Syllabus for Entrance Test to 3 Year Integrated Ph. D. Programme in Economics -2018

Part-2nd

1. **Production and Markets:**

   Production functions - linear and non-linear, Laws of production, equilibrium of firm, theory of costs, Perfect Competition: Monopoly, Monopolistic competition, Oligopoly duopoly models.

2. **Theory of Distribution:**

   Neo-classical approach-Marginal productivity theory. Product exhaustion theorem, elasticity of technical substation and factor shares; technical progress and income distribution; pricing of fixed factors, non-homogeneous factors and wage differentials.

3. **Supply of Money:**

   Empirical definitions of Money; Measures of money supply in India; The stock of high powered money and its determinants; (H theory of Money) Money multiplier process and factors affecting the money multiplier; Predictability and the stability of money multiplier. Reserve Bank's Analysis of money supply.

4. **Demand for Money :**

   Classical Approach to Demand for Money-Quantity Theory Approach, Fisher's Equation and Cambridge Quantity Theory; Keyne's Liquidity preference Approach.

5. **Fluctuations and Stabilization:**

   The Anatomy of business cycle; Theories of trade Cycle; Hicksian; Samuelson; Kaldor's; Stabilization policy in an open economy and its limitations.

6. **Development Economics:**

   Development-Concept and Approaches, Measurement, Economic development and institutions, Market, state, and community, Classical theories of development, Adam smith, Ricardo, Malthus, Karl Marx

7. **Approaches to Development:**

   Partial theories of growth and development ; Vicious circle of poverty; stages of growth, Balanced vs Unbalanced growth; The Big Push; Critical Minimum effort; Low Level equilibrium Trap; Ranis and Fei model; Dual Gap analysis. Role of Agriculture in economic Development, Terms of trade between agriculture and industry, Globalization and Economic Growth

8. **Theories of International Trade:**

   Classical theory of comparative advantage- Ricardo: Real cost and Opportunity cost approaches; Factor endowment and international trade; Hecksher - Ohlin theorem; Empirical evidence on Ricardo and Hecksher-Ohlin theories; leontiff paradox; new theories of international trade; Trade with economics of scale, product cycle hypothesis, technological Gap model.

9. **Gains from Trade:**

   Production and consumption effect – social indifference curves; optimality and free trade; commodity, income and factorial terms of trade; terms of trade and gains from international trade ;Imperfect competition and international trade— Monopoly; monopolistic competition and oligopoly ;export cartels; commodity agreements; dumping.

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10. **Fundamentals of Public Economics:**

Public Economics; Tools of Budget Analysis, Role of government, Externality theory; Coase theorem; Corrective taxation; Market Failure; Free Riders Problem; Cost Benefit analysis; preference revelation and aggregation. Political Economy - Arrow's Impossibility Theorem; Rent- seeking; Optimal Fiscal federalism and the Tibeout model. Theory of Club goods.

11. **Public Expenditure and Taxation and fiscal federalism:**

Wagner's and Wiseman-Peacock hypothesis; Pure theory of public expenditure; programme budgeting and zero-base budgeting. Taxation - incidence and impact; Dead-weight loss; Theory of Optimal Taxation; Public Borrowing and Debt. Fiscal Federalism; Centre-State financial relations; Sources of Revenue; Reforms in Direct and Indirect Taxes; Budget Deficit and Its Implications.

12. **Public Finance – Subject Matter and Role of Government:**

Role of public Finance in an underdeveloped economy; Government failures; planning and economic development; Budget as means of operationalizing the planning process; Public and Private sector cooperation or competition.

13. **Calculus and Economic Application:**

Derivatives—definition and evaluation; Rules of differentiation; Partial derivatives; Higher order differentiation; Euler's theorem; Uses of differentiation in economics; constrained optimization; Lagrangian multiplier; Marginal Concepts—Relationship between average, marginal and total elasticities; Logarithm and exponents. Indefinite integral; rules of integration; definite integral; Fundamental theorem of integral; properties of definite integral; Economic application of integrals; Consumer's surplus; Producer's surplus.

14. **First Order Differential and Difference Equation:**

First Order differential Equations—definition and concept; general formula for first order linear differential equations; Exact differential equations and partial integration; Rules for integrating functions; Fist-order difference equations—definition and concept; general formula for first order difference linear equations; lagged income determination modal; Cobweb theorem.

