RRB NTPC
Complete Preparation
General Science, History, Geography, General Awareness.
# CONTENTS

**GEOGRAPHY** .......................................................... 2

UNIVERSE ................................................................. 2

WORLD GEOGRAPHY .................................................. 4

INDIAN GEOGRAPHY .................................................. 8

**HISTORY** .................................................................... 14

ANCIENT INDIA ........................................................ 14

MEDIEVAL INDIA ......................................................... 21

MODERN INDIA .......................................................... 28

**INDIAN POLITY** ....................................................... 40

**ECONOMICS** .......................................................... 47

**GENERAL SCIENCE** ............................................... 55

**GENERAL AWARENESS** ........................................... 61
GEOGRAPHY

UNIVERSE

- The Universe includes planets, stars, galaxies, the contents of intergalactic space, the smallest subatomic particles, and all matter and energy. Estimated age of the universe is about 13.82 billion years. The study of universe is known as Cosmology.
- **The Big Bang theory** is the most accepted explanation about the origin of universe. As per this theory, all matter was condensed into one point. Later this point exploded and started expanding and thus we have the present universe.

**Galaxy:**
A galaxy is a huge system of billions of stars, and clouds of dust and gases. There are millions of such galaxies that make the Universe.

- Our solar system is a part of a galaxy called Milky Way or Akash Ganga.

**Solar system**
The sun, the eight planets along with their respective satellites, the asteroids and meteoroids, the comets, the interplanetary dust and the electrically charged gases called plasma, together make up the solar system.

**The Sun:** The Sun is at the centre of the solar system and it is the nearest star to the sun.

- One Astronomical Unit (The average distance between then Sun and the Earth) = 150 million km
- Nuclear Fusion reaction is going on inside the Sun. In this process, two hydrogen atoms combine to form a helium atom. The energy released during this process is emitted and the solar energy which reaches our planet is part of that energy.
- Time taken by sunlight to reach the Earth = 8 min and 20 sec.

**Planets:** All the 8 planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune) of the solar system move around the sun in a fixed path. These paths are also called as **orbits**
**Mercury**
- Also known as swiftest planet
- Nearest planet to Sun
- Smallest planet
- It has no atmosphere
- It doesn't have any moon

**Venus**
- Also known as *evening* or *morning* star
- It is also called *Earth's twin*
- Hottest planet, because of the presence of carbon dioxide in its atmosphere
  - Nearest planet to Earth; Also doesn't have any moons

**Mars**
- Also known as *Red planet*
- It has two moons, *Phobos* and *Deimos*

**Jupiter**
- Biggest planet
- It has fastest rotational velocity; has 79 known moons identified by scientists
- Its satellite, *Ganymede* is the largest and heaviest of all satellites in the solar system

**Saturn**
- It is surrounded by a set of seven rings which are made up of primordial dust and ice particles
- Its planet *Titan*, is the only satellite in solar system with an Earth like atmosphere;
- It has 82 moons identified by scientists.

**Uranus**
- Also known as *Green planet*

**Neptune**
- Coldest planet; Farthest planet from sun

**Earth:** Conditions favourable for life are probably found only on the earth.
- Two-third of earth's surface is covered by water and hence it appears blue from outer space. That is why earth is also known as *Blue planet*.
- *Moon* is the only natural satellite.
- Earth is slightly flattened at the poles and hence its shape is also described as *Geoid*.

<table>
<thead>
<tr>
<th>Earth's statistics</th>
<th>About 4.5 billion years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>150 million km</td>
</tr>
<tr>
<td>Water Area</td>
<td>71% of total surface area</td>
</tr>
<tr>
<td>Rotational time period</td>
<td>23 hrs 56 min 4 sec</td>
</tr>
<tr>
<td>Revolutionary time period</td>
<td>365 days 5hr</td>
</tr>
<tr>
<td>Equinox (Dates when days &amp; nights are equal)</td>
<td>March 21 (Vernal equinox) September 23 (Autumnal equinox)</td>
</tr>
<tr>
<td>Summer solstice (Longest day in northern hemisphere)</td>
<td>21st June</td>
</tr>
<tr>
<td>Winter solstice (Longest day in southern hemisphere)</td>
<td>22nd December</td>
</tr>
<tr>
<td>Tilt of Earth's imaginary axis</td>
<td>23.5°</td>
</tr>
<tr>
<td>Escape velocity</td>
<td>11.2 km/s</td>
</tr>
</tbody>
</table>
Moon: It is earth’s only natural satellite.

- Neil Armstrong and Edwin Adrin were the first human being to set foot on the moon’s surface in 1969. And the landing spot was later called "The Sea of Tranquility"
- Lunar Eclipse: Takes place when moon passes through the shadow of the Earth, i.e. the earth is in between moon and sun. A partial eclipse occurs when only a part of the moon passes through the shadow
- Solar Eclipse: This eclipse happens when the moon passes between the sun and the earth, and the moon fully or partially blocks the Sun.
- Blue Moon: It is a rare celestial phenomenon marked by the occurrence of the second full moon within one month.
- Since moon’s rotational and revolutional time periods are same, we see only one side of moon always.

Asteroids: Apart from the stars, planets, and satellites, there are numerous tiny bodies which also move around the sun. These bodies are called asteroids. They are found between the orbits of Mars and Jupiter. Largest asteroid is Ceres.

Meteoroids: They are the small pieces of rocks which move around the sun.

- Sometimes these meteoroids come near the earth and tend to drop upon it. During this process due to friction with the air they get heated up and burn. It causes a flash of light, called meteor shower.
- Sometimes, a meteor without being completely burnt, falls on the earth and they are called meteorites.

WORLD GEOGRAPHY

Latitudes and Longitudes:

They are imaginary lines drawn on the surface of the earth. And these lines make it easier to locate any place on the surface of the earth.

- Equator: Imaginary line which divides earth into two equal halves, northern and southern hemispheres. Equator is the reference latitude and hence it is the 0°latitude
- Parallels of latitudes: These are parallel circles drawn from the equator up to poles. Parallels divide the earth into various heat zones. The different zones have different types of climate and vegetation.

- Meridians of Longitudes: These are the imaginary lines, drawn from pole (North Pole) to pole (South Pole). Naturally, there is no reference longitude, hence we have fixed a longitude passing via the Royal Observatory, Greenwich, in London. And this reference longitude is also called Greenwich meridian or Prime meridian. Prime meridian divides earth into eastern and western hemisphere.

<table>
<thead>
<tr>
<th>Important latitudes</th>
<th>0°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equator</td>
<td></td>
</tr>
<tr>
<td>Tropic of Cancer</td>
<td>23.5°N</td>
</tr>
<tr>
<td>Tropic of Capricorn</td>
<td>23.5°S</td>
</tr>
<tr>
<td>Arctic circle</td>
<td>66.5°N</td>
</tr>
<tr>
<td>Antarctic circle</td>
<td>66.5°S</td>
</tr>
<tr>
<td>North pole</td>
<td>90°N</td>
</tr>
<tr>
<td>South pole</td>
<td>90°S</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Important longitudes</th>
<th>0°E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime Meridian</td>
<td></td>
</tr>
<tr>
<td>Indian Standard Time (IST)</td>
<td>82.5°E</td>
</tr>
<tr>
<td>International Date Line</td>
<td>180°</td>
</tr>
</tbody>
</table>
Earth System

Earth has four main systems that interact and they are geosphere, hydrosphere, atmosphere and biosphere.

A. GEOSPHERE

Continents

<table>
<thead>
<tr>
<th>Continent</th>
<th>Rank (by Area)</th>
<th>Highest Point</th>
<th>Lowest Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>1</td>
<td>Mt. Everest</td>
<td>Dead Sea</td>
</tr>
<tr>
<td>Africa</td>
<td>2</td>
<td>Mt. Kilimanjaro</td>
<td>Lake Assal</td>
</tr>
<tr>
<td>North America</td>
<td>3</td>
<td>Mt. McKinley</td>
<td>Death Valley</td>
</tr>
<tr>
<td>South America</td>
<td>4</td>
<td>Mt. Aconcagua</td>
<td>Laguna del Carbon</td>
</tr>
<tr>
<td>Antarctica</td>
<td>5</td>
<td>Mt. Vinson Massif</td>
<td>Bentley Subglacial Trench</td>
</tr>
<tr>
<td>Europe</td>
<td>6</td>
<td>Mt. Elbrus</td>
<td>Caspian Sea</td>
</tr>
<tr>
<td>Australia</td>
<td>7</td>
<td>Mt. Puncak Jaya</td>
<td>Lake Eyre</td>
</tr>
</tbody>
</table>

Rocks

Various kinds of rocks found on earth's crust are grouped under three families i.e. igneous rocks, Sedimentary rocks, and metamorphic rock.

1. **Igneous Rocks**: When the molten magma present inside earth comes to the surface as a result of volcanic activity, it cools and forms Igneous Rocks. Granite and Basalt are examples for this type of rocks.
2. **Sedimentary Rocks:** They are formed as a result of weathering, erosion, deposition and compaction of igneous rocks and other materials, through agents like wind, water, ice, and chemicals. Gypsum, Gravel etc. are examples for these kinds of rocks.

3. **Metamorphic Rocks:** These types of rocks are formed from igneous or metamorphic rocks, under great pressure and heat. But under very high temperature they are melted and they become part of magma. Later during volcanic activity this magma will again rise to the surface, cool down and solidify, forming igneous rocks. This complete cycle or the conversion of one type of rock into the other is known as **Rock cycle.**

**B. HYDROSPHERE**

**Oceans**

<table>
<thead>
<tr>
<th>Ocean</th>
<th>Rank (by Size)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific Ocean</td>
<td>1</td>
<td>Spread over 1/3rd of the earth's surface Circular in shape - <strong>Mariana Trench</strong> is the deepest point</td>
</tr>
<tr>
<td>Atlantic Ocean</td>
<td>2</td>
<td>S’ Shaped - From commercial point of view, this is the busiest ocean - Deepest point is <strong>Puerto Rico Trench</strong></td>
</tr>
<tr>
<td>Indian Ocean</td>
<td>3</td>
<td>Trangular shaped - Only ocean named after a country - Deepest point is <strong>Java Trench</strong></td>
</tr>
<tr>
<td>Antarctic Ocean</td>
<td>4</td>
<td>Also known as <strong>Southern Ocean</strong> – Deepest point is <strong>South Sandwich Trench</strong></td>
</tr>
<tr>
<td>Arctic Ocean</td>
<td>5</td>
<td>Located within Arctic circle and surrounds North Pole - Berring Strait connects Pacific and Arctic oceans - <strong>Molloy Hole</strong> is the deepest point.</td>
</tr>
</tbody>
</table>

**Bermuda Triangle:** It is a vaguely defined triangular region of Atlantic Ocean, where many aircrafts and ships have said to be disappeared under mysterious circumstances. But some of this is inaccurate and there are many other place on earth where more number of ships and other vessels disappear.
**Tides**: It is the periodic rises and falls of large bodies of water caused by the gravitational interaction between earth, moon and sun. Based on the position of the three celestial bodies, tides can be of two types, Spring tide and Neap tide

1. **Spring Tide**: It occurs on new moon and full moon days. They are large because the gravitational pulls of the moon and sun are in the same direction. Spring tide occurs on full moon and new moon days

2. **Neap Tide**: Normally there is a seven day interval between the spring tide and neap tide. In this case the gravitational pull of the sun is in right angle to that of the moon. During the Neap tides, high tide is lower and low tide is higher than usual. Neap tide occurs on the first and third quarters moons

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**Highest tide in the world occur in the Bay of Fundy in Nova Scotia, Canada**

- **Strait**: It is a narrow channel of water that connects two large bodies of water. Strait of Hormuz, Palk Strait etc. are examples for a strait.
- **Isthmus**: It is a narrow strip of land connecting two large land areas usually with waterbodies on either side. Isthmus of Panama is an example for an Isthmus

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**Coral Reefs**

Coral reefs are formed as a result of the deposition of skeletons and secretion of microscopic marine organisms known as Coral Polyps. They live in colonies and are mainly of three kinds. **Barrier reef, Fringing reef, and Atolls.**

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**C. ATMOSPHERE**

Atmosphere is the gaseous layer, surrounding earth. It is earth’s gravity which is holding these gases close to earth. Since force of gravity (earth’s pull) decreases from the surface, the concentration of gases also decreases with the increase in altitude from the surface. As a result atmospheric pressure is maximum on the surface of the earth and decreases with increasing altitude. Barometer is used to measure atmospheric pressure.

Based on the gaseous composition and temperature profile, earth’s atmosphere is divided into 5 layers.

1. **Troposphere**: This layer is closest to the surface of earth. In this layer, with increase in altitude, temperature decreases. Almost all weather phenomenon happens in this layer. There is a small region between troposphere and stratosphere where temperature does not change and this region is known as Tropopause.

2. **Stratosphere**: With increase in altitude, temperature also increases in this layer. Presence of Ozone layer is the most important speciality of this layer. Stratopause is present between Stratosphere and Mesosphere and here temperature doesn’t change.
3. **Mesosphere**: Again with increase in altitude, temperature decreases and in Mesopause, temperature is constant.

4. **Thermosphere**: Temperature in this layer increases with increase in altitude. Another speciality of thermosphere is **I onosphere**. It is a layer of charged particle. We make use of Ionosphere in radio communication. Thermopause is also present.

5. **Exosphere**: Last of the five layers. Outer boundary of exosphere is not defined, it slowly merges with the outer space.

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**Global Warming**

Global Warming is the increase in Earth's average surface temperature due to effect of **greenhouse gases** (*carbon dioxide, methane, ozone, water vapour, CFCs and Nitrous oxide*).

After receiving sun's radiation, earth will be heated up and earth will also start emitting radiation which is known as **terrestrial radiation**. But the greenhouse gases present in atmosphere reflects this radiation and thus not allow this radiation to escape into outer space. And this process increases Earth's average surface temperature.

**Effect of global warming**: Increase in pollution increases the greenhouse gases present in the atmosphere and this in turn causes global warming. As a result of this phenomenon agricultural productivity will decrease, increase in the frequency of occurrence of natural calamity, and abnormal weather changes.

**Ozone Depletion**

Ozone layer present in Stratosphere, is protecting earth from harmful ultra-violet radiation from sun, by not allowing it to reach earth's surface.

But chemicals like **Chlorofluorocarbons (CFC)** is destroying Ozone layer and causing many health issues.

**Montreal Protocol** is related to the restriction over the usage and release of CFCs and **Hydrofluorocarbons (HFCs)**.

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**D. BIOSPHERE**

It is the narrow zone where all other earth systems meet and interact with each other. It is the biological component of the Earth Systems and it contains and supports living organisms. Even though geosphere constitute 82% of the total mass and biosphere is **0.0007 percent** of the volume of the planet, which has a 6371 kilometer radius. Without the biosphere, life on earth wouldn't have originated.

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**INDIAN GEOGRAPHY**

**A. PHYSIOGRAPHIC DIVISIONS OF INDIA**

The main physiographic features of India includes, the Himalayan Mountain, Northern Plains, Indian Desert, Peninsular Plateau, Coastal Plains, and Islands.

**THE HIMALAYAN MOUNTAIN**

This young fold mountain ranges from north till north-eastern borders of India. Himalayas Consists of three parallel longitudinal ranges; **Greater or Inner Himalayas or the Himadri, Middle Himalayas or Lesser Himalayas or Himachal, and Outer Himalaya or Shiwalik**.

1. **Himadri**: This is the northernmost range and most continuous of all the three ranges. It is also home to loftiest peaks including **Mt. Everest**.

2. **Himachal**: It is composed of highly compressed and altered rocks. **Pir Panjal, Dhaula Dhar**, and **Mahabharat** are very famous ranges present here. It is also famous for many valleys including Kashmir, and Kulu valley. This region is also known for hill stations.

