DEEP INSTITUTE

COACHING FOR I.S.S/I.E.S

**2513 Basement, Hudson Lane, Beside HDFC Bank,
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Sudhir Sir (Director)

(Ex. Asst. Prof. Delhi University)

B.Sc. (Maths, Physics, Statistics)

M.Sc. in Mathematics

M.Phil in Mathematics

M.Sc. in Statistics

M.A. in Economics from Delhi School of Economics

N.E.T (J.R.F) qualified in Mathematical Science

Director's Message

"Each moment is a golden opportunity an opportunity to learn, to give, to help and to live fully" Education today is no longer confined to the four walls of the classroom, education has to be a precess which prepare the student to learn to develop a way of thinking that is know as success and there is no substitute for hard work, we focus on each and every student to clear all the concepts & our ultimate aim your selection.

About The Institute

In a short span of time Deep Institute has emerged as the best institute for **I.S.S/I.E.S** in Delhi. Usually students do not know how to start and how to study, therefore to crack any exam, our institute specializes in nurturing, paves the path and focus on overall development of students. Deep Institute incorporate in-depth study of principles and other related aspects. The language is simple and lucid. The institute has done commendable job of making the principle of hypothesis easily understandable with the help of diagrams, illustrations and figures. Deep Institute's aim is selection, which is based on strength, focus & hard work. Our USP is hard work.

Features

☞ Weekdays as well as Weekend Classes available.

☞ Exam Oriented Study material.

☞ Emphasis on Numerical approach & Conceptual clarity

☞ Regular assignments & test discussion followed by in-depth doubt clearance.

☞ Test series based on exam pattern.

☞ Innovative audio-visual methods of pedagogy.

SCHEME AND SYLLABUS OF EXAMINATION

1. The examination shall be conducted according to the following Plan:

Part I. written examination carrying a maximum of **1000 marks in** the subjects as shown below.

Part II Viva voce of such candidates as may be called by the Commission, carrying a maximum of 200 marks.

PART-1

The subjects of the written examination under Part I, **the maximum** marks allotted to each subject/paper and the time allowed shall be as follows:-

A. INDIAN ECONOMIC SERVICE

SI.NO.	Subject	Maximum Marks	Time allowed
1.	General English	100	3 hours
2.	General Studies	100	3 hours
3.	General Economics-I	200	3 hours
4.	General Economics-II	200	3 hours
5.	General Economics-III	200	3 hours
6.	Indian Economics	200	3 hours

B. INDIAN STATISTICAL SERVICE

SI.NO.	Subject	Maximum Marks	Time allowed
1.	General English	100	3 hours
2.	General Studies	100	3 hours
3.	Statistics-I (Objectives)	200	2 hours
4.	Statistics-II (Objectives)	200	2 hours
5.	Statistics-III	200	3 hours
6.	Statistics-IV	200	3 hours

PART-II

Viva voce-The candidate will be interviewed by a Board of competent and unbiased observers who will have before them a record of his/her career. The object of the interview is to assess his/ her suitability for the Service for which he/she has competed. The Interview is intended to supplement the written examination for testing the general and specialized knowledge and abilities of the candidate. The candidate will be expected to have taken an intelligent interest not only in his/her subjects of academic study but also in events which are happening around him/ her both within and outside his/her own State or country, as well as in modem currents of thought and in new discoveries which should rouse the curiosity of well-educated youth. 2. The technique of the interview is not that of a strict cross examination, but of a natural, through directed and purposive conversation, intended to reveal mental qualities of the candidate and his/her grasp of problems. The Board will pay special attention to assessing the intellectual curiosity, critical powers of assimilation, balance of judgment and alertness of mind, the ability for social cohesion, integrity of character, initiation and Capacity of leadership.

GENERAL ENGLISH

Candidates will be required to write an essay in English. Other questions will be designed to test their understanding of English and workmanlike use of words. Passages will usually be set for summary or precis.

GENERAL STUDIES

General Knowledge including knowledge of current events and of such matters of every day 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 the candidate should be able to answer without special study.

