

**SSLC  
SOCIAL SCIENCE-2  
NOTE-PDF**

**BIJU KK**  
GHSS TUVVUR-MALAPPURAM  
9778300200

# Seasons and Time SSII-1 Note

## Why seasons change?

- Revolution of Earth around the Sun.
- The tilts of the Earth's axis.
- The parallelism of the Earth's axis.

## Revolution of Earth around the Sun

- The Earth revolves around the Sun in an elliptical Orbit

## The tilts of the Earth's axis

- $66\frac{1}{2}^\circ$  from the orbital plane and
- $23\frac{1}{2}^\circ$  from the vertical plane

## The parallelism of the Earth's axis.

- The Earth maintains tilts of axis throughout its revolution.
- This is known as the parallelism of the Earth's axis.

## Apparent movement of the Sun

- Since the parallelism is maintained same throughout the revolution, the position of the Sun in relation to the Earth varies apparently between Tropic of Cancer ( $23\frac{1}{2}^\circ$  North) and Tropic of Capricorn ( $23\frac{1}{2}^\circ$  South).
- This is known as the apparent movement of the Sun.

## Seasons and apparent movement of the Sun

- As a result of the apparent movement of the sun the different seasons get repeated in a cyclic manner.
- The seasons are Spring, Summer, Autumn and Winter.

## Seasons and apparent position of the Sun

| Months                           | The apparent movement of the sun        | Seasons             |                     |
|----------------------------------|---|---------------------|---------------------|
|                                  |   | Northern hemisphere | Southern hemisphere |
| From March 21 to June 21         | From the Equator to Tropic of Cancer    | Spring              | Autumn              |
| From June 21 to September 23     | From Tropic of Cancer to the Equator    | Summer              | Winter              |
| From September 23 to December 22 | From the Equator to Tropic of Capricorn | Autumn              | Spring              |
| From December 22 to March 21     | From Tropic of Capricorn to the Equator | Winter              | Summer              |

## Summer Solstice

- Sun is vertically over the Tropic of Cancer ( $23\frac{1}{2}^\circ$ N)
- 21 June.
- Northern Hemisphere experiences its longest day and shortest night.
- Southern Hemisphere experiences its longest night and shortest day.

## Equinoxes

- March 21 and September 23.
- The apparent position of the Sun vertically over the Equator
- The length of day and night equal on both the hemispheres.

## Winter solstice

- 22 December
- The Sun is vertically above Tropic of Capricorn ( $23\frac{1}{2}^\circ$ S)
- On this day the Northern Hemisphere experiences its shortest day and longest night.

### **Spring season in Northern Hemisphere**

- Between 21 March and 21 June
- The Sun move from the Equator to Tropic of Cancer
- Transition from winter to Summer.
- The plants sprouts,
- Mango trees blooms.
- Jack fruit trees bearing buds.

### **Summer season in Northern Hemisphere**

- Between 21 June and 23 September.
- The Sun move from Tropic of Cancer to the Equator
- Increase in atmospheric heat
- Water bodies getting dry

### **Autumn Seasons in Northern Hemisphere**

- Between September 23 to December 22
- Autumn is the transition from summer towards winter.
- Atmospheric temperature decreases
- Shortening of day and lengthening of night
- Trees shed their leaves.
- Adaptation to survive the forthcoming dry winter.

### **Winter season in Northern Hemisphere**

- Between 22 December to 21 March.
- This period marks the winter season in the Northern Hemisphere.
- Falling snow
- Freezing cold temperatures

### **Utharayanam**

- Northward apparent movement of the Sun from Tropic of Capricorn to Tropic of Cancer
- The period is 22 December to June 21
- The duration of day in the northern hemisphere gradually increases during this period.

### **Dakshinayanam**

- Southward apparent movement of the Sun from Tropic of Cancer to Tropic of Capricorn
- The period is 21 June to 22 December
- The duration of day in the Southern hemisphere gradually increases during this period.

### **Rotation of the Earth**

- Day and night occur due to rotation of the Earth
- The Earth rotates from west to east
- It takes 24 hours to complete one rotation.
- As the Earth rotates from west to east, the Sun rises in the east.

### **Local time.**

- The time estimated at the position of the Sun.
- When the Sun is vertically overhead, it is noon.

### **What will be the hardships if there are several local times in a country?**

- Cannot prepare a railway time table applicable throughout the country.
- Cannot give announcements about radio programmes.
- Cannot conduct an examination with same question paper all over the country.

### **Calculation of Time**

- The angular distance of the Earth is  $360^\circ$ .
- We will get 360 longitudes if we draw one longitude each for each degree of angular distance.
- The time required to complete a  $360^\circ$  rotation is 24 hours.
- On converting 24 hours into minutes  $24 \times 60 = 1440$  minutes
- That is, the time required for the completion of one rotation = 1440 minutes.
- The time required for the Earth to complete the rotation of  $1^\circ$  longitude is  $1440/360 = 4$  minutes.
- So the time required for the rotation of  $15^\circ$  longitudinal area is  $15 \times 4 = 60$  minutes (1 hour).
- In other words,  $15^\circ$  longitudinal area of the Earth passes by the Sun within a period of one hour.
- From a definite longitude, the time is estimated to increase by 4 minutes towards the east and decrease by 4 minutes towards the west for every degree of longitude.

### **Greenwich Time (GMT) and Time Zones**

- The zero degree longitude is known as the Greenwich Meridian.
- Time is calculated worldwide based on the Greenwich Line.
- Hence this line is also known as the prime meridian.
- The local time at the prime meridian is known as the Greenwich Mean Time.
- Based on the Greenwich Meridian, the world is divided into 24 zones, each with a time difference of one hour.
- These are known as time zones.

### **Standard Time**

- Each country in the world considers the longitude that passes almost through its middle as the standard Meridian.
- The local time at the longitude that passes through the middle of a country is known as the standard time.
- This time is selected as the common time for the whole country.

### **Indian Standard time (IST)**

- The longitudinal extent of India is from  $68^\circ\text{E}$  to  $97^\circ\text{E}$ .
- The  $82\frac{1}{2}^\circ\text{E}$  longitude which passes almost through the middle has been fixed as the standard meridian of India.
- The local time along this longitude is generally considered as the Standard Time of India.
- This is known as the Indian Standard Time.

### **Find the difference between the Indian Standard Time and the Greenwich Mean Time?**

- 5.30 hour plus.

### **International Date Line**

- $180^\circ$  longitude is known as International Date Line.
- There is a difference of 24 hours, at  $180^\circ$  longitude to the east and west of Greenwich.
- If  $180^\circ$  longitude passes through a country, the places situated East and West of this line will be having two different days.
- To avoid this difficulty the line is drawn with bend.
- It passes through Bering - strait in Pacific Ocean.
- The travellers who cross this line from the East calculate the time by advancing it by one day and those who cross the line from the west deduct one day.

**All the Best**

**9778300200**

# In Search of the Source of Wind SS2- 2

## Atmospheric pressure

- Atmospheric pressure is the weight of atmospheric air at the surface of the Earth.
- Winds are caused by atmospheric pressure fluctuations.

## The instrument used to measure atmospheric pressure is

- Mercury Barometer.

## Variations in atmospheric pressure

- The average weight that air exerts on the earth's surface is 1034 mg per cm<sup>2</sup>.
- It is recorded in units like millibar (mb) and hectopascal (hPa).
- The level of mercury at normal atmospheric pressure will be 76 cm.
- The atmospheric pressure at that point will be 1013.2 mb or 1013.2 hPa.

## Factors affecting Atmospheric pressure

- Altitude
- Temperature
- Humidity

## Atmospheric pressure and altitude

- The atmospheric pressure decreases with altitude.
- Due to decrease in the density of air with altitude.
- The pressure decreases at the rate of 1 millibar (mb) per an altitude of 10 meters.
- The atmospheric pressure and the altitude are inversely proportional.

## Temperature and atmospheric pressure

- When the air warms up, it expands and goes up.
- This causes a decrease in atmospheric pressure
- Heat and atmospheric pressure are inversely proportional.
- During the day the atmospheric pressure decreases as the result of the heat the Sun.
- However, because of the lack of sunlight at night, atmospheric pressure increases.

## Humidity and atmospheric pressure

- Humidity is the amount of water (vapour) in atmospheric air.
- Vapour is lighter than air.
- If the quantity of water vapour is more in a unit volume of air, then naturally the atmospheric pressure will be less.
- On the seashore, which receives plenty of sunlight, the humidity is high and the pressure is low.
- In areas far from the sea, humidity is low and atmospheric pressure is high.
- Humidity and atmospheric pressure are inversely proportional.

## Isobars

- Imaginary lines joining places having the same atmospheric pressure.
- We can easily understand the distribution of the atmospheric pressure of any region by observing the isobars.

## Global pressure belts

- At certain latitudes the atmospheric pressure is almost the same.
- Based on this, the earth's surface is divided into different pressure belts.
- Equatorial low pressure belt 0°
- Sub tropical high pressure belt 30°N, 30°S
- Sub polar low pressure belt 60°N, 60°S
- Polar high pressure belt 90°N, 90°S
- These are known as the global pressure belts.

## Equatorial low pressure belt 0°

- The area where the sun rays are perpendicular throughout the year.
- The air expands due to sun's heat and rises up on a massive scale in this area.

- This is the reason for the low pressure experienced throughout this zone.
- The equatorial low pressure belt is situated between 5° North and South latitudes.
- As the air in this zone ascends on a large scale, winds are very feeble here.
- This pressure belt is also known as 'doldrum', meaning 'the zone with no winds'.
- The region was a nightmare for the ancient mariners.

#### **Sub tropical high pressure belt-(30 °N & 30 °S)**

- Located at 30 ° latitude in both hemispheres.
- The warm air rising from the equatorial low pressure belt (0°)
- This air gradually cools and drops to 30° latitudes due to the Earth's rotation (Coriolis Force).
- And there it becomes high pressure belt.

#### **Sub polar low pressure belt (60°N & 60°S latitudes)**

- Located at 60 ° latitude in both hemispheres.
- As this zone is close to the Pole, the air is colder here.
- The air in this zone thrown away due to the rotation of the earth (Coriolis Force).
- As a result, low pressure is experienced all along the sub polar region.

#### **Polar high pressure belt (90°N & 90°S)**

- Located at 90 ° latitude in both hemispheres.
- This zone experiences severe cold throughout the year.
- Steady high pressure experienced here.

#### **Shift of the pressure belts**

- The pressure belts shift according to the apparent movement of the Sun.
- The pressure belts shift 5° northward during the period of Sun's northward progression
- The pressure belts shift 5° southward during the period of Sun's southward progression.

#### **Atmospheric pressure and winds**

- The horizontal movement of air from a high pressure zone to a low pressure zone is called wind.
- Global variations in the atmospheric pressure lead to the formation of winds.
- There are different types of winds on the earth's surface.
- They are wind like Light breeze that makes the leaves flutter and cyclones that cause widespread damage.
- Winds are named on the basis of the direction from which they blow.
- For example the south wind, Westerlies, sea breeze, Mountain breeze
- The peculiarities of the source regions influence the nature of the wind.
- Winds blowing from the sea will be saturated with moisture whereas the moisture content will be less in winds blowing from drier regions.

#### **Factors that control speed and direction of the winds.**

- Pressure gradient
- Coriolis force
- Friction

#### **Pressure gradient**

- The change in pressure with horizontal distance is termed as pressure gradient.
- The pressure gradient is said to be steeper when the pressure difference is more.
- The wind speed will be higher there.

#### **Coriolis Force**

- Freely moving bodies get deflected to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.
- This is due to the force generated as a result of Earth's rotation which is known as the Coriolis force.
- This force increases as it moves towards the Poles from the Equator.

#### **Ferrel's law.**

- Admiral Ferrel found out that the winds in the Northern Hemisphere deflect towards their right and in Southern Hemisphere deflect towards their left due to the Coriolis Effect.
- The law put forward by him on the basis of this is known as Ferrel's law.

## **Friction**

- Wind obstructions cause friction in the wind.
- The speed of wind will be high over ocean surfaces and plains as the friction is less.
- On the other hand, the friction being more along difficult terrains and places with dense forest cover.
- The speed of wind will be less in those places.

## **Pressure belts and winds (The different planetary winds / global winds)**

- There were differences in pressure over different latitudinal zones at the global level.
- These pressure differences lead to the formation of winds.
- Winds blow from high pressure regions to low pressure regions.
- The winds developed between the global pressure belts is called as planetary winds / global winds.

## **Which are the Planetary Winds**

- Trade winds
- Westerlies
- Polar easterlies

### **Trade winds**

- The winds are constantly blowing from the sub tropical high pressure belt towards the equatorial low pressure belt is known as Trade winds.
- The Trade winds blows From 30°N & 30°S latitude to 0° latitude.
- As these winds blow from the north east in the Northern Hemisphere, they are known as north east trade winds. -This wind is blowing from the south east in the Southern Hemisphere, so it is known as the South east trade winds
- The equatorial low pressure zone where the trade winds from both the hemispheres converge is known as the Inter Tropical Convergence Zone (ITCZ).