3. **Shiwalik**: It is composed of unconsolidated sediments brought down by Himalayan Rivers. The longitudinal valleys lying between Himachal and Shiwalik is known as **Duns**. Dehra Dun, Kotli Dun and Patli Duns are some of the well-known Duns.

The eastern most extension of Himalaya is known as **Purvachal** and it consists of Naga, Manipur and Mizo hills.
THE NORTHERN PLAIN

Northern Plain was formed as a result of the alluvial deposition by the three main Himalayan Rivers Ganga, Indus & Brahmaputra and its tributaries. Because of the presence of fertile soil, availability of water, and moderate climate, these areas are best suited for agriculture and hence highly populated. Longitudinally northern plain is divided into four regions.

1. **Bhabar**: This is the northernmost region of the plain. Rivers in this region have pebble sized rocks and as a result, the water level above the rocks in rivers is very low. So normally it looks like rivers disappear in this region.
2. **Terai**: This is just below Bhabar, and the rivers that disappear in Bhabar region, reappear in Terai region. This region is a swampy and marshy land.
3. **Bhangar**: This region lie just above the flood plains of the rivers and has old alluvial soil.
4. **Khadar**: This is the flood plains of rivers, where new alluvial deposits are seen.

INDIAN DESERT

Also known as Thar Desert, is lying in the north-western part of India. This area receives very less rain fall and the presence of sand makes it an arid region with very low vegetation. Luni River is the most important river of this region. The crescent shaped sand dunes seen in this region are known as Barchans.

THE PENINSULAR PLATEAU

Plateau is a table top land. Indian Plateau is divided into two based on the position of River Narmada. Part of plateau lying north of Narmada is called **Central Highlands** and part lying south of Narmada is known as **Deccan Plateau**.

1. **Central Highlands**: In south it is bounded by Vindhyan range and north-west by Aravalis. The further westward extension gradually merges with the Thar Desert. Its eastern extension is known as the Bundelkhand and Baghelkhand.
2. **Deccan Plateau**: This triangular land mass, in south west is bounded by Western Ghats and in South-East by Eastern Ghats. Anai Mudi is the highest peak in Western Ghats and Mahendragiri in Eastern Ghats. Western Ghat is more continuous and hence only with the help of a natural pass, anyone can cross it. On the other side, Eastern Ghat is discontinuous and can be easily crossed.

COASTAL PLAINS

India has Western Coastal Plain (between Western Ghats and Arabian Sea) and Eastern Coastal Plain (between Eastern Ghats and Bay of Bengal).

1. **Western Coastal Plain**: It is divided into three sections. Northern most part of the coast is called the Konkan, the Central stretch is called the Kannad Plain while the Southern most part is known as Malabar Coast.
2. **Eastern Coastal Plain**: It is divided into two parts. Northern part is known as Northern Circar and the southern part is called Coromandel Coast.
ISLANDS

India has two main groups of Islands; Lakshadweep Islands and Andaman and Nicobar groups of Islands.

1. **Lakshadweep Islands**: It is composed of small coral islands and its administrative capital is Kavaratti Island. Pitti Island, which is a bird sanctuary is situated here. In India, Lakshadweep stands first in both coconut production and per capita availability of fish.

2. **Andaman and Nicobar Islands**: Andaman and Nicobar groups of Island is separated by Ten degree channel. Its administrative capital is Port Blair and India’s only active volcano is located in Barren Island. It is believed that these Islands are an elevated portion of submarine mountains.

B. **RIVERS OF INDIA**

**Himalayan Rivers**

![Rivers of India Diagram]

**Indus**:–
- **Origin**: Near Mansarovar lake
- **Tributaries**: Satluj, Ravi, Beas, Chenab, Jhelum. At Mithankot these tributaries join the main Indus River.
- **Indus water treaty**: Treaty between India and Pakistan for sharing Indus water

**Ganga**:–
- **Originates** from Gangotri glaciers
- **Tributaries**: Yamuna, Chambal, Son, Kosi, Ghaghra, Gandhak
- Headwaters of Ganga, Bhagirathi and Alaknanda meet at Devaprayag
- Yamuna joins with Ganga at Allahabad
- Ganga flows east till Farakka in West Bengal and then takes a right turn and flows to Bangladesh. There Ganga meets Brahmaputra and from then onwards known as Meghna and finally joins Bay of Bengal. But these rivers form deltas at river mouth and they are known as Sunderban Delta (*world’s largest and fastest growing delta*).

**Brahmaputra**:–
- **Origin**: East of Mansarovar lake (Kailash ranges of Himalayas at an elevation of 5300 M)
- Flows eastward parallel to Himalaya. Since these regions are dry, river water level is low.
When it reaches Namcha Barwa, river takes a 'U' turn and enters India in Arunachal Pradesh. Here it is called Dihang. Later Dibang, Lohit and many other tributaries join the many river and from then onwards it is Brahmaputra.

After flowing through some of the North Eastern states, Brahmaputra finally enters Bangladesh and then meets Ganga and finally joins Bay of Bengal.

Inside Indian Territory it flows through areas of very high rain fall and hence the water level in the river is very high. River carries large amount of silt in this region and that is why we can't build a dam across Brahmaputra River.

Peninsular Rivers

East flowing rivers

River Godavari:

- Largest Peninsular river and also known as ‘Dakshin Ganga’
- Rises from the part of Western Ghats in Nasik district of Maharashtra
- Main tributaries: Purna, Wardha, Manjra, Pranhita, Wainganga, and Penganga
- Flows through Maharashtra, Madhya Pradesh, Odisha, and Andhra Pradesh. Finally drains to Bay of Bengal.

Mahanadi:

- Origin: from the highlands of Chhattisgarh
- Tributaries: Ong, Jonk, Telen, Hasdeo, and Mand
- Flows through Chhattisgarh and Odisha. And finally drains to Bay of Bengal.

River Krishna:

- Origin: From Mahabaleshwar, Maharashtra.
- Tributaries: Tungabhadra, Bhima, Dindi, Halia, and Panchganga
- Flows through Maharashtra, Karnataka, Telangana & Andhra Pradesh and finally drains to Bay of Bengal.

Kaveri:

- Origin: At Talakaveri, Kodagu in Western Ghats
- Tributaries: Shimsha, Hemavati, Arkavati, Kabini, Bhavani River, and Amravati River.
- Flows through Karnataka and Tamil Nadu and emptying into Bay of Bengal

West flowing rivers

Narmada:

- Rises from Amarkantak hills in Madhya Pradesh and is also known as life line of Madhya Pradesh
- Flows westward through rift valley and empties into Arabian Sea.
- Tributaries: Kolar, Hiran, Shakkar, and Tawa

Brahmaputra is known as the Tsang Po in Tibet and Jamuna in Bangladesh. Sunderban delta area is the home of Royal Bengal Tiger.
Tapi/Tapti:-
- Originates from the Satpura ranges of Madhya Pradesh and flows westward through rift valley
- Flows through Madhya Pradesh, Maharashtra and Gujarat
- Main tributaries: Arunavati, Gomai, and Panzara

Sharavati:-
- Originates at Ambuthirtha in Karnataka
- Flows westward within Karnataka and finally joins Arabian Sea
- Jog waterfalls are formed by Sharavati

River Luni:-
- Origin: Pushkar valley of Aravalli range
- Flows west, through Thar desert and finally joins the marshy land of Rann of Kutch in Gujarat
- Tributaries: Jowai, Sukri and Jojari

C. CLIMATE

Climate is the sum total of weather conditions over a large area for a long period of time. Climate of India is described as the 'Monsoon type'. Because of the presence of coastal area peninsular India doesn't experience much variation in temperature. Four main seasons can be identified in India.

1. Hot Weather Season (Summer):-
   - During this time of the year, because of the apparent movement of the Sun, sunrays fall directly over tropic of cancer and as a result temperature increases gradually. By May end or June starting, temperature of North Indian states increases up to 45-48 degree Celsius.
   - North Indian states also experience a very hot and dry local wind during summer season. They are called loo. They are very dangerous and if we are exposed to it, it may even prove to be fatal.
   - By the end of May, some areas receive localised thunderstorms and slight rainfall. They are also known as Kaal Baisakhi.

2. Advancing Monsoon (Rainy Season):-
   - South West Monsoon winds causes precipitation. Since these winds passes over Indian Ocean, it carries very large amount of moisture and this later results in heavy rainfall. Sometimes Monsoon experiences wet and dry spells.

3. Retreating Monsoon (The Transition Season):-
   - This is a transition season between Monsoon and Winter, and experienced during October-November months
   - October Heat (high temperature and high humidity) is the most important speciality of this season.

4. The Cold Weather Season (Winter Season)
   - During this season, because of the apparent shift of the sun towards southern hemisphere, we will experience a Cold Weather Season.
   - Because of the Western disturbance during this season, North-Western states of India receives some amount of rainfall, known as Mahawat. And this rain helps Rabi crops.
   - Tamil Nadu coast receives some amount of rainfall during this season.

D. SOIL

There are mainly six types of Soils seen in India. They are Alluvial soil, Black soil, Red soil, Laterite soil, Desert soil, and Mountain soil.

1. Alluvial Soil: This soil is found mainly in Northern plains and Coastal plains of peninsular India. It is highly fertile and best suited for agricultural activity.

2. Black Soil: They are originated from the basalt rock which are volcanic in origin. They are clay in character and as a result they can hold moisture for a long time, and this helps crops to sustain even
during the dry season. Black soil is best suited for Cotton cultivation. They are rich in lime, iron, magnesia and alumina.

3. **Red Soil**: Presence of Iron Oxides makes them red in colour. They are not very fertile, but with adequate amount of fertilizer, they can be used for cultivation. They are found in eastern and southeastern part of peninsular India.

4. **Laterite Soil**: Because of very high rainfall in Western Ghats and North-Eastern parts of India, Silica content of the soil leaches out and that soil will be deprived of humus too. This soil with a reddish colour is known as Laterite Soil.

5. **Desert Soil**: They are mainly found in the arid regions of Rajasthan and Gujarat. Due to the dry climate, high temperature, and accelerated evaporation, they lack moisture and humus. Also known as Arid soil.

6. **Mountain Soil**: Our mountain ranges have wide range of soils. The soils vary in structure and texture depending on the mountain environment where they are found. Also known as Forest Soil.

E. **CROPPING SEASONS IN INDIA**

India has three main cropping seasons, **Kharif**, **Rabi** and **Zaid** cropping seasons.

1. **Kharif Season**: Crops are cultivated and harvested during the rainy season. i.e between June and September. Rice and millet are example for Kharif crops.

2. **Rabi Season**: Crops are cultivated and harvested during the winter season. i.e between October and March. Wheat, barley, maize and oat are examples for Rabi crops. Mahawat (winter rain in the north-eastern part of India) helps Rabi crops.

3. **Zaid Season**: This season is between Rabi and Kharif. i.e. mainly from April to June. Watermelon, cucumber and sugar cane are examples for zaid crops.
HISTORY
ANCIENT INDIA

INDUS VALLEY CIVILIZATION (2500BC - 1500BC)

The Proto-History of India begins with Indus Valley Civilization. It is also known as Harappan Civilization because Harappa was the first site to be excavated. Indus Valley Civilization was basically an urban civilization. People for the first time in the history started living in urban areas. These were very well planned cities with wide roads and well developed drainage systems. Houses were built of baked bricks and studies also show that these cities traded with other contemporary civilizations like Mesopotamia. Major sites of Indus Valley Civilization include Harappa, Ganeriwala, and Mohenjo-daro in modern-day Pakistan, and Dholavira, Kalibangan, Rakhigarhi, Rupar, and Lothal in modern-day India.

The civilization that appeared in the northwestern part of India and Pakistan in the third millennium BCE is collectively called the Indus Civilization. Since Harappa was the first site to be identified in this civilization, it is also known as Harappan Civilization.

- Beginnings of the Neolithic villages in this region go back to about 7000 BCE at the Neolithic site of Mehrgarh.
- The Indus valley site of Harappa was first visited by Charles Mason in 1826, and Amri by Alexander Burnes in 1831.
- Sir John Marshal played an important role in the development of archaeology in India. Later in the 1940s, Mortimer Wheeler excavated the Harappan sites.

Planned Towns:
- Harappans used baked and unbaked bricks, and stones for construction. The towns had a grid pattern and drainage were systematically built.
- The site of Mohenjo-Daro had a planned town, built on a platform. It has two distinct areas. One is identified as a citadel and another as the lower town.
- In Mohenjo-Daro, a building has been identified as a warehouse (used as Granaries).

Animal Domestication:
- Pastoralism was also practised by the Harappans. They domesticated sheep, goat and fowl.
- They had knowledge of various other animals including buffalo, pig and elephant. But horse was not known to them.
Metal, Tools and Weapons:

The Harappan civilisation belongs to the Bronze Age civilisation and Harappans knew how to make copper bronze tools.

- The Harappans used chert blades, copper objects, and bone and ivory tools. The tools of points, chisels, needles, fishhooks, razors, weighing pans, mirror and antimony rods were made of copper.

- The chert blades made out of Rohrichert was used by the Harappans. Their weapons include arrowheads, spearhead, celt and axe. They did not have the knowledge of iron.

Arts and Amusement:

- “Priest king” of steatite, dancing girl of copper (both from MohenjoDaro), and stone sculptures from Harappa, Mohenjo-Daro and Dholavira are the important objects of art.

Decline:

- The Indus Valley Civilisation declined from about 1900 BCE. Changes in climate, decline of the trade with the Mesopotamia, and the drying of the river and water resources due to continuous drought are some of the reasons attributed by historians for the decline. Invasions, floods and shifting of the river course are also cited as reasons for the ruin of Indus civilisation. In course of time, the people shifted to the southern and eastern directions from the Indus region.

VEDIC AGE (1500BC-600BC)

Vedic age refers to the time when Vedic Sanskrit texts were composed. There are four Vedas, namely Rig, Veda, Sama Veda, Yajur Veda and Atharva Veda.

- **Rig Vedic** Samhita is the earliest text that relates to the Early Vedic period. The Early Vedic culture is placed between 1500 BCE and 1000 BCE. The political, social and economic aspects of life of this period are reflected in the Rig Vedic hymns.

- The **Sama Veda** was composed in musical notes which are considered to constitute the basis of Indian music.

- The **Yajur Veda** has rituals and hymns.

- The **Atharva Veda** contains charms and magical spells
Early Vedic Period (1500BC-1000BC):

- Settled in the North-Western part of India, especially in and around the river Indus and its tributaries.
- Primarily they were Pastoralist.
- Divided into many clans and each clan had a leader (King), who was elected by the clan members and also this position was not hereditary.
- Patriarchal society, women were given equal status and there were only three varnas (Brahmana, Kshatriya, and Vaishya).
- Nature worship (For example Rain god ‘Varuna’, Thunder god ‘Indra’ etc.) for material gains cattle were considered wealth.
- The term for war in the Rig Veda was gavishthi which means search for cows (which is the contemporary term (goshti) for factions as well).

Later Vedic Period (1000BC-600BC):

- Socio-Political situations of the society totally changed.
- Post of King became hereditary, women lost their status in the society and they started following four fold Varna System (Brahmana, Kshatriya, Vaishya and Shudra).
- Inter Varna marriages led to the creation of new castes which led to caste proliferation by 6th century BC and there was a religious revolution in 6th century BC.
- For the first time they started using Iron and as a result they started moving towards the eastern parts of the country, cutting down the forest.

*The terms ‘Syama’ or ‘Krishna ayas’ are used to refer to iron in the later Vedic texts.