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Part-3rd

1. **Economic Thought :**

   Approaches to the history of economic thought; Classical Thought—Adam Smith— General Philosophy; Doctrine of Harmony and Lassize Faire; Theory of Value; David Ricardo— Theory of Value and Distribution. J B Say— Concept of Political Economy; Restatements of Smith's theories. J S Mill— Utilitarianism and liberty. Alfred Marshall— Scope of Political Economy; Philosophy and Method.

2. **Consumer Behavior and Theory of Games:**

   Utility function, Indifference curve analysis; income and substitution effects; revealed preference hypothesis; elasticity; Homogeneity of demand functions; consumer surplus; income leisure tradeoff; decision making under uncertainty; expected utility maximization; risk aversion and insurance premium; Repeated Games; Sequential and Non sequential Games.

3. **Welfare Economics:**

   Walrasian Equilibrium; existence, stability and uniqueness of general equilibrium; Pareto Optimality; social welfare function; Arrows impossibility theorem.

4. **Macro-Economic policies:**

   General Equilibrium and the derivation of IS-LM curves; Relative effectiveness of Monetary and Fiscal policies in open and closed economies; Mechanism and difference between Monetarism and Keynesianism; The Mundell-Fleming Model with fixed and floating exchange rate; Rational Expectations.

5. **Sectoral Demand Functions:**

   Keynes's Psychological Law of Consumption; Consumption Function an Income Determination; Income-Consumption Relationship; The Life Cycle Theory of consumption and Savings. Investment Demand. Neo-Classical and Keynesian approaches (Marginal Efficiency Approach.) Acceleration Principle; Keynesian Multiplier –Static and Dynamic.

6. **Theories of Economic Growth:**

   Harro-Domar Models; Neo-Classical growth models- Solow; Meade and Kaldor. Neo Classical growth model (Generalized version with & without Technology); Cambridge Model of Growth—Mrs. Joan Robinson's Model. Cambridge criticism of Neo-classical analysis of growth. Production Function approach to economic growth; Total factor Productivity and growth accounting; Two sector model of Ujawa; A.K. Model.

7. **Planning and Development:**

   Need for investment criteria in developing countries; capital–output ratio; project appraisal; private cost-benefit analysis; theory of growth Centers and growth poles. Need for planning –democratic; decentralized and indicative planning.

8. **Trade Theories :**

   Theories of trade - absolute and comparative theories; theories of reciprocal demand, Heckscher Ohlin model; factor price equalization theorem; Role of factor accumulation – Rybezynski theorem– technical progress and growth; economic growth and terms of trade –Immersing growth; Tariffs and non tariff barriers; optimum tariffs, Stolper–Samuelson theorem; Metlzer paradox; Pattern of trade; Export instability – Prebish – Singer and unequal exchange hypotheses; Import substitution versus export led growth.

9. **Foreign Exchange Markets :**

Structure and functions of foreign exchange markets; Exchange rate determination; Foreign exchange transactions; Forward exchange market; Hedging; speculation and arbitrage; option and futures markets; Theories of Exchange rate determination – Purchasing power parity theory; Asset market approach.

10. **Balance of payments and Adjustment Mechanism:**

BOP- Meaning and components; equilibrium and disequilibrium; The process of adjustment under flexible exchange rate system and fixed exchange rate system; Expenditure reducing and expenditure switching policies and direct controls; Devaluation – elasticity and absorption approaches; Foreign trade multiplier; Monetary approach to the balance of Payments.

11. **International Monetary Institutions:**

Types of International monetary system; Evolution, operation and collapse of Bretton Woods system; International Monetary Fund (IMF); International Bank for Reconstruction and Development (IBRD); Euro currency markets; Euro bond market.

12. **Public Bads and Externalities:**

Environmental Problems-Individual and social preferences regarding environmental protection; sustainability; biocentrism; Pareto criterion; compensation principle; Efficiency and competitive markets-failure; public goods and bads; optimal provision and pricing of public goods and bads; externalities; Property rights; Coase theorem; Pigovian fees.

13. **Measurement of Environmental value:**

Concept of natural resources; valuation methods; Market pricing approach; replacement cost approach ; hedonic price approaches ;household production function approach ; contingent valuation method experimental markets. Rationale for environmental regulation; Regulatory framework-general pollution control model; damage and abetment cost functions.

