"Success is our right. We will definitely succeed!"

— *Anil Nagar*, Founder & CEO, Adda Education

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TNPSC INDIAN ECONOMY

Based on Latest Syllabus

- Covers Indian Economy
- Covers both New and Old Textbooks for 100% TNPSC Syllabus Alignment
- Exclusive TNPSC Economy Topic wise PYQ's are added
- Complete Economy Guide for All TNPSC Group 1, 2, 2A & 4 Exams Preparation
- Simplified Revision Version and Complex Economical Events Broken Down into Easy-to-read Points

CONTENTS

01 Nature of Indian economy

ECONOMICS

- The term **Economics** is derived from the Ancient Greek word **"Oikonomikos".**
- Oikos means **household** and Nomos means **management / custom / law**.
- Economics means **management of households**.

DEFINITIONS OF ECONOMICS

– Adam Smith (Wealth)
– Alfred Marshall (Welfare)
– Lionel Robbins (Scarcity)

Aspect	Details
Economist	• Adam Smith (1723–1790)
Book	• An Inquiry into the Nature and Causes of the Wealth of Nations (1776)
Definition	• Economics is the **science of wealth**
Focus	• Wealth creation and accumulation

- Excessive importance given to **material wealth**
- Wealth treated as an **end in itself**
- Human welfare is ignored
- Economics reduced to wealth-getting and wealth-spending activities

ALFRED MARSHALL'S WELFARE DEFINITION

(*Neo-Classical Era*)

Aspect	Details
Economist	• Alfred Marshall (1842–1924)
Book	• Principles of Economics (1890)
Definition	• Economics is the study of mankind in the ordinary business of life
Focus	• Material welfare and well-being

KEY IDEAS OF MARSHALL

- Economics studies individual and social actions related to welfare
- Wealth is only a **means**, not an end
- Welfare is more important than wealth

CRITICISM OF MARSHALL

- Over-emphasis on **material welfare**
- Ignores **immaterial services** (doctor, teacher, etc.)
- Welfare is **subjective** and varies from person to person
- Welfare is not clearly defined
- Welfare depends not only on wealth but also on social, political and cultural factors

LIONEL ROBBINS' SCARCITY DEFINITION

Aspect	Details
Economist	• Lionel Robbins
Book	• An Essay on the Nature and Significance of Economic Science
Definition	• Economics studies human behaviour as a relationship between **ends and scarce means**
Core Idea	• Scarcity and choice

CRITICISM OF ROBBINS

- No distinction between welfare-producing and non-welfare goods
- Ignores moral and welfare aspects
- Focuses mainly on **micro-economics**
- Does not explain **economic growth and development**

COMPARISON OF DEFINITIONS OF ECONOMICS

Economist	Era	Core Focus	Main Limitation
AdamSmith	Classical	Wealth	Ignores human welfare
Alfred Marshall	Neo-Classical	Welfare	Welfare not clearly defined
Lionel Robbins	Modern	Scarcity & choice	Ignores growth & welfare

SAMUELSON'S GROWTH DEFINITION

- Paul A. Samuelson published *"An Introductory Analysis"* in **1948**.
- Economics studies how people and society choose to use **scarce resources** to produce commodities over time and distribute them for consumption.
- Scarcity exists in relation to **unlimited wants**.
- Samuelson included the **element of time**, making the definition **dynamic**.
- His definition covers **economic growth**.
- Applicable even in a **barter economy**.
- Covers **production, distribution and consumption**.
- Samuelson views Economics as a **social science**.
- Adam Smith's *Wealth of Nations (1776)* marked the **birth of Economics as a separate discipline**.**BASIC CONCEPTS IN ECONOMICS – GOODS**

MEANING OF GOODS

- In Economics, the term **goods includes services**, unless specified.
- Goods are also called products / commodities / things.

- **Characteristics of goods:**

– Tangible (material)
– Exist independently of owner
– Transferable
– Have physical dimensions
– Owned by someone
– Have value in exchange

CLASSIFICATION OF GOODS

Type of Goods	Meaning
Necessaries	Essential for survival
Comforts	Improve standard of living
Luxuries	Provide pleasure and status

FREE GOODS vs ECONOMIC GOODS

Aspect	Free Goods	Economic Goods
Availability	Abundant in nature	Scarce
Price	No price	Price exists
Examples	Air, sunlight	Water, food, clothes
Exchange value	No	Yes

MICROECONOMICS AND MACROECONOMICS

Feature	Microeconomics	Macroeconomics
Origin	• Derived from Greek word 'Mikros' (Small).	• Derived from Greek word 'Makros' (Large).
Focus	• Individual units • (a firm, a household, a consumer).	• The entire economy • (National income, GDP, Inflation).
Goal	• **Price Determination:** How the price of a specific good is fixed.	• **Income Determination:** How the national income/employment is fixed.
Approach	• **Bottom-Up:** Studies small parts to understand the whole.	• **Top-Down:** Studies the aggregate (total) to understand the parts.
Key Tools	• Demand and Supply of a product.	• Aggregate Demand (AD) and Aggregate Supply (AS).
Equilibrium	• **Partial Equilibrium:** Assumes other markets remain constant.	• **General Equilibrium:** Considers the interdependence of all sectors.
Father	• Often linked to **Adam Smith**.	• **John Maynard Keynes** (Modern Macroeconomics).

Microeconomics

➢ Focuses on the choices made by individuals and businesses regarding the allocation of scarce resources.
- **Consumer Behaviour:** How you decide to spend your ₹100 on coffee vs. tea.
- **Production Theory:** How a factory in Chennai decides how many units to produce to maximize profit.
- **Labor Economics:** Why a software engineer earns more than a construction worker (Individual wages).
- **Examples:** Price of petrol, rent in a specific city, demand for iPhones.

Macroeconomics

➢ Studies the behaviour of the economy as a whole and how policies affect the entire nation.
- **National Income:** Calculating the GDP (Gross Domestic Product) of India.
- **Inflation:** The general rise in prices across all goods in the country.
- **Monetary Policy:** Decisions by the RBI to change interest rates (Repo Rate).
- **Fiscal Policy:** Government spending and tax decisions (The Budget).
- **Examples:** Unemployment rate, Balance of Payments (BoP), Poverty ratios.
- **Example:** If one person saves more money, they become richer (Micro). However, if everyone in the country saves more and stops spending, the total demand falls, businesses shut down, and the whole economy collapses (Macro). This is called the **Paradox of Thrift**.
- **Ragnar Frisch (1933):** The first person to coin the terms "Micro" and "Macro."
- **Adam Smith:** Wrote "The Wealth of Nations" (1776); focused on individual markets.
- **J.M. Keynes:** Wrote "The General Theory of Employment, Interest, and Money" (1936) after the Great Depression, founding modern Macroeconomics.[12]

Nature of Indian Economy

9th-Understanding Development:
Perspectives, Measurement and Sustainability

❖ Economic development refers to the overall growth of all sectors of an economy through the adoption of new technologies. It leads to higher living standards for people and improves the status of the country.

02 Five-year Plan Models

EVOLUTION OF PLANNING IN INDIA

- Economic planning became important in the **20th century**.
- After World War II, planning was needed for reconstruction.
- India adopted a **mixed economy** after independence.
- Planning Commission was established on **15 March 1950**.
- Plan era began on **1 April 1951** with the First Five Year Plan.

1. **Visvesvaraya Plan (1934)**
    - **The Architect:** Sir M. Visvesvaraya (The father of Indian Planning).
    - **Key Contribution:** Wrote the book **"Planned Economy of India"**.
    - **The Proposal:** A **10-year plan** aimed at doubling the national income.
    - **Significance:** It was the **first systematic attempt** at economic planning in India. He emphasized a shift of labor from agriculture to industries.
2. **National Planning Committee (1938)**
    - **Background:** Established during the Haripura Session of the INC.
    - **Chairman: Jawaharlal Nehru** (appointed by Subhash Chandra Bose).
    - **Objective:** To formulate a comprehensive plan for industrialization and self-sufficiency.
    - **Fate:** Its work was interrupted and postponed due to the outbreak of **World War II** and political turmoil in India.
3. **The Bombay Plan (1944)**
    - **Authors:** 8 leading industrialists of Bombay (including J.R.D. Tata, G.D. Birla, and Purshottamdas Thakurdas).
    - **Full Name:** "A Plan of Economic Development for India."
    - **Duration:** A **15-year investment plan**.
    - **Key Features:**
        - Proposed doubling per capita income.
        - Heavy emphasis on **Basic and Capital Goods industries** (Steel, Power, etc.).
        - It advocated a large role for the state in providing infrastructure.
4. **The Gandhian Plan (1944)**
    - **The Architect: S.N. Agarwal** (Shriman Narayan Agarwal).
    - **Ideology:** Decentralization and self-sufficiency of villages.
    - **Key Features:**
        - Prioritized **Agriculture** over heavy industries.
        - Promoted **Small, Cottage, and Village industries**.
        - It was an alternative to the industrial-heavy Bombay Plan.
5. **The People's Plan (1945)**
    - **The Architect: M.N. Roy** (The leader of the Indian Communist movement).
    - **Duration:** A **10-year plan**.
    - **Key Features:**
        - Based on Marxist socialism.
        - Emphasized **Nationalization** of all production and distribution.
        - Focus on "consumer goods" and **agricultural mechanization** to meet the basic needs of the people.
6. **Sarvodaya Plan (1950)**
    - **The Architect: Jayaprakash Narayan** (J.P.).
    - **Inspiration:** Based on the principles of **Mahatma Gandhi** and **Vinoba Bhave**.
    - **Key Features:**
        - Emphasized "Land to the Tiller" (Land reforms).
        - Focus on agriculture and small-scale industries.
        - Stressed on **self-reliance** and the total rejection of foreign capital.
    - **Legacy:** Many ideas from this plan were incorporated into the initial Five-Year Plans.

Year	Plan Name	Proponent	Focus Area
1934	Visvesvaraya Plan	M. Visvesvaraya	Industrialization (10 yrs)
1938	NPC	Nehru (INC)	National Planning
1944	Bombay Plan	8 Industrialists	Heavy Industry (15 yrs)
1944	Gandhian Plan	S.N. Agarwal	Rural & Cottage Industry
1945	People's Plan	M.N. Roy	State-controlled Agri
1950	Sarvodaya Plan	J.P. Narayan	Agriculture & Land Reform

Post-Planning

- **Advisory Planning Board (1946):** Setup by the Interim Government under **K.C. Neogy** to review the above plans.
- **Planning Commission:** Eventually established on **March 15, 1950**, as a non-constitutional, advisory body to implement the Five-Year Plans.
- **NITI Aayog:** Replaced the Planning Commission on **January 1, 2015**.