During this time many battles were fought between different tribes and finally by Sixth Century BC, sixteen tribes became more powerful than any other and they were called 16 Mahajanapadas.

<table>
<thead>
<tr>
<th><em>Mahajanapada</em></th>
<th>Capital</th>
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<tbody>
<tr>
<td>Anga</td>
<td>Champa</td>
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<tr>
<td>Magadha</td>
<td>Earlier Rajgriha, later Patliputra</td>
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<tr>
<td>Malla</td>
<td>Capitals at Kusinara and Pawa</td>
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<tr>
<td>Vajji</td>
<td>Vaishali</td>
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<tr>
<td>Kosala</td>
<td>Sravasti</td>
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<tr>
<td>Kashi</td>
<td>Varanasi</td>
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<tr>
<td>Chedi</td>
<td>Shuktimati</td>
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<tr>
<td>Kingdom</td>
<td>Capital</td>
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<tr>
<td>Kuru</td>
<td>Indraprastha</td>
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<tr>
<td>Vatsa</td>
<td>Kaushambi</td>
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<tr>
<td>Panchala</td>
<td>Ahichhatra (Uttara Panchala) and Kampilya (Dakshina Panchala)</td>
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<tr>
<td>Matsya</td>
<td>Viratanagara</td>
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<tr>
<td>Sursena</td>
<td>Mathura</td>
</tr>
<tr>
<td>Avanti</td>
<td>Ujjaini and Mahishmati</td>
</tr>
<tr>
<td>Ashmaka</td>
<td>Potana</td>
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<tr>
<td>Kamboja</td>
<td>Capital at Rajapura in modern-day Kashmir</td>
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<tr>
<td>Gandhara</td>
<td>Taxila</td>
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</tbody>
</table>

6TH CENTURY BC

Two important things happened in 6th century BC, Political Unrest and Religious Revolution.

A. Political Unrest:-

The 16 Powerful clans (16 Mahajanapadas) fought among each other and finally Magadha Kingdom emerged victorious. They established itself as the centre of political activity in northern India.

Magadha Empire

Many dynasties ruled Magadha Empire and the most important ones are discussed below.

1. Haryanka Dynasty:-
   - Important rulers: Bimbisara, Ajatasatru, and Udayin
   - Capital was Rajgir
   - First Buddhist council took place in 483BC at Rajgir, when Ajatasatru was ruling.

2. Sisunaga Dynasty:-
   - Important rulers: Sisunaga, Kalashoka
   - Capital was shifted from Rajgir to Vaishali
   - Second Buddhist council took place in 383BC at Vaishali

3. Nanda Dynasty:-
   - Important rulers: Mahapadma Nanda and Dhana Nanda
   - Alexander tried to invade India in 326BC, during Dhana Nanda’s rule
   - Dhana Nanda was replaced by Chandragupta Maurya with the help of Chanakya (also known as Kautilya)
B. Religious Revolution

By 6th Century BC, caste system became highly complicated and lower caste people faced all socio-economic problems while higher caste people led a safe and dignified life. These lower caste people were ready to move to some other religion where there were no such discriminations. And it was during this time new religions like Buddhism, Jainism and many other religions emerged. They acted as an alternative to the present caste system and many people started following these new religions where they could lead a life with dignity.

Buddhism

- Founder: Siddhartha (also known as Buddha) (563BC-483BC), born at Lumbini garden near Kapilavastu, in Sakya territory. Left palace at the age of 29 and started travelling in search of truth.
- At the age of 35, he was sitting under a Banyan tree at modern Bodh Gaya, after taking a bath in the stream of river Niranjana, modern Lilajan, and obtained enlightenment and became known as Buddha.
- Delived the first sermon at Sarnath, and this is called ‘Dharmachakrapracartan’ or ‘Turning of the wheel of law’
- Taught his followers Four Noble Truths
  a. The world is full of sorrows
  b. Desire is the root cause of sorrow
  c. The desire if conquered, all sorrows can be removed
  d. Desire can be removed by following the Eight Fold Path
- Eight fold Path is right understanding, right speech, right livelihood, right thought, right action, right effort, right concentration
- Buddhism was totally against ‘Varna System’
- Buddha died in Kushinagara (capital of Malla Mahajanapada) in 483BC.
- After his death, four Buddhist councils were held

<table>
<thead>
<tr>
<th>Council</th>
<th>Year</th>
<th>Place</th>
<th>King</th>
<th>President of Council</th>
<th>Important Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>483 BC</td>
<td>Rajgir</td>
<td>Ajatasatru</td>
<td>Mahakassapa</td>
<td>Two important literary works were published.</td>
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<td></td>
<td>1. Sutta Pitaka: Deals with life history of Buddha</td>
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<td>2. Vinaya Pitaka: Deals with monastic discipline</td>
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<tr>
<td>2</td>
<td>383 BC</td>
<td>Vaishali</td>
<td>Kalashoka</td>
<td>Sabakami</td>
<td>One important literary work was published:</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>1. Abhidhamma Pitaka: Deals with mystic Concept beyond knowledge</td>
</tr>
<tr>
<td>3</td>
<td>250 BC</td>
<td>Pataliputra</td>
<td>Ashoka</td>
<td>Moggliputta Tissa</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>First Century AD</td>
<td>Kundalawana (Kashmir)</td>
<td>Kanishka</td>
<td>Vasumitra</td>
<td>Buddhism split into two.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. Hinayana: Sect of Buddhism which does not believe in idol worship</td>
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<td></td>
<td>2. Mahayana: believes in worshiping images/idol of Buddha</td>
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</tbody>
</table>
Jainism

- According to Jaina tradition, there were 24 Tirthankaras (religious teachers). **Rishabha** was the first Tirthankara and **Vardhamana Mahavira** was the 24th Tirthankara.
- Mahavira, born in 540 BC at **Kundagrama** near Vaishali, and left his home at the age of 30.
- At the age of 42, he attained the highest spiritual knowledge called **Kevala-Jnana**
- As per Jainism, way to Nirvana also known as **Three Ratnatraya** involves, **Right faith, Right knowledge**, and **Right conduct**.
- Five carinal principles of Jainism are, **Ahimsa, Non-lying, Non-Stealing, Non-Possession**, and **Brahmacharya**.
- Later divided into two sects, **Swethambaras** and **Digambaras**

**Jain Councils:**
1. **First Council**: held at Pataliputra by Sthulabahu in the beginning of the third century BC.
2. **Second Council**: Held at Valabhi in the early 6th century AD, under the leadership of Devaradhi Kshamasramana and resulted in final compilation of 12 Angas and 12 Upangas.
MAURUAN EMPIRE (325BC – 185BC)

Last Nanda Dynasty ruler, Dhana Nanda was replaced by Chandragupta Maurya with the help of Chanakya (Also known as Kautilya), and from then started Mauryan Empire.

1. Chandragupta Maurya
   - Megasthenes was a Greek ambassador sent to his court by Seleucus Nicator
   - ‘Indica’ was written by Megasthenes.
   - Chandragupta Maurya went for territorial expansion and followed Jainism
   - His Prime Minister, Chanakya wrote the famous book Arthashastra

2. Bindusara
   - Also known as ‘Amitragatha’
   - Followed ‘Ajivikaism’, another religion started in 6th Century BC

3. Ashoka
   - Fought Kalinga war in 261BC, but after seeing the devastation caused, he decided not capture any other place by force and follow Buddhism.
   - 3rd Buddhist Council was held in 250BC during Ashoka’s time.
   - To propagate Buddhism, he issued inscriptions called edicts

Brihadratha was the last ruler of Mauryan Empire and later other dynasties came in power.

POST MAURYAN RULERS (2ND CENTURY BC - 3RD CENTURY AD)

<table>
<thead>
<tr>
<th>Sunga Dynasty (185 BC-73BC)</th>
<th>Kanva Dynasty (73BC-30BC)</th>
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<tbody>
<tr>
<td>Established by Pushyamitra Sung, who was a Brahmin</td>
<td>Established by Vasudeva</td>
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<tr>
<td>Patanjali’s Yogasutras’ was composed during this time</td>
<td>Rulers were very weak and dynasty came to an end very soon</td>
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<tr>
<td>Bharhut stupa is the most famous monument of the Sunga period</td>
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<tr>
<td>Devabhuti was the last ruler</td>
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</tbody>
</table>

Satavahana Dynasty (60BC-225AD)

- Founder: Simuka
- Their capital was Pratishthan
- Greatest Satavahana ruler Gautamiputra Satakarni, defeated a Saka ruler who ruled Saurashtra
- Many Chaityas and Viharas were cut out from rocks during this time
Sangam Literature:

South India was under the rule of three great dynasties, Pandyas, Cholas and Cheras. We get information about these dynasties from the literary works of that age known as Sangam Literature. Ettuthogai, and Pattupattu are the most important works of this time.

Pandyas

- First mentioned by Greek traveller Megasthenes.
- Capital was Madurai.
- Was known for pearls.
- Had trade with Roman Empire.

Cheras

- Chera Dynasty had ruled in two different time-periods.
- The first Chera Dynasty had ruled in Sangam Era while.
- second Chera Dynasty had ruled from the 9th century AD onwards.
- We get to know about the first Chera Dynasty through Sangam Text. The area ruled by Cheras included Cochin, North Travancore and Southern Malabar.
- Their capital was Vanchi Muthur in Kizhanthur-Kandallur and Karur Vanchi. The capital of later Cheras was Kulashekarapuram and Mahodayapuram.

Cholas

- Capital was Uraiyur.
- Cotton trade was the main source of wealth.
- Karikala was the greatest king; Cholas were wiped out by attack of Pallavas.

Kushans

- They came to India from Central Asia. After establishing their empire in India, they even controlled the famous Silk Route which started connecting China to Iran and West Asia.
- Founder: Kadphises I.
- Greatest of Kushan ruler was Kanishka. He defeated a Saka ruler and started an era in 78 AD, known as Saka Era.
- Fourth Buddhist Council was held during Kanishka’s rule.
- Kanishka followed Mahayana form of Buddhism.

AGE OF GUPTAS (240AD-550AD)

Sri Gupta was the founder of Guptas, who ruled from Pataliputra. Art, Literature and science flourished during Gupta period and hence this period is also known as the Golden age of India. Main rulers of Gupta Empire are discussed below.

1. Chandragupta I (320AD-335AD)
   - Assumed the title of Maharajadhiraja.
   - Married a Licchavi prince named Kumaradevi and obtained large territory.

2. Samudragupta (335AD-375AD)
   - Historian V.A. Smith has regarded him as ‘Indian Napoleon’ and ‘Kavi Raja’.
   - Performed Ashvamedha Yagna and gained more territory and power.

3. Chandragupta II (375AD-415AD)
   - Known by the name ‘Vikramaditya’.

-
• His capital was Pataliputra
• Fa-hien, the Chinese traveller visited India during this time and he has written about the socio-economic and political situation that was present in India.
• Vikramaditya's achievements are inscribed in Mehrauli's iron pillar

4. Kumaragupta I (415AD-455AD)
   • Nalanda Buddhist University was built during this time.
   • Hunas tried to invade, but they were successfully resisted

5. Skandagupta (455AD-467AD)
   • Eran inscription (510AD) is the first reference of practice of Sati in India.
   • He also performed Ashvamedha Yagna

As a result of continued invasion of Hunas, Gupta's power deteriorated and later Gupta rulers were very weak.
Why is Guptan period considered as the Golden age:-
Because in literature, science, economy and many more areas, greater development was seen during Gupta Era.

Literature
Greater contribution to Sanskrit was made by,
1. **Kalidasa**: He wrote the following books
   - Abhijnanashakuntalam
   - Malavikagnimitram
   - Kumarasambhavam
   - Raghuvamsa
   - Meghadutam
2. **Visakhadatta**: wrote the following books
   - Mudrarakshasa
   - Devichandraguptam
3. **Vishnushraman**: wrote the following books
   - Panchatantra

Science and Technology
1. **Aryabhatta**: An astronomer and mathematician.
   - Wrote *Aryabhatiya*
   - Calculated the value of 'pi' and contributed a lot to *trigonometry*
2. **Varahamihira**: An astronomer as well as an astrologer
   - Wrote *Panchasiddhanta*
3. **Brahmagupta**: 
   - Wrote *Brahmasiddhanta*, in which he discussed about gravity

Economy
1. More trade was happening through silk route
2. Trade with west declined and trade with east flourished
3. Guptas issued large number of gold coins with less intrinsic value
POST GUPTA PERIOD

1. Harshavardhana (606AD-647AD)
   - His belonged to Pushyabhuti dynasty and his capital was Kanauj
   - Xuanzang, the Chinese traveller visited India during this time and wrote about the socio-economic condition of India in his book.
   Toward the end of his stay, Xuanzang had the heady experience of being quarreled over by two kings -- the King of Assam and the illustrious King Harsha (reigned 607-647 C.E.) who was one of the last of the great Buddhist rulers.
   - Harsha was a devout Saiva but later he became an ardent Hinayana Buddhist. Hiuen Tsang converted him to Mahayana Buddhism.
   - Harsha’s court poet Banabhatta wrote Harshacharita
   - Pulakesin II (a Chalukya ruler) defeated Harsha in the battle of Narmada, when Harsha tried expand his territory beyond River Narmada
II. Pallava (560AD-900AD)
- Capital was Kanchipuram
- Narasimhavarman I, a Pallava king killed Pulikesin II (a Chalukyan king) and conquered Vatapi (Chalukyan capital) and assumed the title of Vatapikonda
- Narasimhavarman I was also known as Mamallan and he founded Mahabalipuram or Mamallapuram
- Narasimhavarman II built a Kailash temple at Kanchi.

III. Chola Empire (9th century – 12th century)
- Also known as Later Cholas and their capital was Tanjore
- Rajaraja Chola built Brihadeswara Temple, world’s first granite temple at Tanjore
- Rajendra Chola conquered area up to the banks of Ganga and assumed the title of ‘Gangaikonda’
- Rajendra Chola’s reigning period is known as the ‘Golden Age of Cholas’

IV. Chalukya (543AD-757AD)
- Capital was Vatapi
- Greatest of its kings, Pulakesin II, defeated Harshavardhana but was later defeated by Narasimhavarman-I, a Pallava King

V. Pala
- Founder of Pala empire was Gopala in 750AD
- Dharmapala, a Pala ruler, revived Nalanda University and also founded the Vikramshila University

VI. Pratihara
- Since their origin is from Gujarat of Rajasthan, they are also known as Gurjara Pratiharas
- Bhoja was the greatest ruler of this dynasty.
- Also known as life line of Madhya Pradesh

VII. Rashtrakuta
- Founder was Dantidurga and their capital was Malkand
- One of the greatest Rashtrakuta rulers, Krishna I built the Rock cut temple of Shiva at Ellora in 9th century.
**MEDIEVAL INDIA**

**Muslim Invasion in India**

During the early medieval period, there was no single prominent ruler. India was actually ruled by more than hundred rulers. Then happened Islamic invasion and most important of them was Muhammad of Ghori. He invaded India in 1175 AD. After the conquest of Multan and Punjab, he advanced towards Delhi. Here he fought with Rajput rulers.

1. **First Battle of Tarain (1191 AD):** Ghori was defeated in this battle by Prithvi Raj Chauhan
2. **Second Battle of Tarain (1192 AD):** Prithvi Raj Chauhan was defeated in this battle by Ghori.

And 2nd battle of Tarain laid the foundation of Islamic rule in India. After the death of Muhammad Ghori in 1206, Delhi region came under the control of his trusted general, Qutub-ud-din Aibak (who was earlier a Turkish slave) and from 1206 starts Slave Dynasty.

