

CLASSROOM PROGRAMME

SHORT NOTE – SOCIAL SCIENCE – GEOGRAPHY

Chapter 1 -Weather and Climate

Weather

- Weather refers to the **atmospheric conditions** such as:
 - **Temperature** (hot or cold),
 - **Pressure** (high or low),
 - **Wind** (direction and speed),
 - **Humidity** (moisture in the air),
 - **Precipitation** (rain, snow, hail, etc.).
- ✓ It is a **short-term condition** (changes within hours or days).

Climate

- Climate is the **average weather condition** experienced over a **longer period (35–40 years)** and over a **larger area**.
- Climate gives a more stable picture of atmospheric patterns compared to weather.

Importance of Climate

- Climate directly affects:
 - **Flora and Fauna** – Certain plants and animals survive only in suitable climates.
 - **Human Life** – Decides lifestyle and living conditions.
- Its influence is seen in:
 - **Food habits** – Spices in tropical regions, meat in colder regions.
 - **Dressing** – Cotton in hot regions, wool in cold regions.
 - **Settlement** – River valleys, coastal areas, deserts differ due to climate.
 - **Occupation** – Farming, fishing, herding, industries.
 - **Physical & Mental conditions** – Climate affects human energy levels and mindset.
 - **Race & Colour of mankind** – Long exposure to climates influences skin colour and physical build.

Atmospheric Temperature

Source of Heat Energy

- The **Sun** produces massive energy through **nuclear fusion** (conversion of hydrogen into helium).
- This energy travels in the form of **short waves** (solar radiation).
- Only a very tiny fraction (about **1 part in 200 million**) reaches Earth.
- The energy received on Earth's surface is called **Insolation**.

Path of Insolation

- When solar energy reaches Earth:
 - A part is **reflected** back by clouds and dust particles.

- A part is **absorbed** by atmospheric particles.
- The rest reaches the **Earth's surface**, heating land and water.
- Since it is in **short waves**, it does not directly heat the atmosphere much.

Heating of Atmosphere

- The Earth's surface absorbs solar energy and becomes hot.
- Then, the surface transfers this heat to the atmosphere by:
 1. **Conduction** – Direct transfer of heat through contact (ground to air).
 2. **Convection** – Upward movement of warm air, replaced by cool air.
 3. **Advection** – Horizontal transfer of heat by winds.
 4. **Radiation** – Heat emitted in the form of waves.

Terrestrial Radiation

- After being heated, the Earth emits energy back in the form of **long waves**.
- This outgoing energy is called **Terrestrial Radiation**.

Individual Tuition Concept

Greenhouse Effect

- Atmospheric gases like **Carbon dioxide, Methane, and Water vapour** absorb terrestrial radiation.
- This traps heat in the atmosphere, keeping Earth warm.
- This natural process is known as the **Greenhouse Effect**.
- Without it, Earth would be too cold for life.

Heat Budget of the Earth

- Almost all the energy that reaches the Earth as **insolation** is radiated back every day.
 - Because of this balance, Earth's surface does not become extremely hot or extremely cold.
 - This natural balance of heat is called the **Heat Budget of the Earth**.
-

Daily Temperature Pattern

- After sunrise, the Earth's surface gradually gets warmer due to insolation.
 - The atmosphere takes more time to heat up than the surface, so the highest temperature is usually recorded around **2 PM**, not exactly at noon.
 - After afternoon, temperature begins to decrease because insolation reduces and **terrestrial radiation** increases.
 - During night, both the Earth's surface and atmosphere lose more heat.
 - Just before sunrise, the temperature is at its lowest → the **minimum temperature of the day**.
-

Diurnal Temperature Concepts

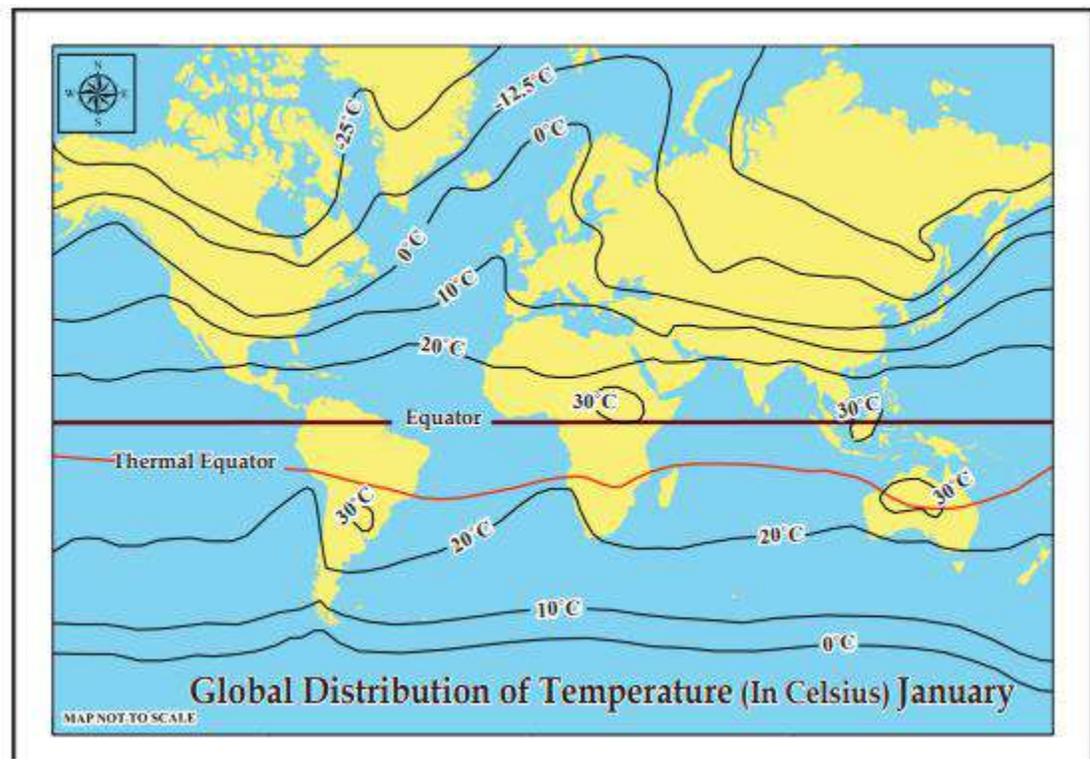
- **Maximum Temperature** → usually around 2 PM.
- **Minimum Temperature** → just before sunrise.
- **Diurnal Range of Temperature** → difference between maximum and minimum temperatures.

- **Daily Mean Temperature** → average of maximum and minimum temperatures.

$$\text{Daily Mean Temperature} = \frac{\text{Maximum} + \text{Minimum}}{2}$$

$$\text{Diurnal Range Of Temperature} = \text{Maximum} - \text{Minimum}$$

ISOTHERMS



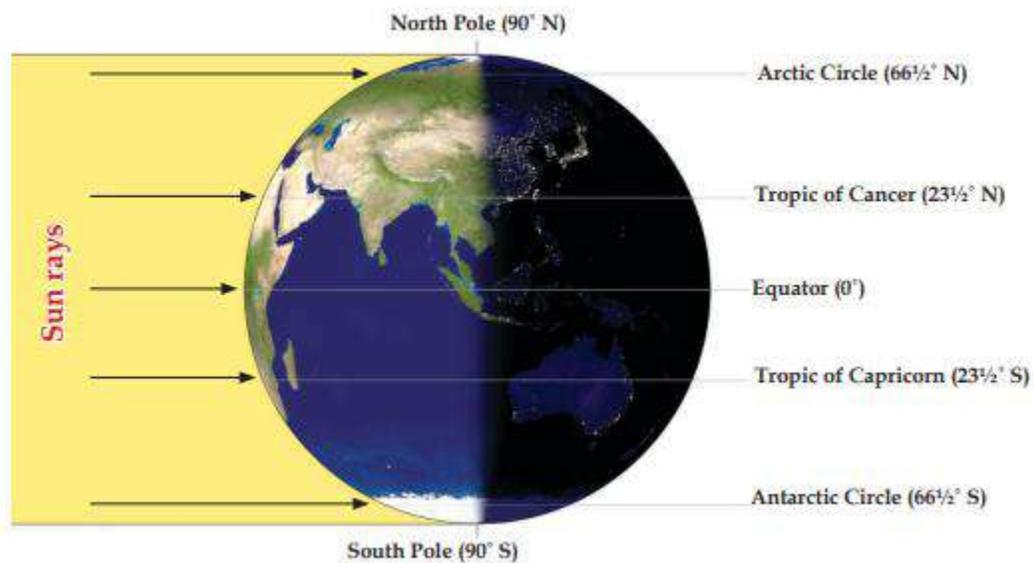
- ✓ When these temperatures are plotted on a map, smooth curved lines are drawn to connect places having the same temperature.
- ✓ These imaginary lines are called **Isotherms**.

- ✓ Isotherm maps are very useful to study and analyse the distribution of temperature across regions.

FACTORS INFLUENCING DISTRIBUTION OF TEMPERATURE

1.LATITUDE

- ✓ Equatorial regions are very hot because the sun's rays fall almost vertically.
- ✓ Due to Earth's spherical shape, sun's rays fall more slanting as we move towards the poles.
- ✓ Temperature decreases gradually from the equator to the poles.
- ✓ Based on this, the Earth is divided into different temperature zones.



2. ALTITUDE

- ❖ Temperature decreases as altitude increases.
- ❖ On average, temperature drops **6.4°C for every 1 km** of height.
- ❖ This is called the **Normal Lapse Rate**.

3. DIFFERENTIAL HEATING OF LAND AND SEA

- ❖ Land heats up and cools down faster than sea.
- ❖ So, land has higher temperatures in summer.
- ❖ Land has lower temperatures in winter compared to sea.

4. DIFFERENCE FROM THE SEA

- ❖ Winds from land to sea and sea to land help control coastal temperatures.
- ❖ Coastal areas have moderate climate.
- ❖ Far from the sea, this effect decreases, causing very hot days and very cold nights.

5. OCEAN CURRENTS

- ❖ Ocean currents affect coastal temperatures.
- ❖ Warm currents raise temperature.
- ❖ Cold currents lower temperature.
- Example: North Atlantic Current keeps Western Europe warmer.
- Example: Labrador Cold Current makes North Eastern Canada very cold.

6. RELIEF

- Sunlight availability changes with relief (land shape).
- Mountain slopes facing the sun are warmer.
- Slopes away from the sun are cooler.

ATMOSPHERIC PRESSURE

- The weight exerted by the atmospheric air over the earth's surface is termed as Atmospheric Pressure.

FACTORS INFLUENCING ATMOSPHERIC PRESSURE

❖ Temperature

- Warm air expands and rises, creating **low pressure**.
- Rising air cools and contracts.
- Cooled air sinks down, creating **high pressure**.

❖ Altitude

- Air pressure decreases as altitude increases.
- This is because air density becomes less at higher altitudes.
- Pressure drops about **1 mb for every 10 metres** of height.

❖ Humidity

- Humid air is lighter than dry air.
- Water vapor replaces heavier gases like nitrogen and oxygen.
- This lowers the atmospheric pressure.

ISOBARS

- ✓ Smooth curved lines are drawn on maps to connect places having equal atmospheric pressure. These imaginary lines are called **Isobars**.

GLOBAL PRESSURE BELTS

- ✓ Global Pressure Belts are specific latitudinal zones where distinct air pressure conditions are formed due to the rotation of the Earth.

TYPES OF PRESSURE BELTS

Individual Tuition Concept

I. Equatorial Low Pressure Belt (Doldrums)

- ❖ High temperature near the equator causes air to expand and rise.
- ❖ This upward movement creates low pressure.
- ❖ Vertical air currents dominate, so winds are absent → called the **Doldrums**.

