ECONOMICS

UNIT-I: MICRO AND MACRO ECONOMICS

Consumer Theory: Demand and supply, Elasticity of demand and elasticity of supply; Consumer’s Surplus and Producer’s Surplus; Preferences – Indifference curves and their Properties, Optimisation and Equilibrium, Change in equilibrium – Income Offer Curve and Engel Curve, price, income and substitution effects.

Production and Cost Functions: Production with one variable input (labour) and with two variable inputs; Returns to Scale; Four Simple Production Functions (Linear, Fixed PROPORTIONS, Cobb-Douglas, CES); Isoquants and Producer’s Equilibrium; Costs, Cost Functions and Cost Curves; Objectives of a Business Firm and Validity of Profit maximisation hypothesis.

Markets and Equilibrium: Pure and perfect competition, Supply decision of a competitive firm, Equilibrium in Short and Long Run; Monopoly and Price Discrimination; Monopolistic competition and Equilibrium; Oligopoly – Price leadership, Cournot Equilibrium, Kinked demand curve.

Distribution, General Equilibrium and Welfare Economics: Marginal productivity theory, Theories of Rent, Wages, Interest and Profit; General Equilibrium (2X2X2) model, Efficiency of General Equilibrium; Marshallian and Pigovian Welfare economics; Pareto optimality; Compensation Principle; Social welfare function.

Game Theory: The Payoff Matrix of a Game; Nash Equilibrium; Mixed Strategies; The Prisoner’s Dilemma; Repeated Games; Enforcing a cartel; Sequential Games; A Game of entry deterrence.

Macroeconomics and National Income Accounting: Macro vs. Micro Economics; National Income Concepts; Real and Nominal GDP; Output, Income and Expenditure Approaches to measuring national income; National Income Identities in a simple 2-sector economy, and with government and foreign trade sectors; Circular Flows of Income; National Income and Economic Welfare; Green Accounting.

Money: Demand for and Supply of Money; Measures of Money Supply in India; Quantity Theory of Money; Value of Money and Index Number of Prices; Inflation, Deflation, Depression and Stagflation and measures to control them; Inflation, Unemployment and Expectations; Trade Cycles- Hawtrey’s Monetary Theory, Hayek’s Over-investment Theory and Keynes’ views on Trade Cycles.

Banking: Functions of commercial banks and Central Bank, Instruments of credit control and monetary policy, Non-Banking Financial Intermediaries.

Open Economy Macroeconomics: The basic Mundell-Fleming Model.

Determination of National Income: The Classical Approach; The Keynesian Approach; Consumption Function & Absolute, Relative, Permanent and Life-Cycle Hypotheses; MEC, MEI and Theories of Investment; Income Determination in a Simple 2-Sector Model; Derivation of Aggregate Demand and Aggregate Supply Curves in the IS-LM Framework and Determination of Equilibrium; Investment Multiplier; Income Determination in a 3-Sector Model and Fiscal Multipliers; Relative efficacy of monetary and fiscal policies; Crowding out effect.

UNIT-II: PUBLIC ECONOMICS AND INTERNATIONAL ECONOMICS

Introduction to Public Finance: Public Finance and Private Finance; Public good vs. private good; Market failure and role of government; Criteria for public investment- Social Cost-Benefit Analysis; Maximum Social Advantage.

Public Expenditure: Classification, principles, cannons, causes of growth of public expenditure- Wagner’s law and Peacock-Wiseman hypothesis and effects of Public Expenditure.

Public Revenue: Sources of Public Revenue; Taxation - cannons and classification, impact and incidence of taxes; The benefit and ability to pay approaches; Taxable capacity; Effects of taxation; Characteristics of a good tax system; Major trends in tax revenue of central and state governments in India.
Public Budget: Kinds of budget- Economic and Functional classification, Balanced and unbalanced budgets; Balanced budget multiplier; Budget as an instrument of economic policy; Concepts of Deficits.

Public Debt: Sources and effects; Debt burden- inter-generational shifting of burden and intergenerational equity; Methods of debt redemption; Debt management; Tax vs. debt.

Trade Theories: Absolute advantage; Comparative advantage and opportunity cost; Heckscher-Ohlin theory of trade.