**DELHI SULTANATE**

Delhi Sultanate includes, the rule of 5 important dynasties; Slave dynasty, Khilji dynasty, Tughlaq dynasty, Sayyid dynasty, Sayyid dynasty, Lodhi dynasty.
Slave Dynasty/ Mamluk Dynasty

After the death of Muhammad Ghori, Delhi came under the control of his general Qutub-ud-din Aibak, and thus started the rule of the Slave Dynasty in India. Aibak ruled from his capital Lahore. He was a great builder and started the construction of Qutub Minar. But in 1210 AD, he died of injuries received in a polo match and it was Iltutmish who completed Qutub Minar.

Iltutmish was the real founder of Slave Dynasty. He was a great expansionist and consolidated territories. He ruled from Delhi and successfully protected Delhi during the Mongol invasion under Genghis Khan. He set up a group of forty nobles known as Chalisa or Turkan-i-Chihalgani. After Iltutmish, Razia Sultana, was the next main ruler. Later Nasir-ud-din Mahmud became Sultan. But during his tenure, the main power remained in the hands of Balban.

After the death of Mahmud, Balban took over and consolidated the administrative set up of the empire and completed the work started by Iltutmish. Slave dynasty rulers conquered southern territories, but never crossed Vindhyan range. Last of Slave Dynasty ruler was killed by Jalal-ud-din Khilji.

Qutub-ud-din Aibak (1206-10)
- He was also known as Lakh baksh, because of his generosity
- Built Qutub Minar, in the memory of Khwaja Qutub-ud-din Bhaktiyar Kaki
- Constructed two famous mosques: Quwat-ul-Islam at Delhi and Adhai-din-ka-Jhonpra at Ajmer

Shams-ud-din Iltutmish (1211-36)
- Introduced ‘Iqta system’
- Introduced two types of coins: Tanka and Jital

Razia Begum/ Razia Sultana (1236-40)
- First and Only Muslim lady ruler who ever adorned the throne of Delhi

Ghiyas-ud-din Balban (1266-86)
- Proposed the Divine theory of Kingship
- Abolished Turkan-i-Chihalgani
- Took the title of Zil-i-Ilahi (Shadow of God)
- Introduced Sijda (Prostration before the monarch) and Paibos (Kissing the feet of monarch)

Khilji Dynasty

Jalal-ud-din Khilji, the founder of Khilji Dynasty was a weak ruler and he adopted a lenient policy towards Mongol.

But his successor Ala-ud-din Khilji was an expansionist and during his time, empire expanded both northward and southward. He defeated Yadava Dynasty rule and crossed Vindhyan range. Mongols (who tried to invade India) were successfully repulsed. After his death, the other rulers were inefficient and Khilji dynasty came to an end by 1320.
Ala-ud-din Khilji (1296-1316 AD)
- Separated religion from politics and proclaimed "Kingship knows no kinship"
- Constructed 'Alai Darwaja', the entrance gate of Qutub Minar and built the palace, Hazar Situn

Tughlaq Dynasty
After the death of Ala-ud-din Khilji, Ghiyas-ud-din Tughlaq ascended the throne and founded the Tughlaq dynasty. Ghiyas-ud-din expanded his territory south upto Madurai and also decided to annex Gujarat and Bengal, which became independent during the decline of Khiljis. But in an accident Ghiyas-ud-din died and his son Muhammad-bin Tughlaq became the next ruler.

Muhammad Bin Tughlaq was well educated and introduced many welfare measures but they just remained as experiments (failed experiments). He shifted his capital from Delhi to Devagiri, and renamed it as Dauladabad. During the second half of his rule, revolt started at different parts of the empire and finally resulted in the disintegration of Tughlaq dynasty.

Firoz Shah Tughlaq was the most famous of last Tughlaq rulers. He did not try to expand his territory, but was involved in the welfare activities. After his death Tughlaq dynasty virtually came to an end. During the last days of Tughlaq, Timur invaded India and captured Delhi. He appointed Khizr Khan Sayyid to administer these areas and thus started Sayyid Dynasty in India.

Muhammad-bin Tughlaq
- His real name was Jauna Khan
- Transfer of capital from Delhi to Dauladabad and then back to Delhi
- Qarachil and Khurasan were very famous expeditions of Jauna Khan
- Separate department for agriculture known as Diwan-i-kohi was created
- Introduced token currency by replacing silver by bronze due to global shortage of silver
- Ibn Battuta (Moroccan traveller) visited during his reign

Firoz Shah Tughlaq
- Built cities of Kotla, Hissar, and Ferozabad
- A new department, Diwan-i-Khairat was set up.

Sayyid Dynasty (1414-1450 AD)
First ruler was Khizr Khan Sayyid. Sayyids ruled for 37 years and the last ruler, Ala-ud-din Alam Shah gave power to Bahlul Lodhi.

Lodhi Dynasty (1451-1526)
Lodhis were the 1st Afghan rulers in India. Their 1st ruler, Bahlul Lodhi introduced the Afghan theory of Kingship (king is just like other ministers but prime one) and gave huge respect to nobles. But later rulers, Sikander Lodhi and Ibrahim Lodhi rejected Afghan theory of kingship, and tried to control nobles.
Nobles conspired against Ibrahim Lodhi and invited Babar to invade India. **Ibrahim Khan Lodhi** was killed by **Babar in 1526** during **1st battle of Panipat**

**Sikander Lodhi (1489-1517 AD)**
- Shifted his capital from Delhi to Agra
- Introduced a new system of land measurement, called **Gaz-i-sikandari (Sikander’s yard)**

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<th>Sultanate Architecture</th>
<th>Al Beruni</th>
<th>Ibn-Batuta</th>
<th>Chand Bardai</th>
<th>Feroz Shah Tughlaq</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al-ud-din Khilji</td>
<td>Siri Fort Mahal- Hazari-I Sitoon Alai -Darwaza Alai Minar</td>
<td></td>
<td>Hasan Nizami Tajul Maasir</td>
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</tr>
<tr>
<td>Ghiyas-ud-din Tughlaq</td>
<td>Tuglaqabad (Fort city)</td>
<td></td>
<td>Minhas-us-Siraj Tabaqat-i-Nasiri</td>
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<td>Muhammad-bin Tughlaq</td>
<td>Jahan- Panah (Fort city) Sat Pullia</td>
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<td>Malik Muhammad Jayasi Padmavat</td>
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<td>Sikander Lodhi</td>
<td>Founded Agra</td>
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<td>Sher Shah Suri</td>
<td>Old Fort Qila-i- Kuhng Sher Shah’s Torib - Sasaram</td>
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</tbody>
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**Amir Khusrau:**
- He was a Persian poet and he had associated with many Delhi Sultanate rulers during 1253-1325. He was a very versatile person, he was a soldier, diplomat, shrewd in court matters and a great poet in Persian, Arabic, and Urdu.
- He is also known as **Tuti-i-Hind** or the ‘Parrot of India’
- His major works include, **Tarikh-i-Alai, Khamsah, Tughlaqnama, and Miftahul Futuh**

**MUGHAL EMPIRE**

**Zahiruddin Muhammad Babur (1526–1530):**

**Battle of Khanwa, 1527:** Babur decided to take on Rana Sanga of Chittor, who as ruler of Mewar, had a strong influence over Rajasthan and Malwa. Babur selected Khanwa, near Agra, as a favourable site for this inevitable encounter. With strategic positioning of forces and effective use of artillery, Babur defeated Rana Sanga’s forces.

**First Battle of Panipat, 21 April 1526:** Babur then turned towards the Lodigoverned Punjab. After several invasions, he defeated the formidable forces of Ibrahim Lodi with a numerically inferior army at Panipat.

Babur, the founder of Mughal Empire, was a scholar of Persian and Arabic. Babur’s memoirs **Tuziuk-Baburi (Baburnama)** is considered a world classic.

**Humayun (1530-1540 & 1555-1556):**

**Battle of Chausa (1539):** This battle was won by Sher Khan due to his superior political and military skills. Humayun suffered a defeat in which 7000 Mughal nobles and soldiers were killed and Humayun himself had to flee.

**Battle of Kanauj (1540):** This battle was won by Sher Khan and Humayun’s army was completely routed, and he became a prince without a kingdom.
Sher Shah and Sur Dynasty:

- From the time Humayun abandoned the throne in the Battle of Kanauj to his regaining of power in 1555 Delhi was ruled by Sher Shah of the Sur Dynasty.
- Born in the family of a Jagirdar and named as Farid, he received the title of Sher Khan after killing a tiger (sher in Hindi). When he ascended the throne, he was called Sher Shah.
- Through his ability and efficiency, he emerged as the chief of Afghans in India
- Sher Shah was succeeded by his second son Islam Shah who ruled till 1553. His death at a young age led to a state of confusion about succession. Humayun used this opportunity to regain Delhi and Agra from the Sur rulers.

Emperor Akbar (1556–1605):

At the age of 13 years, Akbar became the Mughal emperor. For the initial few years, Maham Anga helped him in administration and this is known as Petticoat Government, but later started ruling all by himself. Akbar was known for four of his great policies.

1. Religious Policy:-
   - Respected all religion and abolished Jizya, a tax imposed on non-Muslims.
   - In 1572 he also constructed Ibadat Khana, at Fatehpur Sikri, for religious discussions.
   - Proclaimed Din-i-Illahi in 1582

2. Rajput Policy:-
   - Through discussions he solved problems with Rajput.
   - Some of them even entered in matrimonial alliance.

3. Expansionist Policy-
   - From 1556-1605, he was continuously involved in territorial expansion.

4. Administration:-
   - Considered as the real founder of Mughal administration, Art, Culture etc.
   - Introduced Jagirdari system - collection of the revenue of an estate and the power of governing it were bestowed upon an official of the state.
   - Also introduced Mahalwari system- Mahal refers to an estate with many cultivators. The term Mahal referred to the fiscal unit / revenue division into which the whole land was divided by Akbar.
In his last days there were some problems between Akbar and his son Salim (also known as Jahangir).

After the death of Akbar, his son Jahangir (original name was Salim) became the next ruler. It was during his reign, Guru Arjan Dev was executed by Mughal Army for providing shelter to Khusrau, (his son) who revolted against him. In 1611 Salim married Mehr-ul-Nisa (also known by the name Nur Jahan). Jahangir was not an able ruler like his father. Most of the administrative activities were done by his wife. After his death in 1627, his son Khuram (also known by the name 'Shah Jahan') became the next ruler.

Shah Jahan’s ruling period is known as the Golden age of Medieval India because of

1. Very high economic prosperity and
2. Development in art and culture

He ruled from his capital Shah Jahanabad, which had Jama Masjid, Red Fort and famous Chandini Chowk. In 1612, he married Arjumand Banu Begum, who became famous as Mumtaz Mahal later. He also built a Peacock Throne and he is also known as ‘architect king’. In 1658 he was imprisoned by his son Aurangzeb and finally died in 1666.

In 1658 Aurangzeb came in power by imprisoning his father Shah Jahan. The religious and Rajput policies of Akbar were reversed by him. In 1678 he reintroduced Jizya (a tax on Non-Muslim) and went against Rajput using military. Maratha region also revolted during this time under Shivaji. He was an expansionist and it was under his reign Mughal Empire reached its peak in terms of area. After his death in 1707, other rulers (later Mughals) were not that efficient and powerful. As a result a lot of people came into power in continuous succession and territorial disintegration also happened during this time.

**Akbar (1556-1605)**
- Akbar built Buland Darwaza, Ibadat Khana at Fatehpur Sikri, Agra Fort, Lahore Palace, Fatehpur Sikri, Allahabad Fort
- Gems of Akbar’s court: Birbal, Tansen, Abdur Rahim Khan-i-Khanan, Mullah do Pyaza, Todar Mal, Abul Fazl, Faizi and Man Singh

**Jahangir (1605-27)**
- Married Nur Jahan (also known as Meh-un-Nisa)
- Guru Arjan Dev was executed at Jahangir’s order
- Wrote Tuzuk-i-Jahangir

**Shah Jahan (1627-1658)**
- Also known as architect king
- He built Taj Mahal in agra, Moti Masjid, Red Fort, Jama Masjid and also Musamman Burz (here he spent his last years in captivity)
- He laid the Shalimar Gardens in Lahore

**Aurangzeb (1658-1707)**
- Assumed the title of Alamgir
- Jizya was reintroduced
- 9th Sikh Guru Teg Bahadur was executed during his reign
- Moti Masjid was built by him
- Compiled Fatwa-i-Alamgiri and ended the celebration of Navroz festival
Maratha presence was there in medieval history, but most of them split and they were in different groups, sometime fighting against each other and sometimes on the same side. As a result a unity was absent. Shivaji born in 1627, obtained Jagir of Poona from his father.

Shivaji now started raiding territories of Bhaminis (especially Bijapur ruler) and Mughals. Shivaji also killed Afzal Khan, who was deputed by Adil Shah (Bijapur ruler) to kill Shivaji.

In 1664 as part of territorial expansion Shivaji attacked Surat, a very important Mughal port, but was defeated by the army sent by Aurangzeb under Jaisingh in 1665. This defeat resulted in Treaty of Purandhar (1665). He continued his territorial expansion and captured southern areas up to Tanjore. Later he died in 1680.
Shivaji’s Administration:

1. **Ashtapradhan:** There were eight most important ministers and most powerful of them was known as Peshwa.

2. **Chauth and Sardeshmukhi:** They were taxes levied on territories outside Maratha, to avoid frequent raid or attack by Marathas.

Sambaji (Shivaji’s elder son) and Shahuji (Sambaji’s son) were imprisoned by Aurangzeb and hence Raja Ram (Shivaji’s younger son) became the next ruler. He took Marathas to a new height, but in 1700 he died and from then till 1707, Tarabai (Raja Ram’s wife) ruled. Later when Shahuji was released by Bahadur Shah, he went to Tarabai asking for his state which she rejected and this led to the battle of Khed and Shahuji won this war. Balaji Viswanath (the 1st Peshwa) helped Shahuji in war and eventually Shahuji succeeded Raja Ram.

From here onwards, power would start shifting to Peshwa, even though ruler was also there. Important Peshwas are listed down.

1. Balaji Vishwanath (1713-20)
2. Baji Rao I (1720-40)
3. Balaji Baji Rao (1740-61)

After the defeat in the Third battle of Panipat in 1761, against Ahmad Shah Abdali, Maratha power decreased drastically and their decline started. Maratha Empire almost came to an end after the defeat in the third Anglo-Maratha wars.
MODERN INDIA

POST AURANGZEB ERA (1707-1857)

After the death of Aurangzeb in 1707, Mughal Empire declined. Later Mughals (Mughal rulers after Aurangzeb) were weak and didn’t have good administrative skills. As a result, many rulers came to power in quick succession with a very few exceptions and many parts of the empire started declaring independence. These areas, though now controlled by local rulers, they symbolically considered Mughal ruler as their supreme head.

Important Later Mughal Rulers:-

1. Bahadur Shah (1707-12)
   - Also known as Muazzam and he followed a pacifist policy
   - Assumed the title of Shah Alam I and made peace with Guru Gobind Singh
   - Released Shahu and Granted Sardesh Mukhi to Marathas

2. Jahandar Shah (1712-12)
   - Came into power with the help of Zulfiquar Kahn
   - Abolished Jiziya and later was defeated by Farrukh Siyar

3. Farrukh Siyar (1713-19)
   - Came into power with the help of Sayyid Brothers (Abdullah Khan and Hussain Ali Khan)
   - During his time, Banda Bahadur was captured and executed
   - He was killed by Sayyid brothers

4. Mohammad Shah (1719-48)
   - His real name was Roshan Akthar, but was nick named as ‘Rangeela’
   - Nadir Shah invaded India when he was ruling and took away Koh-i-noor and Peacock throne
   - In 1722, his Wazir, Nizam-ul-mulk quit the job and marched to the Deccan to found the state of Hyderabad

5. Ahmed Shah Bahadur (1748-54)
   - He was a very weak ruler and couldn’t control his vast army, territorial disintegration continued in his time and by the end Empire reduced in size
   - Ahmed Shah Abdali marched towards Delhi

6. Alamgir (1754-59)
   - During his reign, Delhi was plundered by Ahmed Shah Abdali and Marathas

7. Shah Alam II (1759-1806)
   - Battle of Buxar was fought during his reign.

8. Akbar Shah II (1806-37)
   - During his time, Mughal ruler became a mere pensioner of British.
   - He sent Raja Ram Mohan Roy to England and later Ram Mohan Roy died in England.
9. Bahadur Shah II (1837-58)
- Last Mughal ruler
- He was the leader of revolt of 1857.
- He was later captured and exiled to Rangoon. He died in Rangoon prison in 1862.