II. Polar High Pressure Belts

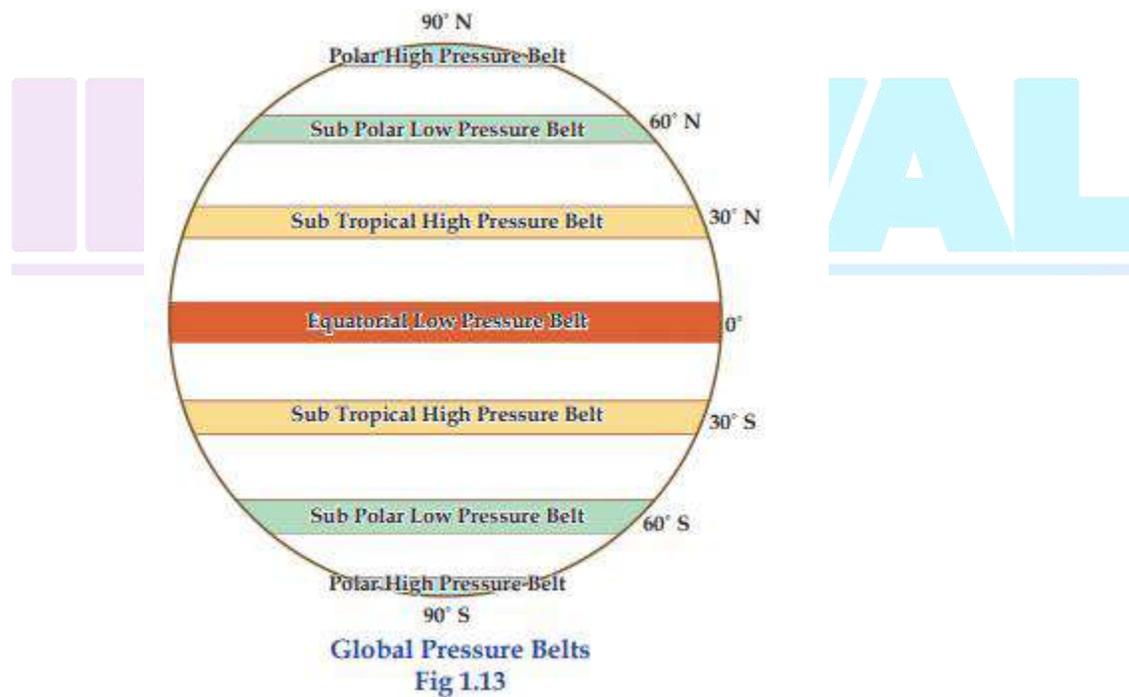
- ❖ Extremely low temperatures at the poles cause air to contract and sink.
- ❖ This creates high pressure zones at the poles

III. Sub-Tropical High Pressure Belts

- Warm air rising at the equator moves towards the poles in the upper atmosphere.
- Around **30° N and 30° S**, the air cools, subsides, and forms high pressure zones.

IV. Sub-Polar Low Pressure Belts

- ❖ At about **60° N and 60° S**, cold conditions should create high pressure.
- ❖ But due to Earth's rotation, air is forced upward, forming **low pressure belt**



FACTORS INFLUENCING WIND SPEED AND DIRECTION

1. Coriolis Force (Direction)
2. Pressure gradient force (Speed)
3. Frictional force (Speed)

Coriolis Force

- ❖ Coriolis Force is the apparent force caused by the Earth's rotation that makes winds deflect to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

Pressure Gradient Force

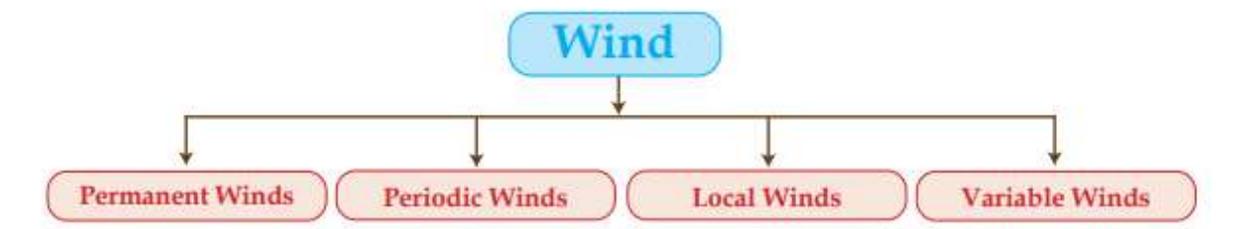
- ❖ Pressure gradient = change in pressure over a horizontal distance.
- ❖ **High pressure gradient** → large pressure difference between nearby places.
- ❖ **Low pressure gradient** → little or no pressure difference over distance.
- ❖ Strong winds blow where the pressure gradient is high.

Frictional Force

Individual Tuition Concept

- ❖ The friction caused by hills, mountains, forests and man-made structures will obstruct the free flow of winds.

TYPES OF WIND



1. Permanent winds

- Winds blowing constantly in one direction all year = **Permanent Winds**.
- Also called **Prevailing Winds** or **Planetary Winds**.
- Blow between global pressure belts.
- Main types: **Trade Winds, Westerlies, Polar Winds**.

Wind	Blows From	Blows To
Trade Winds	Subtropical Hg 30° N/S	Equatorial Low 0
Westerlies	Subtropical Hg 30° N/S	Sub-Polar Low 60° N/S
Polar Winds	Polar High 90° N/S	Sub-Polar Low 60° N/S



2. Periodic winds

Periodic winds: Winds that reverse direction periodically.

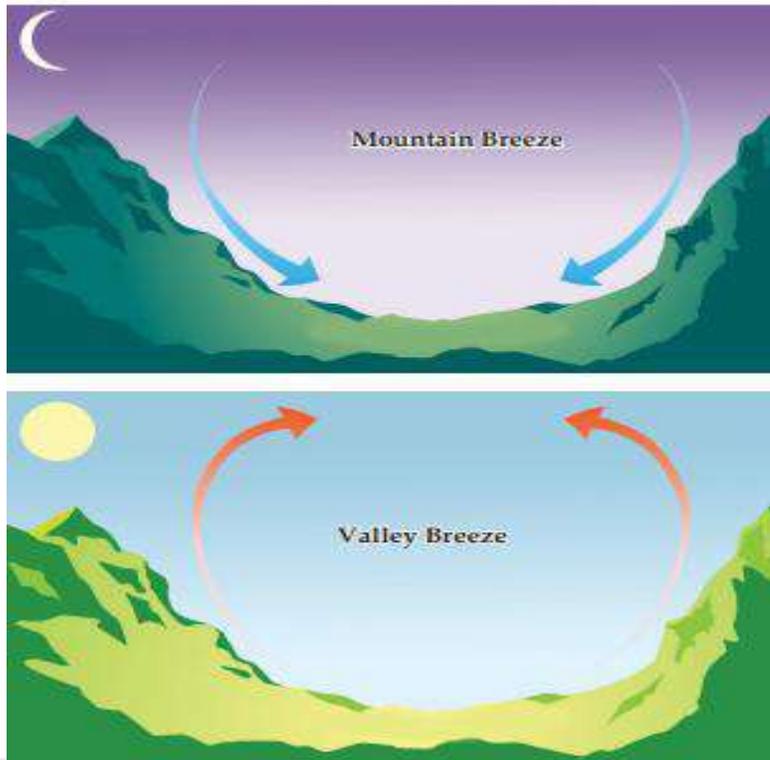
Types:

- **Diurnal winds:** Change daily. Examples:

- Land breeze
- Sea breeze
- Mountain breeze
- Valley breeze

Mountain and valley breeze

Factor	Mountain Breeze	Valley Breeze
Time	Night	Day
Cause	Cooling of air on mountain slopes	Heating of mountain slopes by sun
Air Movement	Down the slope into the valley	Up the slope from the valley
Air Density	Becomes denser and contracts	Becomes lighter and rises
Direction	Mountain → Valley	Valley → Mountain



INTERVAL

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Monsoon winds

A) Southwest Monsoon Winds

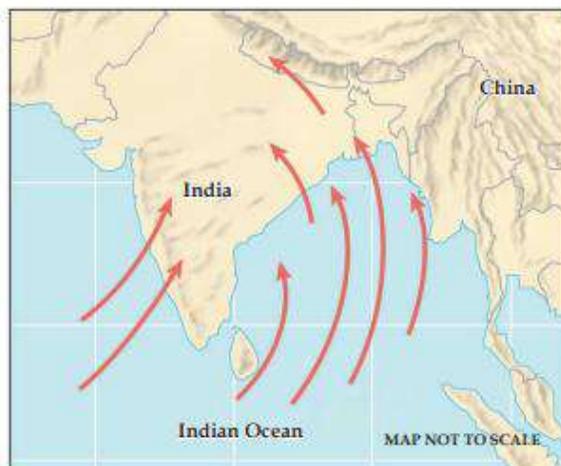
- ❖ Occurs during **summer** (June to September).
- ❖ The Indian subcontinent heats up intensely → **low pressure develops** over land.
- ❖ Indian Ocean remains relatively cooler → **high pressure over ocean**.
- ❖ Winds blow from **ocean to land** (Southwest direction) due to **pressure difference**.

- ❖ The **Coriolis effect** causes the winds to turn right in the Northern Hemisphere → SW winds.
- ❖ These winds **bring heavy and widespread rainfall** over most parts of India.
- ❖ Responsible for **agriculture, water resources, and replenishing rivers**.

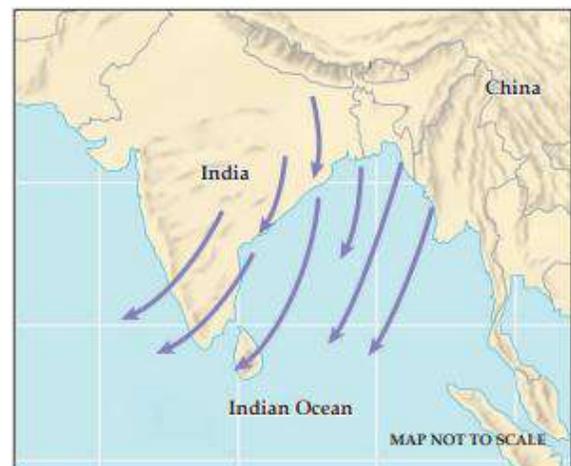
B) Northeast Monsoon Winds

- Occurs during **winter** (October to December).
- Northern land masses cool down → **high pressure develops** over North India.
- Indian Ocean remains warmer → **comparatively low pressure over ocean**.
- Winds blow from **land to ocean** (Northeast direction).
- These winds are **dry in nature**, as they come from the land.
- Bring **limited rainfall**, mostly to **southeast coast of India** (e.g., Tamil Nadu).
- Important for **replenishing groundwater in some coastal regions**.

Individual Tuition Concept



South West Monsoon



North East Monsoon

3. Local winds

- ✓ Local winds are winds formed as a result of local differences in temperature and pressure in different parts of the world.

Local Winds	Region	Characteristics
Loo	North Indian Plains	Hot wind
Chinook	Slopes of Rocky Mountains in North America	Dry hot wind
Foehn	Slopes of Alps Mountain in Europe	Dry hot wind
Harmattan	Sahara Desert in Africa	Relief to intense heat

4. Variable winds

- ✓ Winds of short duration, of which the intensity or direction cannot be predicted are called variable winds
- ✓ Eg: Cyclones And Anticyclones

Cyclones

Cyclones are **low-pressure systems** towards which winds whirl from the surroundings.

Tropical cyclones:

- Originate over **tropical oceans**.
- Smaller in diameter but **more devastating** than temperate cyclones.
- Move **northwest over oceans**; dissipate on hitting land due to **temperature differences and friction**.

- Cause **intense rainfall and strong whirlwinds along coasts.**
- Known by different names globally: **Hurricanes, Typhoons, Willy Willies, Tornadoes, etc.**

Temperate cyclones:

- Form in **temperate regions** where **warm and cold air masses meet.**
- Larger in diameter but **less devastating** than tropical cyclones.
- Can **move over land** without dissipating quickly.

Direction of air flow:

- **Northern Hemisphere** → Anticlockwise.
- **Southern Hemisphere** → Clockwise.