Trade and Economic Growth: Terms of trade; Reciprocal demand and offer curve; Gains from trade; International Trade and Growth; Free trade and policy of tariffs in relation to economic growth.

Exchange Rate: Types of exchange rate (bilateral vs. trade-weighted exchange rate, cross exchange rate, spot, forward, futures); Demand for and Supply of foreign exchange; Exchange Rate Determination-Purchasing Power Parity Theory; The Monetary Model of Exchange Rates, Asset Portfolio Model of Exchange Rates; Fixed vs. Flexible exchange rate.

Balance of Trade and Payments: Concepts and components of balance of trade and balance of payments; Equilibrium and disequilibrium in balance of payments and measures to correct deficit in BoPs; Foreign trade multiplier.

International Economic Institutions: IMF, World Bank, WTO, Asian Development Bank— their achievements and failures; Forms of economic cooperation; Reforms for the emergence of international monetary system and trading blocs at the global level.

UNIT-III: DEVELOPMENT AND ENVIRONMENTAL ECONOMICS

Study of economic development: Economic growth and economic development; Characteristics of underdeveloped countries; Obstacles to economic development; Measures of economic development— national and per capita income, basic needs approach, capabilities approach, three core values of development, PQLI, HDI, HPI, MDPI, GDI.

Theories of Economic Growth and Development: Classical, Marxian and Schumpeterian theories; Rostow’s stages of economic growth; Balanced vs. unbalanced growth; Low level equilibrium trap and Critical minimum effort theories; Modeling Economic Growth-The Basic Harrod-Domar Model, Joan Robinson and the Golden Rule of Capital Accumulation, The Basic Solow Model, The Rudimentary A-K Model of Endogenous Growth.

Poverty, Inequality and Development: Concepts of poverty and inequality; Measuring poverty—Lorenz curve and Kuznets’ inverted U hypothesis; Growth, poverty and inequality linkage; Poverty groups— rural poverty, women and poverty, indigenous population and poverty; Dualism, Regional inequalities and economic development.

Institutions and Economic Development: Role of institutions in economic development; The role of democracy in economic development; Role of state; Role of markets and market failure; Limitations of markets in LDCs; Corruption and economic development.

Financing Economic Development: Saving, capital formation and economic development; Foreign finance, investment and aid— controversies and opportunities; Private foreign investment and private portfolio investment.

Globalisation, International Trade and Economic Development: Trade and economic development; Export led growth; Trade liberalisation and growth of exports; Terms of trade and economic growth— the Prebisch Singer Hypothesis; Trade vs. aid.

Economy and Environment: Environment and Economy interaction; Environment as a public good— National versus global public goods; Market failure-Environmental degradation and externalities; The nexus involving environment, development and poverty; Population, resources and the environment; Poverty, economic growth, rural development, urban development and the environment; Common property resources as public goods and the free-rider problem.

The Economics of Pollution and Climate Change: Pollution as externality; The market approach to optimal pollution, Property rights and market bargain theorems, Coase theorem; Taxation, Subsidies and optimal pollution; Pollution permit trading; Climate change— concept, causes, effects and management; Climate change and Agriculture.
Valuation of Environmental Damage: Methods and difficulties of environmental valuation, Direct and Indirect Valuation of Environmental Goods - The hedonic price approach, Contingent valuation, Travel cost approach; Willingness to accept; Mechanism for environmental regulation in India - Environmental policy and legislations.

Natural Resources and Sustainable Development: Environment and sustainable development, Concept and indicators of sustainable development; Resource scarcity, Renewable and exhaustible resources; Optimal use of renewable resources – fishery and forest; Tragedy of commons; People’s Participation in the management of common property resources.

UNIT-IV: INDIAN ECONOMY

Basic Characteristics of Indian Economy: Indian Economy in the Pre-British Period; Colonialism, Economic Consequences and theory of drains; Present status of the Indian economy.

Population and Human Development: Demographic issues – Sex and Age Composition of population; Dynamics of Occupational structure; Population policy; Demographic Dividend; Urbanisation and Migration; Human Resource Development.

National Income in India: Trends in national and per capita income; Changes in sectoral composition of national income; Regional disparities in Growth of Income; Savings and Investment in India.