04 Sources of Revenue

SOURCE OF REVENUE

7TH - Tax and its Importance

TAXATION

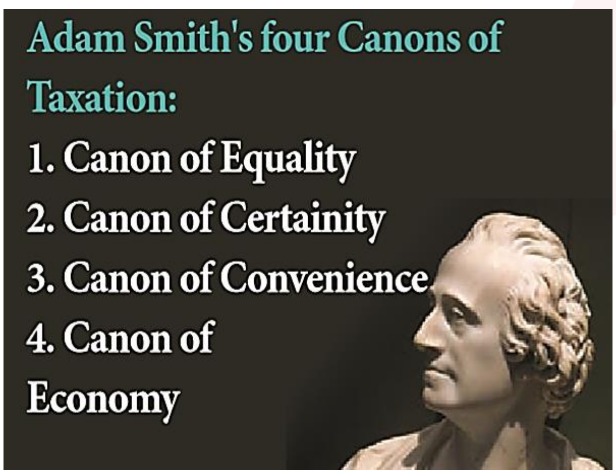
- Taxation refers to the act by which a government or taxing authority levies taxes.
- It includes all involuntary levies such as income tax, capital gains tax, estate tax, etc.
- The revenue collected through taxation is called taxes.

TAX – DEFINITION

- Taxes are compulsory payments to the government without any direct return or benefit.
- Prof. Seligman: Tax is a compulsory contribution from a person to the government for meeting common expenses without reference to special benefits.

WHY TAXES ARE IMPOSED

- Payment of taxes is a legal obligation of every citizen.
- Taxes finance government expenditure.
- More tax collection enables more welfare schemes.
- Taxes are essential for social, economic, and administrative functions of the state.



CANONS (PRINCIPLES) OF TAXATION

1. **Canon of Equality**
   - Tax burden should be based on ability to pay.
   - Rich pays more; poor pay less.
2. **Canon of Certainty**
   - Tax system must be clear and predictable.
   - Avoids confusion and economic waste.
3. **Canon of Convenience**
   - Taxes should be collected at a time and manner convenient to taxpayers.
4. **Canon of Economy**
   - Cost of tax collection should be minimal.
   - Revenue collected should reach government treasury efficiently.

TYPES OF TAXATION

1. **Proportional Taxation**
   - Same tax rate for all income levels.
   - Tax amount increases in proportion to income.
   - Relative financial status remains unchanged.
2. **Progressive Taxation**
   - Tax rate increases as income increases.
   - Higher income groups pay higher percentage of tax.
3. **Regressive Taxation**
   - Lower income groups bear higher tax burden.
   - Opposite of progressive taxation.

IMPORTANCE OF TAX

- Taxes are essential for meeting societal needs.
- *Government uses tax revenue for*:
  – Health services – Medical research
  – Social security – Education
  – Infrastructure
- Taxes contribute to Gross Domestic Product (GDP).
- Taxes fund pensions, unemployment benefits, childcare, etc.

PRINCIPLES OF TAXATION – ADAM SMITH

- Adam Smith's canons form the foundation of modern tax systems.
- Emphasize equity, certainty, convenience, and economy.

TYPES OF TAX (MODERN CLASSIFICATION)

1. Direct Tax
2. Indirect Tax

DIRECT TAX

- Paid directly by individuals or organisations to the government.
- Burden cannot be shifted to others.

Examples:

- Income Tax
- Property Tax
- Personal Property Tax
- Corporate Tax

Important fact:

- Central Board of Direct Taxes (CBDT) formed under Central Board of Revenue Act, 1963.

CORPORATION TAX

- Levied on profits of companies.
- *Charged on:*
  – Royalties – Interest
  – Capital gains – Technical service fees
  – Dividends

WEALTH / PROPERTY TAX

- Levied on property value.
- Taxed every year based on current market value.

GIFT TAX

- Paid by the recipient of a gift.
- Depends on the value of the gift.

ESTATE DUTY

- Levied on inherited property.
- Paid by successor.

INDIRECT TAX

- Burden of tax can be shifted to another person.
- Taxpayer and tax bearer are different.

Examples:

- Service Tax
- Sales Tax
- Excise Duty
- Entertainment Tax
- Goods and Services Tax (GST)

SERVICE TAX

- Levied on services provided.
- Collected from service recipient.
- Paid to Central Government.

SALES TAX

- Levied on sale of goods.
- Shopkeeper collects tax from customer.
- Burden falls on consumer.

EXCISE DUTY

- Levied on manufactured goods.
- Paid by producer.
- Recovered from wholesalers and retailers.
- Collected by Central Government.

ENTERTAINMENT TAX

- Levied by State Governments.
- *Charged on:*
  – Movie tickets
  – Amusement parks
  – Exhibitions
  – Sports events

GOODS AND SERVICES TAX (GST)

- A national-level indirect tax.
- Applies to manufacture, sale, and consumption of goods and services.
- Replaced multiple indirect taxes of Centre and States.

Historical background:

- Kautilya's Arthashastra mentions taxes in cash and kind.
- Central Excise Duty introduced in early 20th century.
- VAT introduced in Haryana in 2003, expanded in 2005.
- GST implemented from 1 July 2017.

Slogan:

- One Nation – One Market – One Tax

STRUCTURE OF GST

- *CGST* – Central Goods and Services Tax
- *SGST* – State Goods and Services Tax
- *IGST* – Integrated Goods and Services Tax *(Inter-state trade)*
- 0%, 5%, 12%, 18%, 28%
- Essential goods like vegetables and food grains are exempted.

TOLL TAX AND ROAD TAX

- Levied for use of infrastructure like roads and bridges.
- Used for maintenance and upkeep.

SWACHH BHARAT CESS

- Introduced on 15 November 2015.
- Rate: 0.5%
- Levied on taxable services over and above service tax.

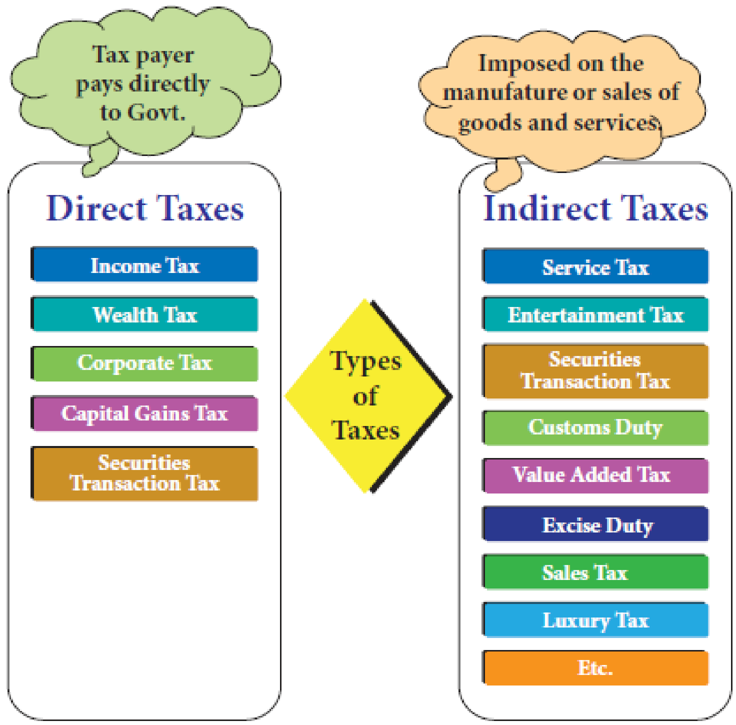
DISTINCTION BETWEEN DIRECT AND INDIRECT TAX

Direct Tax

- Burden cannot be shifted
- No inflationary pressure
- Impact and incidence same
- Less elastic

Indirect Tax

- Burden can be shifted
- Causes inflationary pressure
- Impact and incidence differ
- More elastic



NEED FOR TAX AND PEOPLE'S WELFARE

- Raises revenue for governance.
- Funds infrastructure, health, education, defence, Research.
- Supports pensions, unemployment benefits, public utilities.
- Government's ability to raise tax is called fiscal capacity.
- Excess expenditure over revenue leads to public debt.

GOVERNANCE

- Governance ensures proper utilization of tax revenue.
- Good governance supports economic growth.
- Poor governance negatively affects development.

10th-UNIT – 4 : GOVERNMENT AND TAXES

ROLE OF GOVERNMENT IN DEVELOPMENT POLICIES

Defence

- Essential security function.
- Protects the nation from external threats.
- Responsibility of the Union Government.

1. Foreign Policy
   - Maintaining friendly relations with other countries.
   - Economic relations through exports, imports, investments and labour.
   - Handled by the Union Government.

05 Reserve Bank of India

Reserve Bank of India

9th-Role of the Reserve Bank of India (RBI), Money and Credit

The RBI is the **Central Bank of India**, acting as the **"Banker's Bank**" and the "Banker to the Government."

- **Established:** April 1, 1935 (under the **RBI Act, 1934**).
- **Headquarters:** Initially in Kolkata; moved permanently to **Mumbai** in 1937.
- **Nationalization: 1949** (became fully government-owned).
- **The Ambedkar Connection:** The RBI's framework was guided by **Dr. B.R. Ambedkar's** Ph.D. thesis: "The Problem of the Rupee – Its Origin and Solution.

Key Functions of the RBI

The RBI performs several critical roles to maintain the country's economic health:

1. **Monetary Authority:** Regulates the money supply and controls **inflation** using monetary policy.
2. **Currency Regulator:** Manages the design, printing, and circulation of banknotes.
3. **Banker to the Government:** Manages the banking accounts of both Central and State governments.
4. **Banking Supervisor:** Monitors and supervises the credit system and commercial banks.
5. **Price Stability:** Acts as the primary guardian of price stability in the Indian economy.

Currency and Circulation

The RBI has the sole authority to issue banknotes (except for the one-rupee note, which is issued by the Ministry of Finance).

- **Decision Power:** RBI decides the **value**, **quantity**, and **distribution** methods of currency.
- **Capacity:** The RBI can print notes up to **₹10,000**, though the highest currently issued is ₹2,000.
- **Circulation Stats:** * About **85%** of printed currency is released into actual circulation.
  - As of August 2018, the total currency in circulation was approx. **₹19 lakh crore**.

Money, Prices, and Inflation

Understanding the relationship between currency and cost of living:

- **The Link:** Money supply and price levels are directly related.
- **Inflation Cause:** An **increase in money supply** usually leads to inflation (rising prices).
- **Control:** The RBI uses **Monetary Policy** (interest rates, reserve ratios) to pull back excess money and stabilize prices.

Key Concepts of Money

Function	Description
Medium of Exchange	• Used to buy goods and services easily.
Unit of Account	• Provides a standard measure to value goods *(e.g., pricing a phone at ₹20,000).*
Store of Value	• Allows wealth to be saved and retrieved in the future.
Standard of Deferred Payments	• Forms the basis for future payments (loans and debt

Building on your notes, here is the structured information for **Currency, Credit, and Banking** with updated facts for 2025. This layout is designed for clarity and quick revision, particularly for TNPSC and competitive exams.

Currency and Foreign Exchange

Currency management involves both domestic utility and international trade value.

- **Domestic Currency:** The **Indian Rupee (INR)**.
- **Foreign Exchange (Forex):** Any currency other than the domestic one.
- **Global Standard:** The **US Dollar ($)** is the benchmark for comparing economies and conducting international trade.
- **Exchange Rate:** The value of the Rupee in terms of another currency (e.g., $1 = ₹84$).