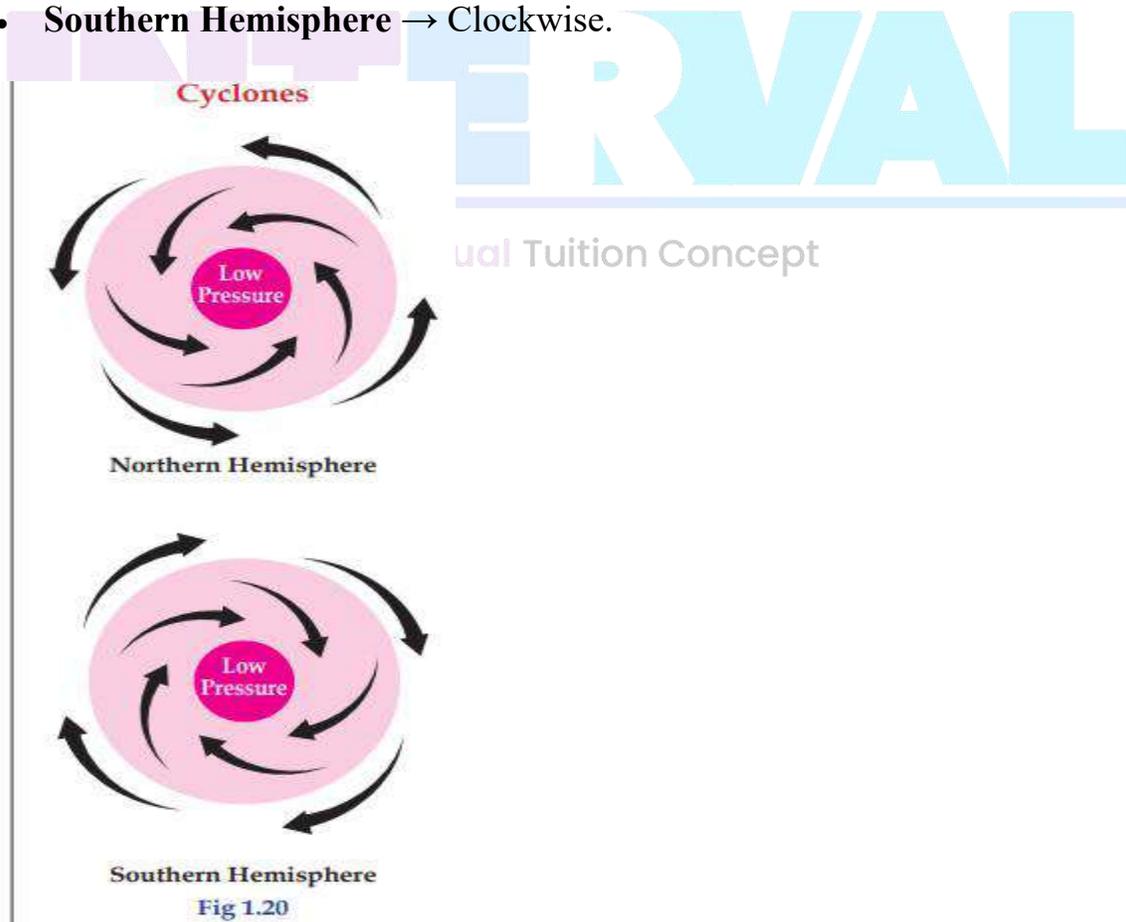


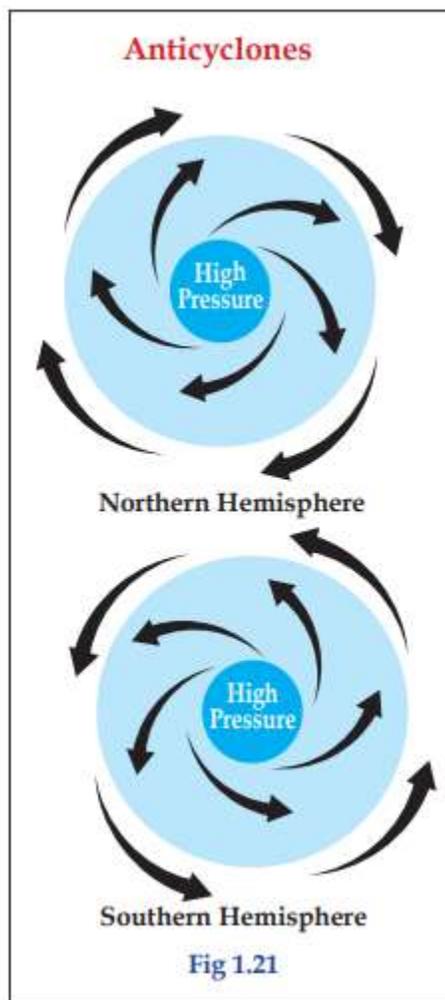
Fig 1.20

Anti - Cyclones

- Anticyclones are **high-pressure systems**.
- Winds **whirl outwards** from the center.
- Generally, **do not cause atmospheric disturbances**.

Direction of wind flow:

- **Northern Hemisphere** → Clockwise
- **Southern Hemisphere** → Anticlockwise



ERVAL
ual Tuition Concept

HUMIDITY

- ✓ The invisible water content in the atmosphere is called **Humidity**.
- ✓ Actual amount of water vapour present per unit volume of atmosphere is called **Absolute humidity**.
- ✓ The ratio between the actual amount of water present in the atmosphere and the total waterholding capacity of atmosphere at that particular temperature and time is referred to as **Relative Humidity**.

$$\text{Relative Humidity} = \frac{\text{Absolute Humidity}}{\text{Total water holding capacity of the atmosphere}} \times 100$$

CONDENSATION

- ✓ Condensation is the process by which water vapor (gas) in the air cools down and changes into liquid water.

FORMS OF CONDENSATION

1. **Dew:** At night, the earth's surface cools → nearby air also cools → water vapour condenses into tiny droplets → settle on grass, leaves, and other cold surfaces.
2. **Frost:** When temperature falls below **0°C** at night → tiny ice crystals form instead of dew.
3. **Mist & Fog:** Cooling of air → water vapour condenses around dust particles → tiny droplets remain suspended in lower atmosphere
Difference: Identified by **range of visibility**.

4. **Clouds:** Formed by condensation around dust particles in the atmosphere → droplets < **0.001 cm** in diameter → remain suspended in the air.

Types Of Clouds

The infographic is titled "CLOUD TYPES" in large white letters on a blue background. It is divided into four quadrants, each featuring a cloud illustration, a title in a colored box, and a description in a white box.

- Cirrus Clouds:** Thin, delicate, feather-like appearance. Found at very high altitudes. (Illustration: thin, wispy white clouds)
- Stratus Clouds:** Thick, flat, layered clouds. Usually in the lower atmosphere. (Illustration: a flat, greyish-white cloud layer)
- Cumulus Clouds:** Cotton wool-like, fluffy clouds. Formed by intense convection currents. (Illustration: a large, white, puffy cloud)
- Nimbus Clouds:** Dark, dense clouds. Rain-bearing. (Illustration: a dark, heavy cloud with raindrops falling)

PRECIPITATION

- ✓ **Precipitation** is the process by which water droplets in clouds, formed through continuous condensation, grow too heavy to resist gravity and fall to the earth in various forms such as rain, snow, or hail.

TYPES OF PRECIPITATION

Type of Precipitation	Form	Conditions	Example/Feature
Rainfall	 Water droplets	Common form of precipitation	Most familiar type
Snowfall	 Tiny crystals of ice	Occurs when temperature falls below 0°C in cold/temperate regions	Seen in winter and cold climates
Hailstones	 Layered ice pellets	Droplets undergo repeated condensation at different atmospheric levels	Fall as chunks of ice

TYPES OF RAINFALL

1. Orographic Rainfall
2. Convectional Rainfall
3. Cyclonic Rainfall

1. Orographic Rainfall / Relief Rainfall

Moisture-laden winds from sea enter the land



Winds rise along mountain slopes



Condensation occurs → Rain clouds form



Rainfall on windward slopes – This is known as **Orographic Rainfall**



Windward slopes → Plenty of rainfall

INTERVAL

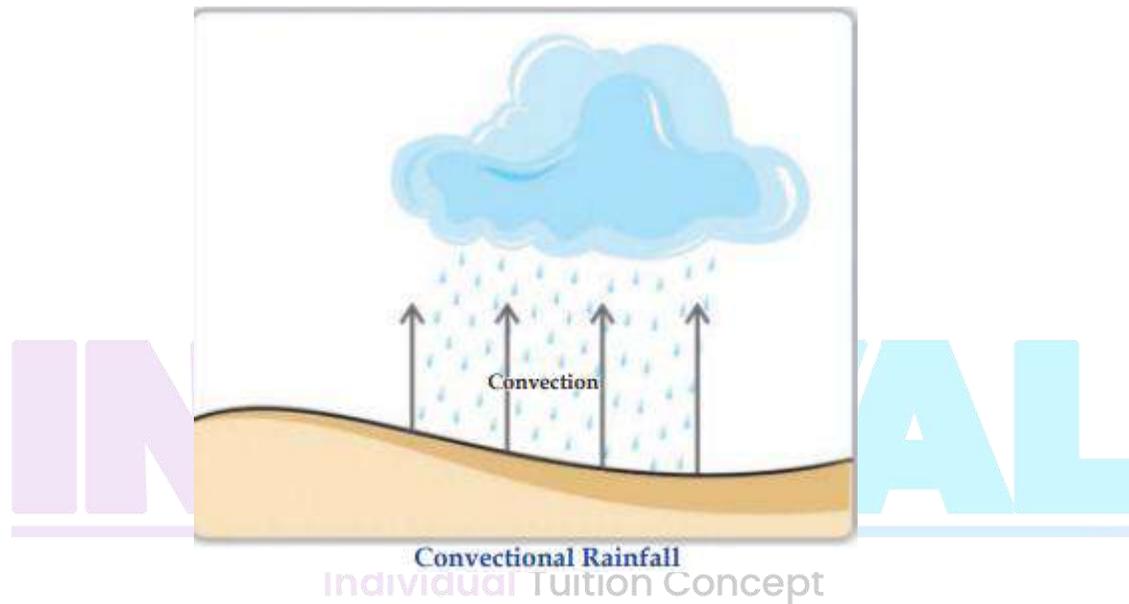
- Air descends dry on leeward side Leeward side → **Rainless (Rain Shadow Region)**



Orographic Rainfall

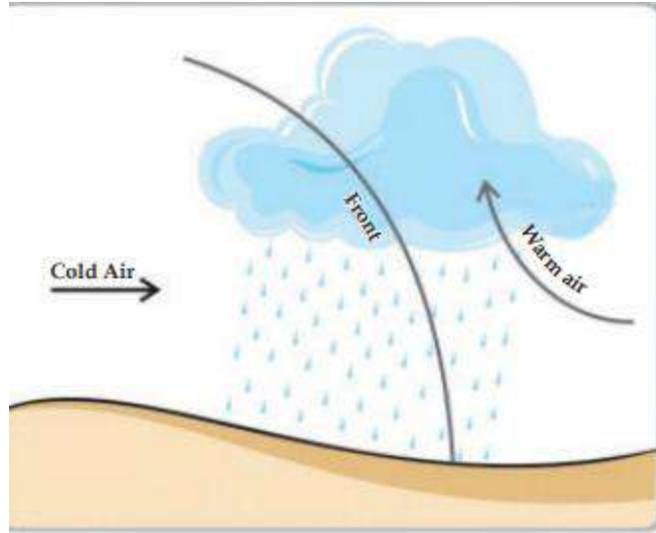
2. Convective Rainfall.

- ✓ Rainfall occurring because of convective process are called Convective Rainfall.
- ✓ As the convective rainfall commonly occurs during afternoons, it is also called 4 O'Clock rains.



3. Cyclonic Rainfall.

- In cyclonic systems, warm and cold air masses meet.
- Warm air is forced to rise, leading to condensation and rainfall.
- This type of rainfall is called **Cyclonic Rainfall**.
- The boundary between warm and cold air masses is called a **front**.
- Hence, this rainfall is also known as **Frontal Rainfall**.



Cyclonic Rainfall

INTERVAL

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Chapter 2 -Climatic Regions and Climate Change

CLIMATIC REGION

- ❖ A climatic region is an extensive geographical area in which similar climate characteristics are observed.

Major climatic regions of the world

1. Equatorial climatic region
2. Monsoon climatic region
3. Savanna climatic region
4. Hot deserts
5. Temperate grasslands
6. Mediterranean climatic region
7. Taiga region
8. Tundra region

1. Equatorial climatic region

Extent

- Found up to 10° North and South of the Equator.

Climate Features

- High temperatures throughout the year.
- High rainfall throughout the year.

- Hotter because sun's rays fall almost vertically.
- Strong air convection leads to convectional rainfall.
- Daily afternoon rainfall is common.

Vegetation

- Evergreen forests are abundant due to high temperature and heavy rainfall.

2. Monsoon Climatic Region

- Monsoons are the **seasonal reversal of wind system**.
- Blow **from sea to land in summer**.
- Reverse **from land to sea in winter**.

Regions

- South Asia (India, Bangladesh, Sri Lanka, Myanmar).
- Southeast Asia (Thailand, Vietnam, Cambodia, Indonesia, Philippines).
- Parts of East Asia (Southern China, Japan).
- Northern Australia.
- West Africa.

Climate

- Long, humid summer and short, dry winter.
- Diurnal range of temperature:
 - Very low in coastal areas.

- Very high in interior regions.

Rainfall

- Rainfall distribution varies with physiography, wind direction, and distance from the coast.
- Ranges from **50 cm to over 1000 cm annually**.