Economic Planning in India: Rationale, Features, Objectives, Strategies, Achievements and Assessment of Planning in India; From Planning to NITI – Transforming India’s Development Agenda.

Indian Agriculture: Role of agriculture; Green Revolution and Land Reforms; Agricultural Finance; Agricultural Marketing.

Industrial Development in India: Role of Industrialisation; Trends in industrial output and productivities; Small Scale & Cottage Industries - Role, Problems and Remedies; Industrial Policies; Problems of Industrial Development in India; Industrial finance and industrial sickness.

Service Sector in India: Trend of Growth & Contribution to GDP; ICT and IT – Spread and Policy; Sustainability of services led growth.

External Sector in India: Trends, Composition & Direction in exports from and imports of India; Present balance of payments position of India – Need for and rationale of trade reforms in India including partial and full convertibility of rupee; Recent export and import policies in India; Export Promotion vs. Import Substitution; Foreign Trade Policy of India; FDI flow and regulatory framework; WTO and India.

Economic and Social Infrastructure of India: Growth of transport sector and development of its sub-sectors; Indian Telecom Industry - spread and competition; Irrigation; Energy - forms of energy, conservation and government policy; Education - finance for education, education policy; Health - health care structure in India, National Health Policies; Housing - rural and urban housing schemes in India; Sustainable Development Goals.

Financial Markets in India: Commercial Banking in India & Nationalisation of Banks; RBI – Functions, Monetary Policy and Techniques of monetary control; Development Banking; Microfinance institutions in India - Problems and prospects; Policy issues in banking sector - Non-performing assets; Indian Stock Market and SEBI; Banking and financial sector reforms in India.

Indian Public Finance: Public Expenditure - Growth and Composition, Tax Revenue of Central and State Governments; The GST debate; India’s Fiscal Policy.


Current Challenges: Poverty and Poverty Alleviation Programmes; Inequality – Measures and trends in India; Unemployment and Employment Policy.
UNIT V: QUANTITATIVE METHODS

Functions and differentiation: Types of functions- constant, polynomial, rational, exponential, logarithmic; Rate of change and derivative; Rules of differentiation for a function of one variable; Partial differentiation techniques; Partial derivatives in Economics; Elasticity of a function – demand and cost elasticity, cross and partial elasticity; Technique of higher order differentiation; Second order derivative and curvature of a function; Concavity and convexity of functions; Points of inflection, Derivative of Implicit Function.

Integration: Indefinite Integrals; Rules of Integration; Techniques of Integration: Substitution Rule, Integration by parts, and Partial Fractions; Definite Integral – Area Interpretation.

Optimisation: Relative maximum and minimum; Necessary versus sufficient conditions - First and Second derivative tests (Using Hessian Determinants); Economic applications thereof, First and second order condition for extremum of multivariable functions; Effects of a constraint; Finding stationary value – Lagrange-Multiplier method: First and second order condition; The Bordered Hessian determinant.

Measures of Central Tendency and dispersion: Mean, median, mode, geometric mean, harmonic mean, their relative merits and demerits; Measures of Dispersion: absolute and relative - range, mean deviation, standard deviation, coefficient of variation, quartile deviation, their merits and demerits; Measures of skewness and kurtosis.

Correlation and regression: Karl Pearson’s correlation coefficient and its properties, Spearman’s rank correlation coefficient; Two variable linear regression analysis - estimation of regression lines (Least square method) and regression coefficients - their interpretation and properties, standard error of estimate.

Probability theory: Basic concepts, addition and multiplication rules, conditional probability.

Sampling: Meaning and types of Sampling; Probability Sampling versus Non-Probability Sampling; Simple Random Sampling and its selection, Systematic Sampling, Multi-stage Sampling, Quota Sampling; Error: Sampling and Non-sampling.
Tick the correct alternative in each case

1. If a straight-line demand curve is tangent to a curvilinear demand curve, the price elasticity of demand at the point of tangency is
   a. same for both the demand curves
   b. different for the demand curves
   c. equal to Unity
   d. None of the above

2. The Engel curve for an inferior commodity is
   a. backward bending
   b. upward sloping and convex downward
   c. upward sloping and concave downward
   d. downward sloping and convex to the origin