British East India Company (1st Phase):
They got a charter from queen of England in 1600, giving them the sole right to trade with the east. And in the first decade of 17th century, they reached India for trade. Trade with proved highly profitable to them and to increase profit margin further, they started asking for more and more concession from the rulers. They succeeded in getting a royal Farman from Mughal, which gave them the right to trade duty free. In the initial years, there main centre of activity was Bengal. Royal Farman only exempted only company from paying duty and not the employees, who were involved in personal trade. But misusing the provisions, the employees of the company also started evading duty, which later led to building tension between company and the local ruler.

Other than British East India Company, there were other companies too. All these company traded same things, and because of this competition prices of different commodities increased, which in turn decreased the profit margin. And these companies were fighting among each other, to stay on top of the business. To protect the stock from the attack of other company, they started fortifying their company premises. And this was another reason for the escalation of tension between the local rulers and the trading company.

Battle of Plassey:
During the reign of later Mughal rulers, different areas in their territory started claiming independence and Bengal was one such area. After the death of Alivardi Khan of Bengal in 1756, Siraj-ud-daulah became the next Nawab of Bengal in 1756. Siraj-ud-Daulah, asked company to stop fortification, stop involving in political affairs of Bengal and also asked employees, who were involved in personal trades to pay duty. When company refused to do that, Nawab captured and imprisoned British company officials. This later led to the famous battle of Plassey in 1757.

Company army under Robert Clive won this war. Though for a few years, they appointed puppet rulers, later took control of administration completely by 1773, thus starting British rule in India.

Carnatic Wars
Between 1740 and 1760, European wars in which England and France were opponents brought them into conflict in India also. And this led to a series of three wars known as Carnatic Wars. The third Carnatic war ended when the war in Europe ended in 1763, with the treaty of Paris. But as per the terms and conditions of the treaty, French factories in India could no longer be fortified.

Anglo-Mysore Wars
Mysore rulers, initially Hyder Ali and later Tipu Sultan, were acting against the British interest and they were close to French. With French help, they even modernised their army. All this led to a series of four wars between Mysore and British East India Company, known as Anglo-Mysore Wars.

- 1st Anglo-Mysore War (1767-69): ended with Treaty of Madras
- 2nd Anglo-Mysore War (1780-84): Hyder Ali died, but Tipu continued war which later ended with Treaty of Mangalore
- 3rd Anglo-Mysore War (1789-92): Ended with Treaty of Seringapatam
- 4th Anglo-Mysore War (1799): Death of Tipu Sultan. Later the Mysore area was brought under Wodeyar dynasty (the real rulers of Mysore)

Anglo-Maratha Wars
Three wars were fought between Maratha and English.

- 1st Anglo-Maratha War: Ended with Treaty of Salbai
- 2nd Anglo-Maratha War: Result was a decisive British victory
3rd Anglo-Maratha War: Formal end of the Maratha empire and firm establishment of the British East India Company

**Important British Policies in India:**

When British started conquering places in India, they also started imposing new policies here. Important policies are discussed below.

1. **Subsidiary Alliance:-**
   - Introduced by Wellesley in 1798
   - Using this policy they tried to capture territories even without war
   - It was a military alliance and under it, Indian states had to pay an amount to British, for maintaining an army for them in the state. And in return British would protect them from any internal or external threat.
   - But if the Indian state fail to pay, British would annex a part of Indian state’s territory
   - First state to sign subsidiary alliance with British was the state of Hyderabad.

2. **Doctrine of Lapse:-**
   - Also known as Doctrine without any morality.
   - It was introduced in 1848 by Lord Dalhousie
   - It gave British, the right to annex any Indian state to its territory, if the ruler of that state dies without a natural successor

British felt that investment in land had to be encouraged and agriculture had to be improved. For this, they introduced 3 systems Zamindari, Ryotwari, and Mahalwari systems

<table>
<thead>
<tr>
<th>Land Tenure System</th>
<th>Location</th>
<th>Features</th>
</tr>
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</table>
| Permanent Settlement   | Bengal, Bihar                       | • Introduced by Cornwallis  
| (1793)                 |                                    | • Tax amount was fixed permanently and not to be increased in the future  
|                        |                                    | • Zamindars collected tax  
|                        |                                    | • Very exploitative and British didn’t implement in any other parts of India |
| Ryotwari (1820)        | Madras, Bombay, Assam               | • By Thomas Munro  
|                        |                                    | • Company directly collected tax from farmers                             |
| Mahalwari (1822)       | Gangetic valley, Punjab, North-west provinces and some part of central India | • Introduced by Holt Mackenzie  
|                        |                                    | • Village headman was made responsible for tax collection               |

**REVOLT OF 1857**

V. D. Savarkar in 1907 wrote a book on ‘Indian war of independence’ and mentioned revolt of 1857 as the **First war of independence**.

**Causes of Revolt:-**

1. **Economic Causes:-**
   - All sections of the society was negatively affected by British economic policies
   - **Peasants:** Huge taxation, money lenders, and complex judiciary led to the exploitation of this group. Disguised unemployment was very high here.
   - **Artisans:** British economic policy was aimed at de-industrialisation in India. And in this process many artisans lost their job and they had to move to agriculture sector or to some other areas, where already unemployment was pretty high. When they shifted, situation worsened.

2. **Socio Cultural Changes:-**
   - The British believed that Indian society had to be reformed.
➢ Laws were passed to stop the practice of sati and to encourage the remarriage of widows.
➢ English-language education was actively promoted.
➢ After 1830, the Company allowed Christian missionaries to function freely in its domain and even own land and property.
➢ In 1850s, a new law was passed to make conversion to Christianity easier. This law allowed an Indian who had converted to Christianity to inherit the property of his ancestors.

- Many Indians began to feel that the British were destroying their religion, their social customs and their traditional way of life. There were of course other Indians who wanted to change existing social practices.

3. Military Causes:
- Racial brutality/ Maltreatment of Indian military personals by British officers
- Discrimination in pay and promotion
- Bad service conditions: caste and other rituals were prohibited in Army

4. Political Causes:
- Kings, queens, peasants, landlords, tribals, and soldiers were all affected in different ways by the British policies. Since the mid-eighteenth century, nawabs and rajas had seen their power erode. They had gradually lost their authority and honour
- Many ruling families tried to negotiate with the Company to protect their interests. For example, Rani Lakshmi Bai of Jhansi wanted the Company to recognise her adopted son as the heir to the kingdom after the death of her husband and Nana Saheb, the adopted son of Peshwa Baji Rao II, pleaded that he be given his father's pension when the latter died
- Awadh was one of the last territories to be annexed. In 1801, a subsidiary alliance was imposed on Awadh, and in 1856 it was taken over. Governor-General Dalhousie declared that the territory was being misgoverned and British rule was needed to ensure proper administration
- In 1849, Governor-General Dalhousie announced that after the death of Bahadur Shah Zafar, the family of the king would be shifted out of the Red Fort and given another place in Delhi to reside in.
- In 1856, Governor-General Canning decided that Bahadur Shah Zafar would be the last Mughal king and after his death none of his descendants would be recognised as kings – they would just be called princes

5. Immediate Cause:
- A rumour spread that the newly introduced Enfield rifle's cartridge was manufactured using cow and pig fat and usage of this cow and pig fat was against the religious ideologies of Hindus and Muslims.

A Mutiny Becomes a Popular Rebellion:
- A very large number of people begin to believe that they have a common enemy and rise up against the enemy at the same time. Such a situation developed in the northern parts of India in 1857.
- After a hundred years of conquest and administration, the English East India Company faced a massive rebellion that started in May 1857 and threatened the Company's very presence in India. Sepoys mutinied in several places beginning from Meerut and a large number of people from different sections of society rose up in rebellion.

From Meerut to Delhi:
On 29 March 1857, a young soldier, Mangal Pandey, was hanged to death for attacking his officers in Barrackpore
On 9th May 1857 some sepoys of the regiment at Meerut refused to do the army drill using the new cartridges, which were suspected of being coated with the fat of cows and pigs. Eighty-five sepoys were dismissed from service and sentenced to ten years in jail for disobeying their officers.

On 10 May, the soldiers marched to the jail in Meerut and released the imprisoned sepoys. They attacked and killed British officers. They captured guns and ammunition and set fire to the buildings and properties of the British and declared war on the firangis.

The sepoys of Meerut rode all night of 10 May to reach Delhi in the early hours next morning. The emperor was not quite willing to challenge the mighty British power but the soldiers persisted. They forced their way into the palace and proclaimed Bahadur Shah Zafar as their leader.

- Bahadur Shah Zafar wrote letters to all the chiefs and rulers of the country to come forward and organise a confederacy of Indian states to fight the British. Threatened by the expansion of British rule, many of the smaller rulers felt that if the Mughal emperor could rule again, they too would be able to rule their own territories once more, under Mughal authority. The British had not expected this to happen.

**The rebellion spreads:**
After the British were routed from Delhi, there was no uprising for almost a week. It took that much time for news to travel. Then, a spurt of mutinies began. Regiment after regiment mutinied. People of the towns and villages also rose up in rebellion and rallied around local leaders, zamindars and chiefs who were prepared to establish their authority and fight the British.

- **Nana Saheb**, the adopted son of the late Peshwa Baji Rao who lived near Kanpur, gathered armed forces and expelled the British garrison from the city. He proclaimed himself Peshwa and declared that he was a governor under Emperor Bahadur Shah Zafar.
- In Lucknow, Birjis Qadr, the son of the deposed Nawab Wajid Ali Shah, was proclaimed the new Nawab. He too acknowledged the suzerainty of Bahadur Shah Zafar. His mother Begum Hazrat Mahal took an active part in organising the uprising against the British.
- In Jhansi, Rani Lakshmibai joined the rebel sepoys and fought the British along with Tantia Tope, the general of Nana Saheb.

The British were defeated in a number of battles. This convinced the people that the rule of the British had collapsed for good and gave them the confidence to take the plunge and join the rebellion. A situation of widespread popular rebellion developed in the region of Awadh in particular. Many new leaders came up. For example,

1. **Ahmadullah Shah**, a maulvi from Faizabad, prophesied that the rule of the British would come to an end soon. He caught the imagination of the people and raised a huge force of supporters.
2. **Bakht Khan**, a soldier from Bareilly, took charge of a large force of fighters who came to Delhi. He became a key military leader of the rebellion.
3. In Bihar, an old zamindar, Kunwar Singh, joined the rebel Sepoys and battled with the British for many months.

**The company fights back:**
The Company decided to repress the revolt with all its might. It brought reinforcements from England, passed new laws so that the rebels could be convicted with ease, and then moved into the storm centres of the revolt.

- **Delhi** was recaptured from the rebel forces in September 1857. The last Mughal emperor, Bahadur Shah Zafar was tried in court and sentenced to life imprisonment. His sons were shot dead before his eyes. He and his wife Begum Zinat Mahal were sent to prison in Rangoon in October 1858. Bahadur Shah Zafar died in the Rangoon jail in November 1862.
- Lucknow was taken in March 1858.
- Rani Lakshmibai was defeated and killed in June 1858.
• Tantia Tope escaped to the jungles of central India and continued to fight a guerrilla war with the support of many tribal and peasant leaders. He was captured, tried and killed in April 1859.

Aftermath:
After the revolt of 1857, British introduced many changes and some of them are discussed below:

1. The British Parliament passed a new Act in 1858 and transferred the powers of the East India Company to the British Crown.
   - A member of the British Cabinet was appointed Secretary of State for India and made responsible for all matters related to the governance of India.
   - He was given a council to advise him, called the India Council.
   - The Governor-General of India was given the title of Viceroy, that is, a personal representative of the Crown.

2. All ruling chiefs of the country were assured that their territory would never be annexed in future. They were allowed to pass on their kingdoms to their heirs, including adopted sons. However, they were made to acknowledge the British Queen as their Sovereign Paramount. Thus the Indian rulers were to hold their kingdoms as subordinates of the British Crown.

3. It was decided that the proportion of Indian soldiers in the army would be reduced and the number of European soldiers would be increased. It was also decided that instead of recruiting soldiers from Awadh, Bihar, central India and south India, more soldiers would be recruited from among the Gurkhas, Sikhs and Pathans.

4. The land and property of Muslims was confiscated on a large scale and they were treated with suspicion and hostility. The British believed that they were responsible for the rebellion in a big way.

5. The British decided to respect the customary religious and social practices of the people in India.

6. Policies were made to protect landlords and Zamindars and give them security of rights over their lands.

Thus a new phase of history began after 1857.

RENAISSANCE

This includes the reforms happened in Indian society in the 19th century. Raja Ram Mohan Roy is considered as the Father of Indian Renaissance.

All the educated Indians of early 19th century, believed that British rule was good for India and hence they never went angst British. Only after the First War of Independence, they realised that they were wrong and decided to act against British. But for mass resistance against British was possible only when there is a common uniting factor i.e. ‘Nationalism’. But the socio-religious and other practices present during that time didn’t allow that. Hence they decided to modernise the society by going for socio-religious reforms. And this is what happened during renaissance.

Social Reforms and Reformers:-

Raja Ram Mohan Roy
• Started Atmiya Sabha in 1814 and Brahma Sabha in 1828. Also established Vedanta college in 1825
• Succeeded in persuading Lord Bentick to abolish ‘Sati’ in 1829
• Wrote ‘A gift to Monotheists’

Arya Samaj
• Set up in 1875 by Swami Dayanand Saraswati in Bombay
• Opposed untouchability, child marriage, and caste discrimination

Ram Krishna Paramhansa
• Was a supporter of Advaita
- Socio-religious reformer from Bengal
- Thought of attaining salvation through yoga, meditation, and devotion.
- He said, all religions are different roads to the same destination.

Swami Vivekananda
- He was a disciple of Rama Krishna Paramahansa
- Attended the World Parliament of Religions held at Chicago in 1893
- Started Rama Krishna Math in 1887 and Rama Krishna Mission in 1897
- Sister Nivedita was his disciple.

Sree Narayana Guru
- Established Sree Narayana Dharma Paripalana Yogam (SNDP) in 1902
- He gave the slogan of “One Caste, One Religion and One God for mankind”

E. V. Ramasamy Naicker
- Took steps to uplift lower caste and started ‘Self-respect movement’
- He believed that old manuscripts were the root cause of all social injustice and hence he asked to ‘Burn Manusmriti’

Theosophical Society
- Formed in 1875 by Madam Blavatsky and Colonel Olcott in USA
- Head Quarter was later shifted to Adyar, Madras.
- Annie Besant was a very famous theosophist

PERIOD OF MODERATES (1885-1905)
In 1885, 72 men met in Bombay under A O Hume and this was the 1st All India Organization known as Indian National Congress (INC). W. C. Banerjee presided over INC’s founding session. Promotion and consolidation of Nation making & the Establishment of secular and democratic nation, were the primary objectives of INC.