## **What could be the reason for the trade winds blowing from the south east and the north east directions?**

- Winds change direction due to the Earth's rotation (through the Coriolis force).
- In the northern hemisphere, trade winds are blowing in the north-east direction as they move to the right.
- In the southern hemisphere, trade winds are blowing in the south-east direction as they move to the left.

## **Westerlies**

- The Westerlies are blow continuously from the sub tropical high pressure zones (30 ° latitudes) into Sub polar low pressure zones (60 ° latitudes) In both hemispheres.
- As the direction of these winds is mostly from the west, they are known as the westerlies.
- Due to the vast expanse of oceans in the Southern Hemisphere the westerlies are stronger in the Southern Hemisphere than in the Northern Hemisphere.
- The ancient mariners had given different names to the rough westerlies in the Southern Hemisphere, such as 'Roaring Forties' (along 40° latitudes), 'Furious Fifties' (along 50° latitudes) and 'Shrieking Sixties' (60° latitudes).

## **Polar Easterlies**

- The cold polar regions are centers of high pressure.
- The polar winds are the cold winds that blow from these high pressure areas towards the sub polar low pressure belts.
- These winds blow from the East in both the hemispheres due to the Coriolis Force.
- Hence these are known as polar easterlies.
- These winds play a significant role in determining the climate of North America, the eastern European countries, and Russia.

## **Periodic winds**

- Periodic winds are winds that repeat at regular intervals of time and can be seasonal or diurnal.
- Monsoon winds
- Land and sea breeze
- Mountain and valley breeze are the main periodic winds.



### **Monsoon winds**

- The term 'monsoon' is derived from the Arab word 'mousom'.
- It means 'winds that change direction in accordance with season'.
- Monsoon is the seasonal reversal of wind in a year.

### **Factors responsible for the formation of the monsoon winds?**

- The apparent movement of the sun
- Coriolis force
- Differences in heating

### **South west monsoon winds**

- Sun's rays fall vertically to the North of the Equator during certain months due to the tilt of the Earth's axis.
- The pressure belts also shift slightly northwards in accordance with this.
- The south east trade winds also cross the equator and moves towards the north as the Inter Tropical Convergence Zone (ITCZ) moves northwards during the summer in the northern hemisphere.
- As the trade winds cross the Equator they get deflected and are transformed into south west monsoon winds due to the Coriolis Effect.
- The low pressure formed over the land due to the intense day temperature attracts these sea winds and further contributes to the formation of the South west monsoon winds.

### **North east monsoon winds**

- As a result of the formation of high pressure zones over the Asian landmass and low pressure zones over the Indian Ocean during winter, the north east trade winds get strengthened.
- These are the North East monsoon winds.

### **Sea breeze**

- The air in contact with the land gets heated up and ascends as the land heats up quickly during the daytime.
- This leads to the formation of low pressure over the land.
- which causes the comparatively cooler air blow from the sea to land.
- This is known as sea breeze.

### **Land breeze.**

- As the land cools faster than the sea during the night it would be high pressure over the land and low pressure over the sea.
- This results in the movement of air from the land to sea.
- This is the land breeze.
- The land breeze which starts blowing at night becomes active early in the morning and ceases by sunrise.

### **Mountain and valley breeze**

#### **Mountain breeze**

- During night the air in the mountainous regions cools due to the intense cold conditions in that region.
- As cool air is dense, it blows towards the valley.
- This is known as mountain breeze.

#### **Valley breeze**

- During the day time the air above the mountains gets heated and rises up.
- As a result, the wind blows up slope from the valley with relatively lower temperature.
- This is known as valley breeze.

### **Local winds**

- Local winds are winds whose effects are limited to a relatively smaller area.
- Formed as a result of the local pressure= differences, these winds are weak.
- Such winds exist in different parts of the world in different names.
- Loo, Mangoshowers, Kalbaisakhi, Chinook, Harmattan and Foehn are some of the local winds in the world.



**Chinook**

- Chinook is a hot local wind that blows down the eastern slope of the Rocky Mountains in North America.
- As a result of this wind, the ice on the eastern slope of the Rocky Mountains has been melts down.
- Therefore, it is called Chinook, which means 'Who Eats Snow'.
- Since this wind reduces the severity of the cold, it is helpful for wheat cultivation in the Canadian lowlands.

**Foehn**

- Foehn is the wind that blows down the northern slopes of the Alps mountain.
- As the air heats up due to pressure from the descent, it helps in reducing the severity of cold in that region.

**Harmattan**

- Harmattan is a dry wind which blows from the Sahara desert towards West Africa.
- On the arrival of these winds, the humid and sultry conditions of West Africa improve significantly.
- Hence, people call these winds as the doctor.

**Loo**

- Loo is a hot wind blowing in the North Indian plain.
- These winds blowing from the Rajasthan desert raise the summer temperature of the North Indian plains.

**Mango showers**

- The winds that blow in South India during summer season are called Mango showers.
- These wind cause the ripening and fall of mangoes and hence the name.

**Variable winds**

- Variable winds are winds with entirely different characteristics formed during certain atmospheric situations.
- Cyclones and Anticyclones are variable winds.

**Cyclones**

- Cyclones are caused by the formation of low atmospheric pressure at the centre surrounded by high pressure regions.
- Strong whirl winds blow towards such low pressure centres from the surrounding high pressure areas.
- Due to Coriolis effect cyclones are flow in the anti-Clock wise direction in the Northern Hemisphere.
- in the southern Hemisphere direction of cyclones are clock wise.
- Based on the climatic region of their formation, cyclones can be classified as tropical cyclones and temperate cyclone.
- The Ockhi - cycloninc winds that struck the coastlines of Kerala and Lakshdweep during November 2017 was a tropical cyclone
- Tropical cyclones are caused due to local pressure differences in the tropical oceans, especially the Indian ocean.

**Anti cyclones**

- Anti cyclones are phenomenon where strong whirl winds blow from the high pressure centres to the surrounding low pressure areas.
- Due to Coriolis effect the pattern of winds in anti cyclones is clock wise in the Northern Hemisphere and anti clockwise in the Southern Hemisphere.

**All the Best**

**9778300200**

# Human Resource Development in India SS2-3

## What is Human resource?

- People who have the manpower which can be utilised in the production sector.
- Manpower is an important factor in making goods and services.
- Human resource is necessary for the progress of any country.

## What is Human resource development?

- Development of man's physical and mental abilities through education, health care, and training.

## What are different levels of human resource development.

- Individuals
- Family
- Institutions and agencies
- Nation

## Features of human resource

- Human resource has quantitative as well as qualitative features.

### Quantitative features

- Size of population
- Population density
- Growth of population:- Birth rate, Death rate.
- Population structure:- Age structure, Sex ratio, Labour force participation rate, Dependency ratio.

### Qualitative features

- Education- Literacy rate
- Health care- Life expectancy
- Training
- Social capital

## Why are population studies conducted?

- Help the government to quantitatively assess the different needs of the people
- To plan activities and programmes
- Informs the availability of human resource in a country.
- Depicts the extent of basic facilities required by the people.
- Quantifies the goods and services required.
- Determines the socio - economic development policies.

## Density of population

- Number of people per square kilometer area.

## What are the factors that affect the population of a country.

- Birth rate,
- Death rate, and
- Migration.

### Birth rate

- Birth rate is the number of live births per 1000.

### Death rate

- Death rate is the number of deaths per 1000.

### Migration

- Migration is the settlement of people of a region in another region.

## Population Structure

- Classification of population into different age groups and presenting the ratio of each group in the population.
- classification is done in age groups like 0- 14 years, 15-59 years, and 60 and above years.

**Labour force participation rate**

-Labour force participation rate is the ratio of the population in the age group 15 - 59, who are either employed or actively looking for jobs.

-This age group has the capability to contribute to the progress of the nation.

**Dependency ratio**

-The age groups 0-14 years and 60 years and above are included in the dependent group.

-Their proportion in total population is known as dependency ratio.

-This group depends on the labour force of the country.

-An increase in the dependency ratio decreases the per capita income.

**Sex ratio**

-Sex ratio is the number of females per 1000 males.

**Qualitative features of human resource (What are the qualitative factors that improve the labour potential?)**

- Education-Literacy rate
- Healthcare-Life expectancy
- Training
- Social capital

**How education helps in the development of a country.**

-Education

-Improves the skills of individuals

-Better the technological know-how

-Helps to secure better job and income

-Improves the standard of living.

**Literacy rate**

-Literacy rate refers to the percentage of population that can read and write with comprehension.

**India's literacy rate according to Census of 2011**

Total-74.04

Female - 65.46

Male - 82.14

**Which are institutions at various levels to provide education in a country.**

-Schools,

-colleges,

-Universities,

-Technical education institutions.

**Right to Education Act (RTE Act)**

-India has made education a fundamental right and has passed the Right to Education Act (RTE Act) in 2009.

-The constitution ensures the goal of "elementary education for all" through RTE

**What are the problems still exist in the education sector of India which need to be solved.**

-Certain sections drop out from schools without completing primary education.

-There is a lack of availability of basic facilities in the education sector.

-Quality of education has to be improved.

**Which are the projects implemented in India to develop education and skills.**

|   |  |
|---|--|
| Integrated Child children upto 6 years Development Scheme (ICDS)  | <ul style="list-style-type: none"> <li>-To ensure integrated development of children upto 6 years</li> <li>-To provide healthcare for pregnant and lactating wome</li> </ul>   |
| Samagra Shiksha Abhiyan (SSA) (It was formed by integrating institutes like Sarva Shiksha Abihyan (SSA) and Rashtriya Madhyamik Shiksh) | <ul style="list-style-type: none"> <li>• To ensure universal education to all up to higher secondary level</li> <li>• To ensure quality and equity</li> <li>• To promote the vocational education strenthen</li> <li>• To the teacher training institutes like SCERT/DIET</li> </ul> |
| Rashtriya Uchthal Shiksha Abhiyan(RUSA)   | <ul style="list-style-type: none"> <li>• To increase the access to higher education</li> <li>• To improve the quality of higher education</li> </ul>   |
| National Skill Development and Monetary Reward Scheme   | <ul style="list-style-type: none"> <li>• To improve the working skills of the youth</li> <li>• To ensure the availability of people with employable skills</li> </ul>  |

**What is health?**

- Health is a state of physical, mental and social wellbeing.
- Along with physical conditions, importance is given to mental and social conditions as well.

**Explain how healthy persons can participate in the progress of a country.**

- Production increases with the increase in efficiency and the number of working days.
- Natural resources can be utilized properly.
- Medical expense can be reduced, thereby reducing the government's expenditure.
- Economic development is possible through increase in production.

**What are the facilities to be ensured for health care.**

- Availability of nutritious food
- Availability of clean water
- Preventive measures
- Cleanliness
- Medical facilities
- Ensuring of leisure and entertainment
- Healthy environment

**Government institutions that work at different levels in the medical sector.**

- Medical Colleges
- District Hospitals
- Community Health Centres
- Primary Health Centres
- Health Sub Centres

**National Rural Health Mission (NRHM)**

- Function to make available quality health services to all in the rural sector.
- Multi specialty hospitals operate to make available modern treatment facilities.

**National Urban Health Mission (NUHM)**

- It provides improved health services to the residents of urban slums and other marginalised people in towns with a population of more than 50,000.

**Life expectancy**

- Life expectancy is the expected average years of life of a person lives.

**Life expectancy of India According to census of 2011**

Female - 67.7

Male - 64.6

Total -66.1

**Advantages in developing human resource.**

- Productivity of the workers increases.
- Economic inequality is reduced.
- Natural resource is utilized effectively.
- Makes possible the development and use of advanced technology.
- Social welfare is ensured.
- Entrepreneurship improves.

**ALL THE BEST**

**9778300200**

# Landscape analysis through maps SS2-4

## What is Topographical maps?

- Topographical maps depict all the natural and man-made features on the earth's surface.
- These maps contain the important surface features such as the undulations of the terrain, rivers, other water bodies, forests, agricultural land, barren land, villages, towns, and transport and telecommunication systems.
- Topographic maps are large-scale maps.
- Large-scale maps are maps depicting detailed information of relatively small areas.

## Who is responsible for making the Topographic map in India? Why?

- Survey of India
- Certain restrictions have been imposed on the use of topographic maps of strategic regions owing to the national security concerns.

## Uses of topographical maps?

- Analysis of the physical and the cultural features of the earth surface.
- For military operations and the preparation of military maps.
- Identification and studying of the natural and the cultural resources of a region as part of economic planning.
- For urban planning.
- To understand land use.
- To understand the topography.
- For resource conservation and allocation.
- For computerized form of maps - GIS

## What are the essential elements for a topographic maps reading?

- Knowledge of the numbering scheme,
- Locational aspects,
- The conventional signs and symbols,
- The elevation and slope of the terrain,
- The methods of their representation are very essential for comprehending topographic maps.

## Million sheets

- Each of the maps in troposheets is in 1:1000000 scale.
- These are known as million sheets.
- The million sheets covering 4° latitudinal and 4° longitudinal extent are given numbers from 1 to 105.
- These numbers are known as index numbers(55).

## Degree sheets

- Each million sheet is divided into 16 parts in the order A, B, C, D, ..... up to P.
- For example, the million sheet numbered 55 is divided into 16 parts as 55A, 55B, 55C, .....55P.
- Each of these sheets with 1° latitudinal and longitudinal extent is prepared in 1:250000 scale.
- These sheets are prepared in 1:250000 scale.