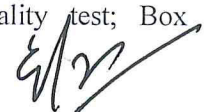14. **Correlation and Regression :**

Correlation and Regression Analysis; Property of estimators. Testing of regression-Gauss Markov theorem; interval Estimation and hypothesis testing test of significance and Confidence interval Approach. Nature, test consequences and remedial steps of problems of Hetroscedesity; multicollinearity and auto-correlation; problems of specification error and error of measurement.

15. **Probability and Frequency Distribution:**

Meaning and definition of probability; Probability Rules—Addition and multiplication rule; Conditional Probability; Frequency distribution—binomial, Poisson, normal and Chi-Square Distribution (mean; standard deviation and their applications). The Hypothesis Testing Process; One tailed and two tailed tests; type I and type II error; t, Z, F and $\chi2$ tests; Chi square goodness of Fit; Analysis of variance (one way and two way analysis);
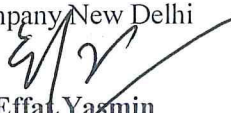
16. **Econometric Models:**

Dummy variables techniques and qualitative dependent variable models—logit and probit models. Auto regressive and distributed lag models- koyek; partial adjustment and adaphic expectations. Simultaneous equations- problem; estimation- Indirect Least Square, Two Stage Least Square; Time series- stationery; unit root; Dickey fuller test; co-integration; causality test; Box Jenkins methodology.

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Suggested Readings for both part 2nd and 3rd

1. Landreth. H. and D.C Colander (2001), History of Economic Thoughts, Houghton Mifflin Company, Boston
2. Guide and Rist (1973), A History of Economic Doctrine. Oxford University Press, New Delhi
3. Haney, L. (1979), History of Economic Thought, Surjeet Publications, New Delhi.
4. Hunt, E. K.(2011) , History of Economic Thought: A Critical Perspective, Armonk, New York.
5. Pindyck, R.S., D. Rubinfeld and P. L. Mehta (2012), Microeconomics, Pearson Education, South Asia.
6. Varian, H. R. (2010), Intermediate Microeconomics – A Modern Approach, EWP and WW Norton and Co, Inc, New York.
7. Froyen, R. T. (2013), Macro Economics: Theories and Policies, Pearson Education,
8. Mankiw, N. G., (2008), Macroeconomics, Worth Publishers.
9. Branson, W.H. (2005), Macroeconomics Theory and Policy, Harper & Row, New York.
10. Chiang, A.C, (1984), Fundamental Methods of Mathematical Economics, Tata McGraw Hill,
11. Allen, R. G. D, (2003), Mathematical Analysis for Economists, The Macmillan Press, New Delhi.
12. Gupta, S. C. (2011), Fundamentals of Statistics, Himalayan Publishing House, New Delhi
13. Miskin, F. (2015) The Economics of Money: Banking and Financial Markets, Addison Wesley Longmate, New York.
14. Mishra, S.K. and V. K. Puri, (2016), Economics of Development and Planning, Himalayan Publishing House, New Delhi
15. Thirlwal, A.P. (2003), Growth and Development, Macmillan Press Ltd., U.K.
16. Gujarati, D.N. (2009), Basic Econometrics, McGraw Hill, New Delhi.
17. Wooldridge, J. (2012), Introductory Econometrics: A Modern Approach, Cengage Learning.
18. Johnston, J., (2015), Econometric Methods, Tata McGraw Hill, New Delhi.
19. Krugman, P. R. and M. Obstfeild (2012), International Economics- Theory and Policy, Addison Wesley, New Delhi.
20. Salvatore, D. (2011), International Economics, Wiley India, New Delhi.
21. Nayak, P. (2015), Economic Development of India (Critical Concepts in Economics), London & New York, Routledge, 2015
22. Drèze, J. and A.K. Sen (2013); An Uncertain Glory India and Its Contradictions, Princeton University Press
23. Gruber, J. (2016), Public Finance and Public Policy, MIT.
24. Rosen, H. (2013), Public Finance. MIT Press.
25. Stiglitz, J. E. (2015), Economics of Public Sector, Norton, New York.
26. Kolstad, C.D. (1999), Environmental Economics, Oxford University Press, New Delhi
27. Hussain, A.M. (1999), Principals of Environmental Economics, Rutledge, London.
28. Khan, M. Y. (2015), Indian Financial System, Tata McGraw Hill, New Delhi.
29. Bhole, L. M. (2009). Financial Institutions and Markets, Tata McGraw Hill Company New Delhi

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