Vegetation

- Luxuriant vegetation due to high temperature and rainfall.
- Forests are dense.
- Both evergreen and deciduous trees present, but **deciduous trees are more common**.
- Monsoon forests (**tropical deciduous forests**) have mixed tree types based on rainfall.

Population

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- One of the most densely populated regions in the world.

Agriculture

- High rainfall and abundant labour → important agricultural region.
- Main crops: **rice, sugarcane, jute, cotton, tea, coffee**.
- **Intensive subsistence agriculture** is common.
- **Shifting cultivation** (primitive subsistence agriculture) also exists in some areas.
- Shifting cultivation has **different local names** in different countries.

3. Savanna Climate Region

Location

- Found between **10° and 30° latitudes** in both hemispheres.
- Known as:
 - **Savanna** – Africa
 - **Campos** – Southern Brazil
 - **Llanos** – Venezuela

Climate

- Hot and humid summers.
- Cool and dry winters.
- Annual average temperature: **21°C – 32°C**.
- Annual rainfall: **25 cm – 125 cm**.

Vegetation

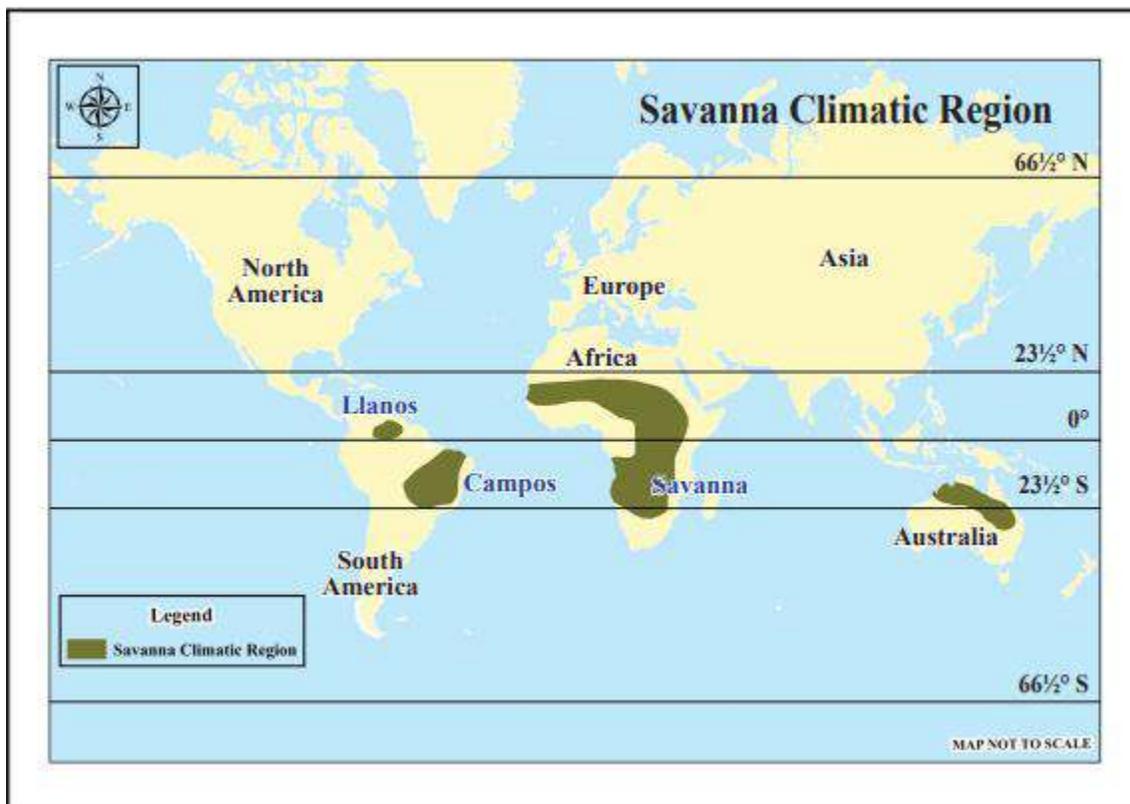
- Dominated by **deciduous trees and tall grasses**.
- Near deserts: **short bushes and thorny forests**.

Wildlife

- Rich habitat for wild animals.
- Herbivores: **giraffes, zebras**.
- Carnivores: **lions, tigers**.

Agriculture & Economy

- Soil relatively fertile but low rainfall → **dry farming** practiced.
- **Animal husbandry** and **agriculture** are main livelihoods.
- Population density is generally low.
- **Maasai tribe** (African savanna) leads a pastoral life.
- Cash crops cultivated in former colonies:
 - **Cotton in Sudan.**
 - **Coffee in Brazil.**



4. Hot Deserts

Climate

- Tropical deserts are the **hottest regions on Earth**.
- Average annual temperature: **30°C**.
- Highest recorded: **58°C at Al Aziziya, Sahara Desert**.
- **High diurnal range of temperature** makes life difficult.
- Annual rainfall: **less than 25 cm**, some places → no rain for years.

Location & Formation

- Found mainly on the **western margins of continents** in the tropics.
- Reason: Trade winds lose moisture while crossing continents → reach western margins dry → deserts form.

Vegetation

- Plants adapted to low rainfall: **cactus, shrubs, palms**.
- **Oases** form where underground water sources are available.

Population

- **Sparsely populated** due to harsh climate.
- Indigenous tribes adapted to desert life, e.g., **Bushmen of Kalahari Desert**.

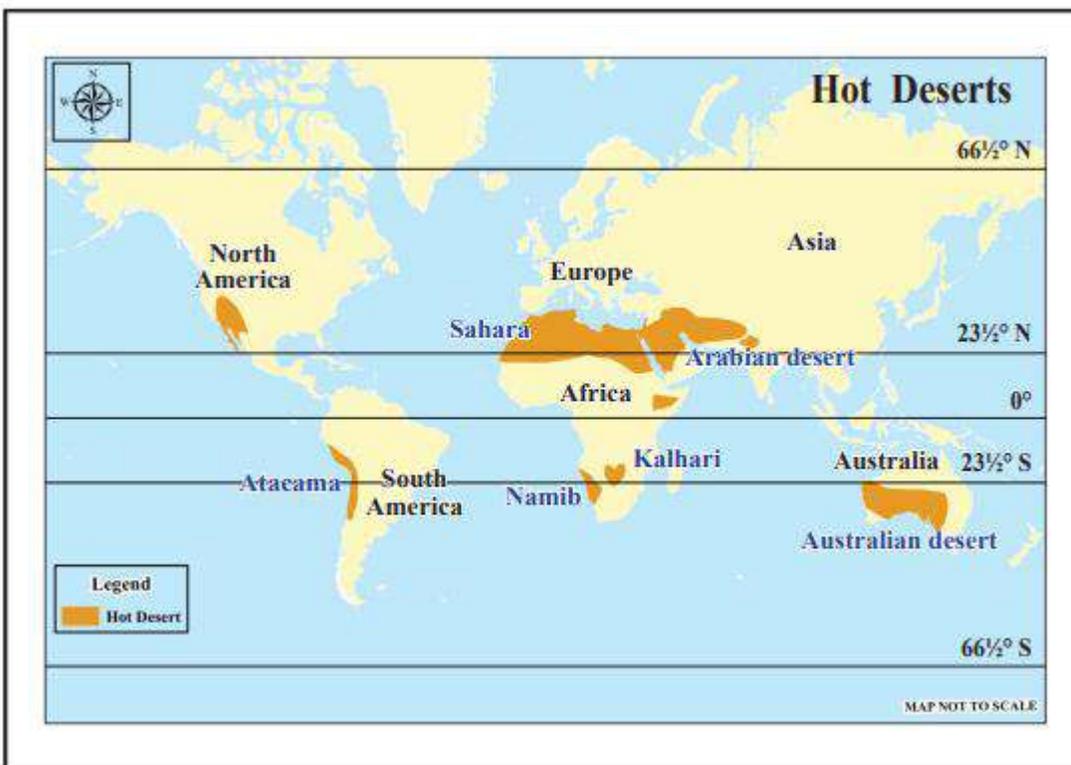
Livelihood

- **Agriculture and animal husbandry** are main occupations in deserts.

- Availability of minerals supports human settlement.

Economic Importance

- Gold mining → **Australia.**
- Copper mining → **Atacama Desert.**
- Petroleum deposits and oil mining → **Sahara and Arabian Deserts** (transformed the region).



5. Mediterranean Climatic Region

Climate

- Dry summers and humid winters.
- Summer temperature: **20°–25°C**.
- Winter temperature: **10°–16°C**.
- Winter rainfall: **30–75 cm** (beneficial for winter crops).

Location

- Along the coasts of the **Mediterranean Sea**.
- Also in regions between **30°–45° latitudes** (parts of California, Chile, South Africa, Australia).
- Collectively called **Mediterranean climatic regions**.

Rainfall

- Caused by **Westerlies** during winter.

Vegetation

- No dense forests due to low rainfall.
- **Tall evergreen trees**: oak, sequoia.
- **Evergreen conifers**: pine, fir.
- Shrubs also present.

Agriculture

- Fruits and vegetables are major produces.
- Cereals and pulses cultivated wherever possible.
- Mediterranean region = **great economic importance**.
- World's leading producers of **wine**.
- About **70% of citrus fruit exports** come from Mediterranean countries.

6. Temperate Grasslands

Location

- Found in both hemispheres, between **40°–50° latitudes**.
- Known by different names in different regions.

Climate

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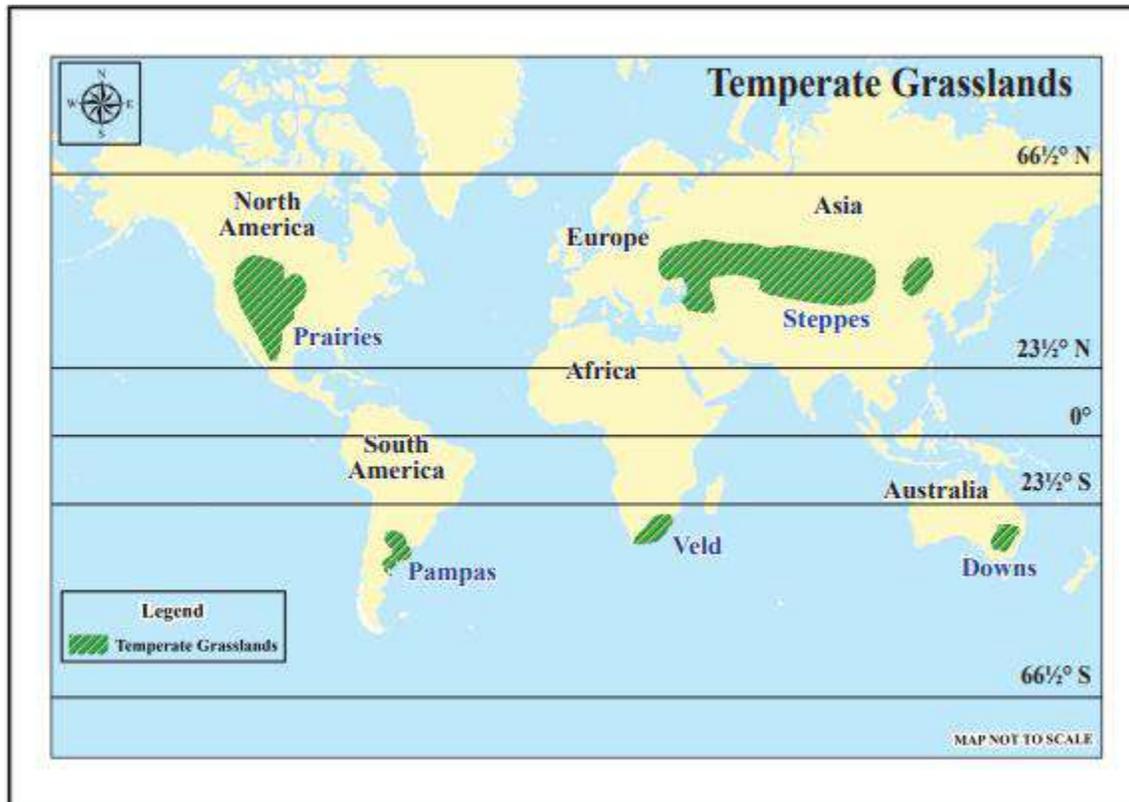
- **Short summers** and **long winters**.
- High summer temperatures (due to interior continental location).
- Average winter temperature: **2°C – 13°C**.
- Rainfall: **25 – 60 cm annually**.

Vegetation

- Few trees due to low rainfall.
- Covered mostly by **varieties of grasses**.