SYLLABUS FOR I.S.S.
STATISTICS-I (OBJECTIVE TYPE)

(i) Probability:

Classical and axiomatic definitions of Probability and consequences. Law of total probability, Conditional probability, Bayes' theorem and applications. Discrete and continuous random variables. Distribution functions and their properties.

Standard discrete and continuous probability distributions - Bernoulli, Uniform, Binomial, Poisson, Geometric, Rectangular, Exponential, Normal, Cauchy, Hyper geometric, Multinomial, Laplace, Negative binomial, Beta, Gamma, Lognormal. Random vectors, Joint and marginal distributions, conditional distributions, Distributions of functions of random variables. Modes of convergences of sequences of random variables - in distribution, in probability, with probability one and in mean square. Mathematical expectation and conditional expectation. Characteristic function, 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.

(ii) 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. Association and contingency. Curve fitting and orthogonal polynomials. Bivariate normal distribution. Regression-linear, polynomial. Distribution of the correlation coefficient, Partial and multiple correlation, Intraclass correlation, Correlation ratio.

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

Non-parametric tests-Goodness of fit, sign, median, run, Wilcoxon, Mann-Whitney, Wald- Wolfowitz and Kolmogorov-Smirnov. Order statistics-minimum, maximum, range and median. Concept of Asymptotic relative efficiency.

(iii) Numerical Analysis:

Finite differences of different orders: $\triangle$, E and D operators, factorial representation of a polynomial, separation of symbols, sub-division of intervals, differences of zero.

Concept of interpolation and extrapolation: Newton Gregory's forward and backward interpolation formulae for equal intervals, divided differences and their properties, Newton's 14 formula for divided difference, Lagrange's formula for unequal intervals, central difference formula due to Gauss, Sterling and Bessel, concept of error terms in interpolation formula.

Inverse interpolation: Different methods of inverse interpolation.

Numerical differentiation: Trapezoidal, Simpson's one-third and three-eight rule and Waddles rule.

Summation of Series: Whose general term (i) is the first difference of a function (ii) is in geometric progression.

Numerical solutions of differential equations: Euler's Method, Milne's Method, Picard's Method and Runge Kutta Method.

(iv) Computer application and Data Processing:

Basics of Computer: Operations of a computer, Different units of a computer system like central processing unit, memory unit, arithmetic and logical unit, input unit, output unit etc., Hardware including different types of input, output and peripheral devices, Software, system and application software, number systems, Operating systems, packages and utilities, Low and High level languages, Compiler, Assembler, Memory – RAM, ROM, unit of computer memory (bits, bytes etc.), Network – LAN, WAN, internet, intranet, basics of computer security, virus, antivirus, firewall, spyware, malware etc.

Basics of Programming: Algorithm, Flowchart, Data, Information, Database, overview of different programming languages, frontend and backend of a project, variables, control structures, arrays and their usages, functions, modules, loops, conditional statements, exceptions, debugging and related concepts.

STATISTICS- II (OBJECTIVE TYPE)

(i)   Linear Models:

Theory of linear estimation, Gauss-Markov linear models, estimable functions, error and estimation space, normal equations and least square estimators, estimation of error variance, estimation with correlated observations, properties of least square estimators, generalized inverse of a matrix and solution of normal equations, variances and covariances of least square estimators.

One way and two-way classifications, fixed, random and mixed effects models. Analysis of variance (two-way classification only), multiple comparison tests due to Tukey, Scheffe and Student-Newmann-Keul-Duncan.

(ii)   Statistical Inference and Hypothesis Testing:

Characteristics of good estimator. Estimation methods of maximum likelihood, minimum chisquare, moments and least squares. Optimal properties of maximum likelihood estimators. Minimum variance unbiased estimators. Minimum variance bound estimators. Cramer-Rao inequality. Bhattacharya bounds. Sufficient estimator. factorization theorem. Complete statistics. Rao-Blackwell theorem. Confidence interval estimation. Optimum confidence bounds. Resampling, Bootstrap and Jacknife.

Hypothesis testing: Simple and composite hypotheses. Two kinds of error. Critical region. Different types of critical regions and similar regions. Power function. Most powerful and uniformly most powerful tests. Neyman-Pearson fundamental lemma. Unbiased test. Randomized test. Likelihood ratio test. Wald's SPRT, OC and ASN functions. Elements of decision theory.