Important INC Sessions:

<table>
<thead>
<tr>
<th>Year</th>
<th>Place</th>
<th>President</th>
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<tbody>
<tr>
<td>1885</td>
<td>Bombay</td>
<td>W. C. Banerjee</td>
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<tr>
<td>1886</td>
<td>Kolkata</td>
<td>Dadabhai Naoroji (1st president from minority)</td>
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<tr>
<td>1887</td>
<td>Madras</td>
<td>Badruddin Tyabji (1st Muslim president)</td>
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<tr>
<td>1888</td>
<td>Allahabad</td>
<td>George Yule (1st English president)</td>
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<tr>
<td>1905</td>
<td>Banaras</td>
<td>G K Gokhale</td>
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<tr>
<td>1906</td>
<td>Kolkata</td>
<td>Dadabhai Naoroji</td>
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<tr>
<td>1907</td>
<td>Surat</td>
<td>Rashbihari Ghosh (split in congress)</td>
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<tr>
<td>1916</td>
<td>Lucknow</td>
<td>A C Mazumdar (reunion of moderates &amp; extremists)</td>
</tr>
<tr>
<td>1917</td>
<td>Kolkata</td>
<td>Annie Besant (1st woman president)</td>
</tr>
<tr>
<td>1920</td>
<td>Nagpur</td>
<td>Lala Lajpat Rai (1st constitution for congress was drafted under the direction of M K Gandhi)</td>
</tr>
<tr>
<td>1922</td>
<td>Gaya</td>
<td>D C Das</td>
</tr>
<tr>
<td>1924</td>
<td>Belgaum</td>
<td>M K Gandhi</td>
</tr>
<tr>
<td>1925</td>
<td>Kanpur</td>
<td>Sarojini Naidu (1st Indian woman president)</td>
</tr>
<tr>
<td>1929</td>
<td>Lahore</td>
<td>Jawaharlal Nehru (Poorna Swaraj declaration)</td>
</tr>
<tr>
<td>1931</td>
<td>Karachi</td>
<td>Vallabhbbhai Patel (Passing of resolution on Fundamental Rights)</td>
</tr>
<tr>
<td>1936</td>
<td>Lucknow</td>
<td>Jawaharlal Nehru</td>
</tr>
<tr>
<td>1937</td>
<td>Faizpur</td>
<td>Jawaharlal Nehru</td>
</tr>
<tr>
<td>1938</td>
<td>Haripura</td>
<td>Subhas Chandra Bose</td>
</tr>
<tr>
<td>1939</td>
<td>Tripuri</td>
<td>Subhas Chandra Bose (resigned) Rajendra Prasad replaced Bose</td>
</tr>
<tr>
<td>1947</td>
<td>Meerut</td>
<td>J B Kripalani</td>
</tr>
</tbody>
</table>
**Important Events:**

- Drain of wealth theory was proposed, which showed how British is destroying India by taking our wealth to England.
- Indian Council Act of 1892, didn’t give enough powers to Indian and in protest of this, INC came up with the slogan of *'No taxation without representation'.*
- Moderates adopted methods like, Petition, Prayer, and Protest (*3Ps*) to get their demand done.

**PERIOD OF RADICAL NATIONALISTS (1905-15)**

**Important Events:**

- A group of people in INC was not convinced by the way INC protested, later this group formed extremists.
- **Bengal Partition:** In 1905 British announced their plan of dividing Bengal. Official explanation said, it was for administrative convenience but other understood that it was part of Britain's divide and rule policy. In protest of this Swadeshi movement started in 1905. And later in October 1905, when partition took place, people went for hartal, tied rakhi, and sang 'Vande mataram' to show their unity. And as a part of Swadeshi movement, people boycott British goods and English education. And India witnessed a revival of vernacular literary activity.
- **Split in Congress:** Extremists wanted to extend Swadeshi Movement throughout India and continue boycotting British goods. But moderates in INC, rejected this proposal which led to the Split in INC in its 1907 Surat session. After split most of the extremist leaders were arrested on the charges of sedition. But after the suppression of extremists, **1st phase of Revolutionary Terrorism** emerged in India.
- **1909:** Morley-Minto reform

**Reasons for the rise of Revolutionary Terrorism:**

1. Realisation of the true nature of the British rule
2. Growth of education
3. Reaction against westernisation
4. International development
5. Failure of moderates and extremists

First revolutionary act started in Maharashtra, among the Chitpavan Brahmins. They felt that they lost their ruling power because of British and adopted a revolutionary terrorist way under the leadership of **Tilak.** He published two journals **Kesari** (in Marathi) and **Maratha** (in English).

Other acts of Revolutionary Terrorism include,

1. Chapekar brothers tried to kill Rand, a British officer, but instead killed Lt. Ayerst
2. V D Savarkar in 1904, started Abhinav Bharat, to provide physical training to youngsters
3. In 1902, Anusilan Samiti by Pramod Mitra was started
4. Formation of Ghadar party in USA.

**GANDHIAN ERA (1915-47)**

After coming from South Africa in 1915, he started Sabarmati Ashram. His resistance against British administration started with Champaran Satyagraha, Ahmedabad Textile Mill works strike, and Kheda Satyagraha. And success of all these Satyagraha showed his ability to lead masses.

**Formation of Muslim League and Reunification of Moderates & Extremists:**

After Bengal partition, Muslim leaders had gone to Shimla to meet Governor General and ask for some concessions including a separate electorate for Muslims. After their return to Dacca, they formed **Muslim League.** League and INC worked separately.
In 1916, Lucknow session of INC, two important things happened.

1. Lucknow Pact: INC and League decided to put forward joint demands before British, for Constitutional reforms. They demanded an expansion of Legislative council and to include more Indians in Viceroy's executive council.

2. Reunification of Moderates and Extremists: Annie Besant played a huge role in this process. Issues based on which split occur, became irrelevant by that time and moderate leaders who refused reunification (G K Gokhale and Firozshah Mehta) died. Moreover they realised that it was actually British who benefited from the split.

Jallianwala Bagh massacre:-

1916 Lucknow session of INC supported British during World War II, because they believed that British would give independence to India after WWII. But British introduced harsh measures like Rowlatt Act in 1919. Due to violence in Punjab province, two Sikh leaders were arrested in March 1919, and after a few days, on 13th April 1919, a large crowd assembled in the Jallianwala bagh. Some people were protesting and others were celebrating Baisakhi Festival. Hearing this news General Dyer ordered to fire on the crowd to supress the protest and many died there itself. In protest Rabindranath Tagore, returned his Knighthood.

Home Rule Movement:-

Two main leaders were Tilak and Annie Besant. M K Gandhi never took part in this movement. Aim of this movement was to put pressure on British to grant self-rule in India during WWI. There method of agitation included Processions, meetings, pamphlet distribution and reading them in gatherings etc. But Home Rule Movement died within one year itself, because of the severe suppression by British and the movement lost its leaders (Annie was under house arrest and Tilak had to go to England regarding a case).

Khilafat and Non Cooperation Movement:-

After WWII, Turkey ruler was removed from power and British and other countries took control of Turkey. But Caliph (ruler of Turkey) was considered as the leader of Muslim religion. And after this incident, Muslims all over the world started protesting, and in India this protest was known as Khilafat Movement. In India this was started by Ali brothers. M K Gandhi proposed that they should use Satyagraha form of protest and they could include other demands of INC and could protest together under a common umbrella known as Non-Cooperation Movement (NCM).

Gandhi said as a result of NCM, we would achieve 3 main objectives

1. Swaraj within one year
2. Khilaft issue will be resolved and
3. Punjab issue will also be resolved

NCM was launched on 1st August 1920 and the same day Tilak died. Gandhi had decided to go for agitation in two phases, (1) NCM and (2) Civil Disobedience Movement (CDM).

So the first phase of peaceful agitation was launched on 1st Aug 1920 and as part of that Indian decided to do following things.

1. Boycott British goods, Schools, and Colleges
2. Masses resigned from British Govt. jobs
3. Constructive programmes were also part of NCM. For example
   a. Promotion of Hindu-Muslim unity
   b. Abolition of untouchability
   c. Promotion of Khadi

First phase was a huge success and Gandhi was about to go for 2nd phase (CDM) at Bardoli in February 1922. It was at that time Chauri-Chaura Incident occur and Gandhi suspended CDM. Taking the moral responsibility, Gandhi went to jail for 6 years.
Revolutionary Terrorism II:-

Some people thought that Gandhi’s method failed, hence we should go along revolutionary path to get what we need. In 1924, at Kanpur, Sachin Sanyal, Ram Prasad Bismil and many others assembled and formed **Hindustan Republican Association (HRA)**. Their aim was to overthrow British through revolution. They planned and executed Kakori robbery in 1925. Understanding the threat from HRA, British arrested many people and hanged some leaders.

After a few years, in 1928, many revolutionists assembled in Feroz Shah Kotla and pledged to revive HRA and changed the name of the organisation to **HSRA (Hindustan Socialist Republican Association)**. HSRA’s aims were,

1. Establish a united state of secular republic of India
2. They stood for egalitarian society
3. Decided to give up individual heroic actions (which they had to change within a few months)

In 1927, British appointed Simon commission to recommend to the Govt. whether India was ready for further Constitutional Reforms and on what lines. There was not a single Indian in that commission, and hence all over India protest was going on. During one such protest in Lahore, Lala Lajpat Rai died during a lathicharge.

To take revenge, HSRA decided to move away from their decision of not to go for heroic action. A team of Bhagat Singh, Azad and Raj Guru, killed Saunders (ASP of Lahore). British started arresting innocent people and People started saying against revolutionaries, that they were coward that’s why hiding and we were suffering for their actions. HSRA decided to go open, get public attention and make a point that they were not coward and whatever they were doing is for the same public. And this led to the Bomb attack in the Central Legislative Assembly by Bhagat Singh and Batukeshwar Dutt. Bombs were made just to make noise and not to kill anyone and they said this was ‘to make deaf hear’.

Under Lahore Conspiracy Case (an umbrella case), British arrested many people and hanged Bhagat Singh, Raj Guru and Sukh Dev on **23rd March 1931**. Other revolutionaries were also suppressed, arrested, or killed (including Chandra Sekhar Azad).

**Nehru Committee:-**

Indians protested Simon Commission at two levels.

1. By Anti-Simon agitation
2. By forming Nehru Committee: under Motilal Nehru they drafted a constitution.

In 1928, Kolkata session, INC wanted to discuss and ratify the Nehru Committee Report. Some of the recommendations of certain communal parties couldn’t be included in this report and they boycott session. From here communal issues started strengthening and it finally ended with the partition of India.

**Civil Disobedience Movement (CDM) and Round Table Conference (RTC):-**

In 1929, Lahore session of INC, which was presided over by Jawaharlal Nehru, declared two things.

1. INC’s aim is Poorna Swaraj; also decided to celebrate January 26th as independence day
2. To get Poorna Swaraj, INC decided to launch CDM: as part of CDM, they 1st decided to boycott Round Table Conference

INC gave the responsibility of launching CDM to M K Gandhi. Gandhi wrote a letter to Lord Irwin, with his famous **11 point demand** and also informed that he was going to launch CDM with a Salt march from Sabarmati to Dandi (**Dandi March**). Many arrested during this protest.

**1st Round Table Conference (RTC) in 1930**, in the absence of INC, was a failure and understanding that no settlement was possible in the absence of INC, they decided to act friendly towards INC, and as a first step, released all the prisoners including Gandhi 1931. An agreement was reached between INC and Irwin with
Gandhi Irwin Pact of 1931. Gandhi has asked Irwin to suspend the death sentence of 3 revolutionaries (Raj Guru, Sukh Dev, and Bhagat Singh) but Irwin didn't agree for that. There was a mass protest against Gandhi because people believed that Gandhi didn’t try enough to save those 3 revolutionaries. Gandhi suspended CDM and went to attend 2nd Round Table Conference. But 2nd RTC was a failure and he relaunched CDM in 1932. British arrested everyone and suppressed completely.

In August 1932, British Prime Minister announced communal awards, also known as Ramsay Macdonald award. Under this British, depressed classes were granted separate electorates. But Gandhi was totally against this, and with B R Ambedkar, he signed an agreement known as Poona Pact of 1932, which promised some special treatment to depressed classes. In 3rd RTC, also INC didn’t participate. In 1934, Gandhi withdrew CDM and resigned Congress saying, he could serve congress much more from outside. And started working for the backward class, whom he called 'harijan'.

British released white paper, which had the gist of all the 3 RTCs, and later with some modification, released it as Government of India Act of 1935. Provincial autonomy was given under this and after winning the elections, Indians themselves started ruling different provinces. But later when British declared that India supported British in World War II, in a protest, the members of the provincial legislative assemblies resigned.

There were no main all India movement during 1934-41 because Gandhi supported British against Nazism. Because he thought Nazism and Fascism were greater threat than imperialism and capitalism.

In 1940 INC’s Wardha session, they demanded two things
1. Declare British war aims
2. Genuine transfer of power to Indians

They were of the view that if British fulfil the above demands, India could support British in WWII. As a British response, Lord Linlithgow proposed August Offer of 1940. Provisions of August offer is shown below.

1. Dominion status the aim of British Govt. in India
2. Formation of Constituent assembly after WWII
3. Any such Constitution prepared by this Constituent assembly won’t be accepted by British if it doesn’t have minority support.

But INC rejected August Offer. To fight against the suspension of Press freedom, Individual Satyagraha was started. This was a limited protest.

By early 1942, Japan was about to attack British in India and capture it. To get Indian support, British sent Cripps Mission to India in 1942. Cripps Proposal included:

1. Dominion status to India
2. A Constituent assembly after WWII
3. Any province in India which rejects the newly drafted constitution, can have a separate constitution and union. This was supposed to be a blueprint for Pakistan.

INC rejected Cripps Proposal also. Gandhi described these proposals as “post-dated cheque on a failing bank”. And after the failure of Cripps Mission, we went for Quit India Movement. Reasons for Quit India Movement included,

1. Failure of Cripps Mission
2. War time miseries
3. Scarcity and inflation
4. Racial attitude of British
5. Defence of India against Japan

It was during this time, Gandhi gave the slogan of “Do or Die”. But one day before the launch of this movement, all the leaders were arrested and imprisoned, as a result a leaderless mass started violence, and this was actually
the most violent agitation after the 1857's first war of independence. And within a few months British succeeded in suppressing this movement completely.

**Indian National Army (INA)** also known as **Azad hind Fauj** was started by Mohan Singh in 1942 to help Japan. But because of the problems between Mohan Singh and Japanese Army officials, INA didn’t get a major role.

After a difference of opinion with INC, Subhash Chandra Bose resigned from INC in 1939 and formed **Forward Block** and met world leaders to gain support for India. At Singapore in 1943 he revived INA. It had an exclusive women regiment named Rani Jhansi Regiment headed by Captain Lakshmi Swami Nathan (also known as Capt. Lakshmi Saigal). Bose sought Gandhi's blessings and called M K Gandhi as “**Father of the Nation**”. But INA’s campaign through Imphal was a failure and Japan was also starting losing war. Captured INA members were undergoing trials at Red Fort, when another mutiny known as **Royal Indian Naval Mutiny** started on 18th February 1946. This was an expression of a lot many grievances and ill feelings. Local people also supported mutiny, but on the request of Muhammad Ali Jinnah and S V Patel, they surrendered.

After WWII, by 1946 British proposed **Cabinet Mission Plan**. The mandate was to prepare modalities of transfer of power. They consulted with different communities and then came up with the recommendations. Main recommendations included:

1. Religion can't be the basis for partition
2. Provinces were to be divided into three groups. A,B, and C
3. Provinces to have full autonomy
4. A common central Govt. to look after defence, external affairs, and communication
5. Three tier legislature and executive
6. A constitutional assembly to be formed comprising British India and the Indian states
7. An interim Govt. to be formed till the constitution was drafted.