Sources of Credit (Formal vs. Informal)

Credit is the backbone of economic activity for farmers, entrepreneurs, and large industries.

Feature	Formal Institutions	Informal Institutions
Examples	• Nationalised, Private, & Cooperative Banks	• Moneylenders, Traders, Relatives, Friends
Interest Rate	• **Low** (fixed by RBI guidelines)	• **High** (often exploitative)
Documentation	• Strict; requires **Collateral** (security)	• Easy access; flexible/no documentation
Regulation	• Supervised by the **RBI**	• No legal supervision
Recovery	• Legal and procedural	• Often involves risky or forceful methods

Micro-Credit and Self-Help Groups (SHGs)

SHGs bridge the gap between the poor and formal banking.

- **Purpose:** To promote saving habits and provide small loans for livelihood.
- **Target Groups:** Women, the rural poor, fishermen, and street vendors.
- **Bank Linkage:** Nationalised banks provide bulk loans to SHGs, which then distribute "micro-credit" to members.
- **Impact:** Empowers women and provides **income security** without the need for individual collateral.

Tamil Nadu Banking: 2024–25 Facts

Tamil Nadu is a leader in banking infrastructure and financial inclusion.

- **Bank Branches:** As of 2024, there are over **13,500** bank branches in the state (including Public, Private, and RRBs).
- **Grama Bank:** The **Tamil Nadu Grama Bank** (sponsored by Indian Bank) is a key player in rural credit.[1]
- **Digital Leader:** Tamil Nadu consistently ranks in the **top 3 states** in India for digital transaction volumes (UPI and PoS).

Currency History & Printing (Chronology)

The evolution of Indian paper money and where it is produced today.

Timeline of Important Events

- **1917:** First printing of ₹1 and ₹2 notes.
- **1925:** Government press established at **Nasik** (Maharashtra).
- **1974:** Currency press started at **Dewas** (Madhya Pradesh).
- **Modern Era:** Presses were later established in **Mysuru** (Karnataka) and **Salboni** (West Bengal).

Production Units

The RBI and Government of India share the responsibility of printing and minting:

1. **Printing Presses:** Nasik, Dewas, Mysuru, and Salboni.
2. **Mints (Coins):** Mumbai, Kolkata, Hyderabad, and Noida.

Design & Status Updates

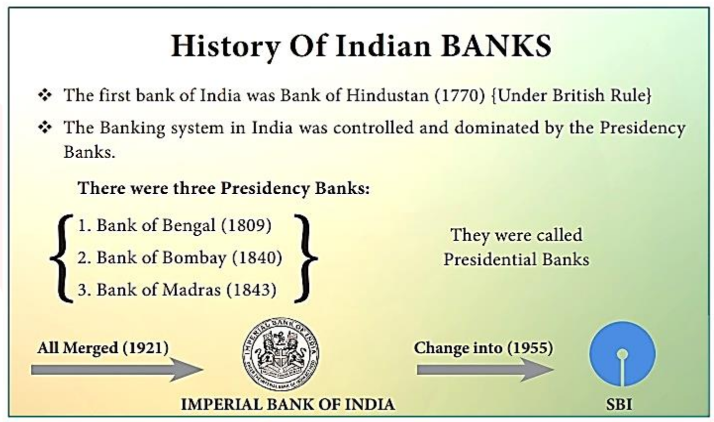
- **Historical Figures:** Pre-Independence notes featured **King George VI**; Post-Independence notes initially featured the **Lion Capital of Ashoka**, and later the **Mahatma Gandhi Series**.
- **₹2,000 Note Status:** Withdrawn from circulation in May 2023.As of late 2025, over **98%** have been returned to the RBI, though they technically remain legal tender only at RBI issue offices.

12TH-BANKING

1. Introduction and Historical Development

- **Definition:** Finance is the "life blood" of all economic activities like trade and industry. A bank is an institution that provides fundamental services by **accepting deposits and lending loans**.

- **World History:**
  - **Bank of Venice (1157):** The world's first finance lending bank.
  - **Ricks Bank of Sweden (1656):** The oldest central bank in the world; it gained the sole right to issue notes in 1897.
  - **Bank of England (1694):** Developed the fundamentals of banking and became the first "bank of issues" in 1864.
- **Indian History:**
  - **Bank of Hindustan (1770):** The first bank in India.
  - **Presidency Banks:** Bank of Bengal (1806), Bank of Bombay (1840), and Bank of Madras (1843).
  - **Mergers:** All three Presidency Banks merged in **1921** to form the **Imperial Bank of India**.
  - **State Bank of India (SBI):** The Imperial Bank was transformed into SBI in **1955**.



2. Commercial Banks

Commercial banks conduct business with a **profit motive** by accepting public deposits and lending for various investments. They primarily provide **short-term credit** to maintain asset liquidity

Functions of Commercial Banks

1. **Primary Functions:**
   - **Accepting Deposits:** Includes **Demand Deposits** (withdrawable anytime via ATM, cheque, or slip) and **Time Deposits** (fixed period, higher interest, requires notice for withdrawal).
   - **Advancing Loans:** Provided as overdrafts, cash credit, and discounting bills of exchange.
2. **Secondary Functions:**
   - **Agency Functions:** Acting as an agent to collect cheques, dividends, and pensions, or paying bills (telephone, insurance) for customers.
   - **General Utility Functions:** Providing safe lockers, issuing traveller's cheques, and dealing in foreign exchange (with RBI permission).
3. **Other Functions:**
   - **Money Supply:** Increasing the supply by creating demand deposits through loans without printing physical cash.

06 Fiscal Policy and Monetary Policy

8TH-MONEY, SAVINGS AND INVESTMENTS

☆ ORIGIN AND MEANING OF MONEY

- The word Money is derived from the Roman word *"Moneta Juno".*
- Juno Moneta was a Roman goddess, and the Roman Republic money was issued near her temple.
- Indian Rupee is derived from the Sanskrit word "Rupya", meaning silver coin.

EVOLUTION OF MONEY – OVERVIEW

- Money did not evolve overnight; it took thousands of years.
- Evolution depended on time, place, and circumstances.
- Earliest stage of money: Barter System.

Major stages of evolution of money:

1. Commodity Money
2. Metallic Money
3. Paper Money
4. Credit Money / Bank Money
5. Near Money
6. Recent forms of Money

BARTER SYSTEM

- Barter system means exchange of goods for goods or services without using money.
- Value of goods was decided by mutual negotiation.
- Advantage: No use of money.

Deficiencies of Barter System:

1. Lack of double coincidence of wants
2. Absence of common measure of value
3. Indivisibility of commodities
4. Difficulty in storing wealth

COMMODITY MONEY

- Used in early human civilization.
- Any commonly demanded commodity accepted by society.
- Examples: furs, skins, salt, rice, wheat, utensils, weapons.
- Exchange of goods for goods was called Barter Exchange.

METALLIC MONEY

- Developed with progress of civilization.
- Metals used: gold, silver, copper, bronze.
- *Reasons for use:*
  – Easy handling
  – Measurable quantity
  – Durable and portable
- Main form of money in recorded history.

HISTORY OF METALLIC MONEY

- Coins had standard weight and fineness with official seal.
- Easily divisible and portable.

Important historical facts:

- King Midas of Lydia introduced metal coins in 8th century BCE (recorded by Herodotus).
- Gold coins were used in India much earlier than Lydia.
- Earliest coin issuers: Ancient Indians, Chinese, and Lydians.
- First Indian coins minted in 6th century BCE by Mahajanapadas.
- Names of early Indian coins: Puranas, Karshapanas, Panas.

Dynasty-wise contributions:

- **Mauryas:** Punch Marked Coins (silver, gold, copper, lead).
- **Indo-Greek and Kushans:** Portrait engraving on coins.
- **Delhi Sultans (12th century CE):** Islamic calligraphy replaced royal images.
  – *Coins:* Tanka (gold, silver, copper), Jittals (lower value).
- **Mughal period (from 1526 CE):** Unified monetary system.
- **Sher Shah Suri:**
  – Issued silver coin "Rupiya" (178 grams).
  – Divided into 40 copper paisa.
- **British East India Company (from 1600):**
  – Mughal currency continued initially.
  – *1717 CE:* Farrukhsiyar allowed British to mint Mughal coins in Bombay.
  – **<u>British coins:</u>**
    ☆ *Gold:* Carolina
    ☆ *Silver:* Angelina
    ☆ *Copper:* Cupperoon
    ☆ *Tin:* Tinny

PAPER MONEY

- Carrying metal coins was risky and inconvenient.
- Paper money developed from goldsmiths' receipts for stored gold.
- These receipts became substitutes for money.
- Paper money is regulated by Central Bank.

India-specific facts:

- Reserve Bank of India (RBI) established in 1935.
- RBI prints, issues, regulates paper currency.
- Present money mainly consists of RBI-issued currency notes.

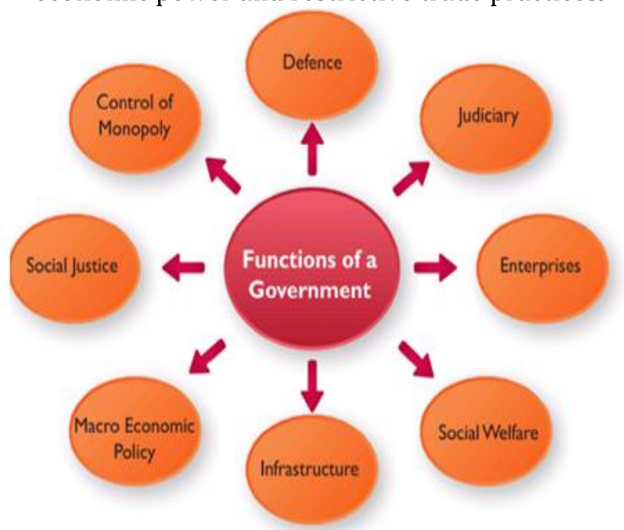
CREDIT MONEY / BANK MONEY

- Emerged along with paper money.
- People deposit cash in banks.
- Withdrawals through cheques.
- Cheque is not money, but performs functions of money.

Functions of a Modern Government

↳ The modern welfare state assumes roles far beyond a simple "police state":

- **Defence:** Protecting citizens from external aggression and internal disorder.
- **Judiciary:** Providing a structure to render justice and settle disputes for all classes of citizens.
- **Enterprises:** Operating and regulating state-owned and private enterprises.
- **Social Welfare:** Providing education, health, sanitation, and social security.
- **Infrastructure:** Building the social and economic foundations for national development.
- **Macro-economic Policy:** Administering fiscal and monetary policies to achieve economic goals.
- **Social Justice:** Intervening to redistribute income during economic growth.
- **Control of Monopoly:** Curbing the concentration of economic power and restrictive trade practices.