(iii) Official Statistics:

National and International official statistical system Official Statistics:

(a) Need, Uses, Users, Reliability, Relevance, Limitations, Transparency, its visibility (b) Compilation, Collection, Processing, Analysis and Dissemination, Agencies Involved, Methods

National Statistical Organization: Vision and Mission, NSSO and CSO; roles and responsibilities; Important activities, Publications etc.

National Statistical Commission: Need, Constitution, its role, functions etc; Legal Acts/ Provisions/ Support for Official Statistics; Important Acts

Index Numbers: Different Types, Need, Data Collection Mechanism, Periodicity, Agencies Involved, Uses

Sector Wise Statistics: Agriculture, Health, Education, Women and Child etc. Important Surveys & Census, Indicators, Agencies and Usages etc.

National Accounts: Definition, Basic Concepts; issues; the Strategy, Collection of Data and Release.
Population Census: Need, Data Collected, Periodicity, Methods of data collection, dissemination, Agencies involved.

Misc: Socio Economic Indicators, Gender Awareness/Statistics, Important Surveys and Censuses.

STATISTICS- III (DESCRIPTIVE TYPE)

(i)   Sampling Techniques:

Concept of population and sample, need for sampling, complete enumeration versus sampling, basic concepts in sampling, sampling and Non-sampling error, Methodologies in sample surveys (questionnaires, sampling design and methods followed in field investigation) by NSSO.

Subjective or purposive sampling, probability sampling or random sampling, simple random sampling with and without replacement, estimation of population mean, population proportions and their standard errors. Stratified random sampling, proportional and optimum allocation, comparison with simple random sampling for fixed sample size. Covariance and Variance Function.

Ratio, product and regression methods of estimation, estimation of population mean, evaluation of Bias and Variance to the first order of approximation, comparison with simple random sampling.

Systematic sampling (when population size (N) is an integer multiple of sampling size (n). Estimation of population mean and standard error of this estimate, comparison with simple random sampling

Sampling with probability proportional to size (with and without replacement method), Des Raj and Das estimators for n=2, Horvitz-Thomson's estimator

Equal size cluster sampling: estimators of population mean and total and their standard errors, comparison of

cluster sampling with SRS in terms of intra-class correlation coefficient.

Concept of multistage sampling and its application, two-stage sampling with equal number of second stage units, estimation of population mean and total. Double sampling in ratio and regression methods of estimation.

Concept of Interpenetrating sub-sampling.

(ii) Econometrics:

Nature of econometrics, the general linear model (GLM) and its extensions, ordinary least squares (OLS) estimation and prediction, generalized least squares (GLS) estimation and prediction, heteroscedastic disturbances, pure and mixed estimation.

Auto correlation, its consequences and tests. Theil BLUS procedure, estimation and prediction, multi collinearity problem, its implications and tools for handling the problem, ridge regression.

Linear regression and stochastic regression, instrumental variable estimation, errors in variables, autoregressive linear regression, lagged variables, distributed lag models, estimation of lags by OLS method, Koyck's geometric lag model.

Simultaneous linear equations model and its generalization, identification problem, restrictions on structural parameters, rank and order conditions.

Estimation in simultaneous equations model, recursive systems, 2 SLS estimators, limited information estimators, k-class estimators, 3 SLS estimator, full information maximum likelihood method, prediction and simultaneous confidence intervals.

(iii) Applied Statistics:

Index Numbers: Price relatives and quantity or volume relatives, Link and chain relatives composition of index numbers; Laspeyre's, Paasches', Marshal Edgeworth and Fisher index numbers; chain base index number, tests for index number, Construction of index numbers of wholesale and consumer prices, Income distribution Pareto and Engel curves, Concentration curve, Methods of estimating national income, Inter-sectoral flows, Inter industry table, Role of CSO. Demand Analysis

Time Series Analysis: Economic time series, different components, illustration, additive and multiplicative models, determination of trend, seasonal and cyclical fluctuations.

Time-series as discrete parameter stochastic process, auto covariance and autocorrelation functions and their properties.

