Development, Service Led Growth.

VIII Sustainable Development and Inclusive Growth (10 Marks)

Millennium Development Goals to Sustainable Development Goals, Deprivation and vulnerability – capability approach, entitlements and empowerment, Dimensions of Deprivation and development, HDI – Head count Ratio – Intensity of Poverty – Multidimensional Poverty Index, India's vulnerability to 'Global Warming and Climate Change', Ecological Impact assessment of developmental projects, Integration of environmental costs in budgets and development programmes. Biodiversity and its Conservation and Sustainable Use of natural resources – Initiatives India and Kerala

IX Emerging Growth Drivers of Kerala Economy (10 Marks)

Tourism, knowledge economy, energy, Food Processing Industry, IT, S&T etc., HRD – Neighboring groups – Self Help groups and developmental challenges - gender violence – old age – rising dependency ratio – waste management – housing – sanitation – Infrastructure planning and development.

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X IT Information Technology (10 Marks)

Module I Computer Hardware

Technical specifications of desktops/laptops/servers.

Certifications – ROHS, BIS, EPEAT, BEE/Energy Star, UL, CE, FCC.

I/O devices – standard I/O interfaces (PCI Express, SCSI, USB, SATA).

Semiconductor RAMs –semiconductor ROMs –flash memory –cache memory.

Processing unit - microprocessor, microcontroller.

SMPS – UPS – Battery types.

Module II Operating Systems

Windows, Linux variants of operating systems.

Licensed software – free software.

Storage Management: disk structure – accessing disks - RAID.

File Concepts – attributes – operations – types – structure – access methods.

File sharing in Windows environment.

Module III Database Management Systems

Types of data and DBMS.

Relational Model – concepts and languages, SQL.

Concurrent transaction processing and recovery principles, logs, checkpoints.

Semantic web, RDF, GIS, NoSQL.

Module IV Data Communication

Guided transmission media: twisted pair, Coaxial cable, optical fiber.

Wireless transmission, terrestrial microwave, satellite microwave.

Digital carrier system, SONET/SDH.

Module V Computer Networks

LAN –MAN – WAN - PAN, high speed LANs, Wireless LANs - 802.11 standards.

Network hardware devices (Hub, Switch, Modem, Router, Bridge, Repeater)

Network layer – IPv4 – Ipv6 - IP Addressing – subnetting, supernetting.

Application layer –FTP, electronic mail, MIME, SNMP, streaming protocols.

Configuring network services - SSH, web/proxy server, DHCP, DNS, Active Directory.

Module VI Web Technologies

HTML - basic text markup, Cascading Style Sheets.

JavaScript, JSON, XML. Frameworks.

World Wide Web - Web browsers, Hypertext Transfer Protocol. Content Management System.

Full stack programming.

Module VII Cyber Security

Network Security fundamentals. Security policy. Risk analysis.

Firewalls - Types of firewalls, application layer firewalls, packet filtering firewalls, UTM.

Intrusion detection and prevention. Setting up and managing IPS.

Virtual Private Networks, managing VPNs.

End-point security. Cyberforensics.

Module VIII Cloud Computing

Cloud delivery models - Infrastructure-as-a-Service (IaaS), Platform-as-a-Service(PaaS), Software-as-a-Service (SaaS), XaaS (Anything-as-a-service).

Cloud deployment models- Public cloud, Community cloud, Private cloud, Hybrid cloud.

Virtualization – hardware / OS level virtualization, Hypervisors. Storage/Desktop Virtualization.

Internet Service Providers (ISP), Data center technology.

Amazon Web Services, Google Cloud, Microsoft Azure.

Module IX Machine Learning & Artificial Intelligence

Supervised learning – linear regression, classification, Naive Bayes, Decision tree algorithm.

Neural Network - Multilayer feed forward network, Activation functions (Sigmoid, ReLU), Backpropagation algorithm.

Support Vector Machine.

Unsupervised learning – Clustering. Dimensionality reduction – Principal Component Analysis.

Tools, libraries and platforms for machine learning / deep learning.

Performance measures - Precision, Recall, Accuracy, F-Measure, Receiver Operating Characteristic Curve(ROC). Cross Validation.

Module X Emerging Technologies

Blockchain – concept, applications. Cryptocurrencies.

Payment gateways – Unified Payment Interface – Digital Rupee.

Internet of Things (IoT).

Mobile application development – tools, libraries and platforms.

Technology Management – digital strategy and leadership, forecasting, roadmap, project portfolio.

E-governance and M-governance.

Big data analytics – Apache Hadoop, MapReduce, Apache Spark.

PAPER II

PART I – ECONOMICS (25 Marks)

1. DECENTRALIZED PLANNING IN INDIA & KERALA
2. DECENTRALISED PLANNING – INSTITUTIONS AND METHODOLOGY
3. DIMENSIONS OF DECENTRALISATION
4. METHODOLOGY FOR BENEFICIARY SELECTION
5. EXPENDITURE PLANNING UNDER DECENTRALISATION
6. PROJECT MANGEMENT AND IMPACT STUDY

PART II – STATISTICS (25 Marks)

1. MULTIVARIATE ANALYSIS
2. STOCHASTIC PROCESSES AND TIME SERIES ANALYSIS
3. ESTIMATION
4. TESTING OF HYPOTHESES
5. SAMPLING THEORY

PART III – COMMERCE (25 Marks)

1. PLANNING
2. ORGANISING
3. CO-ORDINATION
4. GROWTH MODELS
5. PLANNING IN INDIA

PART IV – MATHEMATICS (25 Marks)

1. LINEAR ALGEBRA
2. REAL ANALYSIS
3. DIFFERENTIAL EQUATIONS
4. OPERATIONS RESEARCH
5. FUNCTIONAL ANALYSIS

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.