Lifestyle & Economy

- Traditionally → **shepherding and grazing.**
- Today → **commercial mechanised grain farming and animal husbandry** are common.



Continents	Grassland - Name
North America	Priaries
South America	Pampas
Eurasia (Europe & Asia)	Steppes
Africa	Veld (South Africa)
Australia	Downs

7. Taiga Region

Location:

- Northern Hemisphere between **55° and 70° latitude**.
- Absent in Southern Hemisphere due to limited landmass.

Climate:

- **Summers:** Short, 15°C to 20°C.
- **Winters:** Long, -13°C to -25°C.
- **Rainfall:** 50–70 cm annually, often as **snow** in winter.

Vegetation:

- Dominated by **sub-Arctic coniferous evergreen trees**.
- Main trees: **Pine, Fir, Spruce**.
- Name “**Taiga**” comes from Russian, meaning “coniferous forest”.

Agriculture and Economy:

- Limited **crop cultivation** due to harsh climate.
- Main economic activities: **Lumbering** and **wool industry**.
- Lumbering is especially significant in **Canadian Taiga**.

8. Thundra Region

Location:

- North of the **Arctic Circle** in **Alaska, Canada, Greenland**, and the **Arctic coasts of Europe and Asia**.

Climate:

- **Winter:** -25°C to -40°C.
- **Summer:** Up to 10°C.
- **Precipitation:** Mainly **snowfall**.

Vegetation:

- Very few plants survive harsh conditions.
- **Short growing season;** only summer allows growth.
- Main plants: **Short shrubs and mosses**.

Human Life and Activities:

- Native people: **Eskimos** and **Lappas**; **semi-nomadic** lifestyle.
- Arctic areas have **minimal human intervention**.
- Scientists and explorers study the region for **future possibilities**.

CLIMATIC CHANGE

- ✓ 'Climate change' as a long-term shift in weather patterns and temperatures that is caused by human activity or natural variability.

Causes of Climate Change

Manmade Causes:

- Burning of fossil fuels (coal, oil, gas)
- Deforestation
- Industrial emissions
- Agricultural activities (methane from livestock, fertilizers)
- Urbanization and land use changes
- Waste management (landfills)
- Transportation emissions

Natural Causes:

- Volcanic eruptions
- Solar radiation variations
- Ocean currents
- Natural greenhouse gas fluctuations
- Earth's orbital changes (Milankovitch cycles)
- Natural disasters (wildfires, droughts)

Climatic Change Examples

- ✓ Nepal held a cabinet meeting at Mt. Everest to highlight climate change.
- ✓ Maldives held a cabinet meeting underwater to draw attention to rising sea levels.
- ✓ Nepal (Himalayas) and Maldives (low-lying island) are highly affected by climate change.
- ✓ Himalayan glaciers are melting 12–20 metres per year due to global warming.
- ✓ Rising global temperatures cause glacier melt and ecosystem changes.
- ✓ A 2.5-metre sea level rise could submerge the Maldives completely.
- ✓ Global sea level is rising at 0.42 cm per year due to climate change.

Greenhouse Gases:

- Gases like CO₂ and N₂O trap solar energy in the atmosphere.

Greenhouse Effect:

- Sunlight reaches Earth, but terrestrial radiation is intercepted → keeps atmosphere warm.

Global Warming:

- Excess greenhouse gases from human activities strengthen the greenhouse effect → rise in temperature.

Causes of Excess Greenhouse Gases:

- Burning fossil fuels (coal, petroleum)
- Industrial effluents
- Solid waste

Impact:

- Accelerates climate change

INTERNATIONAL INITIATIVES TO PROTECT ENVIRONMENT & CLIMATE

International initiatives	Year	Place	Interventions
Establishment of World Meteorological Organisation	1950	Geneva	Organises world climate conferences
Stockholm Conference	1972	Stockholm	Environmental conservation and development
Earth Summit	1992	Rio de Janeiro	Prepared UN Agenda 21 to promote environment friendly development
Kyoto Protocol	1997	Kyoto	Reduce the amount of Green House gases in the atmosphere
Montreal Protocol	1987	Montreal	Reduce the production and consumption of ozone depleting substances
Paris Agreement	2015	Paris	Reduce Global warming, helping world nations to cope up with the harmful effects of climate change
G 20 Summit	2023	New Delhi	One earth, one family, one future. Green development, climate finance, overall development

Chapter 5 – Money And Economy

MONEY

- ✓ Anything accepted in the exchange of goods and services can generally be called money

General Functions Of Money

1. Medium of Exchange

- ✓ Goods and services can be sold for money.
- ✓ Money can be used to purchase needed goods and services.
- ✓ Labour can be supplied, and its reward is received in the form of money.
- ✓ The same money can be used to purchase goods and services.
- ✓ Money is crucial for making countless transactions in the economy.

2. Measure Of Value

- ✓ The value of all goods can be expressed in monetary terms.
- ✓ In the barter system, it was not easy to compare the value of one good with another.
- ✓ Money made it easy to compare the values of two goods.
- ✓ The value of a good is the price assigned to it in the transaction process.

3. Store of Value

- ✓ When money became acceptable to everyone, it became possible to store the value of any good in the form of money.
- ✓ This was not possible in the barter system.

- ✓ The value of goods, including perishable items, can be converted into money or assets.
- ✓ This stored value can be used in the future.

4. Means of Deferred Payments

- ✓ In modern times, many business activities are carried out with ease due to settling financial transactions at a later date.
- ✓ Buyers and sellers generally agree that cash settlement of goods and services can be cleared later.
- ✓ The value of borrowing and lending can be measured in the form of money.
- ✓ This is very helpful for short-term and long-term business transactions.

MONEY WORKS IN THE ECONOMY

- Money moves the economy and speeds up its functioning.
- It stimulates production, distribution, and consumption by making transactions faster.

Example:

- Rice production (primary sector) needs fertilizers, seeds, machinery, labour.
- Money spent on these becomes income for the industrial sector.
- Transporting rice gives income to the service sector.
- Income received in industrial and service sectors is pumped back into the economy.
- Each currency spent changes hands repeatedly, increasing transactions.

- **Velocity of circulation of money** = number of times a unit of money is exchanged in a given period.
- Increase in velocity → economic growth accelerates.
- Decrease in velocity → economic slowdown.
- High-growth economies → more chances to spend money.
- Low-growth economies → limited chances to spend money.

RESERVE BANK OF INDIA (RBI)

- The Reserve Bank of India (RBI) is the central bank of India, headed by its Governor.
- It was established on **1 April 1935** in Kolkata under the **Reserve Bank of India Act, 1934**.
- In **1937**, the headquarters was shifted to Mumbai.
- It was **nationalized in 1949**.

FUNCTIONS OF RBI

Individual Tuition Concept

a) **Printing and Issuing Currency**

- Under the **RBI Act 1934**, only RBI can print and issue all currencies except coins and ₹1 notes.
- Coins and ₹1 notes → Ministry of Finance.
- RBI handles design, security features, printing, and distribution of currency.
- Printing presses: **Nasik, Dewas, Mysore, Salboni** (last two by BRBNML, owned by RBI).
- Coins are minted at **Mumbai, Hyderabad, Kolkata, Noida**.

- RBI can withdraw notes based on government instructions → **Demonetization**.

b) Bankers' Bank

- The Reserve Bank acts as the **bankers' bank**.
- It provides **emergency loans** to banks in times of crisis.
- It **maintains the reserves** of banks.
- It helps to **settle transactions** between banks.

C) Controls the supply of money and credit

- **Cause of inflation:** When money supply rises but production of goods and services does not rise proportionately → fewer goods, more money → prices increase.
- **Definition:** Inflation = increase in the general price level of goods and services.

Individual Tuition Concept

Measurement in India:

- Measured using the **Consumer Price Index (CPI)**.
- CPI is prepared by the **National Statistical Office (NSO)** under **MOSPI**.

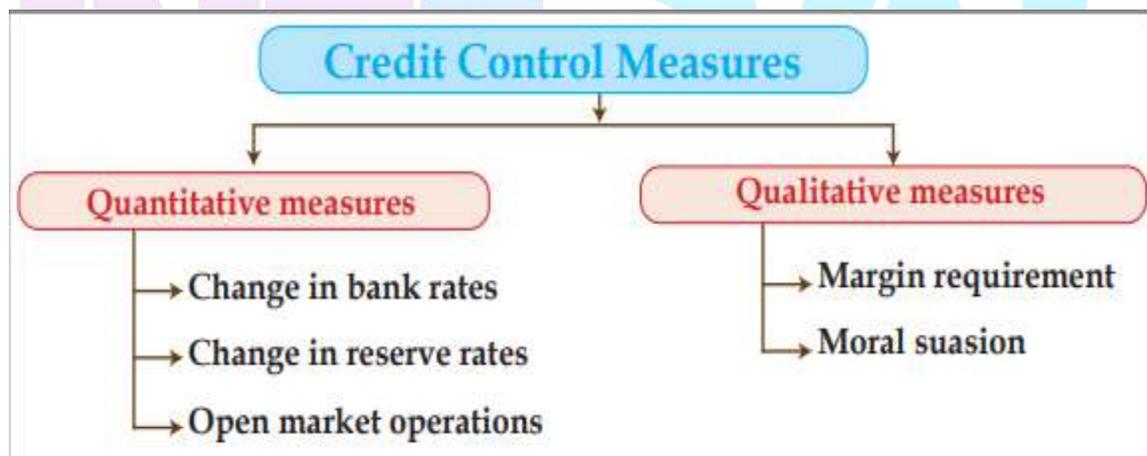
Impact of uncontrolled inflation:

- Reduces **purchasing power of money**.
- Adversely affects **economic growth and production**.
- **Reason behind inflation:** Increase in the **quantity of money supply** is a major factor.

The Reserve Bank sees the total amount of money in our economy in the form of M1, M2, M3 and M4. Let's see what they are.

M1 = Coins and currency notes held by the public and the savings deposits in commercial banks
M2 = M1 + savings deposits in post office savings banks
M3 = M1 + net fixed deposits in commercial banks
M4 = M3 + total deposits in post offices (excluding National Savings Certificates)
where M1 and M2 are known as narrow money and M3 and M4 are known as broad money.

- RBI uses quantitative and qualitative measures to control credit.



- ✓ When **RBI increases rates**, commercial banks also raise their rates.

At higher interest rates:

- ✓ Banks take **fewer loans** from RBI.
- ✓ Banks **deposit more** money with RBI.

- ✓ Public takes **fewer loans**.
- ✓ Result → **Less money available** in the economy.

High interest rates encourage **saving over spending** (greater reward for not consuming).

- ✓ Public money flows to **banks** → **RBI**.
- ✓ Overall money in circulation **decreases**, helping to **control inflation**.
- ✓ **Cash Reserve Ratio (CRR)**: Banks must keep a part of their deposits with RBI.
- ✓ **When CRR decreases**: Banks have more money to lend → Credit increases → People have more money.
- ✓ **When CRR increases**: Banks have less money to lend → Credit decreases → People have less money.

c) **Acts as the government's bank**

- **Maintains govt. accounts** – handles deposits, receipts, payments.
- **Banking services** – lends and advances to govt. when needed.
- **Financial management** – issues securities, manages debt & borrowings.
- **Advises govt.** – on fiscal and monetary policy.

d) Custodian of foreign exchange reserves

- Foreign Exchange Reserves: Total of foreign currencies and gold, maintained by RBI as custodian.