Exploratory time Series analysis, tests for trend and seasonality, exponential and moving average smoothing. Holt and Winters smoothing, forecasting based on smoothing.

Detailed study of the stationary processes: (1) moving average (MA), (2) auto regressive (AR), (3) ARMA and (4) AR integrated MA (ARIMA) models. Box-Jenkins models, choice of AR and MA periods.

Discussion (without proof) of estimation of mean, auto covariance and autocorrelation functions under large sample theory, estimation of ARIMA model parameters.

Spectral analysis of weakly stationary process, periodogram and correlogram analyses, computations based on Fourier transform.

STATISTICS-IV (DESCRIPTIVE TYPE)
(Equal number of questions i.e. 50% weightage from all the subsections below and candidates have to choose any two subsections and answer)

(i) Operations Research and Reliability:

Definition and Scope of Operations Research: phases in Operation Research, models and their solutions, decision-making under uncertainty and risk, use of different criteria, sensitivity analysis.

Transportation and assignment problems. Bellman's principle of optimality, general formulation, computational methods and application of dynamic programming to LPP.

Decision-making in the face of competition, two-person games, pure and mixed strategies, existence of solution and uniqueness of value in zero-sum games, finding solutions in 2x2, 2xm and mxn games.

Analytical structure of inventory problems, EOQ formula of Harris, its sensitivity analysis and extensions allowing quantity discounts and shortages. Multi-item inventory subject to constraints. Models with random

demand, the static risk model. P and Q- systems with constant and random lead times.

Queuing models – specification and effectiveness measures. Steady-state solutions of M/M/1 and M/M/c models with associated distributions of queue-length and waiting time. M/G/1 queue and Pollazcek-Khinchine result.

Sequencing and scheduling problems. 2-machine n-job and 3-machine n-job problems with identical machine sequence for all jobs

Branch and Bound method for solving travelling salesman problem.

Replacement problems – Block and age replacement policies.

PERT and CPM – basic concepts. Probability of project completion.

Reliability concepts and measures, components and systems, coherent systems, reliability of coherent systems.

Life-distributions, reliability function, hazard rate, common univariate life distributions – exponential, weibull, gamma, etc. Bivariate exponential distributions. Estimation of parameters and tests in these models.

Notions of aging – IFR, IFRA, NBU, DMRL and NBUE classes and their duals. Loss of memory property of the exponential distribution.

Reliability estimation based on failure times in variously censored life-tests and in tests with replacement of failed items. Stress-strength reliability and its estimation.

(ii)   Demography and Vital Statistics:

Sources of demographic data, census, registration, ad-hoc surveys, Hospital records, Demographic profiles of the Indian Census.

Complete life table and its main features, Uses of life table. Makehams and Gompertz curves. National life tables. UN model life tables. Abridged life tables. Stable and stationary populations.

Measurement of Fertility: Crude birth rate, General fertility rate, Age specific birth rate, Total fertility rate, Gross reproduction rate, Net reproduction rate.

Measurement of Mortality: Crude death rate, Standardized death rates, Age-specific death rates, Infant Mortality rate, Death rate by cause.

Internal migration and its measurement, migration models, concept of international migration. Net migration. International and postcensal estimates. Projection method including logistic curve fitting. Decennial population census in India.

(iii)   Survival Analysis and Clinical Trial:

Concept of time, order and random censoring, likelihood in the distributions – exponential, gamma, Weibull, lognormal, Pareto, Linear failure rate, inference for these distribution.

Life tables, failure rate, mean residual life and their elementary classes and their properties.

Estimation of survival function – actuarial estimator, Kaplan – Meier estimator, estimation under the assumption of IFR/DFR, tests of exponentiality against non-parametric classes, total time on test.

Two sample problem – Gehan test, log rank test.

Semi-parametric regression for failure rate – Cox's proportional hazards model with one and several covariates, rank test for the regression coefficient.

Competing risk model, parametric and non-parametric inference for this model.

Introduction to clinical trials: the need and ethics of clinical trials, bias and random error in clinical studies, conduct of clinical trials, overview of Phase I – IV trials, multicenter trials.

Data management: data definitions, case report forms, database design, data collection systems for good clinical practice.