After a few days, Muslim League rejected the Cabinet Mission plan and announced **Direct Action Day agitation** on 16th August 1946 to get Pakistan through violent action. Violence started in many parts of India. On 9th December 1946, the first session of Constituent assembly was held and Rajendra Prasad was chosen as the president of the assembly and Jawaharlal Nehru became the Prime Minister of the interim government.

Clement Attlee announced in February 1947 that, by June 1948, British would leave India. If by that no consensus was arrived at then transfer of power to many centres else to one centre. But later, after having many discussions Lord Mountbatten understood that other than partition, there was no other solution. By June 1947, Mountbatten came up with his very famous **June 3rd Plan**, which said:

1. Transfer of power would take place by 15th August
2. Boundary commission was to be headed by Radcliffe
3. Sindh assembly members were to decide whether to join India or Pakistan.
4. People of North-West Frontier Provinces and Assam could decide whether to join India or Pakistan through a referendum.

And thus on 15th August 1947, India got long fought independence.
**Constitution** is the fundamental law of the land. It contains a set of rules, according to which the state is governed.

**Constituent Assembly:**

- It was M N Roy, who put forward the idea of the Constituent Assembly for the first time.
- In 1935, the Indian National Congress, officially demanded a Constituent Assembly to frame the Constitution of India.
- The concept of Constituent Assembly was included in August offer of 1940, Cripps proposal of 1942 and the Cabinet Mission Plan of 1946.
- In November 1946, Constituent Assembly was constituted as per the Cabinet Mission Plan. Constituent Assembly was a partly elected and partly nominated body.
- Dr. Sachchidanand Sinha, the oldest member of the Assembly was elected as the temporary President and later Dr. Rajendra Prasad was elected as the President. Sir B N Rau was appointed as the Constitutional advisor to the Assembly.
- In December 1946, Jawaharlal Nehru moved the ‘Objective Resolution' in the Assembly. Its modified version forms the Preamble of the Indian Constitution.
- To deal with the different tasks of Constitution making, Constituent Assembly appointed different committees.

**Name of the important Committee** | **Chairman**
---|---
Union Powers Committee | Jawaharlal Nehru
Drafting Committee | Dr. B R Ambedkar
Committee on the Functions of the Constituent Assembly | G V Mavalankar

**Enactment of the Constitution:**

- The Constitution Assembly adopted the Constitution of India on 26th November 1949
- Constitution of India came into force on 26th January 1950.
- Indian National Congress celebrated Purna Swaraj day on 26th January 1930. To commemorate this incident, Constituent Assembly chose 26th January as the date of enactment of the Constitution.

**Salient Features of the Constitution of India:**

I. Lengthiest written Constitution
II. Drawn various sources: The Constitution of India has borrowed many of its features from the various Constitutions of the world

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Source</th>
<th>Features Borrowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Govt. of India Act - 1935</td>
<td>Federal Scheme, Office of Governor, Public Service Commissions</td>
</tr>
<tr>
<td>2</td>
<td>British Constitution</td>
<td>Rule of Law, Parliamentary form of Govt., Single Citizenship, Bicameralism, Legislative procedure, Cabinet System, Prerogative writ</td>
</tr>
<tr>
<td>3</td>
<td>US Constitution</td>
<td>Judicial review, Fundamental rights, Office of Vice-President, Independence of Judiciary, Impeachment of the President, Removal of Supreme Court and High Court judges</td>
</tr>
<tr>
<td>4</td>
<td>Canadian Constitution</td>
<td>Federation with a strong centre, Vesting of residuary powers in the Centre, Advisory jurisdiction of the Supreme Court</td>
</tr>
<tr>
<td>5</td>
<td>Australian Constitution</td>
<td>Concurrent List, Joint sitting of the two houses of the Parliament</td>
</tr>
<tr>
<td>6</td>
<td>French Constitution</td>
<td>Ideals of Liberty, Equality and Fraternity, Republic</td>
</tr>
<tr>
<td>7</td>
<td>Japanese Constitution</td>
<td>Procedure established by Law</td>
</tr>
<tr>
<td>8</td>
<td>Soviet Constitution</td>
<td>Fundamental duties, Ideals of Justice (Social, Economic and Political) in Preamble</td>
</tr>
<tr>
<td>9</td>
<td>South African Constitution</td>
<td>Election of members of Rajya Sabha, Procedure for amendment of the constitution</td>
</tr>
</tbody>
</table>
III. Federal Structure: This refers to the existence of more than one level of Government. For example, in our country, we have Central Govt. and State Governments.

IV. Parliamentary Form of Government

V. Integrated and Independent Judiciary

VI. Fundamental Rights: These are a set of rights given to citizen, which are fundamental in nature. This is to protect citizen from the absolute exercise of power by the State. There are 6 basic Fundamental Rights and they are
   i. Right to Equality
   ii. Right to Freedom
   iii. Right against exploitation
   iv. Right to Freedom of Religion
   v. Cultural and Educational Rights
   vi. Right to Constitutional Remedies

VII. Directive Principles of State Policy

VIII. Fundamental Duties: These were added as per the 42nd Constitutional Amendment Act of 1976. There are eleven Fundamental Duties mentioned in the Constitution.

IX. Secularism: This means, the State is not promoting any one religion

X. Emergency Provisions: There are 3 types of emergencies
   1. National Emergency (As per Art. 352)
   2. President’s Rule (As per Art. 356 & 365) and
   3. Financial Emergency (As per Art 360)

Preamble of the Indian Constitution:
   - Based on the ‘Objective Resolution’ drafted by Jawaharlal Nehru
   - It has been amended by the 42nd Constitutional Amendment Act (1976), which added three new words (Socialist, Secular, and Integrity)
   - Key concepts in Preamble: Sovereign, Socialist, Secular, Democratic, Republic, Justice, Liberty, Equality, and Fraternity

Schedules of the Indian Constitution:

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Schedule</td>
<td>List of States &amp; Union Territories</td>
</tr>
<tr>
<td>2nd Schedule</td>
<td>Provisions relating to the emoluments, allowances and so on of President, Governors, Chief Justice and Judges of Supreme Court and High Courts, Comptroller and Auditor General of India</td>
</tr>
<tr>
<td>3rd Schedule</td>
<td>Forms of Oath and affirmation</td>
</tr>
<tr>
<td>4th Schedule</td>
<td>Allocation of seats in Rajya Sabha to the states and Union Territories</td>
</tr>
<tr>
<td>5th Schedule</td>
<td>Provisions relating to the administration and control of scheduled areas and scheduled tribes</td>
</tr>
<tr>
<td>6th Schedule</td>
<td>Provisions relating to the administration of tribal areas in the states of Assam, Meghalaya, Tripura, and Mizoram</td>
</tr>
<tr>
<td>7th Schedule</td>
<td>Division of powers between the Union and the states in terms of Union, State and Concurrent lists</td>
</tr>
<tr>
<td>8th Schedule</td>
<td>Languages recognised by the Constitution</td>
</tr>
<tr>
<td>9th Schedule</td>
<td>Acts and orders related to land tenure, land tax, railway, industries</td>
</tr>
<tr>
<td>10th Schedule</td>
<td>Provisions as to disqualification on ground of defection</td>
</tr>
<tr>
<td>11th Schedule</td>
<td>Provisions of Panchayati Raj</td>
</tr>
<tr>
<td>12th Schedule</td>
<td>Provisions of Municipal Corporations</td>
</tr>
</tbody>
</table>
## Parts of the Indian Constitution:

<table>
<thead>
<tr>
<th>Parts</th>
<th>Articles Covered</th>
<th>Subject Matter</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1 to 4</td>
<td>Union and its Territories</td>
</tr>
<tr>
<td>II</td>
<td>5 to 11</td>
<td>Citizenship</td>
</tr>
<tr>
<td>III</td>
<td>12 to 35</td>
<td>Fundamental Rights</td>
</tr>
<tr>
<td>IV</td>
<td>36 to 51</td>
<td>Directive Principles of State Policy</td>
</tr>
<tr>
<td>IV - A</td>
<td>51 - A</td>
<td>Fundamental Duties</td>
</tr>
<tr>
<td>V</td>
<td>52 to 151</td>
<td>The Union Government</td>
</tr>
<tr>
<td>VI</td>
<td>152 to 237</td>
<td>The State Governments</td>
</tr>
<tr>
<td>VII</td>
<td>239 to 242</td>
<td>The Union Territories</td>
</tr>
<tr>
<td>IX</td>
<td>243 to 243 - O</td>
<td>The Panchayats</td>
</tr>
<tr>
<td>IX - A</td>
<td>243 - P to 243 - ZG</td>
<td>The Municipalities</td>
</tr>
<tr>
<td>IX - B</td>
<td>243 - ZH to 243 - ZT</td>
<td>The Co-operative Societies</td>
</tr>
<tr>
<td>X</td>
<td>244 to 244 - A</td>
<td>The Scheduled and Tribal Areas</td>
</tr>
<tr>
<td>XI</td>
<td>245 to 263</td>
<td>Relations between the Union and the States</td>
</tr>
<tr>
<td>XII</td>
<td>264 to 300 - A</td>
<td>Finance, Property, Contracts, and Suits</td>
</tr>
<tr>
<td>XIII</td>
<td>301 to 307</td>
<td>Trade, Commerce and Intercourse within the Territory of India</td>
</tr>
<tr>
<td>XIV</td>
<td>308 to 323</td>
<td>Services under the Union and the States</td>
</tr>
<tr>
<td>XIV - A</td>
<td>323 - A to 323 - B</td>
<td>Tribunals</td>
</tr>
<tr>
<td>XV</td>
<td>324 to 329 - A</td>
<td>Elections</td>
</tr>
<tr>
<td>XVI</td>
<td>330 to 342</td>
<td>Special Provisions relating to Certain Classes</td>
</tr>
<tr>
<td>XVII</td>
<td>343 to 351</td>
<td>Official Language</td>
</tr>
<tr>
<td>XVIII</td>
<td>352 to 360</td>
<td>Emergency Provisions</td>
</tr>
<tr>
<td>XIX</td>
<td>361 to 367</td>
<td>Miscellaneous</td>
</tr>
<tr>
<td>XX</td>
<td>368</td>
<td>Amendment of the Constitution</td>
</tr>
<tr>
<td>XXI</td>
<td>369 to 392</td>
<td>Temporary, Transitional and Special Provisions</td>
</tr>
<tr>
<td>XXII</td>
<td>393 to 395</td>
<td>Short title, Commencement, Authoritative Text in Hindi and Repeals</td>
</tr>
</tbody>
</table>

### Organs of the State

- There are 3 organs of the State: Legislature, Executive, and Judiciary
  - Legislature: They are responsible for making new laws
  - Executive: They implement the laws
  - Judiciary: This include all the court system in the country and they provide justice
Union Executive

- It consists of the President of India, Vice-President, Prime Minister, Council of Ministers, and Attorney General of India

I. President of India

- President of India is the head of the State as well as part of both Union Executive and the Parliament
- Qualification for election as President:
  1. Should be a citizen of India
  2. Should have completed 35 years of age
  3. Should be qualified for election as a member of the Lok Sabha
  4. Shouldn’t hold any office of profit
- Election: Indirectly elected by an electoral college consisting of:
  1. The elected members of both the houses of Parliament
  2. The elected members of the legislative assemblies of the states and,
  3. The elected members of the legislative assemblies of the Union Territories of Delhi and Puducherry
- Term of Office is 5 years
- Impeachment: It is the process of removing the President from his office. And impeachment can be initiated only in the case of ‘violation of the Constitution’
- Important Powers and Functions of the President:
  1. All executive actions of the Govt. of India are taken in his name and he is the Supreme Commander of the defence forces
  2. Appoints the Council of ministers, Attorney General of India, Comptroller and Auditor General of India, Chief Election Commissioner, Chairman and other members of Finance Commission, Chief Justice and other judges of Supreme Court and High Court.
  3. Nominates 12 members to Rajya Sabha from literature, Art, Science, and Social Service; and 2 members to Lok Sabha from Anglo Indian community
  4. President can promulgate ordinance when the Parliament is not in session
  5. Money bill can be introduced in the Parliament only with his prior recommendation
  6. President of India also enjoys 3 types of Veto Power over the bills passed by the Parliament. They are,
     a. Absolute Veto
     b. Suspensive Veto and
     c. Pocket Veto.
  7. President also has 5 types of pardoning powers.
     a. Pardon
     b. Commutation
     c. Remission
     d. Reprieve
- First President of independent India was Dr. Rajendra Prasad
- Mr. Ram Nath Kovind is the 14th and the current President of India

II. Vice-President of India

- Qualification for election as Vice-President:
  1. Should be a citizen of India
  2. Should have completed 35 years of age
  3. Should be qualified for election as a member of the Rajya Sabha
  4. Shouldn’t hold any office of profit
- Election: Indirectly elected by an electoral college consisting of:
  1. Both the elected and nominated members of the Parliament
  2. It doesn’t include the members of the State legislative assemblies
- Term of Office is 5 years
Important Powers and Functions of the Vice-President:

1. Acts as the ex-officio Chairman of Rajya Sabha
2. Acts as President when a vacancy occurs in the office of the President
3. Draws his salary in his capacity as the ex-officio Chairman of the Rajya Sabha

Mr. Venkaiah Naidu is the 13th and the current Vice-President of India

III. Prime Minister and the Council of Ministers

- Prime Minister (PM) is the leader of the party that enjoys a majority in Lok Sabha
- President is the nominal executive head and PM is the real executive head
- PM is appointed by the President of India and all other ministers are appointed by the President on the advice of PM
- President acts on the advice of the council of ministers
- As per the 91st Constitutional Amendment Act of 2003, total strength of the council of ministers should not exceed 15% of the total strength of the Lok Sabha
- Principle of collective Responsibility: This is the foundational principle of Parliamentary form of Govt. This means council of ministers is collectively responsible to the parliament for all their acts.

IV. Attorney General of India

- He is appointed by the President of India and he is also the first law officer of the Govt. of India.
- Qualification: Should be qualified to be appointed as a judge of the Supreme Court
- Advises Govt. of India on all legal matters
- He can participate in the proceedings of the Parliament but can’t vote

Union Legislature or Parliament

- It consists of the two houses (Lok Sabha and Rajya Sabha) and the President of India.

V. Lok Sabha

- Also known as House of people
- Max. Strength=552; Elected representatives from different states=530; Elected representatives from different Union Territories=20; Nomination (Nominated by the President of India) from Anglo Indian Community=2. Except the two nominated members, all other members of Lok Sabha are directly elected by the people. A Lok Sabha member is elected for a maximum of 5 years.
- Speaker is the presiding officer during the Lok Sabha sessions. And Speaker is elected from the members of the Lok Sabha itself.
- Speaker Pro Tem: In the very first session of the newly elected Lok Sabha, the eldest member of LS act as the Speaker Pro Tem. Once the actual speaker is elected, the office of the Speaker Pro Tem automatically cease to exist. Speaker Pro Tem is appointed by the President of India.
- Important Powers and Function:
  1. No confidence motion can be initiated and passed in Lok Sabha
  2. Money and Finance Bill can be introduced only in Lok Sabha
  3. Lok Sabha in a special sitting can disapprove the continuance in force of a national emergency proclaimed by the President. In such case, the president shall revoke the national emergency

- G V Mavalankar is known as the Father of Lok Sabha (conferred by Jawaharlal Nehru) and he was also the 1st Speaker of Lok Sabha
- Meira Kumar was the 1st Woman Speaker of Lok Sabha
- Indian constitution is the longest written constitution in the world
- 42nd Constitutional Amendment Act of 1976 is also known as the mini-constitution
- The offices of the leader of the Houses and the leader of the opposition are not mentioned in the constitution of India
VI. Rajya Sabha

- Also known as Council of State
- Max. Strength=250; Representatives of different states and union territories=238; Nomination (Nominated by the President of India) of eminent scholars from Art, Literature, Science and Social Science=12. No member of Rajya Sabha is directly elected. A Rajya Sabha member is elected for a maximum of 6 years
- Chairman is the presiding officer during the Rajya Sabha sessions. And Vice-President of India is the ex-officio Chairman of the Rajya Sabha.
- **Important Powers and Function:-**
  1. It is a permanent house and not subject to dissolution. One third members of Rajya Sabha retire after every second year.
  2. If Rajya Sabha passes a resolution by a special majority, in national interest Parliament will be empowered to make a law on the subject specified in the resolution, for the whole or any part of the territory of India.
  3. If Rajya Sabha passes a resolution by a special majority that it is necessary in the national interest to create one or more All India Services, then Parliament will be empowered to create by law such a service.