Public Finance vs. Private Finance

- **Similarities:** Both are based on **rationality** (welfare maximization at least cost), require limits to borrowing, aim for optimum resource utilization, and depend on efficient administration.
- **Dissimilarities:**
  - **Adjustment:** Individuals adjust expenditure to income, while governments adjust income to meet expenditure needs.
  - **Borrowing:** Governments can borrow from their own citizens (internal debt); individuals cannot borrow from themselves.
  - **Currency:** Only governments have the right to print and monitor currency.
  - **Vision:** Public finance focuses on long-term future planning (schools, hospitals); private finance often has a short-term profit vision.

Local Finance and Administration

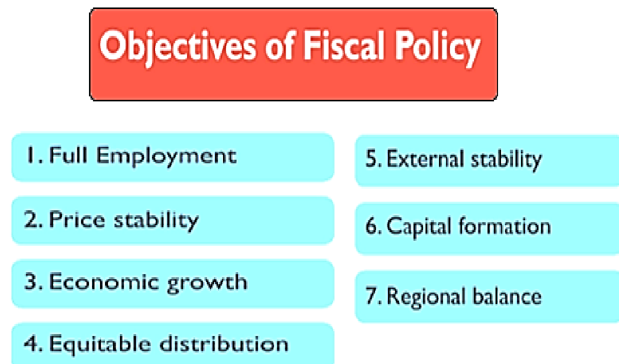
↳ Local bodies like **Municipal Corporations** (e.g., Corporation of Chennai) manage urban affairs such as water supply, drainage, lighting, and slum clearance.

- **Revenue Sources for Corporations:** Property tax, vehicle/animal tax, trade tax, and advertisement tax.

Fiscal Policy and Instruments

↳ Fiscal policy is the use of budgetary manipulations to affect macro-economic variables like output, employment, and investment.

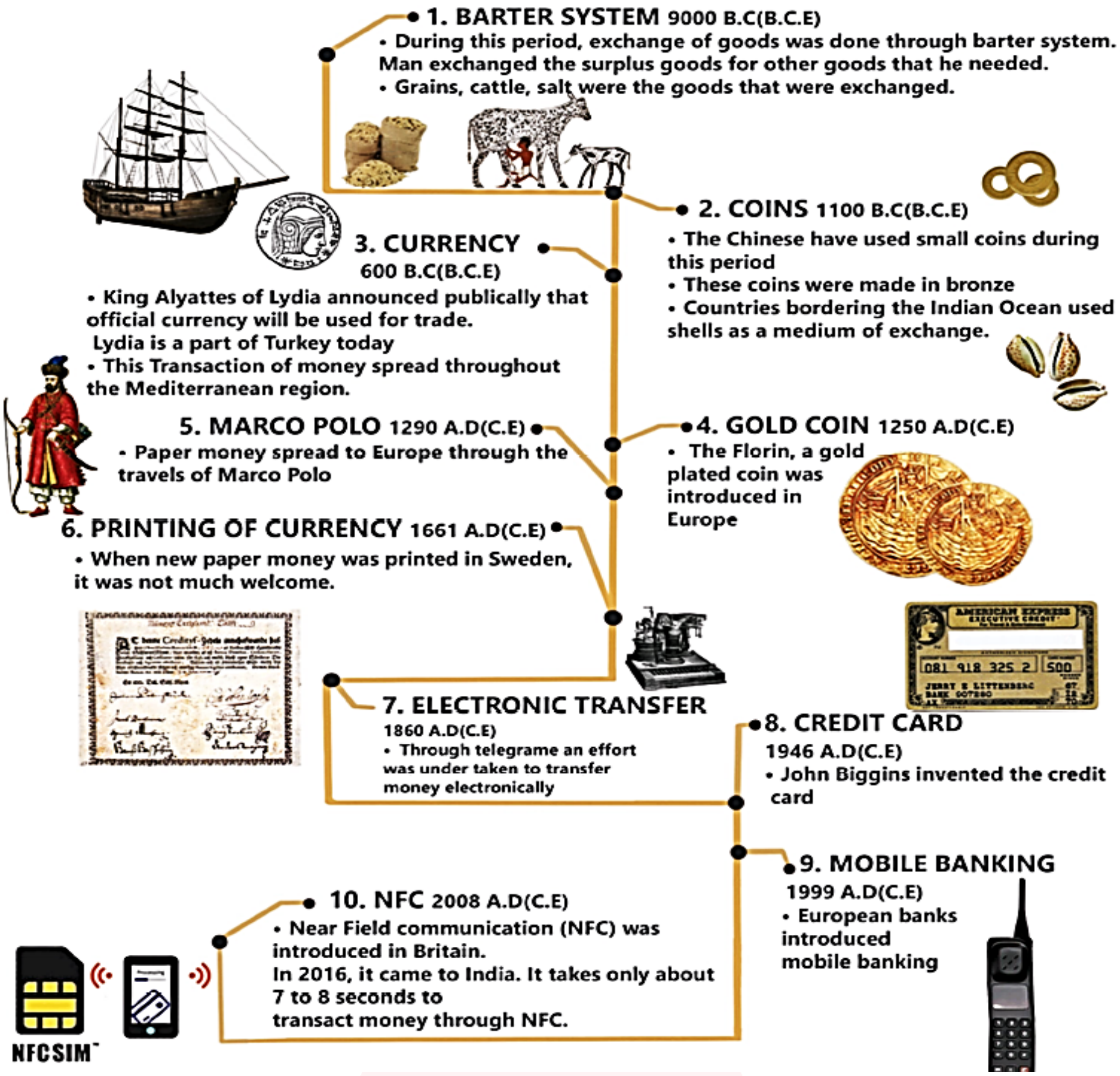
- **Instruments:**
  - **Taxation:** Increases reduce disposable income to control inflation; reductions help fight depression.
  - **Public Expenditure:** Increases help fight recession by raising aggregate demand; reductions control inflation.
  - **Public Debt:** Transfers funds between the public and government to manage money circulation.
- **Objectives:** Includes **Full Employment**, **Price Stability**, **Economic Growth**, **Equitable Distribution**, **Exchange Stability**, and **Capital Formation**.



9TH -<u>Money and Credit</u>

The Evolution of Money

- **Barter System (9000 B.C.E):** The earliest form of trade where goods were exchanged for other goods (e.g., grain for pots).
  - **Limitations:** Difficulty in exchanging specific needed goods (the "double coincidence of wants") and difficulty in measuring the value of different items.
- **Coins (1100 B.C.E – 1250 A.D.E):** * Metals like gold, silver, and copper were used as "Natural Money" because they were rare and maintained value.
  - **Sher Shah Suri (1540-1546):** Introduced a silver coin weighing 178 grams called the **Rupiya**, which remained in use through the Mughal and British periods.
- **Paper Money (1661 A.D.E – Present):** Introduced because of the scarcity of gold and silver reserves. Initially, coins of lesser value were used for the poor, leading eventually to paper currency and bank savings.
- **Modern Transactions:**
  - **Electronic Transfers:** Started via telegram in 1860.
  - **Credit Cards:** Invented by John Biggins in 1946.
  - **Mobile Banking:** Introduced by European banks in 1999.
  - **NFC (Near Field Communication):** Introduced in 2008; came to India in 2016.



The Reserve Bank of India (RBI)

The RBI is the central authority governing money in India.

- **History:** Started operations on **April 1, 1935**. It moved permanently to Mumbai in 1937 and was nationalized in 1949.
- **Role:** Regulates money supply, oversees monetary policy, and controls inflation.
- **Currency Printing:**
  - The first one and two-rupee notes were printed in 1917.
  - The government press was established at Nasik (1925), followed by Dewas, Mysuru, and Salboni.
  - While RBI can print notes up to 10,000 rupees, the current maximum is 2,000 rupees.
- Dr. B.R. Ambedkar's Ph.D. thesis, "The Problem of the Rupee - Its origin and solution," was a reference for the RBI Act of 1934.

Functions of Money

Money serves four primary roles in an economy:

1. **Medium of Exchange:** Accepted widely in exchange for goods and services.
2. **Unit of Account:** A standard measure to record financial transactions (e.g., if a book costs ₹50, money measures its value).
3. **Store of Value:** Used to save purchasing power for the future.
4. **Standard of Deferred Payments:** Used to finance and pay back future debts.

Understanding Credit

➢ Credit is essential for farmers (during monsoons), small entrepreneurs, and large industries.

- **Formal Sources:** Nationalized banks, private banks, and cooperative banks. These offer lower interest rates.
- **Informal Sources:** Local moneylenders or traders. These are easily approachable but often charge very high interest rates and lack safety.
- **Self-Help Groups (SHG):** Groups that join together to save money and provide micro-credit to members (especially women and the poor).

08 Resource sharing between Union and State Governments

Resource Sharing Between Union and State Governments

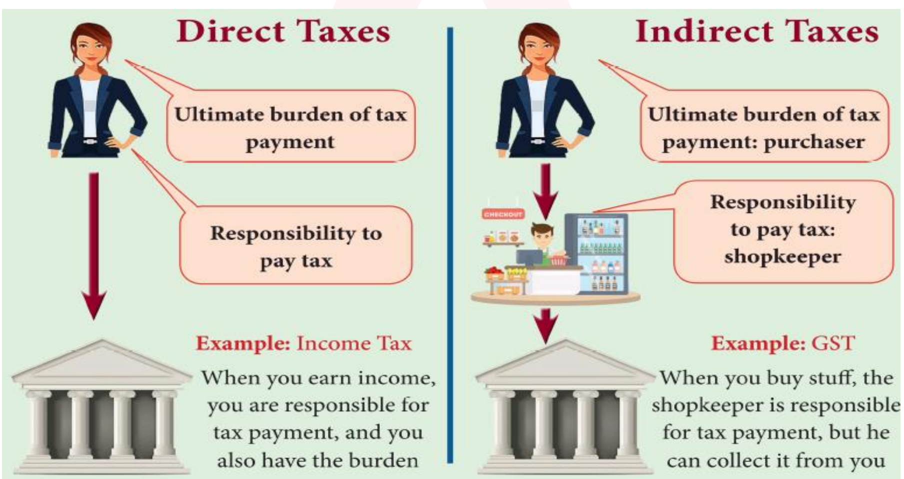
12TH- COMMERCE- INDIRECT TAX

Meaning of Indirect Tax: - Indirect Tax is a tax levied on goods and services rather than directly on the income or wealth of an individual.

- **Collection Process**: It is collected from buyers by the sellers, who then pay the collected amount to the Government
- **Impact**: Because it is imposed on the buyer through a transaction rather than on their earnings, it is referred to as an "indirect" tax
- **Examples**: Common examples include **GST (Goods and Services Tax)** and **Excise Duty**

Differences between Direct and Indirect Taxes

Basis	Direct Taxes	Indirect Taxes
Meaning	• Levied on income or wealth and paid directly by the person to the Govt.	• Levied on goods or services, collected by the seller, and paid to the Govt.
Incidence	• Falls on the same person (the one earning).	• Falls on different persons (seller pays, but consumer bears the cost).
Evasion	• Tax evasion is possible.	• Tax evasion is significantly more difficult.
Inflation	• Helps in reducing inflation.	• Contributes to inflation.
Shiftability	• Cannot be shifted to others.	• Can be shifted to others (the consumer).
Examples	• Income Tax, Wealth Tax.	• GST, Excise Duty.