## Minutes sheets

- Degree sheets are divided into 16 parts and each has 15 minutes longitude and longitude.
- These are Minutes sheets.
- Minutes sheets are numbered as 1, 2, 3, .... 16 (55D/1, 55D/2,.....55D/16).
- These sheets are prepared in 1 : 50000 scale.

## Conventional signs and symbols in Troposphere

- various features on the Earth's surface are represented in topographic maps using different colours and symbols.
- The colours and symbols used in the toposheets are internationally accepted.
- So the maps prepared in one country can be easily understood and analysed by the people of another.

## Conventional colours used to represent different geographic features

| Feature   | Colour |
|---|--------|
| -Latitudes and longitudes<br>-Non perennial water bodies<br>-Railway lines, telephone and telegraph lines<br>-Boundary line | Black  |
| -Oceans, rivers, wells, tube wells (perennial water bodies)   | Blue   |
| -Forests<br>-Grasslands<br>-Trees and shrubs<br>-Orchards   | Green  |
| -Cultivable land  | Yellow |
| -Barren land  | White  |
| -Settlements, roads, paths  | Red    |
| -Grid lines (eastings, northings and their numbers)   | Red    |
| -Contour lines and their values   | Brown  |
| -Sand dunes and sand hills  | Brown  |

### Grid reference

- In Toposheets include red lines in the north-south and east-west directions.
- The north-south lines are called eastings.
- And east-west lines are called northings.
- The grids formed jointly by the eastings and the northings are called reference grids.
- Grid reference is the determination of the position of the terrestrial objects using this grid.
- In 1:50000 toposheets each grid with 2 cm width & 2 cm breadth covers an area with 1 kilometre length & 1 kilometre breadth on the earth's surface.
- Eastings and Northings lines are used to solve the difficulty of accurately determining the location of small geographical features on toposheets.

### Eastings

- These are north-south lines.
- Their value increases towards the East.
- The value of the easting immediately left to the geographic features is considered for identifying a location.

### Northings

- These are lines drawn in the east-west direction.
- Their value increases towards the north.
- The value of the northings immediately to the south of the feature in the map is considered for identifying a location.

### 4 - figure grid reference(Problems)

### 6-figure grid reference(Problems)

### Contour Lines

- Contours are imaginary lines drawn on maps connecting those places having equal elevation from the sea level.
- The respective altitude will be marked with each contour line.
- These are called contour values.
- The closely spaced contours represent steep slopes and the widely spaced contours represent gentle slopes.

**What are the three things can be assessed from the contour lines in topographic maps?**

- Altitude of the place
- Nature of the slope
- Shape of the land form

**Intervisibility**

- If any two places are mutually visible, then we can establish that these places are intervisible.
- Intervisibility assessment is being applied for erecting electric posts, mobile towers and wireless transmission towers.
- To find out the intervisibility between two place we must draw the shape of geographical feature by using contour lines.

**Toposheet interpretation**

- Marginal Information/Primary information,
- Physical/Natural features,
- Cultural/Man-made features.

These are the different stages of study and interpretation of toposheet.

**Marginal Information or Primary information.**

-The general information given outside the margins in topographic maps is known as marginal/primary information.

**Marginal Information or Primary information & indicators.**

- Topo sheet number - (a)
- Name of the place represented - (b)
- Latitudinal location - (c) 1 , (c) 2
- Longitudinal location - (d) 1 , (d) 2
- Easting - (e) 1 , (e) 2
- Northing - (f) 1 , (f) 2
- Scale of the map - (g)
- Contour interval - (h)
- Year of survey - (i)
- Year of publication - (j)
- Agency in charge of survey - (k)

**Physical features of toposheets**

Water bodies such as (-rivers, -streams, -springs, etc) and -different landforms are the physical features in topographic maps.

**Cultural features**

- Cultural features are man-made objects on toposheet.
- Settlements,
- Well,
- Tube well,
- different types of roads,
- boundaries,
- places of worship,
- agricultural lands,
- post office,
- police station,
- bridges,
- wells and tube wells are a few cultural features shown in toposheets.

**All the Best**

**9778300200**



# Public expenditure and public revenue SS2-5

## What are the activities of the government?

- Drinking water
- Environmental protection
- Distribution of welfare pension
- Health care
- Education

## What is the public Expenditure?

- The expenditure incurred by the government is known as public expenditure.
- Government undertakes many activities for the welfare of the people.
- Expenditure increases with an increase in the activities of the government.

## What are the classification of public expenditure?

- Developmental expenditure,
- Non-developmental expenditure.

### Developmental expenditure

- The expenditure incurred by the government for constructing roads, bridges and harbours, starting up new enterprises, setting up educational institutions, etc. are considered as developmental expenditure.
- The government will receive future revenue from development expenditure.

### Non-developmental expenditure.

- Expenditure incurred for war, interest, pension, etc. are considered as non-developmental expenditure.
- The government will not get any revenue from its non-development expenditure.

## Why does India's public expenditure increase?

- Population growth,
- Increase in defense expenditure,
- Welfare activities,
- Urbanization,
- Natural calamities,
- Infectious diseases.

## What is Public revenue?

- The income of the government is known as public revenue.

## What are the sources of revenue to the government?

- Tax Revenue.
- Non Tax Revenue.

### What is tax (What is tax revenue)

- Taxes are the main source of income to the government.
- Tax is a compulsory payment to the government made by the public for meeting expenditure towards welfare activities, and developmental activities etc.
- The person who pays tax is called tax payer.
- The reduction in the income the taxpayer receives by paying taxes is known as the tax burden.

### Classify the tax on the basis of bearing tax burden

- Taxes can be divided into two categories on the basis of bearing tax burden
- Direct Tax
- Personal Income Tax

### Direct Tax

- When a person pays taxes on himself, it is called direct tax.
- The unique feature of direct tax is that the tax payer undertakes the burden of the tax.

## **Major direct taxes in India**

### **Personal Income Tax**

- It is the tax imposed on the income of individuals.
- The rate of tax increases as the income increases.
- Income tax is applicable to the income that is above a certain limit.
- In India the income tax is collected by the central government as per the Income Tax Act 1961.

### **Corporate tax**

- This is the tax imposed on the net income or profit of the companies.

### **Indirect tax**

- In the indirect tax the tax burden can be shifted from the person on whom it is imposed to another person.
- in the case of sale tax the tax burden initially falls on the trader.
- But the trader transfers the burden of the tax along with its price to the consumer.
- The tax is included in the price paid by the consumer.
- This is the peculiarity of indirect taxation.
- With a view to simplify the indirect tax system and to introduce one tax across the country Goods and Services Tax (GST) was introduced by incorporating majority of existing indirect taxes.
- The prevailing system will continue for those items that are not included in GST.

### **Goods and Services Tax (GST)**

- Goods and Services Tax (GST) was introduced in India on 1 st July 2017 merging different indirect taxes imposed by central and state governments.
- Taxes are levied at different stages starting from production to final consumption of goods and services.
- In each stage the tax is imposed on the value added.
- Hence tax is collected only on value addition.
- The tax paid in the earlier stages need not be paid by the final consumer.
- GST registration is mandatory to the traders if the turnover is more than 20 lakh in a financial year.

### **Types of Goods and Services Taxes (GST)**

- Central Goods and Services Tax (CGST)
- State Goods and Services Tax (SGST)
- Integrated Goods and Services Tax (IGST)

### **Central Goods and Services Tax (CGST) & State Goods and Services Tax (SGST)**

- The Central and State government impose GST on goods and services traded within the state.
- The tax imposed by the central government is known as Central GST (CGST).
- And the tax imposed by the state government is known as State GST (SGST).
- These taxes are collected jointly from the consumers and are shared equally by the centre and state governments.

### **Integrated Goods and Services Tax (IGST)**

- The GST on interstate trade is imposed and collected by the central government.
- This is known as Integrated GST (IGST).
- The share of the state government on IGST is given by the Central government.

### **GST Rates**

- No GST is imposed on essential services and daily consumption goods including unprocessed food items.
  - And all other goods and service are arranged under four GST slabs.
- They are:-
- 5%
  - 12%
  - 18%
  - 28%

**GST rates as represented by symbols**

- ! = 0%
- @ = 5%
- # = 12%
- \$ = 18%
- & = 28%

**What are the important information from the GST Bill?**

- GST Registration Number
- PAN number
- Date
- Bill number
- Symbols indicating tax rates
- Tax rates
- Items including in -GST
- Items that are exempted from GST.

**GST Council**

- Union Finance Minister, Union Minister of State in charge of finance and state finance ministers are members of GST Council.
- Union Finance Minister is the chairman of GST council

**Duties of the GST Committee**

- The GST council makes recommendation on the Following.
- Taxes, cess and surcharges that are to be merged into GST.
- The goods and services that are to be brought under GST.
- Determining GST rates.
- The time frame for including the excluded items into GST.
- Determining the tax exemption limit on the basis of total turnover.

**What are the other two sources of income to the government?**

- Surcharge,
- Cess.

**Surcharge?**

- Surcharge is an additional tax on tax amount.
- This is imposed for a certain period of time.
- Usually surcharge is imposed as a given percentage on the income tax.

**Cess?**

- Cess is an additional tax for meeting some special purpose of government.
- Cess is withdrawn once sufficient revenue is collected.

- Education cess on income tax is an example.
- The purpose of this is the development of educational facilities.

**List the taxes levied by Central, State and Local self Governments in India.**

| Central government  | State government  | Local self government  |
|---|---|--|
| <ul style="list-style-type: none"> <li>-Corporate tax</li> <li>-Personal Income Tax</li> <li>-Central GST (CGST)</li> <li>-Integrated GST (IGST)</li> </ul> | <ul style="list-style-type: none"> <li>-Land Tax</li> <li>-Stamp duty</li> <li>-State GST (SGST)</li> </ul> | <ul style="list-style-type: none"> <li>-Property tax</li> <li>-Professional Tax</li> </ul> |

**What are the non-tax revenue sources of the government?**

- Fees
- Fines and penalties
- Grants
- Interest
- Profit

**What is Public debt?**

- Public debts are loans taken by the government.
- Loans are availed from within and outside the country.
- The debt that the government buys from within the country is known as **internal debt**.
- The debt that the government buys from outside the country is known as **External debt**.

**Reasons for the increase in India's public debt**

- Increased defence expenditure
- Increase in population
- Social welfare activities
- Developmental activities
- Urbanization activities
- Health care
- Reforms in transport sector.

**Public finance?**

- Public finance is the branch of economics that relates to public income, public expenditure and public debt.
- Public finance is presented through the budget.

**What is a Budget?**

- Budget is the financial statement showing the expected income and expenditure of the government during a financial year.
- In India, financial year is from April 1 to March 31.

**Types of Budget**

Balanced budget:- When income and expenditure are equal, it is called a balanced budget.

Surplus budget:- When income is more than expenditure, it is called surplus budget.

Deficit budget:- When expenditure is more than income, it is called deficit budget.

**What is Fiscal policy?**

- Government's policy regarding public revenue, public expenditure and public debt is called fiscal policy.
- These policies are implemented through the budget.
- Fiscal policy influences a country's progress.
- A sound fiscal policy helps in nourishing the developmental activities and to attain growth.
- The tax rate is increased when there is inflation.
- As a result of this, the purchasing power of the people falls.
- Similarly, tax is reduced at the time of Deflation.
- This will increase the purchasing power of the people.

**What are the goals of the fiscal policy?**

- Attain economic stability.
- Create employment opportunities.
- Control unnecessary expenditure.
- Prevent inflation.
- Prevent depreciation.

**All the Best**

**9778300200**

# Eyes in the Sky and Data Analysis SS2-6

## **What is Remote Sensing?**

- Method of collecting information about an object, place or phenomenon without actual physical contact is known as remote sensing.
- Devices used for data collection in remote sensing are called sensors.
- Cameras and scanners are examples of sensors.
- The sensors record the electromagnetic radiations reflected by objects.

## **Classification of Remote Sensing Based on Source of energy**

- Passive Remote Sensing
- Active Remote Sensing

### **Passive Remote Sensing**

- Remote Sensing is carried out with the help of solar energy is known as passive remote sensing.
- Here the sensors do not emit energy by itself.

### **Active Remote Sensing**

- Remote Sensing made with the aid of artificial source of energy radiating from the sensor is known as active remote sensing.
- Here the sensors emit energy by itself.

## **What is the platform in remote sensing?**

- The carrier on which sensors are fixed is called a platform.
- Sensors can be installed on balloons, air crafts and satellites.

## **Classification of Remote Sensing based on the platform**

- The remote sensing can be divided into three types based on the platform.
- Terrestrial Photography
- Aerial Remote Sensing
- Satellite Remote Sensing

## **What is terrestrial photography?**

- The method of obtaining the earth's topography using cameras from the ground is known as terrestrial photography.
- The images we take using cameras are examples of terrestrial photography.

## **Aerial Remote Sensing**

- Aerial remote sensing is a continuous process of taking pictures from the sky with the help of a camera mounted on balloons or aeroplanes.
- Aerial remote sensing is generally used to gather information about comparatively smaller areas.
- The photographs obtained through this method are called aerial photographs.

