SECTION-II STANDARD AND SYLLABI:

The standard of papers in General English and General Studies will be such as may be expected of a graduate of an Indian University. The standard of papers in the other subjects will be that of the Master’s degree examination of an Indian University in the relevant disciplines.

The candidates will be expected to illustrate theory by facts, and to analyses problems with the help of theory. They will be expected to be particularly conversant with Indian problems in the field(s) of Economics/Statistics.

General English:
Candidates will be required to write an essay in English. Other questions will be designed to test their understanding of English and workman like use of words. Passages will usually be set for summary or précis.

General Studies:
General knowledge including knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected of an educated person who has not made a special study of any scientific subject.

The paper will also include questions on Indian Polity including the political system and the Constitution of India, History of India and Geography of a nature which a candidate should be able to answer without special study.

General Economics I:

Part A
Theory of Consumer's Demand:
Cardinal utility Analysis; Marginal utility and demand, Consumer's surplus, Indifference curve Analysis and utility function, Price income and substitution effects, Slutsky theorem and derivation of demand curve, Revealed preference theory. Duality and indirect utility function and expenditure function, Choice under risk and uncertainty. Simple games of complete information, Concept of Nash equilibrium

Theory of Production:

Theory of Value:
Pricing under different market structures, public sector pricing, marginal cost pricing, peak load pricing, cross-subsidy free pricing and average cost pricing. Marshallian and Walrasian stability analysis. Pricing with incomplete information and moral hazard problems.

Theory of Distribution:
Neo classical distribution theories; Marginal productivity theory of determination of factor prices, Factor shares and adding up problems. Euler's theorem, Pricing of factors under imperfect competition, monopoly and bilateral monopoly. Macro- distribution theories of Ricardo, Marx, Kaldor, Kalecki.

Welfare Economics:

Inter-personal comparision and aggreation problem, Public goods and externalities, Divergence between social and private welfare, compensation principle. Pareto optimality. Social choice and other recent schools, including Coase and Sen.

**Part B**

Mathematical Methods in Economics:

Differentiation and Integration and their application in economics. Optimisation techniques, Sets, Matrices and their application in economics. Linear algebra and Linear programming in economics and Input-output model of Leontief.

Statistical and Econometric Methods:


**General Economics II:**

Economic Thought:

Mercantilism Physiocrats, Classical, Marxist, Neo-classical, Keynesian and Monetarist schools of thought.

Concept of National Income and Social Accounting:


Theory of employment, Output, Inflation, Money and Finance:


Financial and Capital Market:
Finance and economic development, financial markets, stock market, gift market, banking and insurance. Equity markets, Role of primary and secondary markets and efficiency, Derivatives markets; Future and options.

**Economic Growth and Development:**

Concepts of Economic Growth and Development and their measurement: characteristics of less developed countries and obstacles to their development - growth, poverty and income distribution. Theories of growth: Classical Approach: Adam Smith, Marx and Schumpeter-Neo classical approach; Robinson, Solow, Kaldor and Harrod Domar.


**International Economics:**

Gains from International Trade, Terms of Trade, policy, international trade and economic development- Theories of International Trade; Ricardo, Haberler, Heckscher- Ohlin and Stopler- Samuelson- Theory of Tariffs- Regional Trade Arrangements. ASEAN Crisis of 1998, Global Financial Crisis of 2008 and Euro Zone Crisis- Causes and Impact.

**Balance of Payments:**


**Global Institutions:**


**General Economics III:**

**Public Finance:**


**Environmental Economics:**


**Industrial Economics:**

Market structure, conduct and performance of firms, product differentiation and market concentration, monopolistic price theory and oligopolistic interdependence and pricing, entry preventing pricing, micro level investment decisions and the behaviour of firms, research and development and innovation, market structure and profitability, public policy and development of firms.

**State, Market and Planning:**


**Indian Economics:**

**History of Development and Planning:**

Alternative Development Strategies- goal of self reliance based on import substitution and protection, the post 1991 globalisation strategies based on stabilization and structural adjustment packages: fiscal reforms, financial sector reforms and trade reforms.

**Federal Finance:**


**Budgeting and Fiscal Policy:**

Tax, expenditure, budgetary deficits, pension and fiscal reforms, Public debt management and reforms, Fiscal Responsibility and Budget Management (FRBM) Act, Black Money and Parallel economy in India definition, estimates, genesis, consequences and remedies

**Poverty Unemployment and Human Development:**

Estimates of inequality and poverty measures for India, appraisal of Government measures, India’s human development record in global perspective. India’s population policy and development.