Goods and Services Tax (GST) – Meaning

- GST is a tax imposed on the supply and consumption of goods and services
  - **Destination-Based**: It is a destination-based consumption tax collected on value-added items at each stage of the supply chain
  - **Applicability**: It applies to all goods and services except for **alcohol** and **specified petroleum products**
  - **Reform Significance**: The GST Act was passed on April 12, 2017, and came into effect on **July 1, 2017.** It is considered the single biggest tax reform in India since Independence

Key Implementation Details

- **Tax Rates**: The Act proposes four main tax rates: **5%, 12%, 18%, and 28%**.
- **Exemptions**: Small traders with an annual turnover within a state below Rs. 20 lakhs are generally exempted from registration. However, inter-state traders must register regardless of their turnover.
- **Constitutional Basis**: The **101st Constitution Amendment Act 2016** provided the legal authority for both the Centre and States to levy taxes on the same goods and services.

09 Structure of Indian Economy and Employment Generation

Structure of Indian Economy and Employment Generation

INDIAN ECONOMIC STRUCTURE

10th-UNIT 1-GDP

Gross Domestic Product and its Growth: an Introduction.

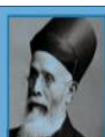
Introduction to GDP - Gross Domestic Product (GDP) is the tool used to understand how an economy is performing. It measures the total volume of **goods** (tangible physical items like food) and **services** (intangible activities like cooking or serving) produced and paid for nationwide.

- **Definition:** GDP is the market value of all the final goods and services produced in a country during a specific time period.
  - **Formula:** GDP = C + I + G + (X - M) (where C is Consumption, I is Investment, G is Government Expenditure, X is Exports, and M is Imports).
  - **Final vs. Intermediate Goods:** Only final goods (those used or consumed) are included in GDP. Intermediate goods (used to produce other goods, like sugar in tea) are excluded to avoid **double counting**.

National Income

- National Income measures the total money value of all goods and services produced by an economy over a year. Associated terms include:
  - **Gross National Product (GNP):** Total value of goods and services produced and income received by domestic residents, including profits from capital invested abroad
  - **Net National Product (NNP):** GNP minus depreciation (value lost over time due to wear and tear)
  - **Net Domestic Product (NDP):** GDP minus depreciation
  - **Per Capita Income (PCI):** National Income divided by the population; it indicates the standard of living
  - **Personal Income (PI):** Total money income received by individuals/households before direct taxes.
  - **Disposable Income (DI):** Actual income available for consumption after paying direct taxes DI = PI - Direct Taxes

In 1867-68 for the first time Dadabhai Naoroji had ascertained the Per Capital Income in his book *"Poverty and Un-British Rule of India".*



Methods of Calculating GDP

There are three primary approaches to measuring GDP:

1. **Expenditure Approach:** Summing all spending on final goods and services produced during a period
   $$Y = C + I + G + (X - M)$$
2. **Income Approach:** Measuring the earnings of those involved in production
   $$Y = \text{wages} + \text{rent} + \text{interest} + \text{profit}.$$
3. **Value-Added Approach:** Adding the value produced at each stage of production by intermediate goods to equal the total value of the final good.

DO YOU KNOW? The modern concept of GDP was first developed by Simon Kuznets for a US Congress report in 1934.

Importance of GDP

- GDP serves as a vital scorecard for a nation's economy. Its primary uses include:
- **Measuring Growth:** It helps track how much an economy is expanding or contracting over time.
- **Policy Planning:** It acts as a guide for governments to create economic plans and manage the public sector.
- **Global Comparison:** It allows for the comparison of economic performance between different countries.
- **Tracking Inflation:** It helps identify problems related to inflation (rising prices) and deflation (falling prices).

Limitations of GDP

- While GDP is a standard metric, it has significant "blind spots" that don't reflect the full reality of human life:

1. **Excludes Non-Market Services:** Important services that aren't "sold"—like parents caring for children or the value of clean air—are completely left out.
2. **Quantity vs. Quality:** GDP focuses on the volume of goods produced. It doesn't necessarily account for how much the quality of those goods (like the ballpoint pen example in your text) has improved.
3. **Income Distribution:** A country can have a high GDP even if the wealth is concentrated in the hands of a few people, leaving the majority in poverty.
4. **Quality of Life:** GDP doesn't measure social factors like health, political freedom, or happiness levels.

Growth of GDP and Economic Policies

- Several policies drive growth:
  1. **Agriculture Policy:** Decisions relating to domestic farming and imports, including the Green Revolution and land reforms.
  2. **Industrial Policy:** Promotes research, creates employment, and makes the economy self-sufficient.
  3. **New Economic Policy (1990):** The LPG reforms that significantly influenced economic growth.

Gross National Happiness (GNH)

- Coined in 1972 by the King of Bhutan, GNH prioritizes happiness over GNP. It rests on **four pillars**: sustainable development, environmental conservation, cultural preservation, and good governance

Human Development Index

In 1990 Mahbub ul Haq, a Pakistani Economist at the United Nations, introduced the Human Development Index (HDI). The HDI is a composite index of life expectancy at birth, adult literacy rate and standard of living measured as a logarithmic function of GDP, adjusted to purchasing power parity.

India climbed one spot to 130 out of 189 countries in the latest human development rankings released today by the United Nations Development Programme (UNDP). Between 1990 and 2017, India's HDI value increased from 0.427 to 0.640, an increase of nearly 50 percent – and an indicator of the country's remarkable achievement in lifting millions of people out of poverty.

India's Developmental Path

- India has followed a unique developmental journey, marked by two distinct phases:
  - **Pre-1991 (Closed Economy):** India initially focused on domestic industries and reduced dependence on foreign products. This period emphasized public sector dominance and strict regulations for private companies.
  - **Post-1991 (Liberalization):** To address a struggling economy, India opened its borders to free trade and liberalized by allowing foreign companies to enter. This is known as the **LPG Model** (Liberalisation, Privatisation, and Globalisation).

Factors Supporting Growth

- **Demographic Dividend:** India has 700 million people under age 35, with a working-age population that has grown to 64% of the total.
- **Knowledge Hub:** A strong legal system and English-speaking population have attracted investments in Information Technology (IT), making Bangalore a global software hub.

Economic Policies

- The Government of India has framed several policies to drive growth and development:
  1. **Agricultural Policy:** Sets rules for domestic farming and imports. It includes land reforms, the Green Revolution, and price policies.
  2. **Industrial Policy:** Aims to create employment and modernization. Key resolutions were passed in 1948, 1956, and 1980.
  3. **New Economic Policy (1991):** Introduced the LPG model, which significantly increased the country's overall economic growth.

Gross National Happiness (GNH)

- Bhutan's King famously stated that "Gross National Happiness is more important than Gross National Product". In 2011, the UN urged member nations to adopt this holistic approach.
  - **The 4 Pillars:** Sustainable development, environmental conservation, cultural promotion, and good governance.
  - **The 9 Domains:** Includes psychological well-being, health, education, and community vitality

Gross National Happiness (GNH)

The term Gross National Happiness was coined in 1972 during an interview by a British journalist for the Financial Times at Bombay airport when the then king of Bhutan, Jigme Singye Wangchuck, said "Gross National Happiness is more important than Gross National Product.

In 2011, The UN General Assembly passed Resolution "Happiness: towards a holistic approach to development" urging member nations to follow the example of Bhutan and measure happiness and well-being and calling happiness a "fundamental human goal."

The four pillars of GNH's are

1. Sustainable and equitable socio-economic development.
2. Environmental conservation.
3. Preservation and promotion of culture.
4. Good governance.

The nine domains of GNH are psychological well-being, health, time use, education, cultural diversity and resilience, good governance, community vitality, ecological diversity and resilience, and living standards.

Performance of Tamil Nadu Economy

- Some states like Gujarat and Maharashtra perform well in certain economic indicators.
- Kerala tops in literacy, IMR and MMR.
- In recent years, Tamil Nadu's performance has been outstanding and ahead of most other states in:
  – Health
  – Higher education
  – Growth of MSMEs
  – Poverty alleviation
  – Employment generation

Tamil Nadu in Health Index

- Tamil Nadu is placed third in the Health Index Report.
- Tamil Nadu comes after Kerala and Punjab.
- Neo-natal mortality rate in Tamil Nadu is lower than in many other states.
- Under-5 mortality rate declined from 21 in 2014 to 20 in 2015.
  (Source: Healthy States, Progressive India Report, 2018 – NITI Aayog)

Reasons for Tamil Nadu's relative success

- Extension of social policies to cover most of the population.
- Near-universal coverage of:
  – Public Distribution System
  – Midday Meal Scheme
  – Public health infrastructure

Water Availability and Rainfall in Tamil Nadu

- Tamil Nadu accounts for about 3% of India's water resources.
- It has about 4% of India's land area.
- It supports nearly 6% of India's population.
- The North-East Monsoon is the major source of rainfall in Tamil Nadu.
- The South-West Monsoon is the secondary source of rainfall.
- There are 17 river basins in Tamil Nadu.
- *Major rivers include:*
  – Palar
  – Pennaiyar
  – Bhavani
  – Chittar
  – Vellar
  – Siruvani
  – Vaipar
  – Cheyyar
  – Cauvery
  – Vaigai
  – Thamiraparani
  – Noyyal
  – Gundar
  – Valaparai
- Wells are the largest source of irrigation in Tamil Nadu, accounting for about 56%.

Source of Irrigation	Numbers
Reservoirs	81
Canals	2239
Tanks	41262
Tube Wells	3,20,707
Open Wells	14,92,359

Source: Tamil Nadu Government Season & Crop Report 2012-13

Mineral Resources

- Tamil Nadu has mining projects based on:
  – Titanium
  – Lignite
  – Magnesite
  – Graphite
  – Limestone
  – Granite
  – Bauxite
- Neyveli Lignite Corporation was the first major mining-based industrial complex developed around Neyveli.
- Cuddalore district has:
  – Thermal power plants
  – Fertilizer plants
  – Carbonisation plants
- Magnesite mining is carried out at Salem.
- Iron ore mining is carried out at:
  – Kanjamalai
  – Molybdenum deposits are found in Karadikuttam, Madurai district.

Mineral	Reserve (Tonnes)	National Share
Lignite	30,275,000	87%
Vermiculite	2,000,000	66%
Garnet	23,000,000	42%
Zircon	8,000,000	38%
Graphite	2,000,000	33%
Ilmenite	98,000,000	28%
Rutile	5,000,000	27%
Monazite	2,000,000	25%
Magnesite	73,000,000	17%

(Source: Department. of Geology and Mining)

Population

- Tamil Nadu stands sixth in population in India.
- Population of Tamil Nadu: 7.21 crore.
- Total population of India: 121 crores.

State / Country	Population (in Crore)
Tamil Nadu	7.2
U.K.	6.5
France	6.5
Italy	5.9
South Africa	5.6
Spain	4.7
Sri Lanka	2.1

(Source: Projections published by the United Nations in the 2017 Revision of World Population Prospects.)