## **Advantage of aerial remote sensing**

- Information of any region can be gathered in accordance with our requirements.
- Contiguous pictures of the areas along the path of the air crafts are made available.

## **What is overlap in aerial photographs**

- In each aerial photograph, nearly 60% of the places depicted in the adjacent photo is included.
- This is done for ensuring contiguity and to obtain three dimensional vision with the help of stereoscope.
- This is called overlap in aerial photographs.

### **What is Stereo Pair in aerial photographs?**

- Two photographs of adjoining areas with overlap are called a stereo pair.
- The instrument which is used to obtain three dimensional view from the stereo pairs is called stereoscope
- When viewed through a stereo scope, we get a three dimensional view of the area depicted in the stereo pair.
- Such a three dimensional view obtained is called Stereoscopic vision.

### **Limitations of aerial photographs**

- The shaking of air crafts affects the quality of photos
- The air crafts require open space for take off and landing.
- It is not practical to take photographs of regions that are vast and extensive.
- Landing the air crafts frequently for refuelling increases the cost.

### **Satellite Remote Sensing**

- The process of collecting information using sensors fixed on artificial satellites is called satellite remote sensing.
- The artificial satellites are mainly divided into two types.

#### **-Geostationary satellites**

#### **-Sun synchronous satellites**

### **Features of Geostationary satellites**

- They orbit the earth at an elevation of about 36000m kilometres above the earth.
- One third of the earth comes under its field of view.
- As the movement of these satellites corresponds to the speed of rotation of the earth, it stays constantly above a specific place on the earth.
- This helps in continuous data collection of an area.
- It is used in telecommunication and for weather studies.
- India's INSAT satellites are examples of geostationary satellites.

### **Features of Sun synchronous satellites**

- The orbit of these satellites is about 900 km in altitude.
- The surveillance area is less than that of the geostationary satellites.
- The repetitive collection of information of a region at regular interval is possible.
- Used for the collection of data on natural resources, land use, ground water etc.
- These satellites are mainly used for remote sensing purposes.
- Satellites in IRS, Land sat series are examples of sun synchronous satellites.

### **What is Spectral Signature in Satellite Remote Sensing?**

- Each object on the surface of the earth reflects electromagnetic radiation in different measures.
- The amount of reflected energy by each object is called the spectral signature of that object.
- Sensors record the electromagnetic radiation either reflected or emitted by the objects.

### **What is Satellite Imageries?**

- The sensors on artificial satellites distinguish objects on the earth's surface based on their spectral signature and transmit the information in digital format to the terrestrial stations.
- This is interpreted with the help of computers and converted in to picture formats.
- These are called satellite imageries.

### **What is Spectral Signature in Satellite Remote Sensing?**

- Each object on the surface of the earth reflects electromagnetic radiation in different measures.
- The amount of reflected energy by each object is called the spectral signature of that object.
- Sensors record the electromagnetic radiation either reflected or emitted by the objects.

### **What is Spatial Resolution in Satellite Remote Sensing?**

- The size of the smallest object on the earth's surface that a satellite sensor can distinguish is called the spatial resolution of the sensor.
- The clarity of satellite images decreases as the spatial resolution decreases.

### **Uses of remote sensing technology**

- For the assessment of weather and its observations
- For ocean explorations
- To understand the land use of an area.
- For the monitoring of flood and drought
- For identifying forest fires in deep forests and to adopt controlling measures
- To collect data regarding the extent of crops and spread of pest attack
- For oil explorations
- To locate ground water potential places

### **What is Geographic Information System - GIS**

-Geographic Information System is a computer based information management system by which the data collected from the sources of information like maps, aerial photographs, satellite imageries, tables, surveys etc. are incorporated in to the computer using software, which are retrieved, analyzed and displayed in the form of maps, tables and graphs.

-All data analysis with GIS are done based on two kinds of data.

1. Spatial data
2. Attributes

### **What is Spatial data?**

- Each feature on the surface of the earth has a latitude and longitude location of its own.
- Such features of the earth's surface having a specific location is known as spatial data.

### **What is Attributes in Geographic Information System?**

-The additional information about the characteristics of each spatial data on the earth's surface are called attributes.

- If the well is a spatial data on a Geographic Information System,
- Is there a platform,
- Who owns the well,
- How deep it is etc. are the Attributes of that well.

### **Layers of Geographic Information System?**

-The thematic maps prepared and stored in Geographic Information System for analytical purpose are called layers.

-Example: the stream, road, paddy field and forest are provided separately.

-The spatial relationship among the features on the surface of the earth can easily be understood by analysing the appropriate layers.

### **Analytical Capabilities of GIS?**

- Overlay Analysis
  - Buffer Analysis
  - Network analysis
- are the major analytical possibilities of the geographical information system.

#### **Overlay analysis**

-Overlay analysis is used for understanding the mutual relationship among the various features on the earth's surface and the periodic changes undergone by them

-Overlay analysis is helpful in understanding the changes in the area of crops, the changes in land use etc.

#### **Buffer Analysis**

-Buffer Analysis is a technique used to analyse circular operations around a point, and for linear features at fixed distances.

-Suppose if we want to find out the number of houses located within three kilo metres radius of your school, the possibility of buffer analysis can be used effectively.

-Buffer analysis helps to identify the number of houses to be acquired when the existing road is widening from 5 m to 8 m as per the government decision.

-A circular zone created around a point feature or a parallel zone created aside a linear feature in buffer analysis is called buffer zone.



### **Network analysis**

- The network analysis deals only with linear features include roads, railways lines and rivers etc. on a map
- The possibilities of network analysis can be used to find out the easiest and less congested roads from one place to another.
- The possibilities of this analysis can also be used by tourists to plan the maximum number of attractive destinations in the available time.
- This may also help to bring an accident victim to a suitable hospital through less congested roads

### **Uses of Geographical Information System.**

- Compile data from different sources.
- Update and incorporate data easily.
- Conduct thematic studies
- Represent geographic features spatially.
- Generate visual models of future phenomena and processes based on the data collected.
- Prepare maps, tables, and graphs

### **What is the United States satellite-based navigation system?**

Global Positioning System (GPS)

### **Global Positioning System (GPS)**

- The Global Positioning System helps sensing the latitudinal and longitudinal location and elevation of objects on the earth's surface along with the corresponding time.
- In this system a series of 24 satellites placed at six different orbits between the altitudes 20000 and 20200 km above the earth's surface locate objects.
- We can locate places with the help of the signals received from the satellites in our Hand held device.
- The GPS requires signals from at least four satellites to display information like the latitude, longitude, elevation, time, etc. in it.
- Though started initially for the U.S. defence. This facility is now open to the public since 1980

### **Which is a satellite-based navigation system developed by India?**

-Indian Regional Navigation Satellite System

**All the Best**

**9778300200**

# India: The Land of Diversities SS2-7

## India Physiographic divisions

- Northern Mountain Ranges
- Northern Great Plains
- Peninsular plateau
- Coastal plain
- Islands

## Northern Mountain Ranges

-In Northern mountain region there are three mountain ranges

They are:-

- Trans Himalayas
- Himalayas
- Eastern Highlands

## Trans Himalayas

-Trans Himalayas include Karakoram, Ladakh, and Zaskar mountain ranges.

-Mount K2 (8661m) also known as Godwin Austin, the highest peak in India, is in the Karakoram range.

-The average height of the Trans Himalayas is 6000 meters.

## Himalayas

-The Himalayan mountain range forms an arc shaped physical division extending between the north - west trans himalayas and the south-east eastern highlands.

-These mountain ranges have a length of about 2400 kilometers.

-Many of the world's highest peaks are situated here.

-The height of these mountains tend to decrease towards the east.

-The width of these mountain ranges is just about 150 kilometers in Arunachal Pradesh, whereas it is around 400 kilometers in the Kashmir region.

-This physical division extending over 5 lakh square kilometers comprises of three parallel mountain ranges.

## Characteristic features of Himalayan ranges

-Himalayan ranges are divided in to three.

They are :-

- Himadri,
- Himachal,
- Siwaliks.

### Himadri

- The highest mountain range.
- Average altitude is 6000 meters.
- Origin of the rivers Ganga and Brahmaputra.
- Has a number of peaks above 8000 meters (Eg: Kanchenjunga, Nandadevi)

### Himachal

- Situated to the south of the Himadri.
- Average altitude is 3000 meters.
- The hill stations like Shimla, Darjeeling, etc. are situated in the southern slopes of this range.

### Siwaliks

- Situated to the south of the Himachal.
- Average altitude is 1220 meters.
- As the Himalayan rivers cut across this range, its continuity breaks at many places.
- Broad flat valleys seen along these ranges are called Duns. (Eg: Dehradun)

### **Eastern Highlands**

- This region which is at an altitude of 500 to 3000 meters is also known as Purvachal.
- Cherrapunji, the place receiving the highest rainfall in the world is situated here.
- This region is covered by dense tropical rain forests.

### **Major mountains in Eastern Highlands**

- (1) Patkai Bum-Nagaland
- (2) Naga hills-Nagaland
- (3) Garo, Khasi, and Jaintia hills-Meghalaya
- (4) Mizo hills-Mizoram

### **Significance of the Northern Mountains**

- Have been protecting us from foreign invasions from the north since ancient times.
- Block the monsoon winds and cause rainfall throughout North India.
- Prevent the dry cold winds blowing from the north from entering India during winter.
- Caused the emergence of diverse flora and fauna.
- Source region of rivers.

### **Indian rivers**

Indian rivers are classified in to two. They are:-

1. Himalayan rivers
2. Peninsular rivers

### **Himalayan rivers**

| <b>Rivers</b> | <b>Origin</b>                         | <b>Length</b>                  | <b>Tributaries</b>                 | <b>Sea which it joins</b> |
|---------------|---------------------------------------|--------------------------------|------------------------------------|---------------------------|
| Indus         | Manasarovar lake in Tibet             | About 2880 Km, in India 709 Km | Jhelum, Chenab, Ravi, Beas, Satlaj | Arabian Sea               |
| Ganga         | Gaumugh caves in the Gangothri glacie | About 2500 Km                  | Yamuna, Gomathi. Ghaghara, Kosi    | Bay of Bengal             |
| Brahmaputra   | Chema-yung- dung glacier in Tibet     | About 2900 Km, in India 725 Km | Tista, Manas, Luhid, Subensary     | Bay of Bengal             |

### **Northern Great Plains.**

- During the formation of the Himalayas, a huge depression of more than 2000 metre depth took shape along the south parallel to the Himalayas.
- This extensive plain took shape as a result of the continuous deposition by the rivers flowing down from the Himalayas for thousands of years.
- This plain, extending over seven lakh square kilometres and with kilometres of thick sediments, is one among the few extensive alluvial plains of the world.
- This plain is generally known as the Indus-Ganga-Brahmaputra plain.
- The highly fertile alluvial soil is a characteristic feature of this plain.

### **The granary of India**

- A variety of crops such as wheat, maize, rice, sugar cane, cotton, pulses, etc. Cultivated in Northern Great Plains
- This region is known as the granary of India.
- The Northern Great Plain is one of the most densely populated regions in the world.

### **Thar Desert.**

- Rainfall is scarce along the western parts of the northern plains.
- That is why most regions in Rajasthan are deserts.
- This desert is known as Thar Desert.

- River Luni and the long vanished river Saraswathy have had significant role in the formation this portion of the plain.
- Dry and salty desert soil is found in this Region.
- Thorns and bushes form the natural vegetation here.

**What are the main crops cultivated in Rajasthan.**

- Bajra,
- Jowar,
- These crops require very little amount of water to grow.
- Here cultivation is done mainly with the help of irrigation.

**The Punjab plain**

- The Punjab plain is an extensive plain formed by the deposition of the Indus and its tributaries.
- Major crops here are wheat, maize, and sugarcane.

**The Peninsular Plateau**

- The peninsular plateau made of hard crystalline rocks forms the oldest and the most extensive physical division of India.
- It extends about 15 lakh square kilometres.
- It includes varied topography such as mountains, plateaus, and valleys.
- Aravally, Western ghats, Eastern Ghats, Vindya, Sathpura are the major mountains in peninsular plateau
- The highest peak in this region is the Anamudi (2695 m) situated in the Idukki district of Kerala.
- As the peninsular plateau holds numerous deposits of diverse minerals, this region can be termed as the **store house of minerals**.
- The rainy western slopes of the Western Ghats have tropical rain forests.
- A major portion of the deccan plateau, which is the southern part of the peninsular plateau, has been formed by the cooling of lava that spread over the region millions of years ago.
- Black soil is extensively found in this region made of igneous rocks, named basalt.
- As this soil is best suited for cotton cultivation, it is also called black cotton soil.
- Red soil also formed by the weathering of igneous and metamorphic rocks is comparatively less fertile.
- The presence of iron gives red colour to this soil.
- Laterite soil is formed in the regions with monsoon rains and intermittent hot seasons.