Design of clinical trials: parallel vs. cross-over designs, cross-sectional vs. longitudinal designs, review of factorial designs, objectives and endpoints of clinical trials, design of Phase I trials, design of single-stage and multi-stage Phase II trials, design and monitoring of phase III trials with sequential stopping,

Reporting and analysis: analysis of categorical outcomes from Phase I – III trials, analysis of survival data from clinical trials.

(iv)   Quality Control:

Statistical process and product control: Quality of a product, need for quality control, basic concept of process control, process capability and product control, general theory of control charts, causes of variation in quality, control limits, sub grouping summary of out of control criteria, charts for attributes p chart, np chart, c-chart, V chart, charts for variables: R, $(\overline{X}, R), (\overline{X}, \sigma)$ charts.

Basic concepts of process monitoring and control; process capability and process optimization.

General theory and review of control charts for attribute and variable data; O.C. and A.R.L. of control charts; control by gauging; moving average and exponentially weighted moving average charts; Cu-Sum charts using V-masks and decision intervals; Economic design of X-bar chart.

Acceptance sampling plans for attributes inspection; single and double sampling plans and their properties; plans for inspection by variables for one-sided and two sided specification.

(v)   Multivariate Analysis:

Multivariate normal distribution and its properties. Random sampling from multivariate normal distribution. Maximum likelihood estimators of parameters, distribution of sample mean vector.

Wishart matrix – its distribution and properties, distribution of sample generalized variance, null and non-null distribution of multiple correlation coefficients.

Hotelling's T2 and its sampling distribution, application in test on mean vector for one and more multivariate normal population and also on equality of components of a mean vector in multivariate normal population.

Classification problem: Standards of good classification, procedure of classification based on multivariate normal distributions.

Principal components, dimension reduction, canonical variates and canonical correlation — definition, use, estimation and computation.

(vi)   Design and Analysis of Experiments:

Analysis of variance for one way and two way classifications, Need for design of experiments, basic principle of experimental design (randomization, replication and local control), complete analysis and layout of completely randomized design, randomized block design and Latin square design, Missing plot technique. Split Plot Design and Strip Plot Design.

Factorial experiments and confounding in 2n and 3n experiments. Analysis of covariance. Analysis of non orthogonal data. Analysis of missing data.

(vii)   Computing with C and R :

Basics of C: Components of C language, structure of a C program, Data type, basic data types, Enumerated data types, Derived data types, variable declaration, Local, Global, Parametric variables, Assignment of Variables, Numeric, Character, Real and String constants, Arithmetic, Relation and Logical operators, Assignment operators, Increment and decrement operators, conditional operators, Bitwise operators, Type modifiers and expressions, writing and interpreting expressions, using expressions in statements. Basic input/output.

Control statements: conditional statements, if - else, nesting of if - else, else if ladder, switch statements, loops in c, for, while, do - while loops, break, continue, exit ( ), goto and label declarations, One dimensional two dimensional and multidimensional arrays. Storage classes: Automatic variables, External variables, Static variables, Scope and lifetime of declarations.

Functions: classification of functions, functions definition and declaration, assessing a function, return statement, parameter passing in functions. Pointers (concept only).

Structure: Definition and declaration; structure (initialization) comparison of structure variable; Array of structures : array within structures, structures within structures, passing structures to functions; Unions accessing a union member, union of structure, initialization of a union variable, uses of union. Introduction to linked list, linear linked list, insertion of a node in list, removal of a node from list.

Files in C: Defining and opening a file, input – output operation on a file, creating a file, reading a file. Statistics Methods and techniques in R.

SYLLABUS FOR I.E.S.

GENERAL ECONOMICS-I

PART A:

1. 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.

2. Theory of Production: Factors of production and production function. Forms of Production Functions: Cobb Douglas, CES and Fixed coefficient type, Translog production function. Laws of return, Returns to scale and Return to factors of production. Duality and cost function, Measures of productive efficiency of firms, technical and allocative efficiency. Partial Equilibrium versus General Equilibrium approach. Equilibrium of the firm and industry.

3. 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.

4. 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.