10 Land Reforms and Agriculture

Agriculture & Land Reforms in India

Introduction

Land reforms refer to **institutional measures** undertaken by the state to restructure the agrarian system in order to ensure **equity, efficiency, and social justice** in land ownership and land use. In India, land reforms have been a crucial part of the post-Independence development strategy because agriculture supports a large proportion of the population and land is the primary productive asset in rural areas

❖ **Agrarian Structure in Pre-Independence India**
- **Land Revenue Systems under British Rule**
- **Zamindari System**: Ownership vested with zamindars; cultivators had no ownership rights
- **Ryotwari System**: Direct settlement with cultivators, but high revenue demand
- **Mahalwari System**: Village-based revenue settlement

❖ **Key Problems**
- Extreme **concentration of land** in a few hands
- Existence of **multiple intermediaries** with no role in cultivation
- **Exploitative tenancy** arrangements and rack-renting
- Tenants paid **35–75% of gross produce** as rent
- Poor and outdated **land records**, leading to litigation
- Excessive **fragmentation of holdings**, reducing productivity
- Lack of incentive for investment in land improvement

❖ **Rationale for Land Reforms after Independence**

Land reforms were introduced to address:
- Feudal agrarian relations
- Rural poverty and inequality
- Low agricultural productivity
- Political instability in rural areas

The **Kumarappa Committee** recommended comprehensive agrarian reforms focusing on ownership, tenancy, and redistribution.

❖ **Major Components of Land Reforms in India**

India's land reforms had **four interrelated pillars**.

❖ **Abolition of Intermediaries**

Objectives
- Remove zamindars and other intermediaries
- Establish **direct relationship** between cultivator and state
- Transfer ownership to actual tillers

Achievements
- Nearly **2 crore tenants became landowners**
- End of a **parasitic landlord class**
- Large tracts of land vested with the state
- Strengthened political position of peasants
- Improved access to government schemes

Limitations
- Only the **top layer** of intermediaries removed
- Landlords retained land under "personal cultivation"
- Large-scale **evictions of tenants**
- Persistence of tenancy and sharecropping
- Uneven implementation across states

❖ **Tenancy Reforms**

Objectives
- Regulate rent
- Provide **security of tenure**
- Confer **ownership rights** to tenants

Key Measures
- Rent fixed at **20–25% of gross produce** in most states
- Protection against arbitrary eviction
- Recording of tenant rights

Successful Models
- **West Bengal (Operation Barga)**
- **Kerala land reforms**

Issues and Failures
- Weak enforcement mechanisms
- Tenancy concealed to avoid ceilings
- Limited transfer of ownership
- Political resistance from landed elites
- Abolition of tenancy in some states led to **informal tenancy**

❖ **Ceiling on Landholdings**

Concept
- Legal maximum limit on land a household can own
- Aim: prevent **land concentration** and enable redistribution

Policy Evolution
- Early 1960s: State-specific ceiling laws
- 1971–72: National ceiling guidelines

- ❖ **Ceiling Limits (Indicative)**
  - 10–18 acres: irrigated/high productivity land
  - 18–27 acres: medium land
  - 27–54 acres: dry land

  Expected Outcomes
  - Identification of surplus land
  - Redistribution to landless, SCs, STs

  Problems in Implementation
  - **Benami transfers**
  - Division among relatives
  - Manipulation of land records
  - Legal delays and loopholes
  - Very limited land actually redistributed

- ❖ **Consolidation of Landholdings**

  Meaning
  - Reorganization of fragmented plots into **compact holdings**

  Need
  - Rising population pressure
  - Increasing fragmentation across generations
  - Inefficient irrigation and supervision
  - High cultivation costs

  Implementation
  - Compulsory: Punjab, Haryana
  - Voluntary: Most other states
  - Not implemented in Tamil Nadu, Kerala, NE states

  Benefits
  - Reduced boundary disputes
  - Lower cost of cultivation
  - Better irrigation management
  - Improved farm efficiency

  Limitations
  - Lack of political will
  - Administrative inefficiency
  - Re-fragmentation due to inheritance laws

  Data Insight
  - Average holding size declined from **2.28 ha (1970-71)** to **1.08 ha (2015-16)**

- ❖ **Voluntary Land Reform Movements**

  Bhoodan Movement
  - Started in **1951** by **Vinoba Bhave**
  - Voluntary donation of land by landlords
  - Aimed at non-violent agrarian transformation

  Gramdan Movement
  - Started in **1952**
  - Collective village ownership of land
  - Village declared Gramdan when:
    - 75% residents' consent
    - 51% land pooled

  chievements
  - Created moral pressure on landlords
  - Mobilized peasants politically
  - Inspired legislative action

  Drawbacks
  - Donated land often infertile or disputed
  - Limited redistribution
  - Success confined mainly to tribal areas
  - Declined after 1969

- ❖ **Overall Assessment of Land Reforms**

  Positive Outcomes
  - Decline of feudal agrarian relations
  - Improved social status of tenants
  - Political empowerment of peasantry
  - Foundation for Green Revolution in some regions

  Persistent Problems
  - Regional disparities
  - Weak enforcement
  - Fragmentation of holdings
  - Informal tenancy
  - Incomplete land records

Role of Technology in Agricultural Advancement in India

Introduction

Indian agriculture has achieved significant growth despite **limited availability of key factors of production** such as land, water, labour, and energy. According to a paper by **NITI Aayog**, technological progress—rather than expansion of inputs—has been the primary driver of agricultural growth over the last five decades. This chapter examines how technology has reshaped Indian agriculture, the constraints it addresses, emerging innovations, associated challenges, and the future roadmap.

Agriculture and Factors of Production

Agricultural output depends on the **efficient combination of inputs** under a given level of technology.

Traditional Factors of Production

Farmers rely on four main factors:
- **Land** – size, quality, and soil health
- **Water** – rainfall, irrigation, groundwater
- **Labour** – availability and skill
- **Energy** – electricity, diesel, mechanical power

Studies by **Ramesh Chand (Member, NITI Aayog)** show that growth in output has occurred **without proportional growth in these inputs**, indicating the dominant role of technology.

Evidence of Technology-Driven Growth
- Net sown area increased by only **3.3%** between **1961–62 and 2019–20**
- In contrast, agricultural output continued to rise
- Highest annual growth rate of **3.7%** recorded during **2005–06 to 2021–22**
- Indicates **intensification, not expansion**, of agriculture

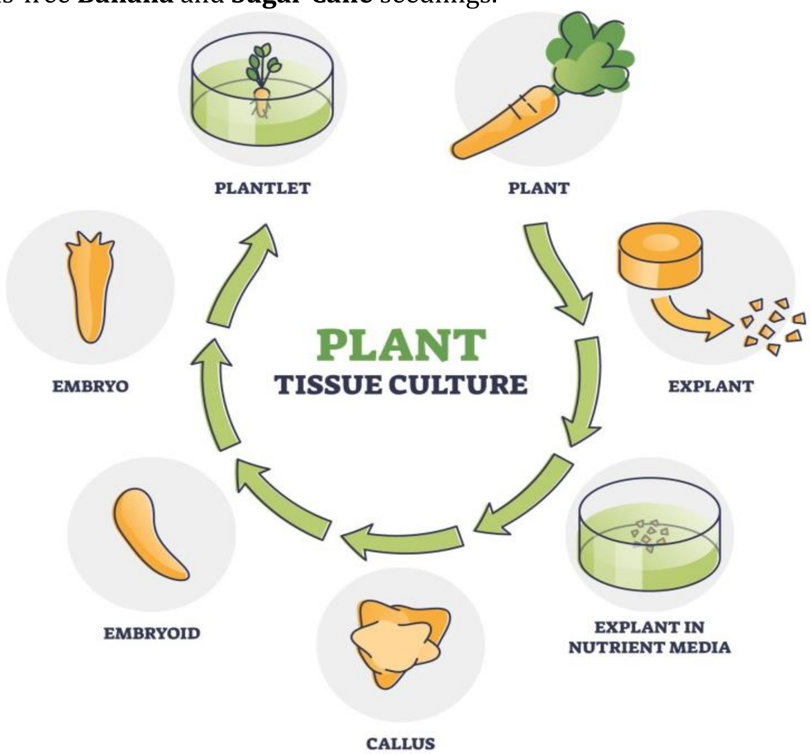
Inference: India is producing **more from less**, primarily through technological advancement.

11 Application of Science and Technology in Agriculture

APPLICATION OF SCIENCE AND TECHNOLOGY IN AGRICULTURE

Genetic Engineering & Biotechnology

- **Genetically Modified (GM) Crops:** Crops whose DNA has been altered to include desirable traits like pest resistance or drought tolerance.
  - **Bt Cotton:** The only commercialized GM crop in India. It contains genes from the bacteria Bacillus thuringiensis to fight the bollworm pest.
  - **Golden Rice:** Genetically engineered to be rich in **Vitamin A** (Beta-carotene) to address malnutrition.
- **Bio-fortification:** Increasing the nutritional value of crops through breeding or genetic modification (e.g., iron-rich pearl millet).
- **Tissue Culture:** Growing new plants from a small piece of plant tissue in a sterile laboratory. It is widely used in Tamil Nadu for producing virus-free **Banana** and **Sugar Cane** seedlings.



Precision Farming & Digital Technology

- **Precision Agriculture:** Using technology to ensure crops receive exactly what they need (water, fertilizer) for optimum health and productivity.
- **Remote Sensing & GIS:**
  - **ISRO's Role:** Using satellites (like RISAT) to estimate crop acreage, monitor crop health, and predict yields.
  - **GIS (Geographic Information System):** Helps in mapping soil fertility and land use patterns.
- **Drones in Agriculture (Agri-Bots):** Used for precision spraying of pesticides, crop monitoring, and soil analysis. This reduces labor costs and prevents human exposure to chemicals.
- **Internet of Things (IoT):** Sensors in the soil that send real-time data to a farmer's mobile regarding moisture levels and nutrient requirements.

Sustainable Irrigation Technologies

- **Micro-Irrigation:**
  - **Drip Irrigation:** Water is delivered directly to the root zone, reducing wastage by 40-70%.
  - **Sprinkler Irrigation:** Mimics natural rainfall; useful for uneven terrains.
- **Fertigation:** The process of applying water-soluble fertilizers through the irrigation system. It ensures 90% efficiency in fertilizer use.