**Peninsular Rivers**

- The rivers originating from the elevated regions of the peninsular plateau are known as peninsular rivers.
- As these are rain fed rivers, the water flow in these rivers decreases in summer.
- Peninsular Rivers are divided in to two:-
- .West flowing rivers- Narmada & Tapti
- .East flowing rivers-Mahanadi, Godavari, Krishna & Cauvery
- Godavari is the longest among the peninsular rivers.
- Waterfalls are common in most of the peninsular rivers.
- The highest among these is the Jog Falls (225 metres) in the Sharavathi River in Karnataka.

**Peninsular Rivers**

| River           | Origin  | Major tributaries  | Sea which it joins |
|-----------------|---|--------------------|--------------------|
| <b>Mahanadi</b> | Maikala Ranges(Madhya Pradesh)                  | Ib, Tel            | Bay of Bengal      |
| <b>Godavari</b> | Western Ghats (Nasik district of Maharashtra)   | Indravathi,Sabari  | Bay of Bengal      |
| <b>Krishna</b>  | Western Ghats(Mahabaleswar in Maharashtra)      | Bhima,Thungabhadra | Bay of Bengal      |
| <b>Kaveri</b>   | Brahmagiri Ranges in Western Ghats (Karnataka)  | Kabani, Amaravathi | Bay of Bengal      |
| <b>Narmada</b>  | Maikala Ranges (Chhattisgarh)                   | Hiran, Banjan      | Arabian sea        |
| <b>Tapti</b>    | Muntai Plateau (Baitul distruct in Maharashtra) | Anar, Girna        | Arabian sea        |

### **Coastal plain of India**

- The approximate length of this coast line is 6100 kilometres extending from the Rann of Kutchh in Gujarat to the Ganga-Brahmaputra delta.
- The coastal plain of India can be divided into two. They are:-
- Western coastal plain,
- Eastern coastal plain.

### **Comparison between Western coastal plain and Eastern coastal plain**

| <b>Western coastal plain</b>                                       | <b>Eastern coastal plain</b>                                |
|--|---|
| Between the Arabian Sea and the Western Ghats                      | Between the Bay of Bengal and the Eastern Ghats             |
| From the Rann of Kutchh to Kanyakumari                             | From the Sundarban delta region to Kanyakumari              |
| Comparatively narrow   | Comparatively wide  |
| Can be divided into Gujarat coast, Konkan coast, and Malabar coast | Can be divided into north Zircar plain and Coromandal coast |
| Backwaters and estuaries are seen                                  | Delta formation takes place                                 |

### **Main occupation of the people in the coastal plains.**

- Fishing
- Tourism
- Rice and coconut are the major agricultural crops along the west coast.
- Rice is extensively cultivated in the basins of the Mahanadi, Godavari, Krishna, and Kaveri along the east coast.

### **Major islands in India**

- The Lakshadweep islands
- The Andaman and Nicobar islands

### **The Lakshadweep islands**

- The Lakshadweep islands are situated in the Arabian Sea at a distance of about 300 kilometers off shore from Kochi.
- There are 36 islands in this island group, of which only 11 are inhabited.
- Kavarathi is the capital of Lakshadweep.
- Lagoons, sandy beaches and coral reefs are the specialities of the Lakshadweep island group.
- People depend largely on sea for their sustenance as agriculture is sparse here.
- Fishing and tourism are the major sources of income.

### **The Andaman and Nicobar islands**

- The Andaman and Nicobar islands include about 200 islands of Andaman group and 19 islands of Nicobar group.
- Most of these islands are not inhabited.
- Many of them have dense forests.
- The only volcano in India is situated in the Barren Island here.
- Port Blair is the capital of Andaman and Nicobar islands.
- The Indira Point at the southern most tip of the Nicobar islands is considered as the southern end of India.

### **Himalayan rivers and Peninsular rivers comparission**

| <b>Himalayan rivers</b>                        | <b>Peninsular rivers</b>  |
|--|---|
| • Originate from the Himalayan mountain ranges | • Originate from the mountain ranges in the peninsular plateau. |
| • Extensive catchment area                     | • Comparatively smaller catchment area                          |

|  |  |
|--|--|
| • Intensive erosion  | • Intensity of erosion is less   |
| • Create gorges in the mountain region and meander in plains | • Do not create deep valleys as they flow through hard and resistant rocks |
| • High irrigation potential                                  | • Less irrigation potential  |
| • Navigable along the plains                                 | • Potential for inland navigation is low                                   |

### **The factors influencing the climate of India**

- Latitude
- Physiography
- Nearness to sea
- Altitude
- Mountains
- Winds

### **The seasons in India**

-The seasons in India can be generally classified into four.

- Cold weather season (Winter)
- Hot weather season (Summer)
- South west monsoon season
- Retreating monsoon season.

### **Cold weather season In India (Winter)**

- India experiences winter when the position of the sun is over the southern hemisphere.
- Most places in India experience intense fog and snowfall occurs in the valleys of the Himalayas during this season.
- The months of December, January, and February experienced cold weather in India.
- During the cold weather season days are generally warm and nights are severely cold in North India.
- Snowfall is a common phenomenon in the hill stations like Manali and Shimla.

### **What is Western Disturbance**

- The cyclones originating in the Mediterranean Sea during winter, gradually shifts towards the east and reaches India.
- This causes winter rainfall in the northern plains, especially in the Punjab region.
- The phenomenon is called western disturbance.
- This rain is much beneficial for the winter crops.
- Jet streams**, the strong upper air currents in the troposphere have a significant role in bringing the western disturbance to India.

### **Why does the temperature decrease from south to north in India During winter?**

- Because of the position of Sun is in the Southern Hemisphere.

### **The coastal regions experience comparatively high temperature. Why?**

- Because of the position of Sun is in the Southern Hemisphere.
- The warm breeze blows into the coastline because it is hotter than the sea shore.

### **Hot weather season (Summer)**

- India experiences hot weather when the sun is over the northern hemisphere.
- In the months of March, April and May experienced Summer season in India
- It is in Barmer in western Rajasthan that the highest temperature of summer is felt.
- Loo, mango showers, etc. are some local winds experienced in India during this season.

### **South west monsoon season**

- When the sun is over the northern hemisphere, North Indian regions experience intense low pressure.
- In the months of June, July, August and September India experience south west monsoon season.
- Owing to the high pressure over the oceans, wind blows from high pressure to low pressure regions, that is, from the Indian Ocean to the Indian sub- continent.

- As the winds deflect towards right due to coriolis effect, they reach India as southwest monsoon winds.
- Because of the peculiar shape of the Indian peninsula, the southwest monsoon winds bifurcate into two branches on entering the land.
  - Arabian Sea branch
  - Bay of Bengal branch
- The Arabian Sea branch that reaches the coast of Kerala by early June causes heavy rainfall here.

#### **Arabian Sea branch of South west monsoon season**

- The Arabian Sea branch of south west monsoon that reaches the coast of Kerala by early June causes heavy rainfall here.
- Then it advances to the states of Karnataka, Goa, Maharashtra, and Gujarat and causes rainfall in the western parts.
- Rainfall is scarce in the Rajasthan region because the monsoon branch entering through Gujarat blows parallel to the Aravalli mountain ranges.

#### **The Bay of Bengal branch of South west monsoon season**

- The Bay of Bengal branch of the monsoon advances northward by absorbing more moisture from the Bay of Bengal.
- On reaching West Bengal, crossing the Sundarban delta, it bifurcates into two branches.
- One branch reaches the northeastern states through the Brahmaputra plains and causes heavy rainfall there.
- The other branch enters the Ganga plains and causes rainfall in West Bengal, Bihar, Uttar Pradesh, etc.
- This branch merging with the Arabian Sea branch in the Punjab plains advances north further and causes heavy rainfall along the foothills of the Himalayas.

#### **Rainfall is comparatively less along the eastern slopes of the Western Ghats. Why?**

- The western part of the Western Ghats receives a good amount of rain.
- As a result of Western Ghats blocking the Arabian Sea branch of the south-west monsoon wind.
- The south west monsoon winds will not be blowing to the east side of the Western Ghats.
- So the rainfall is comparatively less along the eastern slopes of the Western Ghats.

#### **By what name is the southwest monsoon rain known in Kerala?**

- Edavappaathi

#### **Retreating monsoon season(North East Monsoon)**

- By the end of September, as the sun apparently shifts towards the southern hemisphere, intense high pressure develops over the northern plains.
- Comparatively low pressure over the Indian Ocean causes wind to blow from the northern part of India towards the Indian Ocean.
- These winds known as north-east monsoon winds are dry winds that do not generally cause any rain in India.
- This season termed as north east monsoon
- This season is actually a transition period between the rainy season and the forth coming winter.
- This season experienced during the months of October and November.
- This season termed as north east monsoon
- This season is actually a transition period between the rainy season and the forth coming winter.
- This season experienced during the months of October and November.
- The winds blowing from land to sea due to the attraction of low pressure over the Bay of Bengal takes from northeast to southwest direction.
- It absorbs moisture from the Bay of Bengal and causes rainfall along the coromandal coast, especially the Tamil Nadu coast.
- This is the main rainy season of Tamil Nadu.
- Kerala and some parts of Karnataka also receive northeast monsoon rains.

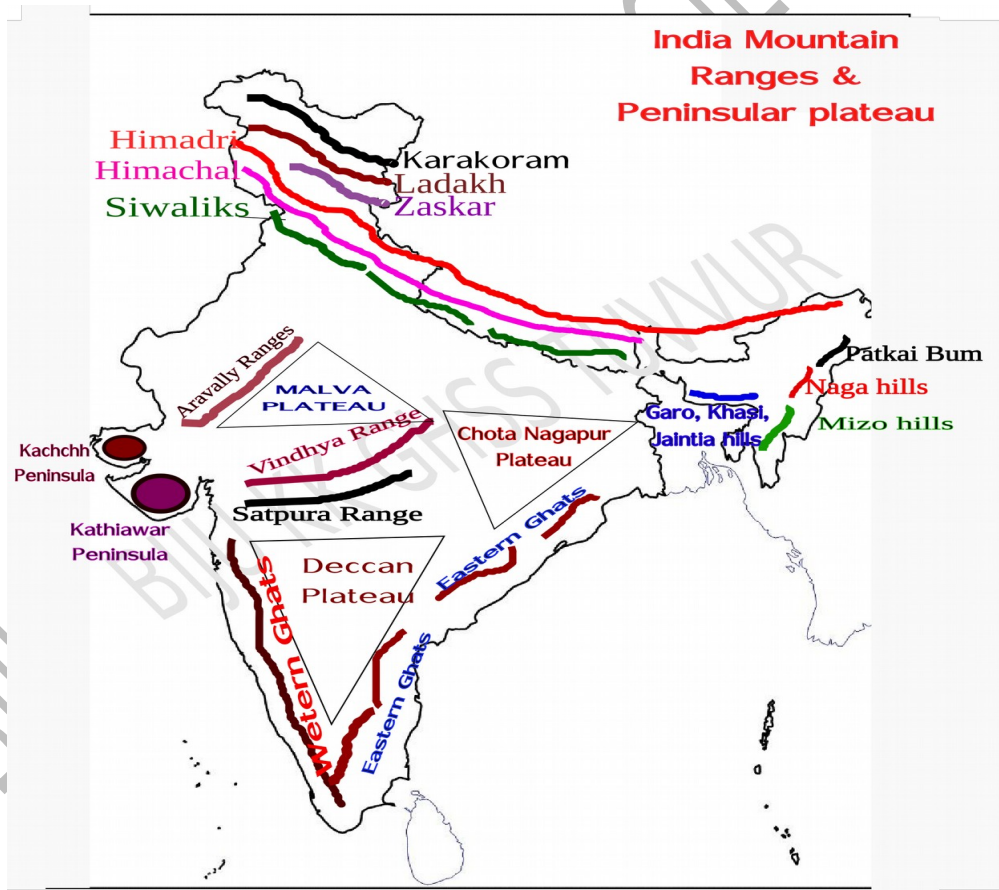
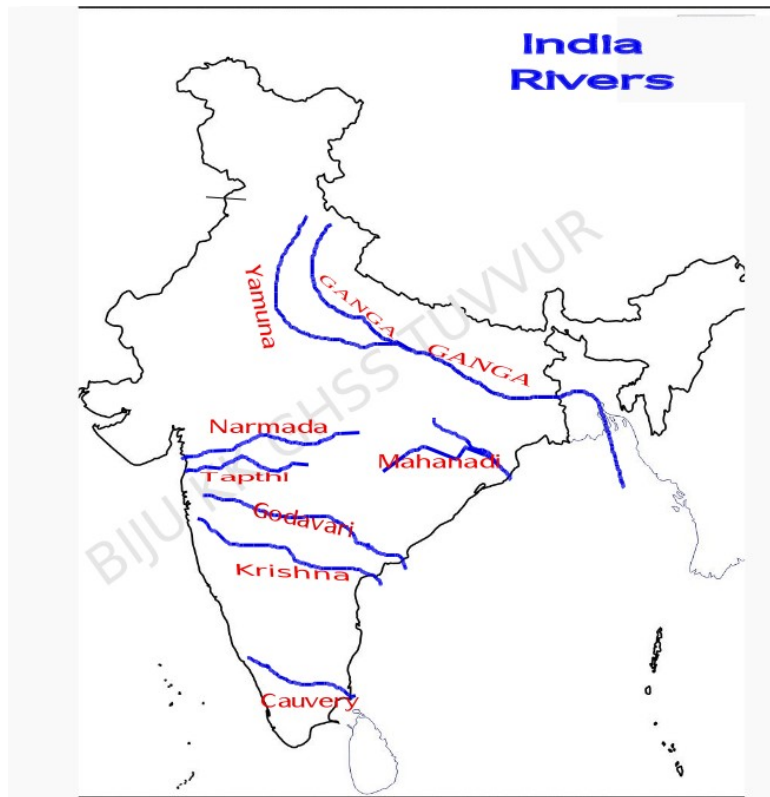
#### **October heat**

- The days in October and November unbearable due to high temperature and humidity.
- This phenomenon is known as October heat.