5. Welfare Economics: Inter-personal comparison and aggretion 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:

1. Mathematical Methods In Economics: Differentiation and Integration and their application in economics. Optimization techniques, Sets, Matrices and their application in economics. Linear algebra and Linear programming in economics and Input-output model of Leontief.

2. Statistical and Econometric Methods: Measures of central tendency and dispersions, Correlation and Regression. Time series. Index numbers. Sampling of curves based on various linear and nonlinear function. Least square methods and other multi-variate analysis (only concepts and interpretation of results). Analysis of Variance, Factor analysis, Principle component analysis, Discriminant analysis. Income distribution: Pareto law of Distribution, lognormal distribution, measurement of income inequality. Lorenz curve and Gini coefficient. Univariate and multivariate regression analysis. Problems and remedies of Hetroscedasticity Autocorrelation **and** Multicollnearity.

GENERAL ECONOMICS II

1. Economic Thought: Mercantilism Physiocrats, Classical, Marxist, Neo-classical, Keynesian and Monetarist schools of thought.

2. Concept of National Income and Social Accounting: Measurement of National Income, Inter relationship between three measures of national income in the presence of Government sector and International transactions. Environmental considerations, Green national income.

3. Theory of employment, Output, Inflation, Money and Finance: The Classical theory of Employment and Output and Neo classical approaches. Equilibrium, analysis under classical and neo classical analysis. Keynesian theory of Employment and output. Post Keynesian developments. The inflationary gap; Demand pull versus cost push inflation, the Philip's curve and its policy implication. Classical theory of Money, Quantity theory of Money. Friedman's restatement of the quantity theory, the neutrality of money. The supply and demand for loanable funds and equilibrium in financial markets, Keynes' theory on demand for money. IS-LM Model and AD-AS Model in Keynesian Theory.

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

5. 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. Theories of Economic Development, Rostow, Rosenstein-Roden, Nurske, Hirschman, Leibenstien and Arthur Lewis, Amin and Frank (Dependency scool) respective role of state and the market. Utilitarian and Welfarist approach to social development and A.K. Sen's critique. Sen's capability approach to economic development. The Human Development Index. Physical quality of Life Index and Human Poverty Index. Basics of Endogenous Growth Theory.

6. International Economics: Gains from International Trade, Terms of Trade, policy, international trade and economic development- Theories of International Trade; Ricardo, Haberter, HeckscherOhlin and Stapler-Samuelson- Theory of Tariffs- Regional Trade Arrangements. ASEAN Crisis of 1997, Global Financial Crisis of 2008 and Euro Zone Crisis- Causes and Impact.

7.Balance of Payments: Disequilibrium in Balance of Payments, Mechanism of Adjustments, Foreign Trade Multiplier, Exchange Rates, Import and Exchange Controls and Multiple Exchange Rates. IS-LM Model and Mundell- Fleming Model of Balance of Payments.

8.Global Institutions: UN agencies dealing with economic aspects, World Bank, IMF and WTO, Multinational Corporations. G-20.

GENERAL ECONOMICS-III

1.Public Finance: Theories of taxation: Optimal taxes and tax reforms, incidence of taxation; Theories of public expenditure: objectives and effects of public expenditure, public expenditure policy and social cost benefit analysis, criteria of public investment decisions, social rate of discount, shadow price of investment, unskilled labour and foreign exchange. Budgetary deficits. Theory of public debt management

2.Environmental Economics: Sustainable development, Rio process 1992 to 2012, Green GDP, UN Methodology of Integrated Environmental and Economic Accounting. Environmental Values: User and Non-Users values; option value. Valuation Methods: Stated and revealed preference methods. Design of Environmental Policy Instruments. Pollution Taxes and Pollution permits, collective action and informal regulation by local communities. Theories of exhaustible and renewable resources. International Environmental agreements, RIO Conventions. Climate change problems. Kyoto protocol, UNFCC, Bali Action Plan, post 2015 agreements, tradable permits and carbon taxes. Carbon Markets and Market Mechanisms. Climate Change Finance and Green Climate Fund.

3.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 behavior of firms, research and development and innovation, market structure and profitability, public policy and development of firms.