3. Breeders of dogs charge different prices from different consumers even for the same breed. It is described as
   a. price discrimination of first degree
   b. price discrimination of second degree
   c. price discrimination of third degree
   d. none of these

4. Under Constant Returns to Scale the marginal product of an individual factor
   a. increases
   b. remains constant
   c. declines
   d. may increase or may decline

5. Interdependence in decision making is a special feature of
   a. monopolistic competition
   b. perfect competition
   c. oligopoly
   d. monopoly

6. The difference between National Product and Domestic Product is known as
   a. net indirect taxes
   b. depreciation
   c. subsidies
   d. net factor income from abroad
7. For a linear consumption function passing through the origin
   a. APC > MPC
   b. APC < MPC
   c. APC = MPC
   d. none of these

8. The coefficient of investment multiplier is
   a. directly related to MPS
   b. inversely related to MPS
   c. directly related to MPC
   d. both (b) and (c)

9. The intersection point of IS and LM curves denotes
   a. equilibrium in goods market
   b. equilibrium in money market
   c. either (a) or (b)
   d. both (a) and (b)

10. The term “Selling Cost' was coined by
    a. Cournot
    b. Chamberlin
    c. Marshall
    d. Edgeworth

11. In the case of Cobb-Douglas production function, elasticity of factor substitution is equal to
    a. zero
    b. infinity
    c. one
    d. negative

12. Cost push inflation is caused by
    a. a rise in the wage rate
    b. a rise in the prices of key materials
    c. an increase in profit
    d. all of the above

13. To Control inflation, the bank rate should be
    a. increased
    b. decreased
    c. kept constant
14. The trade–off between unemployment and inflation is explained by
   a. Engel’s curve
   b. Lorenz curve
   c. Phillips curve
   d. Frequency curve

15. “Inflation is unjust, deflation is inexpedient. Of the two, deflation is worse”. Who said it?
   a. G.Crowther
   b. J.M.Keynes
   c. K.K.Kurihara
   d. A.H.Hansen

16. Balance of payments always balances in
   a. actual economic sense
   b. accounting sense
   c. both (a) and (b)
   d. none of these

17. Which of the following is not a non-monetary measure of correcting adverse BOPs?
   a. Exchange rate control
   b. Import duties and quotas
   c. Tariffs
   d. Export promotion policies

18. The techniques of “Balanced Growth” was propounded by
   a. J.A.Schumpeter
   b. Ragnar Nurkse
   c. A.Hirschman
   d. W.A.Lewis

19. If marginal propensity to save is 0.2 and capital output ratio is 5, then steady state growth rate is equal to
   a. 1%
   b. 4%
   c. 2%
   d. 3%

20. Human poverty is related to
   a. low level of investment
   b. low level of saving
c. low level of demand

d. denial of choices and opportunities

21. Proponents of economic growth contend that growth is the best way
   a. to reduce poverty
   b. to improve quality of life
   c. to create job for unemployed
   d. to overcome poverty and pollution

22. Environmental economics studies the relationship between
   a. government and environment
   b. economic agents and environment
   c. industries and environment
   d. all of the above

23. Green accounting was developed by
   a. World Bank
   b. World Bank and UN’s statistical office
   c. World Bank and IMF
   d. World Bank and WHO

24. According to Marx, the rate of profit tends to fall because of
   a. decrease in surplus value
   b. decrease in labour productivity
   c. both (a) and (b)
   d. none of these

25. The optimum size of public budget is determined at that level where
   a. MSB > MSS
   b. MSB < MSS
   c. MSB = MSS
   d. (MSB – MSS) is maximum

26. The principle of exclusion does apply to
   a. public goods
   b. free goods
   c. private goods
   d. all of the above

27. The ultimate principle of taxation is
   a. equal absolute sacrifice principle
   b. equal proportional sacrifice principle
c. equal marginal sacrifice principle
d. benefit principle

28. Which of the following is not a method of debt redemption?
   a. Borrowing
   b. Repudiation
   c. Sinking fund
   d. Terminal annuities

29. When the demand for a commodity is inelastic the burden of commodity tax is
   a. more on the seller
   b. more on the buyer
   c. equally shared by both the buyer and the seller
   d. none of these