#### **By what name is the northeast monsoon rain known in Kerala?**

- Thulaavarsham.





All the Best

9778300200

# Resource Wealth of India SS2-8

## What geographical factors are favourable for the cultivation of diverse crops in India?

- Diverse topography.
- The ideal agricultural climate that last all year.
- Spacious farm land.
- Variety of fertile soils.
- Availability of water through monsoon rains.

These are all helped to cultivate different crops in India's agriculture and to have different seasons.

## Different Agricultural seasons in India

On the basis of the period of cultivation, we have three distinct cropping seasons.

- Kharif,
- Rabi,
- Zaid

### Kharif

- Sowing period - June (Onset of monsoon)
- Harvesting period - Early November (End of monsoon)
- Major crops - Rice, maize, millets, cotton, jute, sugar cane, groundnut

### Rabi

- Sowing period-November(Beginning of winter)
- Harvesting period - March (Beginning of summer).
- Major crops - Wheat, tobacco, mustard, pulses.

### Zaid

- Sowing period-March (Beginning of summer)
- Harvesting period - June (Beginning of monsoon)
- Major crops - Fruits, vegetables.

## Agricultural crops in India

- The diverse agricultural crops of India can be classified into two.
- Food crops and.
- Cash crops.

## Food crops in India

- The crops which can directly be consumed as food are called food crops. For example:-
- Rice,
- Wheat,
- Corn,
- Barley,
- Millets,
- Legumes.

## Cash crops in India.

- Cash crops are those having industrial and commercial significance. For example:-
- Fiber crops - Eg: cotton, jute.
- Beverage crops - Eg; tea, coffee.
- Spices - Eg: cardamom, pepper.
- Other crops Eg: sugar cane, rubber.

## Rice-Factors required for cultivation

- Crop season - Kharif (Rice the staple food crop of India)
- Soil - Alluvial soil is most suitable for rice cultivation.
- Temperature requires - above 24° C
- Rainfall - More than 150 cm.
- Rice is being cultivated in regions with less rainfall with the aid of irrigation.
- Rice is mostly cultivated in river basins and coastal plains.
- Rice is also cultivated by making terraces along the slopes of Siwaliks.

### **Wheat-Factors required for cultivation**

- Crop season - Rabi (The second major food crop produced in India)
- Soil - Well drained alluvial soil.
- Temperature requires -10°C to 26°C.
- Rainfall - 75 cm.
- Wheat cultivation in India is mainly dependent on irrigation as it is a winter crop.
- Farming states - Punjab, Haryana, Himachal Pradesh, Uttar Pradesh and Madhya Pradesh.

### **Maize-Factors required for cultivation**

- Crop season - In India, maize is cultivated in both summer and winter.
- Maize is the third major food crop produced in India.
- Soil - Well drained fertile soil is ideal.
- Rainfall - 75 cm.
- Cultivating states - Maize is mostly cultivated in Madhya Pradesh, Karnataka, Rajasthan and Uttar Pradesh.

### **Cotton-Factors required for cultivation**

- Crop season - Frost free growing season
- Soil - Black soil and alluvial soil.
- Temperature requires - 20° to 30° Celsius
- Rainfall - Small amount of annual rainfall.
- Cotton is known as 'universal fiber', as it is used worldwide in the textile sector.
- India ranks fourth in cotton production.

### **Cotton textile industry**

- Cotton textile industry is the largest agro based industry in India.
- The first cotton textile mill was established at Fort Glator near Kolkata in 1818.
- Large scale production started at Mumbai in 1854.
- Mumbai being the most important cotton textile center in India, the city is termed as 'Cottonopolis'.
- Next to Mumbai, Ahmedabad in Gujarat is a major cotton textile center.

### **Factors that helped Mumbai to become the most important cotton textile center**

- Easy availability of raw materials from neighbouring regions.
- Cheap availability of power.
- Export and import possibilities of the Mumbai port.
- Fresh water availability.
- Human resource availability.

### **Jute-Factors required for cultivation**

- Crop season - Kharif.
- Soil - Well drained alluvial soil is required.
- Temperature requires - High temperature(Hot and humid conditions are ideal for its growth.)
- Rainfall - Above 150 cm.
- Producing region - The Ganga-Brahmaputra delta region of West Bengal is the major jute producing region. Jute cultivation is mainly confined to West Bengal, Assam, and some parts of Odisha.
- Among the nations of the world, India ranks second in jute production.
- Jute and jute products from India are really significant in the international trade due to its low cost.

### **Tea-Factors required for cultivation**

- Crop season - Permanent crop.
- Soil - Well drained soil rich in humus content (ജൈവാംശമൃത്ത) is required for this plantation crop.
- Temperature requires - 25°C-30°C.
- Rainfall - 200cm-250cm.
- India is the largest producer of tea in the world.
- The tea plantations of India are confined to Assam, West Bengal, Kerala, and Tamil Nadu.
- Tea is a major export commodity of India.

**Coffee-Factors required for cultivation**

- Crop season – Coffee is a tropical plantation crop.
- Temperature requires - Moderate temperature
- Rainfall – High rainfall
- Producing region – Coffee plantations of India are confined to the Western Ghat ranges of Karnataka, Kerala and Tamil Nadu.
- Two-third of the total production is from Karnataka.
- India mainly produces the high quality coffee seed namely 'Arabica,' which has great demand in the international market.

**Sugar cane-Factors required for cultivation**

- Crop season – Sugar cane is a tropical crop, requires hot and humid climate.
- Soil - Black soil and alluvial soil.
- India ranks second in the production of sugarcane.
- Uttar Pradesh is the leading producer in both sugar cane and cane sugar.
- In India both sugar and jaggery are produced from sugar cane.

**Why do sugar mills shown along with the sugar cane cultivating regions?**

- The sugar cane harvested must be immediately brought to the factories so as to extract the juice out of it.
- Otherwise the amount of sucrose in the sugarcane might decrease.
- So the sugar mills shown along with the sugar cane cultivating regions.

**Rubber-Factors required for cultivation**

- Crop season – Permanent plantation crop.
- Soil – Laterite soil which is generally not suitable for other crops is good for rubber.
- Temperature requires - Above 25° Celsius.
- Rainfall – More than 150 cm.
- Kerala is the leading producer of rubber in India.
- Rubber is cultivated on a small scale in certain parts of Tamil Nadu and the Andaman and Nicobar islands.

**The fall in the price of rubber affects Kerala the most. Why?**

- Rubber is a major source of income in Kerala.
- So the fall in the price of rubber affects Kerala the most.

**Why Plantations of spices are concentrated mostly to the ranges of the Western Ghats?**

- The Western Ghats have well drained forest soil or sandy soil and the tropical climate with large amount of rainfall.
- These are essential favourable factors for spice plantations.
- So the plantations of spices are concentrated mostly to the ranges of the Western Ghats.

**What are the factors that contribute to the development of the Iron and steel industries?**

- Iron ore,
- Coal,
- Manganese,
- Limestone,
- Dolomite,
- Availability of water ,
- Transportation facilities,
- Export facility,
- The availability of labours

**Which are four types of iron ores found in India?**

- Magnetite,
- Haematite,
- Limonite,
- Siderite.

### Important information with iron ore deposits of India

-India ranks fourth in iron ore export.

-50 - 60% of the iron ore mined in India is exported to Japan, Korea, European countries, the Gulf countries, etc.

### Major iron ore mining regions in India.

| State      | Major mining centres                        |
|------------|---|
| Odisha     | -Sundargarh, Mayurbhanj, Jhar               |
| Jharkhand  | -Singhbhum, Durg                            |
| Karnataka  | -Bellary, Chikmagalur, Shimoga, Chitradurga |
| Goa        | -Marmagao                                   |
| Tamil Nadu | -Salem, Nilgiris                            |

### Major iron and steel industries in India

| Iron and steel plant                     | Place of location  | Features   |
|--|--|--|
| Tata Iron and Steel Company Ltd. (TISCO) | Jamshedpur (Jharkhand).  | Largest private sector iron and steel plant        |
| Indian Iron and Steel Company (IISCO)    | Kulti, Burnpur, Hirapur (West Bengal)                                  | First public sector iron and steel company.        |
| Visweswarayya Iron and Steel Ltd. (VISL) | Bhadravathi (Karnataka)  | First iron and steel plant in south India.         |
| Hindustan Steel Limited, (HSL) Bhilai    | Durg (Chhattisgarh)  | Established in collaboration with Russia in 1959.  |
| Hindustan Steel Limited, (HSL)Rourkela   | Sundargarh (Odisha) Established in collaboration with Germany in 1959. | Established in collaboration with Germany in 1959. |
| Hindustan Steel Limited, (HSL)Durgapur   | Durgapur (West Bengal)   | Established in collaboration with the UK in 1962.  |
| Hindustan Steel Limited, (HSL)Bokaro     | Bokaro (Jharkhand) Established in collaboration with Russia in 1964.   | Established in collaboration with Russia in 1964.  |

### Manganese

-Manganese is a metallic mineral largely used in the iron and steel industry.

-Manganese deposits are generally found near iron ore mines.

-Odisha is the leading producer.

-Karnataka, Maharashtra, and Madhya Pradesh are the other major manganese producing states.

-Manganese is used to make ferro alloys.

### Other minerals in India

| Minerals | Uses   | Major producing states                          |
|----------|--|---|
| Gold     | For making jewellery   | Karnataka                                       |
| Silver   | For making jewellery, in electro-plating,  | Rajasthan, Jharkhand, in photograph             |
| Copper   | Conductor in electrical goods industries   | Jharkhand, Rajasthan, Madhya Pradesh            |
| Bauxite  | Ore of aluminium. Used for making air crafts, electrical equipments, domestic utensils etc | Jharkhand, Chhattisgarh, Madhya Pradesh, Odisha |
| Mica     | Used as insulator in electrical industries.  | Andhra Pradesh, Rajasthan, Jharkhand,           |

### **Mineral fuels in India**

- Coal,
- Petroleum, and
- Natural gas are the major energy resources.

### **Explain the importance of coal, India's major source of energy.**

- Coal is the major source of thermal power in India.
- Coal is a major industrial fuel.
- Most of the coal found in India is of medium grade of bituminous type.
- West Bengal, Jharkhand, Odisha, and Chhattisgarh are the producing states.
- The largest coal field in India is Jharia in Jharkhand.
- The less energy efficient coal namely lignite is found in Neyveli in Tamil Nadu.

### **Petroleum and natural gas**

- Petroleum is the chief energy source for transportation through road, rail or air.
- Other than petrol, diesel, etc. numerous by-products are also obtained from petroleum such as chemical fertilisers, artificial rubber, artificial fibres, vaseline etc.
- Petroleum mining in India started at Digboi in Assam.
- Petroleum producing states in India are Assam, Gujarat, and Maharashtra.
- The largest of the oil fields is the Mumbai High in Maharashtra.
- Natural gas is the fuel Mumbai - High obtained along with petroleum.
- Exclusive reserves of natural gas also exist, especially along the coasts of Tamil Nadu and Andhra Pradesh.

### **Petroleum deposits are mostly confined to the coastal regions. Why?**

- Petroleum is derived from the remains of marine organisms.
- That is why most of the petroleum deposits are located to the coastal regions.

### **What are the main nuclear minerals of India? Which are the places to get these?**

- Uranium and Thorium are the major nuclear minerals in India.
- There are rich reserves of uranium in the states of Jharkhand, Rajasthan, and Maharashtra.
- Thorium is produced from ilmenite and monazite deposits largely found in the coastal sands of Kerala and Tamil Nadu.

### **What are the major nuclear power plants in India.**

- Tarapur (Maharashtra)
- Rawatbhata (Rajasthan)
- Kalpakkam and Koodamkulam (Tamil Nadu)
- Kaiga (Karnataka)
- Narora (Uttar Pradesh)

### **Identify the mineral resource for which the following places are known.**

| Places        | Mineral   |
|---------------|-----------|
| Neyveli       | Lignite   |
| Jharia        | Coal      |
| Digboi        | Petroleum |
| Mumbai - High | Petroleum |

### **Which are Non-conventional sources of energy?**

- Solar energy,
- Wind energy,
- Wave energy,
- Tidal energy,
- Biogas

### **What are the advantages of non-conventional sources of energy?**

- Cheap,
- Renewable
- Environment - friendly. These are the advantages of non-conventional sources of energy.



## **How the roads in India are classified based on the construction and management.**

### **National Highways**

-National Highways are the major roads in the boundry linking the state capitals, major cities, ports etc.