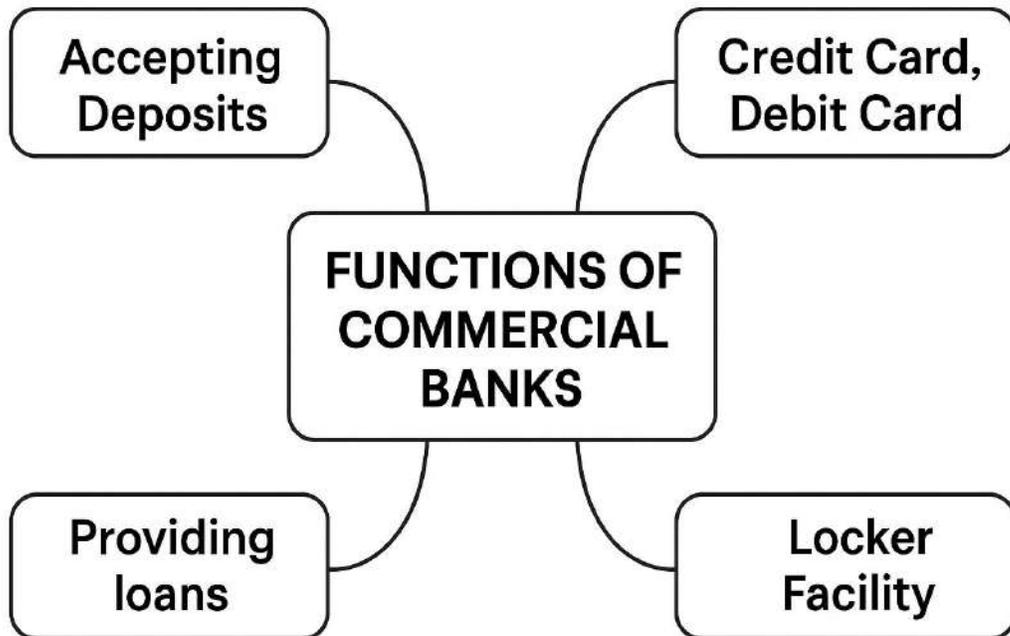
e) Publication of Reports:

- RBI regularly publishes reports like *Banking Trends in India*, *Monetary Policy Reports*, *Consumer Surveys*, *RBI Bulletin*, and *Statistical Supplements*.
- These reports provide data, analysis, and insights on the economy, banking, and monetary policy.

COMMERCIAL BANKS

- ❖ Commercial banks are licensed by RBI and included in the Second Schedule of the RBI Act, 1934.
- ❖ They provide services like accepting deposits and lending loans.
- ❖ Types: Public sector, private sector, small finance, payment, specialized, regional rural, and foreign banks
- ❖ **New generation banks** (after 1990s reforms) use modern technology and customer-friendly services.
- ❖ Examples: Axis Bank, Kotak Mahindra Bank, Yes Bank, IndusInd Bank.

FUNCTIONS OF COMMERCIAL BANKS



monisha-fution concept

1. Accepting Deposits

- ❖ There are 4 types of deposits

Type of Deposit	Savings Deposit	Current Deposit	Term/Fixed Deposit	Recurring Deposit
Purpose	Encourages individuals to save	For business transactions	Deposit for a fixed period	Regular savings of fixed amount
Withdrawal Facility	Limited withdrawals vary by bank	Unlimited transactions daily	Withdrawal not maturity can pay interest	Regular deposits only open more
Interest Rate	Low interest	No interest	Higher than a savings deposit	Higher than a fixed tenure
Special Feature	Safe and flexible savings option	Overdraft facility	Pay interest at maturity or at intervals	Small monthly savings grow into a lump sum

2. Providing Loans

- ✓ Commercial banks provide loans to individuals and institutions.
- ✓ They act as intermediaries between depositors and borrowers.
- ✓ A part of deposits is kept as reserves, the rest is lent out.
- ✓ Banks charge higher interest on loans than what they pay on deposits.
- ✓ The difference (loan interest – deposit interest) is the bank's income, called **spread**.

- ✓ Loans are given against **collateral** like gold, land documents, salary certificates, etc.

BANKING AND TECHNOLOGY

- ❖ Technology increases the speed of banking transactions.
- ❖ **Mobile & Online Banking** allow access via smartphones and computers.
- ❖ **Online Banking:** Bank transactions through the internet.
- ❖ Banking services now available **24/7, 365 days**, anywhere in the world.

Payment Systems in the Banking Sector through Technology

National Electronic Fund Transfer (NEFT)

- Introduced by the **RBI** for safe and easy transfer of money between bank accounts.
- Transactions are processed in **batches** at regular intervals during working hours.
- Uses the **Indian Financial System Code (IFSC)** to identify the bank branch.
- Mainly used for **small and medium transactions**.

Real Time Gross Settlement (RTGS)

- RBI system for transferring **large-value funds** (usually above ₹2 lakhs).
- **Real-time:** Transactions are processed instantly, without waiting.
- **Gross settlement:** Transactions are settled individually, not in batches.
- Safe and reliable for **urgent, high-value payments**.

Core Banking

- Banking network that connects all branches of a bank.
- Customers can access services like deposits, withdrawals, and transfers from **any branch**, not just their home branch.
- Makes banking **more flexible and convenient** for customers.
- Examples: If you open an account in Delhi, you can withdraw money or up-date passbook in Mumbai.

Universal Payments Interface (UPI)

- Developed by the **National Payments Corporation of India (NPCI)**.
- Allows **real-time money transfer** between bank accounts through smartphones.
- Uses a **Virtual Payment Address (VPA)** instead of bank details for easy transactions.
- Customers can link **multiple bank accounts** to one app.
- Provides **24/7 availability**, instant settlement, and is widely used for digital payments.
- Popular UPI apps: Google Pay, PhonePe, Paytm, BHIM UPI, Amazon Pay.

Payment Systems in the Banking Sector through Technology

System	Introduced/ Developed by	Purpose	Key Features	Best for
NEFT	RBI	To make interbank fund transfers easy	<ul style="list-style-type: none"> • Uses IFSC code • Processed in batches 	Small to medium transactions
RTGS	RBI	Transfer of large-value funds	<ul style="list-style-type: none"> • Instant (real-time) settlement • Gross basis (one 	High-value urgent transfers
Core Banking	Banks (via RBI initiative)	To allow banking from any branch	<ul style="list-style-type: none"> • Account access from any branch • No need to visit home branch 	Customers needing branch flexibility
UPI	NPCI	Real-time money transfer via mobile	<ul style="list-style-type: none"> • Uses VPA instead of bank details • 24/7 instant settlement 	Everyday quick & secure payments

Non-Banking Financial Institutions (NBFIs)

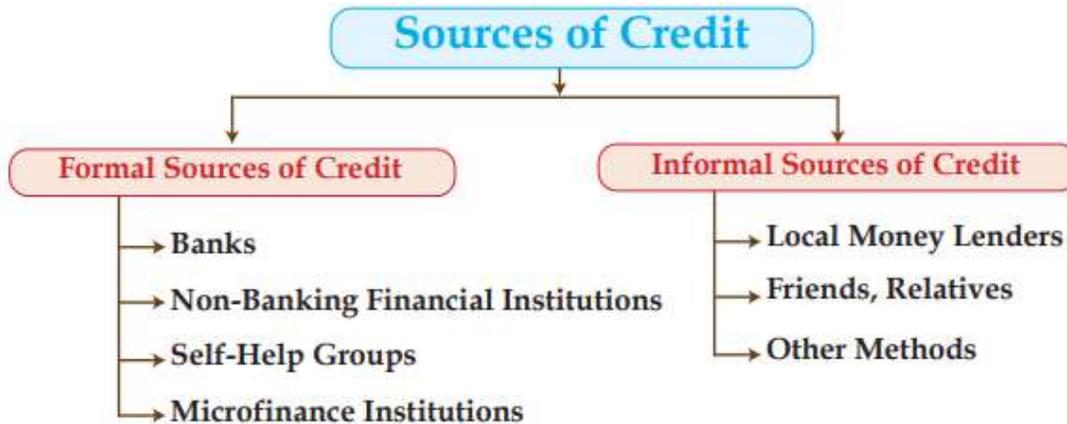
Individual Tuition Concept

- Operate in the financial sector but perform only some banking functions.
- **Key Difference from Banks:** Cannot accept savings deposits or allow withdrawals using cheques.
- **Regulators:** RBI, SEBI, IRDA, NHB.

Examples:

- Insurance companies – LIC, GIC
- Mutual fund companies – UTI
- Other NBFCs – KSFE

Sources Of Credit



- Formal sources of credit are the organized, institutionalized and regulated systems.
- Informal sources of credit are the unorganized and non-institutionalized systems.

Individual Tuition Concept

Credit Deposit Ratio

- Definition: Credit Deposit Ratio (CD Ratio) shows the portion of a bank's deposits given as loans.
- Purpose: It indicates how much of the bank's deposits are being used for lending.
- Monitoring: The RBI keeps track of it.
- High CD Ratio: Means the bank has lent out a large part of its deposits.
- Low CD Ratio: Means the bank is lending less and keeping more deposits idle.

FINANCIAL INCLUSION

NATIONALIZATION OF BANKS

Expanding banking
access across India

CO-OPERATIVE BANKING SYSTEMS

Supporting local
communities & farmers

FINANCIAL INCLUSION STEPS TAKEN BY GOVERNMENT

MICROFINANCE

Small loans for the
underprivileged

JAN DHAN ACCOUNT

Zero balance accounts
for all citizens

Individual Tuition Concept

1. Nationalisation of banks

✓ 14 banks nationalized in 1969, 6 in 1980.

✓ **Goals:**

- Expand banking in rural areas.
- Provide low-interest credit to farmers.
- Ensure fair distribution of credit.
- Prevent concentration of economic power.

2. Co-operative Banking Systems

- ✓ Support rural economy by providing banking to villagers and farmers.
- ✓ Operate on cooperation, self-help, and mutual assistance.
- ✓ **Objectives:**
 - a) Encourage savings among villagers.
 - b) Protect people from private moneylenders.
 - c) Offer low-cost loans to farmers and small businesses.

3. Microfinance

- ✓ Provides financial services to low-income individuals and businesses without access to conventional banks.

Goals:

- Poverty alleviation
- Women and marginalized empowerment
- Promote entrepreneurship and job creation
- Improve quality of life

Examples:

- Grameen Bank (Bangladesh, 1983, Prof. Muhammad Yunus)
- Kudumbashree (Kerala) – poverty alleviation and women empowerment

4. Jan Dhan Account

- Scheme to provide bank accounts to all unbanked citizens.
- **Features:**
 - Zero minimum balance account
 - Financial inclusion for low-income groups
 - Promote financial literacy
 - Encourage banking habits

INTERVAL

Individual Tuition Concept

Chapter 3 – From The Rainy Forests to The Land of Permafrost

EQUATORIAL CLIMATIC REGION

COUNTRIES INCLUDED IN EQUATORIAL CLIMATIC REGION



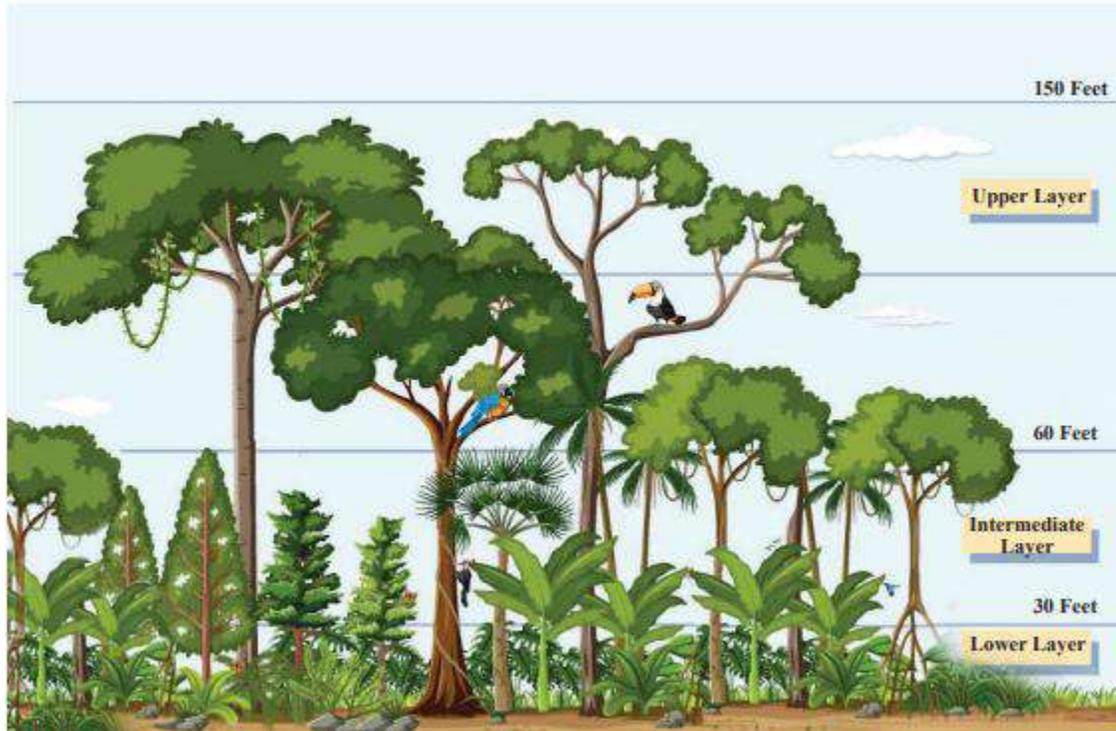
ASIA	SOUTH AMERICA	AFRICA
INDONESIA	BRAZIL	DEMOCRATIC REPUBLIC GABON
MALAYSIA	COLOMBIA	REPUBLIC OF CONGO
SINGAPORE	ECUADOR	CONGO
BRUNEI	PERU	UGANDA
		KENYA

CLIMATIC FEATURES

- **Uniform Temperatures:** The temperature stays nearly the same all year, with a mean monthly and annual temperature around 27°C.
- **No Winter:** Because the region receives vertical solar rays year-round, there is no distinct winter season.
- **Diurnal Variation:** Mornings are moderate, but the temperature increases significantly as the day progresses.
- **Oppressive Days:** High humidity, intense heat, and strong sun make the days feel oppressive.
- **Moderating Winds:** Coastal areas get some relief from winds blowing off the sea.
- **Heavy and Consistent Rainfall:** The region receives heavy rainfall (175 cm to 250 cm annually) that is well-distributed throughout the year.
- **Causes of Rain:** The high temperature and evaporation rate lead to heavy convectional rain, typically in the afternoons.
- **Orographic Rainfall:** Some mountainous areas, like those in Indonesia and Africa, also experience orographic rainfall.
- **Cyclonic Rainfall:** Atmospheric disturbances in the Doldrums can occasionally cause intermittent rainfall of cyclonic origin.
- **No Dry Season:** Unlike other climates like the monsoon or savanna, there is no distinct dry season due to the abundant, year-round rainfall.
- **Mount Kilimanjaro:** Despite being in the equatorial region, Mount Kilimanjaro is snow-covered all year because of its high altitude.