4.State, Market and Planning: Planning in a developing economy. Planning regulation and market. Indicative Planning. Decentralized **Planning.**

INDIAN ECONOMICS

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

2.Federal Finance: Constitutional provisions relating to fiscal and financial powers of the states, Finance Commissions and their formulae for sharing taxes, Financial aspect of Sarkaria Commission Report, Financial aspects of 73rd and 74th Constitutional Amendments.

3.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

4.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.

5.Agriculture and Rural Development Strategies: Technologies and institutions, land relations and land reforms, rural credit, modem 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.

6.India's experience with Urbanization 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.

7.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.

8.Labour: Employment, unemployment and under- employment, industrial relations and labour welfare- strategies for employment generation- Urban labour market and informal sector employment, Report of National Commission on Labour, Social issues relating to labour e.g. Child Labour, Bonded Labour, International Labour Standard and its impact.

9.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.

10.Money and Banking: Financial sector reforms, Organization 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

11.Inflation: Definition, trends, estimates, consequences and remedies (control): Wholesale Price Index, Consumer Price Index: components and trends

REVIEW

A big thanks to Deep Coaching & Sudhir Sir. I was able to clear ISS in the first attempt because of them. I was working earlier so it was even more difficult for me, But the regular classes with the apt content and regular mock tests at Deep Coaching helped me in taking the edge. They also provided classes for GS and English which was an add on benefit .They give individual attention to each student.Also sir ensures that all doubts are solved.They do it on an individual basis.And that's all you need to clear a competitive exam! Thanks again to all the teachers there.

Priyanka Sethi

I would like to personally thank Deep Coaching Institute for providing right guidance and teaching for the Indian Statistical Service exam. They cover the entire syllabus and their material is quite comprehensive. I cleared the exam just after giving my MSc. last semester exams only because Sudhir sir and Rest Faculty are very helpful and gave individual attention.They covered each and every aspect of paper- English, General Studies, Statistics in depth. Thank-You once again.

Chinn

The institute is very good.Effective teaching techniques of Sandeep sir and faculty helped me a lot. Sir had been taught us with the help of effective examples which helped me to understand the concept easily. I would like to express my endless gratitude to sir and Deep institute.

Snehakirty

Thanks to sudheer sir for giving me an incredible experience. I have been so happy and comfortable from almost the moment I got here.The Coaching Institute has given me a lot of confidence! I have learned so much through The Deep Institute and i enjoyed every minute of it.So I thank you with all my heart for helping me find my purpose in life.Sudheer sir you are great I will miss your class a lot.

Anurag

Best coaching for iss examination .I got here much more than what I paid .Sudheer Sir's teaching method is unique. the main thing what we learn here is developing the ability to 1st.correlate the subject with the examples of life and 2nd conceptual clearity. He keeps on motivating his students.He did not teach us only statistics but lessons for life also. I will miss sudheer sir and deep institute throughout my life ....thanks a lot sir ...I am blessed that I could get guidance by you.

Rahul
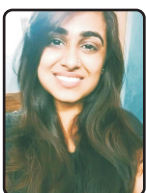
Joining Deep Institute for ISS classes helped me build a strong foundation of basics of Statistics. It refined my existing concepts and helped me discover various other dimensions. The founder Mr Sudhir has a very innovative way of teaching that makes the class interactive and productive. He is also very supportive and helpful and so are other faculties and staff. I am very satisfied with classes, study material and curriculum design.

Palak Arora

Energetic and friendly teacher. Any topic is explained by giving practical example. I never get bored in sudhir sir class his class is always interactive and full of laughter and knowledge. Assignment are provided which helps us to know where we are lacking and helps us to improve ourselves. Any time we can ask our doubt with the teachers unless they don't have another class the best part is that G.S. and English portion also cover manner fully .

Aditya Sharma

Deep institute is the best coaching center for I. S. S and the best part, Which attract is it's faculty members all the teachers are so good they are very easily available even outside the class. Even on the social media like whatsapp teacher's responds to our problems very frequently. The main thing that make this institute unique is best for statistics, economatrics and mathematics. He improve your ability to think about ISS. so guyes-for me it's among the best. So you can go with deep institute for I. S. S preparation.

Ayesha