-The union ministry is responsible for the construction and management of such roads.

### **State Highways**

-State Highways are the major roads connecting the state capitals with the district head quarters.

-State governments are responsible for the construction and maintenance of such roads.

### **District Roads**

-District roads are those linking the district headquarters with the important places within the district.

-These roads are built and maintained by the district panchayats.

### **Village Roads**

-Village roads are those ensuring the domestic movement within the villages.

-More than 80% of the roads in India are village roads.

-The construction and maintenance of such roads are done by the local self governments.

### **What is the Golden Quadrangle Super Highway'.**

-The six- lane super highways -connecting the metropolitan cities in India such as Delhi, Mumbai, Chennai, Kolkata are together named as 'the Golden Quadrangle Super Highway'.

-The National Highway authority of India is responsible for such roads.

### **The density of roads is more over the northern plains, but less over the north eastern states. Why?**

-Road construction and maintenance in the Northern Great Plains is very easy.

-Northern Great Plains is densely populated area.

-Therefore, the density of the road is higher in the Northern Great Plains.

-But North Eastern States are hilly and mountainous, so road construction and maintenance is very difficult.

-The population of the North and East is very low.

-Therefore road density is less in the north eastern states.

### **What is the significance of rail transport in India?**

-The largest railway network of Asia is in India. -Largest public sector undertaking in India. -Rail transport is equally important for cargo as well as passenger transport.

-Railway plays a decisive role in the industrial development of India.

-The rail transport in India was started in 1853.

-The first train ran along the 34 km-long rail between Mumbai and Thane.

-For administrative convenience, the Indian railway is divided in to 16 zones.

### **Which is the railway zone to which the rail network of Kerala belongs? Where is its headquarters?**

-Kerala belongs South zone

-Headquarters Chennai.

### **Which is the rail project for major cities?**

-Metro rail projects.

### **How the Indian Railways is classified based on the gauge width of rails.**

| Rail guage   | Width between the rails  | Proportionate rail length |
|--------------|--------------------------|---------------------------|
| Broad guage  | 1.676 metres             | 74%                       |
| Metre guage  | 1 metre                  | 21%                       |
| Narrow guage | 0.762 metre /0.610 metre | 5%                        |

### **Water transport**

-Water transport can generally be classified in to two:

-Inland water transport

-Marine transport



**Inland water transport**

- Water bodies like rivers, lakes and canals are used for inland water transport.
- Inland water transport is utilised not only for passenger and cargo transport, but also for fishing and tourism.

**Advantages of water transport.**

- The cheapest means of transport.
- Suitable for large scale cargo transport.
- Does not cause environmental pollution.
- Most suited for international trade.

**Which are the water bodies largely used for inland water transport in India.**

- Ganga-Brahmaputra rivers and their tributaries
- Godavari-Krishna rivers and their tributaries
- Buckingham canal of Andhra -Tamil Nadu region
- Mandovi and Zuvari rivers of Goa
- Back waters of Kerala.

**National Waterways after the formation of the Inland Water Transport Authority in 1986.**

| <b>Waterway</b>            | <b>River root</b>   |
|----------------------------|---|
| National Waterway 1 (NW 1) | Allahabad to Haldia in the river Ganga (1620 Km)                          |
| National Waterway 2 (NW 2) | Sadia to Dubri in the river Brahmaputra (891 Km)                          |
| National Waterway 3 (NW 3) | The west coastal canal in Kerala from Kollam to Kottappuram (205 Km)      |
| National Waterway 4 (NW 4) | Canal from Kakinada to Puducherry linking Godavari and Krishna (1095 Km)  |
| National Waterway 5 (NW 5) | Brahmani - Mahanadi delta river system linked to east cost canal (623 Km) |

**Major ports in India.**

| <b>Western coastal ports</b> | <b>Eastern coastal ports</b>   |
|------------------------------|--------------------------------|
| • Kandla - Gujarat           | • Kolkata - West Bengal        |
| • Mumbai - Maharashtra       | • Haldia - West Bengal         |
| • Nhava sheva - Maharashtra  | • Paradip - Odisha             |
| • Marmagao - Goa             | • Visakhapatnam - Andrapradesh |
| • Mangalore - Karnataka      | • Chennai - Tamilnadu          |
| • Kochi - Kerala             | • Tuticorin - Tamilnadu        |

**Air transport in India**

- The air traffic in India is under the control of Airport Authority of India.
- There are 126 airports including 11 international airports under this establishment.
- Two corporations handled flight services in India are:-
- Air India corporation.
- Indian Airlines corporation.

**Air India corporation**

- The international flight services handled by Air India corporation

**Indian Airlines corporation**

- The domestic flight services handled by Indian Airlines corporation.
- A number of private companies also operate flight services in India.

# Financial institutions and services SS2-9

## **Reserve Bank of India**

- The Reserve Bank of India is the apex bank of India.
- It was established in 1935.
- Its headquarters is in Mumbai.

## **Functions of Reserve Bank of India**

- Printing of currency.
- Controlling credit.
- Banker to government.
- Banker's bank.

## **How does the Reserve Bank print notes?**

- All currencies except the one rupee note are printed by the Reserve Bank of India.
- The one rupee note and its subsidiary coins are issued by the Central Finance Department.
- The gold or foreign exchange reserves which hold the fixed value of the note hold as security.

## **Specify how the Reserve Bank controls credit**

- Control of credit is one of the main functions of the Reserve Bank.
- This is made possible by bringing about changes in the rate of interest.
- As rate of interest increases, volume of loans decreases.
- When interest rates fall, the amount of debt increases.
- The Reserve Bank of India increases the money supply in Indian economy through the distribution of printed currency and through credit creation.

## **How does the Reserve Bank of India act as a Banker to government?**

- Another function of the Reserve Bank of India is to serve as the banker to the central and state governments.
- As a banker to the government, the Reserve Bank of India accepts deposits from the government, sanctions loans and renders other banking services to them.
- The Reserve Bank of India does not charge any fees for these services.

## **How does the Reserve Bank of India act as a Banker's bank?**

- The Reserve Bank is the apex bank of all banks.
- To advise and assist all banks in their operations is a function of the Reserve Bank.
- It acts as a last resort to all banks in their financial matters.

## **Why Reserve Bank of India is known as apex bank in India**

- The Reserve Bank controls all other banks.
- It controls and gives the necessary directions and advices to the financial institutions in the country
- So Reserve Bank of India is known as apex bank in India financial institutions
- Financial institutions are those institutions where financial transactions like deposits, loans etc. take place.

## **Banks**

- Banks are institutions that accept deposits from the public and grant loans to the needy subject to conditions.
- They operate on the basis of the general guidelines and conditions set by the Reserve Bank of India.
- The bank pays interest on deposits from individuals, institutions and the government.
- Bank levies interest on loans to individuals, institutions and the government.
- The rate of interest on loans will be higher than the rate of interest given for deposits.
- The difference between these interests is the main revenue of the banks.

### **How are banks categorized based on performance?**

- Commercial banks,
- Cooperative banks,
- Development banks,
- Specialised banks.

### **Commercial Banks Important Information**

- Commercial banks are the oldest banks and have many branches.
- These banks, which play a major role in the country's financial activities.
- They accept deposits from the public and grant loans to trade, industry, agriculture etc., subject to certain conditions.
- Commercial Banks can be divided into Public Sector Commercial Banks and Private Commercial Banks.

### **Public sector commercial banks**

- Public sector commercial banks are owned by the government.
- Their functions are controlled by the Reserve Bank.
- State Bank of India, nationalised banks and regional rural banks together constitute public sector commercial banks

### **Private Indian commercial banks**

- Private commercial banks can be divided into two
- Private Indian Commercial Banks
- Private Foreign Commercial Banks
- Both are owned by private individuals.
- They operate under the control of the Reserve Bank of India.
- Private foreign commercial banks are those banks which have registered in India but have headquarters in a foreign country.

### **Function of Commercial Banks**

- Accepting deposits,
- Providing loans,
- Provide other facilities,
- Providing other services.

### **Deposits received by commercial banks**

- Savings Deposit,
- Current Deposit,
- Fixed Deposit,
- Recurring Deposit.

### **Savings Deposit**

- This scheme helps the public to deposit their savings.
- Banks provide low interest rate for such deposits.
- The depositor can withdraw the money from the deposit, subject to restrictions.
- Different banks have adopted different regulations regarding the number of times and the amount of money that can be withdrawn during a particular time period.
- The details of the amount deposited and withdrawn are stated in the passbook provided by the bank.

### **Current Deposit**

- This deposit facilitates depositing and withdrawing money many times in a day.
- These deposits are used mainly by traders and industrialists.
- This type of deposits does not receive any interest.

### **Fixed Deposit**

- Fixed deposits are ideal for depositing money in banks by individuals and institutions for a specific period of time.
- The interest rate is calculated on the basis of the time period for which the money is deposited.
- If the amount is withdrawn before the maturity of deposits, then the interest rate will be lower.

### **Recurring deposits**

- Recurring deposits receive a specific amount every month for a specified period of time.
- The interest rate of recurring deposits will be higher than that of saving deposits but less than that of fixed deposits.
- The interest rate will be less if the deposits are withdrawn before the maturity date.

### **Loans provided by commercial banks**

- The amount of money accepted as deposit from the public is granted as loans by the banks.
- The interest rate of loans will be higher than the interest rate of deposits.
- There will be differences in the interest rate depending on the duration of loan, its purpose, etc.
- Normally, bank loans are provided by accepting a collateral.

### **Collateral that the banks accept to provide loans.**

- Physical assets - gold, property documents, etc.
- Fixed deposit certificates

### **Loans issued by commercial banks.**

- Cash credit.
- Overdraft. are loans provided by commercial banks.

### **What is Cash credit?**

- The loans given to individuals and institutions by accepting collaterals are called cash credit.

### **What are the purposes for which banks provide cash credit to the public?**

- Agricultural purposes
- Industrial purposes
- Constructing houses
- Purchasing vehicles
- Purchasing home appliances

### **What is overdraft?**

- This is an opportunity for a customer to withdraw money over and above the balance in his/her account.
- This facility is provided to individuals who have frequent transactions with the bank.
- Generally, this opportunity is provided to individuals who maintain current deposits.
- The bank will charge interest on the additional withdrawal amount.

### **Facilities provided by commercial banks**

- Locker facility
- Demand Draft
- Mail Transfer
- Telegraphic Transfer
- ATM facility
- Credit Card facility

### **Locker Facility**

- Majority of the banks provide locker facilities to individuals and institutions for keeping their valuable assets (gold, property documents, etc.).
- One key of the locker will be with the owner and the other will be with the bank.
- The locker can be opened only when both keys are jointly used.
- A certain amount is charged for availing this facility.

### **Demand draft**

- Demand draft is the facility provided by the banks to send money from one place to another.
- It is not necessary to have an account for this

### **Mail transfer**

- Banks provide an opportunity to transfer money from anywhere in the world either to one's own account or to someone else's account.
- This service is called mail transfer.

**Telegraphic transfer**

- Telegraphic transfer is the mechanism which can transfer money through a message.
- It is faster than mail transfer.

**ATM facility**

- The facility to withdraw money any time without going to the bank is made possible through Automated Teller Machine (ATM).
- Today majority of the banks have this facility.
- Now Automated Teller Machines of some banks provide the opportunity to deposit and withdraw money.
- For this, banks provide ATM debit cards.

**What are the information included in an ATM card?**

- Card number
- The name of the bank
- Bank's Emblem
- Duration of the card
- Chip
- CCV number.

**What are the precautions to follow when using an ATM card?**

- Make sure that there is no one at the counter.
- Do not share the ATM Personal Identification Number (PIN).
- Assure the balance amount on receiving the receipt of money withdrawal.
- Do not carelessly throw away the receipt.
- Block the card immediately if the ATM card is lost.

**Credit card facility.**-Banks provide credit card facility which helps in purchasing products without having to keep money on person.

- Credit card is also a plastic card.
- Using this, goods and services can be purchased even without having sufficient cash in one's account.
- The money has to be remitted to the bank later within a specific period.

**Other services provided by commercial banks**

- Services like the payment of insurance premium, telephone and electricity bills, and rendering services like mobile recharging, booking journey tickets, etc.
- Some of the transactions of the government which were once operated only through the treasuries are now done through banks.
- Service pension is also disbursed through banks.

**Modern trends in banking sector**

- Electronic Banking and
- Core Banking are the modern trends in banking.

**What is Electronic Banking?(E- Banking)**

- Electronic banking is a method by which all transaction can be carried out through net banking and tele banking.
- Any time banking,
- Anywhere banking,
- Net banking,
- Mobile phone banking, etc. are part of electronic banking.
- For this, the assistance of the bank employees is not required.
- Bank account and net banking facility alone are required for this.

**Benefits (merits) of Net Banking?**

- Money can be sent and bills can be paid anywhere in the world from home
- Saves time
- Low service charge

### **What is Core banking (Centralised Online Real-time Exchange Banking)?**

- Core banking is the facility which is arranged in such a way that the branches of all banks are brought under a central server so that banking services from one bank to another is made Possible.
- Core banking is the facility which is arranged in such a way that the branches of all banks are brought under a central server so that banking services from one bank to another is made possible.