TNPSC Previous Year Question

Nature of Indian Economy

1. **Match the following:**

List – I	List – II
A. Adam Smith	Weekly day of rest
B. J.M. Keynes	Father of Economics
C. The Sabbath	Year (of celebration/release)
D. Jubilee	Father of New Economics

பின்வருவனவற்றைப் பொருத்தவும்:

பட்டியல் - I	பட்டியல் - II
A. ஆடம் ஸ்மித்	வாராந்திர ஓய்வு நாள்
B. ஜே.எம். கெய்ன்ஸ்	பொருளாதாரத்தின் தந்தை
C. ஓய்வுநாள்	ஆண்டு (கொண்டாட்டம்/வெளியீடு)
D. ஜூபிலி	புதிய பொருளாதாரத்தின் தந்தை

(a) A–2, B–4, C–1, D–3 (b) A–4, B–2, C–1, D–3
(c) A–2, B–1, C–4, D–3 (d) A–3, B–4, C–1, D–2

2. **The total value of output produced by the factors of production located within the country's boundary in a year is:**
(a) Gross National Product
(b) Gross Domestic Product
(c) Net National Product
(d) Net Domestic Product
ஒரு வருடத்தில் நாட்டின் எல்லைக்குள் அமைந்துள்ள உற்பத்தி காரணிகளால் உற்பத்தி செய்யப்படும் மொத்த உற்பத்தி மதிப்பு:
(a) மொத்த தேசிய உற்பத்தி
(b) மொத்த உள்நாட்டு உற்பத்தி
(c) நிகர தேசிய உற்பத்தி
(d) நிகர உள்நாட்டு உற்பத்தி

3. **NSC refers to:**
(a) National Statistical Commission
(b) National Security Council
(c) National Service Commission
(d) National Savings Commission
NSC என்பது பின்வருவனவற்றில் எதைக் குறிக்கிறது?
(a) National Statistical Commission
(b) National Security Council
(c) National Service Commission
(d) National Savings Commission

4. **Supply is constant in:**
(a) Short period (b) Long period
(c) Very short period (d) Very long period
வழங்கல் எப்போது நிலையானது?
(a) குறுகிய காலம்
(b) நீண்ட காலம்
(c) மிகக் குறுகிய காலம்
(d) மிக நீண்ட காலம்

5. **National income of a country can be calculated by:**
(a) 2 methods (b) 3 methods
(c) 4 methods (d) 5 methods
ஒரு நாட்டின் தேசிய வருமானத்தை பின்வருமாறு கணக்கிடலாம்:
(a) 2 முறைகள் (b) 3 முறைகள்
(c) 4 முறைகள் (d) 5 முறைகள்

6. **Match the following:**

List – I (Type of Good)	List – II (Example)
A. Basic goods	Cars
B. Capital goods	Plywood
C. Consumer goods	Machineries
D. Intermediate goods	Cement

பின்வருவனவற்றைப் பொருத்தவும்:

பட்டியல் - I (பொருட்களின் வகை)	பட்டியல் - II (எடுத்துக்காட்டு)
A. அடிப்படை பொருட்கள்	கார்கள்
B. மூலதனப் பொருட்கள்	ஒட்டு பலகை
C. நுகர்வோர் பொருட்கள்	இயந்திரங்கள்
D. இடைநிலை பொருட்கள்	சிமெண்ட்

(a) A–4, B–3, C–1, D–2 (b) A–3, B–4, C–1, D–2
(c) A–1, B–3, C–4, D–2 (d) A–2, B–1, C–3, D–4

7. **By whom was "Every branch of knowledge has its fundamental discovery in mechanics, it is the whole science free; in politics the vote similarly in Economics in money" stated?**
(a) Adam Smith (b) Marshall
(c) Ricardo (d) Keynes
"ஒவ்வொரு அறிவுப் பிரிவிற்கும் இயக்கவியலில் அடிப்படை கண்டுபிடிப்பு உள்ளது, அது முழு அறிவியல் சுதந்திரமானது; அரசியலில் வாக்கிலும் அதைப் போன்று பொருளாதாரத்தில்

பணத்திலும் உள்ளது" என்று யாரால் கூறப்பட்டது?
(a) ஆடம் ஸ்மித் (b) மார்ஷல்
(c) ரிக்கார்டோ (d) கெய்ன்ஸ்

8. **Which is not correct statement?**
(a) Gender Related Development Index (GDI) adjusts the Human Development Index (HDI) to reflect inequalities between men and women
(b) Female status in the society
(c) Female per capita income
(d) Female adult literacy
பின்வரும் கூற்றுகளில் தவறானது எது?
(a) ஆண்களுக்கும் பெண்களுக்கும் இடையிலான ஏற்றத்தாழ்வுகளைப் பிரதிபலிக்கும் வகையில் பாலின தொடர்பான மேம்பாட்டுக் குறியீடு (GDI) மனித மேம்பாட்டுக் குறியீட்டை (HDI) சரிசெய்கிறது.
(b) சமூகத்தில் பெண் நிலை
(c) பெண் தனிநபர் வருமானம்
(d) பெண் வயதுவந்தோர் எழுத்தறிவு

9. **When the value of exports is more than the value of imports, then the balance of trade is said to be:**
(a) Favourable balance of trade
(b) Unfavourable balance of trade
(c) Balanced trade
(d) Unbalanced trade
ஏற்றுமதிகளின் மதிப்பு இறக்குமதிகளின் மதிப்பை விட அதிகமாக இருக்கும்போது, வர்த்தக இருப்பு இவ்வாறு கூறப்படுகிறது:
(a) சாதகமான வர்த்தக இருப்பு
(b) சாதகமற்ற வர்த்தக இருப்பு
(c) சமநிலை வர்த்தகம்
(d) சமநிலையற்ற வர்த்தகம்

10. **Liberalisation of economy refers to:**
(a) A regime in which government traditional public finance are abandoned
(b) Policy whereby different controls and restrictions are to be removed in industry
(c) To increase freedom and speed of decision making
(d) To promote the responsibility of the government
பொருளாதாரத்தின் தாராளமயமாக்கல் எதைக் குறிக்கிறது?
(a) அரசாங்கத்தின் பாரம்பரிய பொது நிதி கைவிடப்பட்ட ஒரு ஆட்சி
(b) தொழில்துறையில் பல்வேறு கட்டுப்பாடுகள் மற்றும் கட்டுப்பாடுகள் நீக்கப்பட வேண்டிய கொள்கை
(c) முடிவெடுக்கும் சுதந்திரத்தையும் வேகத்தையும் அதிகரிக்க
(d) அரசாங்கத்தின் பொறுப்பை மேம்படுத்துதல்

11. **India ranks in which position in Global Innovation Index, 2017?**
(a) 60th (b) 10th
(c) 14th (d) 100th
2017 ஆம் ஆண்டுக்கான உலகளாவிய புதுமை குறியீட்டில் இந்தியா எந்த இடத்தில் உள்ளது?
(a) 60வது (b) 10வது
(c) 14வது (d) 100வது

12. **The Gross Domestic Product per capita of Tamil Nadu in the year 2015–16 is:**
(a) ₹ 98,482 (b) ₹ 1,43,547
(c) ₹ 1,20,245 (d) ₹ 96,820
2015–16 ஆம் ஆண்டில் தமிழ்நாட்டின் தனிநபர் மொத்த உள்நாட்டு உற்பத்தி:
(a) ₹ 98,482 (b) ₹ 1,43,547
(c) ₹ 1,20,245 (d) ₹ 96,820

13. **Which one of the following is not a problem in estimating the National Income of India?**
(a) Double counting
(b) Unreliable data
(c) Unaccounted income
(d) Presence of large number of enterprises
பின்வருவனவற்றில் இந்தியாவின் தேசிய வருமானத்தை மதிப்பிடுவதில் சிக்கலாக கருதப்படுவது இல்லை?
(a) இரட்டை எண்ணிக்கை
(b) நம்பகத்தன்மையற்ற தரவு
(c) கணக்கில் காட்டப்படாத வருமானம்
(d) அதிக எண்ணிக்கையிலான நிறுவனங்கள் இருப்பது

14. **What is mixed economy?**
(a) Legal sector and private sector
(b) Public sector and private sector
(c) Capitalism and socialism
(d) Cooperative sector only
கலப்புப் பொருளாதாரம் என்றால் என்ன?
(a) சட்டத் துறை மற்றும் தனியார் துறை
(b) பொதுத்துறை மற்றும் தனியார் துறை
(c) முதலாளித்துவம் மற்றும் சோசலிசம்
(d) கூட்டுறவுத் துறை மட்டும்

15. **India will be a global player in the digital economy' who said this?**
(a) Amartyasen (b) Manmohan Singh
(c) Sundar Pichai (d) Jawaharlal Nehru

1. a	2. b	3. a	4. c	5. b
6. a	7. a	8. b	9. a	10. b
11. a	12. b	13. d	14. b	15. c
16. b	17. b	18. b	19. b	20. c
21. b	22. a	23. a	24. a	25. d
26. d	27. a	28. d	29. a	30. b

Planning Commission and Niti Ayog

1. **When did the Planning Commission get renamed as NITI Aayog?**
(a) 01-01-2014 (b) 11-01-2015
(c) 21-01-2015 (d) 31-01-2015
திட்டக் கமிஷன் எப்போது நிதி ஆயோக் எனப் பெயர் மாற்றப்பட்டது?
(a) 01-01-2014 (b) 11-01-2015
(c) 21-01-2015 (d) 31-01-2015

2. **Which of the following was NOT identified under the Basic Minimum Services Programme of the Ninth Five Year Plan?**
(a) Availability of primary health facilities
(b) Provision of drinking water
(c) Strengthening efforts to build self-reliance
(d) Universalisation of primary education
ஒன்பதாவது ஐந்தாண்டு திட்டத்தின் அடிப்படை குறைந்தபட்ச சேவைகள் திட்டத்தின் கீழ் பின்வருவனவற்றில் எது அடையாளம் காணப்படவில்லை?
(a) ஆரம்ப சுகாதார வசதிகள் கிடைப்பது
(b) குடிநீர் வழங்குதல்
(c) தன்னம்பிக்கையை வளர்ப்பதற்கான முயற்சிகளை வலுப்படுத்துதல்
(d) ஆரம்பக் கல்வியை உலகமயமாக்குதல்

3. **Identify the period marked as "Plan Holiday" in India.**
இந்தியாவில் "திட்ட விடுமுறை" என்று குறிக்கப்பட்ட காலத்தை அடையாளம் காணவும்.
(a) 1956–59 (b) 1966–69
(c) 2001–05 (d) 1978–79

4. **In which year did the National Development Council endorse the recommendation of the Balwant Rai Mehta Committee?**
(a) 1957 (b) 1958
(c) 1959 (d) 1960
பல்வந்த் ராய் மேத்தா குழுவின் பரிந்துரையை தேசிய வளர்ச்சி கவுன்சில் எந்த ஆண்டு அங்கீகரித்தது?
(a) 1957 (b) 1958
(c) 1959 (d) 1960

5. **The Vice-Chairman of NITI Aayog is:**
(a) Arvind Panagariya (b) Rajiv Kumar
(c) Bibek Debroy (d) V.K. Reddy
நிதி ஆயோக்கின் துணைத் தலைவர்:
(a) அரவிந்த் ராஜ்ஜியம்
(b) ராஜீவ் குமார்
(c) பிபெக் டெப்ராய்
(d) வி.கே. ரெட்டி

6. **National Development Council (NDC) was formed in:**
தேசிய வளர்ச்சி கவுன்சில் (NDC) உருவாக்கப்பட்ட ஆண்டு:
(a) 1952 (b) 1962
(c) 1963 (d) 1973