NATURAL VEGETATION

- **Tropical Rainforests:** The primary type of vegetation is **luxuriant tropical rainforests**, also known as **equatorial evergreen forests**.
- **Evergreen Nature:** There is no specific season for shedding leaves, flowering, or fruiting. These processes occur all year, so the forests remain evergreen.
- **Geographic Distribution:** These forests are found in major regions like the **Amazon Basin (called Selvas)**, **West-Central Africa**, **Indonesia**, the **Malay Peninsula**, and **New Guinea**.
- **Variety of Species:** These forests have a high level of **biodiversity**, with many different plant species co-existing in one area. For example, the Malaysian rainforests can have up to 200 plant species per acre.
- **Abundant Plant Life:** A wide range of plants thrive here, including:
 - **Large Trees:** Ebony, mahogany, cinchona, and rosewood.
 - **Undergrowth:** Smaller palms, climbing plants (like lianas), epiphytes (like orchids), parasitic plants, and grasses (like lalang).
- **Canopy Structure:** The trees grow to different heights, creating **multiple canopies** or layers based on the availability of sunlight.



The distinct canopy layers formed by plants at different heights

WILDLIFE

Individual Tuition Concept

- ✓ **Arboreal Dominance:** The wildlife is primarily **arboreal**, meaning animals live in trees.
- ✓ **Adaptations:** Animals like monkeys and sloths are adapted with strong limbs and prehensile tails to live in the **canopy**, which is rich in food.
- ✓ **Limited Forest Floor Life:** The dense canopy blocks sunlight, so there is little **undergrowth** on the forest floor.
- ✓ **Rare Herbivores and Carnivores:** Due to the lack of undergrowth, herbivores that feed on ground vegetation are uncommon. Consequently, large carnivores that prey on them are also few.

- ✓ **Diverse Inhabitants:** The region is home to a wide variety of animals, including:
 - **Canopy Dwellers:** Monkeys, sloths, toucans, and birds of paradise.
 - **Forest Floor Animals:** Tapirs, jaguars, and a variety of insects.
 - **Aquatic Animals:** Hippos and alligators, which are found near water sources.

POPULATION AND HUMAN LIFE

The equatorial climatic region is generally **sparsely populated** due to its challenging physical conditions. The native people, such as the **Pygmies of Africa**, the **Indian tribes of the Amazon**, and the **Orang Asli of Malaysia**, have traditionally lived a nomadic lifestyle.

- **Traditional Sustenance:** These tribes survive by **hunting, gathering fruits and nuts, and fishing**.
- **Shifting Cultivation:** Their main agricultural method is **slash-and-burn agriculture**, where they clear and burn forest land to grow crops like **manioc, yam, maize, bananas, and groundnuts**

The arrival of Europeans led to the development of **plantation agriculture**, which thrives in the favorable equatorial climate. These crops are often significant for industrial use.

- **Major Plantation Crops:** Key crops include **rubber**, with Malaysia and Indonesia as leading producers, as well as **cocoa, oil palm, coconuts, sugarcane, coffee, tea, bananas, and pineapples**

Despite the challenges of the region, there are many beautiful tourist destinations and modern cities.

- **Modern Cities:** Cities that have undergone significant development include **Singapore, Jakarta, Quito, and Bogotá.**
- **Amazonian Cities:** Manaus and Belém, located in the Amazon Basin, are also examples of developing cities and popular tourist spots.
- **Systematic Growth:** Areas like Malaysia, Singapore, and Eastern Brazil have seen significant development through systematic planning and hard work.

CHALLENGE FACING BY EQUATORIAL CLIMATIC REGION

The equatorial climate, while supportive of plant life, presents significant challenges to human development.

- **Health Hazards:** The hot, wet climate encourages the spread of **insects, pests, germs, and bacteria**, leading to a high occurrence of diseases.
- **Lack of Infrastructure:** Dense forests and swamps make it difficult and expensive to construct and maintain **roads and railway lines**. Many remote areas lack modern communication systems, with rivers serving as the primary transport routes.
- **Commercial Challenges:**
 - **Lumbering:** The thick, dense forests and the heavy nature of hardwoods make commercial logging challenging.

- **Livestock Rearing:** The lack of grazing land and frequent insect attacks make livestock rearing impractical.
- **Threats to Development:** Rapidly growing grasses (like **Lalang**) and thick undergrowth quickly reclaim cleared land, negatively affecting cultivation. Wild animals and poisonous insects also pose a threat to construction workers.

THE EQUATORIAL CLIMATIC REGION

CLIMATE



- High rainfall year-round
- High temperatures and humidity
- Consistent day length

VEGETATION



- Emergent layer
- Main canopy
- Understory

FAUNA

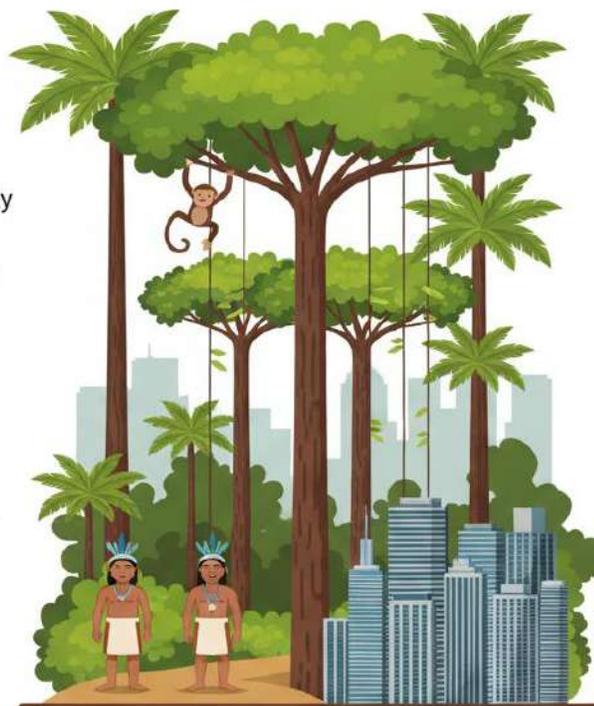


- High biodiversity
- Arboreal animals
- Insects & amphibians

HUMAN LIFE



- Indigenous tribes
- Shifting cultivation
- Modern cities



CHALLENGES

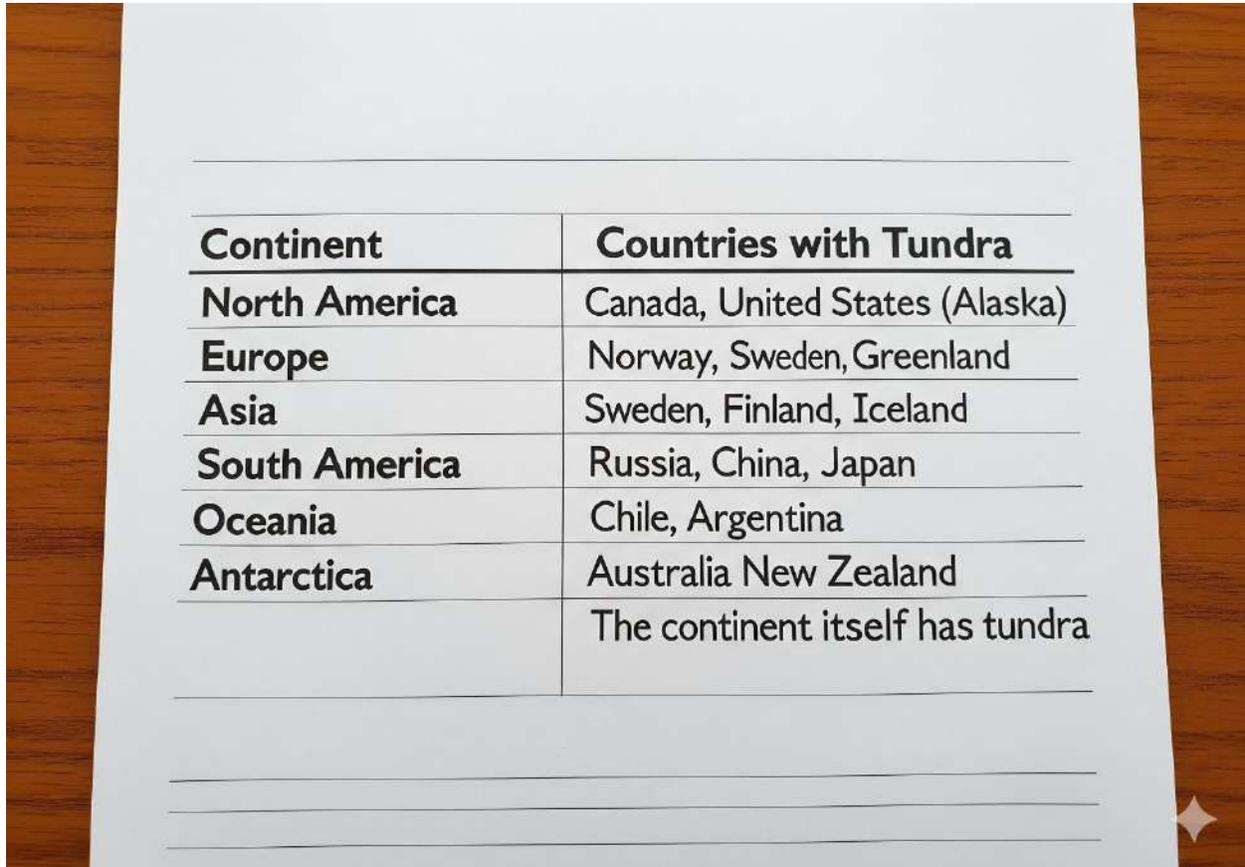


DEFORESTATION

DISEASE

THUNDRA CLIMATE REGION

REGIONS



Continent	Countries with Tundra
North America	Canada, United States (Alaska)
Europe	Norway, Sweden, Greenland
Asia	Sweden, Finland, Iceland
South America	Russia, China, Japan
Oceania	Chile, Argentina
Antarctica	Australia New Zealand The continent itself has tundra

- **Location:** The tundra is located north of the taiga region.
- **Geography:** It stretches along the Arctic coasts of North America, Eurasia, and Greenland.
- **Sub-types:** The tundra is divided into two main categories: **Arctic Tundra** and **Alpine Tundra**

Arctic Tundra	Alpine Tundra
<ul style="list-style-type: none"> In parts located to the north of Taiga in Alaska, Northern Canada, Siberia, Greenland, Iceland, Scandinavia 	<ul style="list-style-type: none"> In high mountainous regions

- The Tundra climatic region is also called the Arctic or Polar Climate.

CLIMATE

- Polar Climate:** The tundra is defined by short summers and long, harsh winters.
- Temperatures:** It has a very low mean annual temperature. Winter temperatures can drop to **-25°C to -35°C**, or even lower in inland areas. Summer temperatures rise just above 0°C for a few weeks.
- Sunlight:** The sun can stay up for **six months straight** during the summer and not rise for **six months** during the winter in the area between the Arctic Circle and the Pole.
- Precipitation:** Precipitation is low and almost always in the form of **snow**. Coastal areas may receive heavier snow from cyclones.
- Blizzards:** Strong snowstorms called **blizzards** are a common feature and can lead to heavy snowfall.

