

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 or 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 and 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 pay vs. 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.

Economic Reforms, Globalisation in India: Genesis of Reforms, Macroeconomic Stabilisation, Structural Reforms, Impact of Economic Reforms on the Indian Economy; IMF, World Bank, WTO and Asian Development Bank— Their Role from the point of view of India.

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.

SAMPLE QUESTIONS

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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

- d. none of these
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 launched 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. Tertiary 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. $\frac{\sigma}{\bar{X}} \cdot 100$
- b. $\frac{\bar{X}}{\sigma} \cdot 100$
- c. $100 \cdot \sigma \bar{X}$
- d. $\frac{100}{\sigma \cdot \bar{X}}$

42. The probability of having 53 Sundays in a non leap year is equal to

- a. $\frac{2}{7}$
- b. $\frac{1}{7}$
- c. $\frac{3}{7}$
- 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
- Origin
 - Scale
 - Both origin and scale
 - Neither origin nor scale
48. If $P(A \text{ and } B) = P(A) \times P(B)$, then the two events must be
- Equally likely
 - Mutually exclusive
 - Independent
 - None of the above
49. Cross elasticity of demand for two substitute goods is always
- Positive
 - Negative
 - Zero
 - 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
- Increasing at an increasing rate
 - Decreasing at a decreasing rate
 - Decreasing at an increasing rate
 - Decreasing at a constant rate
51. The function $Y = X^3 - 3X^2 + 2$ reaches a relative minimum at the point
- $X = 0$
 - $X = 2$
 - $X = -2$
 - $X = 1$
52. If we are trying to optimise $Z = XY$ subject to $X + Y = 6$, then at the point $(3, 3)$ the function reaches a
- Relative maximum
 - Relative minimum
 - Saddle point
 - 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
- Vanish
 - Be positive
 - Be negative
 - Not be defined