30. The impact and incidence of tax coincides in the case of
   a. income tax
   b. sales tax
   c. wealth tax
   d. (a) and (c)

31. Developing countries usually prefer a
   a. deficit budget
   b. surplus budget
   c. balanced budget
   d. none of these

32. Who is the chairman of NITI Ayog?
   a. Montek Singh Ahluwalia
   b. Rajiv Kumar
   c. Narendra modi
   d. Arun Jetly

33. The highest contribution to national income of India comes from
   a. agricultural sector
   b. industrial sector
   c. services sector
   d. all the sectors contribute equally

34. What is the nature of the loan given by the central government to the states in India?
   a. internal debt
   b. external debt
   c. redeemable debt
d. local debt

35. The “Green Revolution “ was lunched in India in the year
   a. 1957
   b. 1966
   c. 1965
   d. 1972

36. The apex bank providing agricultural credit in India is
   a. IDBI
   b. SBI
   c. NABARD
   d. RBI

37. Employment Guarantee Act ensures work for a minimum period of
   a. 80 days in a year
   b. 100 days in a year
   c. 120 days in a year
   d. 180 days in a year

38. Disguised unemployment in an underdeveloped country is
   a. an insurmountable problem
   b. a great bottleneck to growth
   c. a potential source of saving
   d. all of the above

39. Which of the following sectors provide maximum employment in India?
   a. Primary Sector
   b. Secondary Sector
   c. Ternary Sector
   d. None of these

40. The sum of the absolute deviations of the items in a distribution is minimum when taken from
   a. Arithmetic Mean
   b. Median
   c. Mode
   d. Harmonic Mean
41. Co-efficient of variation is equal to
   a. \( \frac{\sigma}{\bar{x}} \times 100 \)
   b. \( \frac{\bar{x}}{\sigma} \times 100 \)
   c. \( 100 \times \frac{\sigma}{\bar{x}} \)
   d. \( \frac{100}{\frac{\sigma}{\bar{x}}} \)

42. The probability of having 53 Sundays in a non leap year is equal to
   a. 2/7
   b. 1/7
   c. 3/7
   d. none of these

43. If \( Y = 8X+4 \) and \( Y = 2X+1 \) are two regression lines, then correlation coefficient is equal to
   a. 0.2
   b. 0.5
   c. 0.4
   d. 0.8

44. Mean, median and mode of a distribution are 23, 24 and 25.5 respectively. The distribution most likely is
   a) Positively skewed
   b) Negatively skewed
   c) Symmetric
   d) Assymptotic

45. Which of the following measures of central tendency is least affected by sampling fluctuation?
   a) Mean
   b) Median
   c) Mode
   d) Harmonic mean

46. Sum of square of deviation of items in a series is minimum when calculated from
   a) Mean
   b) Median
   c) Mode
d) Geometric mean

47. Coefficient of correlation is independent of change of
   a) Origin
   b) Scale
   c) Both origin and scale
   d) Neither origin nor scale

48. If \( P(\text{A and B}) = P(A) \times P(B) \), then the two events must be
   a) Equally likely
   b) Mutually exclusive
   c) Independent
   d) None of the above

49. Cross elasticity of demand for two substitute goods is always
   a) Positive
   b) Negative
   c) Zero
   d) Can take any value

50. If at a point \( x = a \), \( f'(x) < 0 \) and \( f''(x) > 0 \), then at that point the function is
   a) Increasing at an increasing rate
   b) Decreasing at a decreasing rate
   c) Decreasing at an increasing rate
   d) Decreasing at a constant rate

51. The function \( Y = X^3 - 3X^2 + 2 \) reaches a relative minimum at the point
   a) \( X = 0 \)
   b) \( X = 2 \)
   c) \( X = -2 \)
   d) \( X = 1 \)

52. If we are trying to optimise \( Z = XY \) subject to \( X + Y = 6 \), then at the point \( (3, 3) \) the function reaches a
   a) Relative maximum
   b) Relative minimum
   c) Saddle point
   d) None of the above

53. The sufficient condition for a constrained minimisation problem is that at the point where the necessary condition is fulfilled, the required Bordered Hessian determinant should
   a) Vanish
   b) Be positive
   c) Be negative
   d) Not be defined