**Agriculture and Rural Development Strategies:**

Technologies and institutions, land relations and land reforms, rural credit, modern farm inputs and marketing- price policy and subsidies; commercialization and diversification. Rural development programmes including poverty alleviation programmes, development of economic and social infrastructure and New Rural Employment Guarantee Scheme.

**India’s experience with Urbanisation and Migration:**

Different types of migratory flows and their impact on the economies of their origin and destination, the process of growth of urban settlements; urban development strategies.
Industry:

Strategy of Industrial development: Industrial Policy Reforms; Reservation Policy relating to small scale industries. Competition policy, Sources of industrial finances. Bank, share market, insurance companies, pension funds, non-banking sources and foreign direct investment, role of foreign capital for direct investment and portfolio investment, Public Sector reform, privatization and disinvestments.

Labour:


Foreign Trade:

Salient features of India’s foreign trade, composition, direction and organization of trade, recent changes in trade policy, balance of payments, tariff policy, exchange rate, India and WTO requirements. Bilateral Trade Agreements and their implications.

Money and Banking:

Financial sector reforms, Organisation of India’s money market, changing roles of Reserve Bank of India, commercial banks, development finance institutions, foreign banks and non-banking financial institutions, Indian capital market and SEBI, Development in Global Financial Market and its relationship with Indian Financial Sector. Commodity Market in India- Spot and Futures Market, Role of FMC.

Inflation:


Statistics I:

Probability:


Standard probability distributions - Bernoulli, uniform, binomial, Poisson, geometric, rectangular, exponential, normal, Cauchy, hypergeometric, multinomial, Laplace, negative binomial, beta, gamma, lognormal and compound.

Poisson distribution. Joint distributions, conditional distributions, Distributions of functions of random variables. Convergence in distribution, in probability, with probability one and in mean square. Moments and cumulants.

Mathematical expectation and conditional expectation. Characteristic function and moment and probability generating functions Inversion uniqueness and continuity theorems. Borel 0-1 law: Kolmogorov's 0-1 law. Tchebycheff's and Kolmogorov's inequalities. Laws of large
numbers and central limit theorems for independent variables. Conditional expectation and Martingales.

**Statistical Methods:**

Collection, compilation and presentation of data, Charts, diagrams and histogram. Frequency distribution. Measures of location, dispersion, skewness and kurtosis. Bivariate and multivariate data.


Standard errors and large sample test. Sampling distributions of x, s², t, chi-square and F; tests of significance based on them, Small sample tests.


**Numerical Analysis:**


**Statistics II:**

**Linear Models:**


**Estimation:**


**Hypotheses testing and Statistical Quality Control:**

*a) Hypothesis testing:* Simple and composite hypothesis. Two kinds of error. Critical region. Different types of critical regions and similar regions.

b) **Statistical Quality Control:** Control Charts for variable and attributes. Acceptance Sampling by attributes-Single, double, multiple and sequential Sampling plans; Concepts of AOQL and ATI; Acceptance Sampling by variables-use of Dodge-Romig and other tables.

**Multivariate Analysis:**

**Statistics III:**

i) **Sampling Techniques:**


ii) **Design and Analysis of Experiments**
Principles of design of experiments. Layout and analysis of completely randomised, randomised block and Latin square designs. Factorial experiments and confounding in 2n and 3n experiments. Split-plot and strip-plot designs. Construction and analysis of balanced and partially balanced incomplete block designs. Analysis of covariance. Analysis of non-orthogonal data. analysis of missing and mixed plot data.

iii) **Economic Statistics**

iv) **Econometrics**

**Statistics IV:**

(i) **Stochastic Processes**
Specifications of a Stochastic Process, Markov chains, classification of states, limiting probabilities; stationary distribution; Random walk and Gambler's ruin problem. Poisson
process, Birth and death process; applications to Queues-M/M/I and M/M/C models. Branching Process.

(ii) Operations Research


(iii) Demography and Vital Statistics


(iv) Computer Application and Data Processing

(a) Computer Application

Computer system concepts: Computer system components and functions. The Central Processing unit, Main memory, Bit, Byte, Word, Input/Output Devices, Speeds and memory Capacities in computer systems.


Overview of an application Specific Programme: Flow charts, Basics of Algorithm, Fundamental of design and analysis of Algorithm; Basics of data structure, Queue, Stack.

(b) Data Processing

Data processing: Digital Number System, Number conversions, Binary representation of integers, Binary representation of real numbers, Logical Data element like character, fields, records, files, Fundamentals of data transmission and processing including error control and error processing.