### **Advantages of Core banking**

- As a result, ATM, debit card, credit card, net banking, ele banking, mobile banking, etc have been brought together.
- Transactions have become simple.
- By using this facility, an individual can send money from his bank account to his friend's account elsewhere.

### **Co-operative Banks**

- Co-operation, self help and mutual help are the working principles of co-operative banks.
- The main aim of co-operative banks is to provide monetary help to common people especially the villagers.
- Provide loans to the public.
- Protect the villagers from private money lenders
- Provide loans at low interest rate
- Encourage saving habit among people - these are all the main aims of co-operative banks.
- Farmers, artisans, small scale entrepreneurs, etc. chiefly avail the services of co-operative banks.

### **Different levels of cooperative banks.**

#### **State Cooperative banks**

- Apex body in the state cooperative sector
- Provides financial assistance to district cooperative banks and primary cooperative banks.

#### **District Cooperative banks**

- Operate at district centres
- Provide assistance and guidance to primary co-operative banks.

#### **Primary Cooperative banks**

- Function in villages
- Area of functioning is limited
- Encourage saving habit in villagers
- Provide loans to villagers at low interest rate

### **Development banks - features and functions**

- Development banks provide long term loans for various needs such as modernisation of industries.
- Now, these banks provide loans to agriculture and trade sectors.
- Work as an agent that helps in the development of different sectors (agriculture, industry, trade, ...).
- Provides loans for construction of house, small scale industry, and basic infrastructure development.
- The Industrial Finance Corporation of India (IFCI) is a development bank in India.

#### **Specialised Banks**

- Specialised banks provide financial help for the development of certain specific sectors.
- They provide help to start new enterprises.

### **Specialised banks specialised banks and their feature**

#### **EXIM Bank of India (Export Import Bank of India)**

- Provides loans for exporting and importing products.
- Provides instructions to individuals who come into this sector.

#### **Small Industries Development Bank of India ( SIDBI )**

- Provides help to establish new small scale industries and to modernise existing industries.
- Aim is to vitalize village industries.

### **National Bank for Agricultural and Rural Development (NABARD)**

- Apex bank in India which functions for the Rural Development (NABARD) development of villages and agriculture.
- Unites all the banks which operate for the development of villages.
- Provides financial assistance to agriculture, handicraft, small scale industries, etc.

### **New banks emerged in the banking sector with certain specific aims.**

- Mahila banks
- Payment banks
- Micro Units Development and Refinance Agency(MUDRA) Bank

### **Bharathiya Manilla Bank**

- Bharathiya Mahila Bank was started in November 2013.
- The slogan of this bank is ' Women empowerment is India's empowerment'.
- Today, this bank has branches in various states.
- Though the bank accepts deposits from all, it provides loans mainly to women.
- Mahila Bank has now merged with SBI

### **Payment banks (On 19 August 2015)**

- Payment banks have been established to help the low income groups, small scale industrialists and migrated employees.
- They do not provide all facilities provided by banks

### **Features of Payment Banks.**

- Accept deposits up to only one lakh rupees from individuals.
- Provide interest on deposits as specified by the Reserve Bank of India.
- Do not provide loans.
- Charge a specific fee as commission for bank transactions.
- Only debit cards will be provided.

### **MUDRA Bank Launched by Prime Minister on 8 April 2015**

- A recently introduced bank for providing short term loans is MUDRA Bank.
- Mudra Bank provides financial help to small scale entrepreneurs and micro finances.

### **Non Banking Financial Institutions? Features?**

- These institutions work in the financial sector but do not perform all the functions of a bank.

### **Features or Functions**

- Accepting deposits,
- Lending loans
- Whereas some services like withdrawal of cash by cheque, mail transfer, lockers are not provided.

### **Which are the non-bank financial institutions in India?**

- Non Banking Financial Companies
- Mutual Fund Institutions
- Insurance companies

### **Non Banking Financial Companies**

- These are non banking financial institutions that operate under the supervision of the Reserve Bank of India.
- They are registered under the Company Act, 1936 and carry out the basic functions of the banks.

### **Main services provided by non-bank finance companies**

- Provide loans for hire purchases.
- Provide loan for construction of house.
- Provide gold loan.
- Provide loan on the basis of fixed deposits.
- Running chitty.
- Kerala State Financial Enterprises (KSFE) is the major non banking financial company operating in Kerala.



### **Mutual Fund Institutions**

- Mutual fund is a mode of investment.
- Common man is not always able to invest in the share market directly.
- This limitation can be overcome through mutual fund.
- Money is collected from various investors and is invested in share markets, debentures, etc.
- The profit or loss from this is distributed among the investors.
- Such institutions operate in both private and public sectors.

### **Mutual Fund institutions working in public sector in India.**

- Unit Trust of India (UTI),
- Life Insurance Corporation Mutual Fund (LIC MF),
- SBI mutual fund.

### **Insurance companies**

- Insurance companies are institutions that provide financial protection to individuals' life and wealth.
- They assure social security and personal welfare.
- The first insurance company of India was established in Kolkata in 1818.
- Today, insurance companies operate in public and private sectors.
- A major institution in India working for the protection of individual's life and health is the

### **Life Insurance Corporation of India (LIC).**

- Non life insurance companies that protect individuals from loss due to accidents, natural calamities etc. also operate in India.
- The General Insurance Company and four related companies are the non life insurance companies operating in the public sector. They are:-
- New India Assurance Company Limited
- United India Insurance Company Limited.
- Original Insurance Company Limited.
- National Insurance Company Limited.

### **Micro finance**

- The aim of micro finance is to provide different financial services including micro credit to common people.
- This helps in encouraging saving habit among the low income groups in the society and to seek self employment.
- The Kudumbasree and men self-help groups operating in Kerala and are examples of this.

### **Major goals of micro finance.**

- Helps in collective development by mobilising money from individuals.
- Helps to increase the standard of living of the poor.
- Encourages saving habit.
- Makes use of the individual potential for group development.
- Provides loans to members in need.
- Starts small scale enterprises.

**All the Best**

**9778300200**

## **Consumer: Satisfaction and Protection SS2-10**

### **What is consumption and what is consumer?**

- Consumption is the satisfaction of human wants using goods and services.
- A consumer is a person who purchases and uses goods and services by paying or agreeing to pay a price.
- In order to satisfy our wants, we depend primarily on sale outlets and service centres.
- Production, distribution, and consumption are inter related economic activities.
- All economic activities are meant to satisfy the consumers.

### **What are the aspects that a consumer expects while purchasing products and using services?**

- Quality
- Reliability
- After-sales service
- The correct size and weight
- The fair value
- Decent behaviour of the giver.

### **What does consumer satisfaction mean?**

- The act of fulfilling the wants of the consumer through the consumption of goods and services is called satisfaction

### **What are the instances where customers are exploited and manipulated?**

- Selling low quality products.
- Adulteration.
- Charging excess price.
- Manipulation in weights and measures.
- Delay in making services available.
- Selling expired goods.
- Danger to life and property by use of goods.
- When goods is not possible to use the specified period.

### **Which are the situations that lead to the exploitation of the consumers increase**

- Increase in the extent of consumption
- Increase in intensity of consumption.

### **What are the factors that help the consumers to keep their consumption comfortable without being exploited?**

- Laws,
- Administrative systems,
- Consumer Education.

### **What are the Consumer Protection Act 1986**

- The Consumer Protection Act of 1986 has clearly defined consumer rights and established special judicial systems in India for consumer protection.
- Consumer courts were established as a result of this law.

## **What are the rights of consumers provided by the Consumer Protection Act of 1986?**

- The right to be protected against the marketing of goods and services which are hazardous to life and property.
- The right to be informed about the quality related aspects of goods and services.
- The right to have access to goods and services at fair prices.
- The right to be heard and to seek redressal (solution) at appropriate forums.
- The right to consumer education.

## **What are consumer courts?**

- Consumer courts are the legal entity that is obligated to assist the customer in the event of unsatisfactory experiences with the manufacturers and suppliers.
- Consumer courts play an important role in ensuring justice to the consumers.
- They settle consumer disputes by various means including ensuring compensation for the consumers.
- The consumer courts are able to create confidence in the consumers and bring about a qualitative change in their lives.

## **Structure and jurisdiction of the district, state and national consumer courts.**

| <b>Consumer courts</b>                           | <b>Structure</b>  | <b>Jurisdiction</b>   |
|--|---|---|
| District consumer disputes - redressal forum     | -functions at district level<br>-president and two members<br>-at least one woman member  | -After collecting evidence based on the complaint filed by the consumer, verdicts are given where the compensation claimed does not exceed Rs 20 lakhs. |
| -State consumer disputes redressal commission    | -functions at state level<br>-president and two members<br>-at least one woman member<br>-state government has the right to appoint more members. | -Verdicts are given on consumer disputes where compensation claimed is above Rs. 20 lakhs but upto rupees one crore                                     |
| -National consumer disputes redressal commission | -functions at national level.<br>-president and not less than four members<br>-Central government has the right to appoint more members.          | -Verdicts are given on disputes where compensation claimed exceeds rupees one crore   |

## **Important features of consumer courts(Differences of consumer courts from ordinary courts)**

- Simple procedures
- Fast assurance of justice
- Less court expenses

## **What are the situations when complaints about consumer disputes can be filed.**

- When the purchased product is damaged or defective..
- Defective services received from government/ non government/ private institutions.
- Appropriation of price over and above the amount legally fixed or marked on the outer casing.
- Violation of the prevention of adulteration law
- Sale of products which are harmful to life and safety
- Loss due to trading methods which lead to unfair practices and limited consumer freedom.
- Giving misleading advertisement for increasing sales

### **What are the compensations for consumer disputes obtained through consumer courts.**

- Replacing the product
- Repayment of cash paid or excess amount appropriated
- Monetary compensation for the loss
- Direction to rectify the defects in services.
- Stopping harmful trade practices
- Prohibition of the sale of harmful food items
- Reimbursement of the expenses incurred in lodging the complaint.

### **Three-tier Consumer Protection Advisory Councils constituted under the Consumer Protection Act of 1986.**

- According to the Consumer Protection Act 1986, apart from the consumer courts, three - level advisory councils have been set up. They are:-
- District consumer protection council.
- State consumer protection council.
- National consumer protection council.

### **Important laws for consumer protection in India.**

#### **Sale of Goods Act, 1930**

- It ensures that the prescribed conditions of sale are met while purchasing products.
- Violation of guarantee, warranty, after sale services, etc. comes under this Act.

#### **Agriculture Produce (Grading and Marking) Act, 1937**

- This Act is meant for determining the standard of agricultural products.

#### **Essential Commodities Act, 1955**

- This Act protects the consumers from supernormal profit, hoarding, black marketing, etc.

#### **Weights and Measures Act, 1976**

- This Act is helpful in preventing cheating in weights and measures.

### **Different departments and institutions working for the protection of consumers' interests.**

| <b>Departments and Institution</b>           | <b>working</b>   |
|--|--|
| -Legal Metrology Department                  | -Ensures the weights and measures standards.   |
| -Food Safety Department                      | -Ensures the quality of food products  |
| -Central Drugs Price Control Committee       | -Controls price of medicines   |
| -Drugs Control Department                    | -Ensures the quality and safety of medicines.  |
| -Food Safety and Standard Authority of India | -Ensures the quality of food products at various stages like production, distribution, storage, sale and import. |

### **The symbols help the consumers in ascertaining the quality of products and institutions.**

- ISI stamp is given by the Bureau of Indian Standard (BIS) to ensure a fixed quality of products .

- This symbol can be seen in products such as electrical appliances, cement, paper, paint and gas cylinder.



- International Organisation for Standardisation (ISO) certifies the quality of goods and services of more than 120 countries including India.
- International Organisation for Standardisation (ISO) gives certification to different products and service institutions like hospitals, banks, etc.



-**BIS 100% Hall Marked jewellery** - It indicates the purity of gold jewellery



-This symbol is used internationally to certify the safety of electronic and electrical appliances



-Agmark symbol is used to ensure the quality of agricultural and forest products.



-These symbols are marked to distinguish between vegetarian and non vegetarian food items.



-It certifies the safety and quality of products processed from fruits and vegetables  
-FPO is the short form of Food Products Order.

### **What are the ways in which the intervention of the society for consumers protection can be made possible?**

- Functioning of consumer organisations
- Consumer awareness
- Public interest litigation. The community can get involved in this ways.

### **What are the ways by which consumer education can be ensured?**

- Awareness programmes
- Inclusion in the curriculum
- Observance of the National Consumer Day

### **What are the ways in which consumers are empowered through consumer education?**

- Helps to consume sensibly as per the wants.
- Helps to acquire information regarding products and services.
- Enables the consumer to make the right Choices.
- Makes the consumer aware of his/her rights
- Makes them capable of intervening in consumer disputes.

### **What habits will be formed as a result of consumer education programmes.**

- Ask for the bill for every purchase made.
- Make sure that the weights and measures are accurate.
- Make sure, while purchasing packed items, that the name of the product, date of packing, expiry date, weight, price, and producer's/distributor's address are stated.
- Note the symbols representing the standard of the products.
- Understand how to use and operate the products purchased.

**All the Best**

**9778300200**