7. **Match List I with List II and choose the correct answer:**

List I	List II
A. NITI Aayog	15.03.1950
B. National Development Council	22.11.1951
C. Finance Commission	01.01.2015
D. Planning Commission	06.08.1952

பட்டியல் I-ஐ பட்டியல் II-உடன் பொருத்தி சரியான பதிலைத் தேர்ந்தெடுக்கவும்:

பட்டியல் I	பட்டியல் II
A. நிதி ஆயோக்	15.03.1950
B. தேசிய வளர்ச்சி கவுன்சில்	22.11.1951
C. நிதி ஆணையம்	01.01.2015
D. திட்டக் கமிஷன்	06.08.1952

(a) 2 1 4 3 (b) 4 2 3 1
(c) 3 4 2 1 (d) 1 3 4 2

Who was the Chairman of the First Planning Commission in India?
(a) Dr. Manmohan Singh (b) Jawaharlal Nehru
(c) V.P. Singh (d) Morarji Desai
இந்தியாவின் முதல் திட்டக் குழுவின் தலைவர் யார்?
(a) டாக்டர் மன்மோகன் சிங்
(b) ஜவஹர்லால் நேரு
(c) வி.பி. சிங்
(d) மொரார்ஜி தேசாய்

9. **The Planning Commission in India is now known as:**
(a) Planning Council (b) NITI Aayog
(c) NITI Sanyog (d) Bharatiya Aayog Mandal
இந்தியாவில் திட்டக் கமிஷன் இப்போது பின்வருமாறு அழைக்கப்படுகிறது:
(a) திட்டமிடல் கவுன்சில்
(b) நிதி ஆயோக்
(c) நிதி சன்யோக்
(d) பாரதிய ஆயோக் மண்டல்

10. Planning Commission was dissolved on:
(a) 07 August 2014 (b) 17 August 2014
(c) 13 August 2014 (d) 30 August 2014
திட்டக் கமிஷன் கலைக்கப்பட்ட தேதி:
(a) 07 ஆகஸ்ட் 2014 (b) 17 ஆகஸ்ட் 2014
(c) 13 ஆகஸ்ட் 2014 (d) 30 ஆகஸ்ட் 2014

11. Food for Work Programme was introduced during the:
(a) Fourth Five Year Plan (b) Fifth Five Year Plan
(c) Sixth Five Year Plan (d) Seventh Five Year Plan
வேலைக்கு உணவு திட்டம் அறிமுகப்படுத்தப்பட்ட காலம்:
(a) நான்காவது ஐந்தாண்டுத் திட்டம்
(b) ஐந்தாவது ஐந்தாண்டு திட்டம்
(c) ஆறாவது ஐந்தாண்டு திட்டம்
(d) ஏழாவது ஐந்தாண்டு திட்டம்

12. Match the following:

A. First Five Year Plan	1. Equality and Social Justice
B. Second Five Year Plan	2. Removal of Poverty
C. Fifth Five Year Plan	3. Agriculture oriented
D. Ninth Five Year Plan	4 Rapid Industrialisation

பின்வருவனவற்றைப் பொருத்தவும்:

A. முதல் ஐந்தாண்டுத் திட்டம்	சமத்துவம் மற்றும் சமூக நீதி
B. இரண்டாம் ஐந்தாண்டுத் திட்டம்	வறுமை ஒழிப்பு
C. ஐந்தாவது ஐந்தாண்டு திட்டம்	விவசாயம் சார்ந்தது
D. ஒன்பதாவது ஐந்தாண்டு திட்டம்	விரைவான தொழில்மயமாக்கல்

(a) 3 1 2 4 (b) 3 4 1 2
(c) 4 3 2 1 (d) 3 4 2 1

13. "Planning requires a strong, competent and incorrupt administration" – Who said this?
(a) Arthur Lewis (b) Adam Smith
(c) J.S. Mill (d) Lionel Robbins
"திட்டமிடலுக்கு வலுவான, திறமையான மற்றும் ஊழலற்ற நிர்வாகம் தேவை" - இதை யார் சொன்னது?
(a) ஆர்தர் லூயிஸ்
(b) ஆடம் ஸ்மித்
(c) ஜே.எஸ். மில்
(d) லியோனல் ராபின்ஸ்

14. Tenth Five Year Plan (2002–07) gave priority to:
(a) Reduction of poverty and population growth
(b) Basic industries
(c) Generation of employment
(d) Priority to agriculture
பத்தாவது ஐந்தாண்டுத் திட்டம் (2002-07) பின்வருவனவற்றில் எதற்கு முன்னுரிமை அளித்தது?
(a) வறுமை மற்றும் மக்கள்தொகை வளர்ச்சியைக் குறைத்தல்
(b) அடிப்படை தொழில்கள்
(c) வேலைவாய்ப்பு உருவாக்கம்
(d) விவசாயத்திற்கு முன்னுரிமை

15. In India, Seventh Five Year Plan period was from:
இந்தியாவில், ஏழாவது ஐந்தாண்டு திட்டக் காலம்:
(a) 1978–83 (b) 1979–84
(c) 1985–90 (d) 1986–91

16. The focus of which plan was "Growth with Social Justice and Equality"?
(a) Sixth Five Year Plan (b) Seventh Five Year Plan
(c) Eighth Five Year Plan (d) Ninth Five Year Plan
"சமூக நீதி மற்றும் சமத்துவத்துடன் கூடிய வளர்ச்சி" என்பது எந்தத் திட்டத்தின் மையமாக இருந்தது?
(a) ஆறாவது ஐந்தாண்டுத் திட்டம்
(b) ஏழாவது ஐந்தாண்டு திட்டம்
(c) எட்டாவது ஐந்தாண்டு திட்டம்
(d) ஒன்பதாவது ஐந்தாண்டு திட்டம்

17. During the Ninth Five Year Plan, how many million people were unemployed?
ஒன்பதாவது ஐந்தாண்டுத் திட்டத்தின் போது, எத்தனை மில்லியன் மக்கள் வேலையில்லாமல் இருந்தனர்?
(a) 105 (b) 106
(c) 107 (d) 109

18. "Garibi Hatao" slogan was raised during:
(a) I Five Year Plan (b) II Five Year Plan
(c) V Five Year Plan (d) VI Five Year Plan
"கரிபி ஹட்டாவோ" முழக்கம் பின்வரும் எந்த சந்தர்ப்பத்தில் முழங்கப்பட்டது?
(a) ஐந்தாண்டுத் திட்டம்
(b) II ஐந்தாண்டு திட்டம்
(c) V ஐந்தாண்டு திட்டம்
(d) VI ஐந்தாண்டு திட்டம்

இதில் எது சரியானது?

(a) (1) மற்றும் (2) (b) (1) மற்றும் (3)

(c) (1), (2) மற்றும் (3) (d) (2) மற்றும் (4)

(e) விடை தெரியவில்லை

73. What did the Planning Commission strongly recommend for the agricultural sector?

(a) Invest more in agriculture
(b) Invest less in agriculture
(c) Invest moderately
(d) Not invest in agriculture

வேளாண் துறைக்கு திட்டக் கமிஷன் கடுமையாக பரிந்துரைத்தது என்ன?

(a) விவசாயத்தில் அதிக முதலீடு செய்யுங்கள்.
(b) விவசாயத்தில் குறைவாக முதலீடு செய்யுங்கள்
(c) மிதமாக முதலீடு செய்யுங்கள்
(d) விவசாயத்தில் முதலீடு செய்யக்கூடாது

1. b	2. c	3. b	4. b	5. b
6. a	7. c	8. b	9. b	10. c
11. c	12. d	13. a	14. a	15. c
16. a	17. b	18. c	19. b	20. b
21. c	22. c	23. c	24. c	25. b
26. a	27. d	28. b	29. b	30. a
31. a	32. b	33. c	34. b	35. c
36. b	37. c	38. c	39. c	40. b
41. b	42. b	43. a	44. d	45. c
46. c	47. a	48. c	49. b	50. c
51. a	52. a	53. c	54. b	55. a
56. c	57. b	58. b	59. a	60. c
61. c	62. b	63. a	64. d	65. d
66. d	67. a	68. d	69. b	70. c
71. c	72. c	73. a		

SOURCES OF REVENUE

1. Why Aadhaar number is linked with PAN number?

(a) To enable the Government for distribution of subsidy to needy people
(b) To give an identity to a citizen
(c) To avoid corruption
(d) To detect the income tax payers

ஆதார் எண் ஏன் பான் எண்ணுடன் இணைக்கப்பட்டுள்ளது?

(a) தேவைப்படும் மக்களுக்கு மானியம் விநியோகிக்க அரசாங்கத்தை செயல்படுத்துதல்.
(b) ஒரு குடிமகனுக்கு ஒரு அடையாளத்தை வழங்குதல்
(c) ஊழலைத் தவிர்க்க
(d) வருமான வரி செலுத்துவோரைக் கண்டறிய

2. MODVAT means
MODVAT என்றால்

(a) Modern Value Added Tax
(b) Manufacture Value Added Tax
(c) Modified Value Added Tax
(d) Multiple Value Added Tax

3. The Government of India's expenditure is classified as

(a) Plan and non-plan expenditure
(b) Developmental outlays and investment outlays
(c) Defence expenditure and internal expenditure
(d) Consumption and capital expenditure

இந்திய அரசின் செலவினம் இவ்வாறு வகைப்படுத்தப்பட்டுள்ளது

(a) திட்டம் மற்றும் திட்டம் சாரா செலவுகள்
(b) வளர்ச்சி செலவுகள் மற்றும் முதலீட்டு செலவுகள்
(c) பாதுகாப்புச் செலவு மற்றும் உள் செலவுகள்
(d) நுகர்வு மற்றும் மூலதனச் செலவு

4. In India, carbon tax is imposed on

I. Gas **II. Oil**
III. Coal

(a) I only (b) III only
(c) II and III (d) I and II

இந்தியாவில், கார்பன் வரி எதன் மீது விதிக்கப்படுகிறது?

I. எரிவாயு **II. எண்ணெய்**
III. நிலக்கரி

(a) I மட்டும் (b) III மட்டும்
(c) II மற்றும் III (d) I மற்றும் II

5. Paying Income Tax signifies

(a) Traditional authority (b) Rational legal authority
(c) Charismatic authority (d) All the above

வருமான வரி செலுத்துதல் என்பது

(a) பாரம்பரிய அதிகாரம்
(b) பகுத்தறிவு சட்ட அதிகாரம்
(c) கவர்ச்சிகரமான அதிகாரம்
(d) மேலே உள்ள அனைத்தும்

6. The tools of fiscal policy of India are

(a) Public revenue and public debt
(b) Public expenditure and public debt
(c) Public revenue, public expenditure and public debt
(d) Public expenditure only

இந்தியாவின் நிதிக் கொள்கையின் கருவிகள்

(a) பொது வருவாய் மற்றும் பொதுக் கடன்
(b) பொதுச் செலவு மற்றும் பொதுக் கடன்