VEGETATION AND WILDLIFE

- ✓ **Vegetation:** The tundra is largely treeless. The dominant plant life includes **mosses, lichens, sedges, and bushes**. Only hardy plants like **dwarf willows and stunted birches** can survive in some areas.
- ✓ **Summer Activity:** During the brief summer, as the snow melts, bushes bear berries and flowers bloom. This short period of warmth also attracts insects.
- ✓ **Wildlife:** Animals are adapted to the cold. Herbivores like **reindeer** survive on hardy grasses. Other animals include **Arctic foxes, wolves, polar bears, musk-oxen, and Arctic hares**. Many birds migrate to the tundra during the summer to prey on insects.

HUMAN LIFE

INTERVAL

Individual Tuition Concept

- ✓ The tundra is a **sparsely populated** region.
- ✓ Human life is largely confined to the **coastal areas**.
- ✓ Permanently snow-covered plateaus and mountains are **uninhabitable**.
- ✓ The region is mainly populated by **nomadic tribes**.

Different tribes in the tundra

Greenland, North Canada, Alaska	Eskimos or Inuit
North Finland, Scandinavia	Lapps
Siberia	Samoyeds
Lena Basin	Yakuts
North- Eastern Asia	Koryaks, Chuckchi

- ✓ **Subsistence Activities:** The primary activities for subsistence are hunting and fishing.
- ✓ **Resources Used:** The people get food, clothing, tools, weapons, and utensils from whales, seals, caribou, various fish, birds, and fur-bearing animals.
- ✓ **Traditional Shelter:** They live in **igloos** during the winter and in portable, animal-skin tents during the summer, migrating to hunt and fish.
- ✓ **Polar Eskimos:** The Polar Eskimos of Greenland still follow a primitive lifestyle similar to their ancestors.
- ✓ **Modernization:** Over the last 60 years, contact with Europeans has led to significant changes. In coastal villages, they now live in houses with modern amenities.
- ✓ **Technology Adoption:** They have replaced traditional **kayaks** with **speed-boats** for fishing.
- ✓ **Commercial Rearing:** Fur-bearing animals are now being raised on a commercial scale.
- ✓ **Education:** Schools have been established in parts of Canada and Alaska to help Eskimo children adapt to modern life.
- ✓ **Nomadic Lifestyle:** In the Eurasian Tundra, many tribal groups are nomadic, moving with their reindeer herds in search of pastures.
- ✓ **Economic Development:** Large farms have been established in the Siberian Tundra for commercial reindeer and fur-bearing animal rearing. Mining activities have also led to the development of new settlements.
- ✓ **Agriculture:** In some southern Tundra areas with favorable conditions, cereals with a short growing season are cultivated.

The Tundra and the Climate Change

- ✓ The Tundra is one of the places that is adversely affected by climate change.
- ✓ Due to global warming, the permafrost in the Tundra melts considerably.
This adversely affects the ecosystem and environmental equilibrium of the region.

INTERVAL

Individual Tuition Concept

Chapter 4 - Consumer : Rights and Protection

- Market is thus a place where sellers and buyers establish close links
- Consumption is the process of buying and using goods and services to fulfil one's needs.
- Consumer is someone who buys and uses goods and services for a price, or under an agreement to buy them for a price

Factors that influence consumption.

- Price
- **Income of the consumer** – higher income → higher consumption.
- **Wealth and assets** – people with more savings/property spend more.
- **Availability of credit/loans** – easy credit increases consumption.
- **Future expectations** – if expecting higher income, people spend more; if expecting crisis, they save.
- **Rate of interest** – higher interest encourages saving, lowers consumption.
- **Advertisement and social influence**

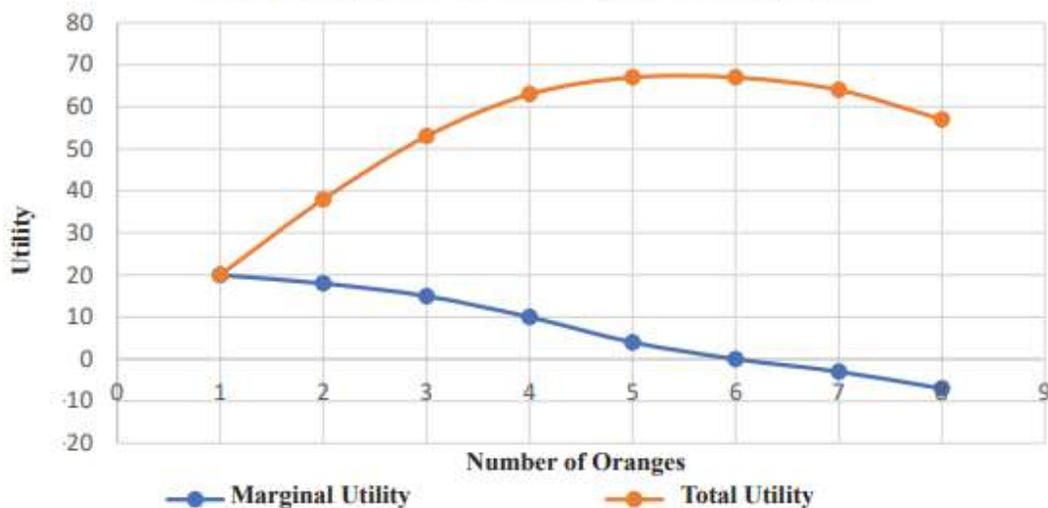
Utility

- Utility is the want-satisfying power of a commodity/ good.
- Unit : utils
- **Total Utility (TU)** : Total utility is the total amount of utility that a person receives when he continuously consumes several units of a particular commodity.
- **Marginal utility (MU)** : The change in total utility that occurs when one additional unit of a commodity is consumed is called marginal utility.

No. of Oranges	Total Utility (TU)	Marginal Utility (MU)
1	20	20
2	38	18
3	53	15
4	63	10
5	67	4
6	67	0
7	64	-3
8	57	-7

- **TU keeps increasing** as more oranges are eaten.
- **MU keeps decreasing** (law of diminishing marginal utility).

Total Utility Curve and Marginal Utility Curve



Findings from the Example

1. Total Utility (TU) increases

- As more oranges are eaten, total satisfaction goes up.
- Example: after 5 oranges, $TU = 68$ utils.

2. Marginal Utility (MU) decreases

- The extra satisfaction from each additional orange becomes less.
- Example: 1st orange = 20 utils, 5th orange = only 5 utils.

3. Law of Diminishing Marginal Utility

- MU keeps falling with every extra unit consumed.
- This is a universal law of consumption.

4. TU rises at a decreasing rate

- TU does not rise equally each time, it rises slowly because MU falls.

5. When MU becomes zero, TU is maximum

- If she eats more and more, at some point $MU = 0$ (no new satisfaction).
- At this stage, TU reaches its peak.

6. When MU becomes negative, TU falls

- If she eats even after being full, MU may become negative (dissatisfaction, discomfort).
- Example: eating the 6th orange may reduce overall happiness.

TYPES OF GOODS

Types of Goods – Simple Explanation

1. Free Goods

- Goods available in nature in unlimited quantity.
- No one needs to pay for them.
- **Examples:** Air, sunlight, rainwater.

2. Economic Goods

- Goods that are limited and have to be bought for money.
- Produced or collected with effort.
- **Examples:** Clothes, electricity, furniture.

3. Consumer Goods

- Goods used directly by people to satisfy their wants.
- Not used again in production.
- **Examples:** Food, TV, mobile phone.

4. Capital Goods

- Goods used to produce other goods or services.
- They help in production but are not finished goods for direct use.
- **Examples:** Machinery, tools, factories.

5. Durable Goods

- Goods that last for a long time.
- Can be used again and again.
- **Examples:** Cars, fridge, washing machine.

6. Non-Durable Goods

- Goods that are used up quickly.

- Cannot be reused once consumed.
- **Examples:** Milk, fruits, bread.

? What are the things a consumer should pay attention to while buying goods and services from markets?

- Ans) Check quality
- See expiry date
- Look for ISI/Agmark/Hallmark
- Compare prices
- Read label details
- Take bill/receipt
- Check warranty/guarantee
- Avoid false ads

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CONSUMER PROTECTION MOVEMENT

- Started in 1966 with Consumer Guidance Society of India (Mumbai)
- Social movement to protect consumer rights and welfare
- Fights against cheating by firms/institutions

Objectives

- Protect consumer rights
- Prevent frauds
- Empower consumers

- Support consumer laws
- Ensure truthful advertisements
- Give consumers representation in forums

CONSUMER PROTECTION ACT – 1986 & 2019

- **Consumer Protection Act 1986** → A law passed to protect consumer rights and set up a separate judicial system for consumer protection.
- **Consumer Protection Act** came into force on **24 Dec 1986**.
- Based on **1985 UN guidelines** on consumer protection.
- **24th December = National Consumer Day**.
- **Consumer Protection Act 2019** → A new law (from 20 July 2020) that replaced the 1986 Act to **empower consumers and protect their rights**.

Features

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- Formed **Central Consumer Protection Authority (CCPA)**.
- Stops **unfair trade by e-commerce** platforms.
- Makes **consumer dispute solving easier**.
- Punishes making/selling **fake or adulterated goods**.
- Bans **misleading ads**.
- Ensures **consumer education**.

RIGHTS OF A CONSUMER

- ✓ **Right to Safety** – Consumers must be protected from goods and services that may cause harm to their health, life, or property.
- ✓ **Right to Choose** – Consumers should have the freedom to choose from a variety of goods and services at fair and competitive prices.
- ✓ **Right to Know** – Consumers have the right to get full information about the quality, quantity, purity, price, and standards of goods and services.
- ✓ **Right to Seek Redressal** – Consumers can raise complaints and claim compensation or justice against unfair trade practices or exploitation.
- ✓ **Right to Consumer Education** – Consumers should have access to knowledge and awareness about their rights and responsibilities to make wise choices.

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CONSUMER COURTS

Structure of consumer courts



- **Consumer courts** resolve consumer disputes and provide justice.
- **Structure in India:**
 - **600+ District Forums**
 - **35 State Commissions**
 - **National Consumer Disputes Redressal Commission (NCDRC)** – apex body
- **Advisory committees under Consumer Protection Act:**
 - District Consumer Protection Council
 - State Consumer Protection Council
 - National Consumer Protection Council

Various types of fraud and the institutions and methods to be approached to resolve them

1. Frauds in educational institutions:

- Contact **UGC / AICTE / State Board**
- Approach **Consumer Forum**
- **Lodge a police complaint**
- Contact **Ministry of Education**

2. Health care fraud

- Report through the grievance portal of State/National/Medical Council.
- Report to the Director of Health.
- Report via Public Interest Litigation (PIL) in High Court or Supreme Court for serious health frauds.

3. Fraudulent offers of jobs abroad

- ✓ Complain via Protectorate of Emigrants (POE)
- ✓ File a case under IPC Section 420
- ✓ Report scams abroad to Indian Embassy/High Commission
- ✓ Contact Pravasi Sahayata Kendra (PBSK): 1800-11-3090

4. Online fraud

- ✓ Complain to Cyber Crime Cell: cybercrime.gov.in
- ✓ Report to CERT-IN portal
- ✓ Submit complaint via National Consumer Helpline or info@cert.in.org.in

5. Bankin fraud

- ✓ Approach Bank Grievance Redressal (Branch Manager)
- ✓ If no response in 30 days, approach RBI Ombudsman
- ✓ Banking Ombudsman Helpline: 14448 | cgmbank@rbi.org.in

QUALITY SYMBOLS

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Symbol	Name	Related sector
	ISI mark	The Bureau of Indian Standards (BIS) issues the ISI mark to ensure that products meet certain quality standards. This mark can be found on industrial products such as cement, paper, paint, and gas cylinders.
	AGMARK	This symbol is used to ensure the quality of agricultural and forestry products.
	FSSAI	Ensures food security.

CONSUMER EDUCATION

- ✓ It is about educating consumers about their rights, responsibilities, choices of products and services, differences in markets and consumer laws.

Objectives

- ✓ Protect consumer rights
- ✓ Make consumers aware of responsibilities
- ✓ Ensure safety in trade (including online)
- ✓ Follow ethics and rules in the market
- ✓ Spread awareness of consumer protection laws
- ✓ Ensure health safety
- ✓ Promote consumer justice

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