State Executive

- It consists of Governor, state Council of Ministers, and Advocate General

VII. Governor

- He is the nominal head of the state (real power lies with Chief Minister and state council of ministers) and he is appointed by the President of India on the advice of the Union Council of Ministers for a term of 5 years, but he can be removed from the post before the completion of his tenure.
- A person may act as the Governor of two or more states.
- **Important Powers and Functions:-**
  1. Appoints Chief Minister (CM) and other Council of Ministers (on the advice of the CM). Also appoints Advocate General, Chairman and members of the State Public Service Commission, Judges of District Courts.
  2. Acts on the aid and advice of state council of ministers headed by CM.
  3. Governor summons and prorogues the sessions of both the houses of the State Legislature.
  4. Governor has power to reserve certain bills for the consideration of the President.
  5. He can promulgate ordinances, when the state legislature is not in session.
  6. Money bill can be introduced in state legislative assembly only on the prior recommendation of the Governor.
  7. Governor can send a report to the President of India informing him that the State’s Constitutional functioning has been compromised and recommending the president to impose ‘President’s rule’ in the state.

VIII. Chief Minister and State Council of Ministers

- CM is appointed by the Governor and Council of ministers are also appointed by the Governor on the advice of CM
- If a non-elected member is appointed as Minister, he/she has to become the member of the state Legislature within 6 months.
- Principal of collective responsibility is followed.

IX. Advocate General

- He is appointed by the Governor and he is also the first law officer of a state
- **Qualification:** Should be qualified to be appointed as a judge of the High Court
- Advises State Govt. on all legal matters
- He can participate in the proceedings of the state legislature, but can’t vote
**State Legislature**

- It consists of the State Legislative Assembly, State Legislative Council and the Governor

**X. State Legislative Assembly**

- Total strength can’t be more than 500. Members are directly elected by the people on the basis of Adult Franchise
- Governor can nominate one member of Anglo Indian community to the Assembly, if this community is not adequately represented in the house
- Formed for a maximum of 5 years, but can be dissolved before the tenure itself
- May be dissolved by the President in case of Constitutional emergency under Art. 356 of the constitution
- Only 2 Union Territories (Puducherry and Delhi) in India are entitled (by law) to have an elected legislative assembly
- Presiding officer is the Speaker, who is elected from among the members

**XI. State Legislative Council**

- At present Legislative Council is present only in Karnataka, Andhra Pradesh, Telangana, Maharashtra, Bihar, Uttar Pradesh, Jammu and Kashmir.
- Consists of not more than 1/3rd of the total strength of the Legislative Assembly of the state and not less than 40. Members are elected as well as nominated
- It is a permanent house and can’t be dissolved
- Presiding officer is the Chairman, who is elected from among the members

**Judiciary**

An integrated structure is followed in judiciary. This includes all the Court systems present in the country. It is a mechanism for the resolution of disputes. They also interpret and apply the law in the name of the State.

**Supreme Court of India**

- At present, Supreme Court (SC) of India comprises the Chief Justice and 33 other judges (total 34). SC Judges retire at the age of 65 years.
- **Removal**: Can be removed (On the ground of proved misbehaviour and incapacity) only by an order of the President passed after an address in each house of the Parliament supported by a special majority
- The jurisdiction of the Supreme Court is of five folds. Original, Writ, Appellate, Advisory and Revisory

**Justice M. Fathima Beevi**

- She was the 1st female judge to be appointed to the Supreme Court of India (1989) and the first Muslim woman to be appointed to any higher judiciary.
- She is the 1st woman judge of a Supreme Court of a nation in India and Asia.

**High Court**

- High Court stands at the head of a State’s Judicial Administration
- Each High Court comprises of a Chief Justice and such other judges as the President may time to time, appoint. The Chief Justice of a High Court is appointed by the President after the consultation with the Chief Justice of India
- Judges hold office until the age of 62 years and are removable in the same manner as a judge of the Supreme Court.
- High Court enjoys three fold jurisdiction. Original, Appellate, and Writ jurisdiction
- **Calcutta High Court** (established in 1862) is India’s oldest High Court
ECONOMICS

Economics can be defined in simple terms as the branch of science which studies the economic activities of mankind. Relation between economics and economy is that of theory and practice, or in other words, we may say that economy is economics at play in a certain region. Here we will discuss economics under three main headings, General economics, Socio-Economic development and Indian economy at a glance.

1. General Economics

Types of Economic Systems:

There are mainly three types of economic systems.

1. Capitalistic Economy: In this system all the means of production, and distribution are privately owned and this is a profit oriented system
2. State Economy: Characteristic feature of this system is the social ownership of means of production and distribution. There are two main varieties in this too, Socialist economy and Communist economy.
3. Mixed Economy: Here some of the means of production and distribution are socially owned and some are privately owned. It is actually a mix of the first two types of systems. India falls under this category.

All the economic activities in a country, can be classified into three sectors.

1. Primary Sector: Includes all those economic activities, where there is the direct use of natural resources. For example agriculture, mining, fishing, etc. all comes under this sector. 49% of Indian population is employed under the Primary sector and its contribution to National Income is around 19%. Making per capita income of people employed here, very low.
2. Secondary Sector: Also known as ‘manufacturing sector’, and this includes all those activities, where direct use out of the primary sector is involved. All industries make this sector and hence also known as industrial sector.
3. Tertiary Sector: Includes all ‘service’ related economic activities, like banking, education, tourism etc. Hence this sector is also known as ‘service sector’. Around 27% of our population is employed here, and its contribution to National Income is 49%, making the per capita income of people employed here, much more than that of the people employed in primary sector.

Planning in India:

Planning may be defined as a process of realising a well-defined goals by optimum utilisation of the available resources. In India we are following five year plans, adopted from the ‘nation planning concept of Soviet Union’. First five year plan rolled out in 1951, for a period of 1951-56 and presently we are in the 12th five year plan (2012-17). To look into all aspect of planning a national level body, Planning Commission was formed in 1950, through a cabinet resolution. But in the early 2015, this institution has been scrapped and another institution, NITI (National Institution for Transforming India) Aayog was setup. NITI will act as a think tank and hope to adopt a bottom-up approach.

National Income:

There are various ways of measuring National income of a country and these measures include, Gross Domestic Product (GDP), Gross National Product (GNP), Net Domestic Product (NDP), and Net National Product (NNP).

1. **Gross Domestic Product (GDP):** It is the monetary value of all final goods and services **produced inside a country** within a specific time period (normally one financial year). Here income from abroad, is not included.
2. **Gross National Production (GNP):** Here we include net income from abroad (NIFA) as well as the monetary value of all final goods and services produced within a country. In another terms, 
   \[ GNP = GDP + NIFA \]
3. **Net Domestic Product (NDP):** GDP calculation considers only the monetary value of total output of the economy and does not include the money spent by the economy on the wear and tear of machinery. So we have NDP which includes the above said depreciation. Hence 
   \[ NDP = GDP - \text{Depreciation} \]
   Depreciation is also known as ‘capital allowance’.
4. **Net National Product (NNP):** NDP considers depreciation, but doesn’t include net income from abroad. On the other hand, NNP considers both depreciation and net income from abroad. Hence we can write, 
\[ \text{NNP} = \text{NDP} + \text{NIFA} \] or \[ \text{NNP} = (\text{GDP} - \text{Depreciation}) + \text{NIFA} \] or \[ \text{NNP} = \text{GNP} + \text{NIFA} \]

An increase in GDP of a country, indicates the economic growth in the country, which normally implies increased per capita income and hence increased standard of living. It is assumed that, with economic development of a country, Human development also happens, and we measure this human development using an index called human development index (HDI).

**Human Development Index (HDI):**

For measuring the growth of a country, we can make use of GDP, and similarly to measure the development of humans, we use HDI. There are three pillars for HDI and they are,

1. Standard of living: measured using real per capita income
2. Knowledge: measured using the data from the school enrolment and educational attainment among the adults
3. Life expectancy: to be calculated at the time of birth.

HDI value ranges between ‘0’ to ‘1’. HDI was first time used in the Human Development Report of 1990, by United Nations Development Programme (UNDP). This index was developed by a group of economists, headed by Mahbub Ul Haq and Inge Kaul.

**Inflation:**

It is a sustained rise in general price level over a period of time. There can be 2 causes of inflation,

1. **Cost Push inflation/ Supply shock inflation:** Inflation is due to the supply side constraints like, high labour wages, bad monsoon causing shortage of agricultural products etc.
2. **Demand Pull inflation:** There is more money with people and their demand increased. But since supply is not increasing, prices of goods and services increase, causing inflation.

To contain cost push inflation, we will have to improve our productivity, and other measures needed to be taken to solve the supply side constraints like improving infrastructure facilities. Both Government and RBI (central bank), take measures to control demand pull inflation. Govt. takes measures under its Fiscal policy, while RBI takes measures under its monetary policy. Inflation can be calculated using WPI (Whole Sale Price Index) or CPI (Consumer Price Index). RBI takes measures based on CPI based inflation figures.

**Fiscal Policy:**

This includes the measures taken by the Govt. to control inflation and it mostly includes changes in different direct and indirect taxes along with policy guidelines. Government announces its tax regime during budget. All taxes can be normally classified into two.

1. **Direct Taxes:** here burden of paying tax falls on the same person on whom it is levied. Examples include, Income tax, corporate tax, Securities transaction tax etc.
2. **Indirect Tax:** here burden of paying tax can be shifted to someone else. Normally it is paid by the final consumer. Examples include, Excise duty, Customs duty, and Service tax.

When Govt. increases taxes, money with people decreases, and their demand will decrease, which in turn decreases the prices of goods and services. And that is how Govt. tries to control cost push inflation. But its effect cannot be seen immediately.

**Monetary Policy:**

This includes the measures taken by RBI to control inflation. Monetary Policy tools of RBI includes Reserve Ratios (Cash Reserve Ratio and Statutory Liquidity Ratio), Bank Rate, and Liquidity Adjustment Facilities (Repo and Reverse-Repo). Repo rate is the policy rate of the Central Bank of India.

1. **Cash Reserve Ratio (CRR):** Every bank is supposed to keep certain minimum cash reserves with RBI and this amount is decided by RBI. A high CRR reduces the cash for lending and a low CRR increase the cash for lending. So during inflation, RBI can increase CRR and contain inflation.
2. **Statutory Liquidity Ratio (SLR):** Under SLR, bank is supposed to maintain a certain portion of its deposits with RBI in the form of cash, gold or other RBI approved securities.

3. **Bank rate:** It is the rate at which RBI lends money to the commercial banks for their liquidity requirement. When RBI increases Bank rate, commercial bank will increase their lending rate (interest rate on different loans) and as a result loans will become costlier. Now people postpone their plan of taking a loan and buying some commodity. In other words, this increase in Bank rate reduces the demand, and which in turn will reduce the prices. When prices of goods and services decrease, because of decrease in demand, this situation is also bad for the economy. To solve this issue, RBI will decrease the Bank rate, as a result commercial banks will decrease the lending rate and since loans now became cheaper, people will take loan and purchase different commodities. This boosts demand for goods and services, and as a result prices of goods and services increases.

4. ** Repo and Reverse Repo:** Repo is a swap deal involving the immediate sale of securities and simultaneous purchase of the same at a future date, at a predetermined price by the commercial banks to RBI. Reverse Repo is just the opposite.

**Banking System in India**

**I. Pre-independence India**

To cater the credit need of traders, British first set up 3 Presidency Banks in India. Bengal presidency bank in 1806, Bombay presidency bank in 1840 and Madras presidency bank in 1842. These were the first banks to be established in India. Later in 1861 these three banks got the right to print currency. Allahabad bank which was established in 1865, was the first bank whose board of directors were Indians.

In 1921, all the three presidency banks were merged to form one Imperial Bank of India, which later became State Bank of India in 1955. In the aftermath of 1929’s great depression, British decided to regulate all the banks present in India, and as a first step they came up with RBI Act in 1934.

**II. Post-independence India**

Keeping consistent economic growth in mind, independent India started its Five year plans. But because of the nexus between banks and business houses, banks didn’t provide credits to different programmes, which had a negative impact on Indian economy. Understanding the situation, Govt. decided to go for the Nationalisation of Banks in 1969 and 1980. In the first round of Nationalisation, 14 banks were nationalised and in the second round, 6 banks. These banks now under Govt. control started giving loans to priority sectors like agriculture, weaker sections etc.

Govt. also introduced many schemes for facilitating financial inclusion. Cooperative banks, establishment of RRBs, and NABARD etc. were steps taken in that direction. But by late 1980s, many problems crippled the working of these banks, and Govt. appointed Narasimhan committee in 1991. Recommendations of this committee include, reduction in CRR and SLR, deregulation of interest rate, introduction of private and foreign banks and many more. Almost all the recommendations of this committee were implemented and we saw a rejuvenated Indian banking system. New bank licences were given in three rounds; 1993, 2001, and 2013. In 2013 Bharatiya Mahila Bank was also set up by the Govt. of India.
Structure of Scheduled Banks in India:

Subsidy:-

It is a form of financial aid given to an economic activity. Subsidies form a major portion of total Govt. expenditure. Subsidies are of two types:

1. **Merit Subsidies**: This includes all those subsidies, which benefit the whole society. For example, subsidies given for education, health etc.
2. **Non-Merit Subsidies**: Here only a targeted group is benefited. Example, Fertilizer subsidy (meant for farmers)

Normally merit subsidy should be more than Non-merit subsidy. But in our country reality is just the opposite.

If we take the three main subsidy areas, they are Food, Fertilizer and Fuel. Out of these, Food Subsidy tops the list, followed by Fertilizer subsidy and Fuel subsidy. Approximately 2.5 Lakh crore is the budget outlay (2015-16) for these three subsidy.

Finance Commission:-

It is a constitutional body, set up by the Article 280 of the Indian constitution. They advises Govt. of India, on the matters relate to tax sharing with the states. In 2015, 14th Finance Commission headed by Y V Reddy, submitted its report and recommended for a 42% vertical tax devolution from the central pool of taxes.

The 15th Finance Commission (Chair: Mr N. K. Singh) was required to submit two reports. The first report, consisting of recommendations for the financial year 2020-21, was tabled in Parliament on February 1, 2020.

The share of states in the centre’s taxes is recommended to be decreased from 42% during the 2015-20 period to 41% for 2020-21. The 1% decrease is to provide for the newly formed union territories of Jammu and Kashmir, and Ladakh from the resources of the central government.

Goods and Services Tax (GST):-

GST is an Indirect Tax which replaced many Indirect Taxes in India. The Goods and Service Tax Act was passed in the Parliament on 29th March 2017 & it came into effect on 1st July 2017. Goods & Services Tax Law is a comprehensive, multi-stage, destination-based tax that is levied on every value addition. There are 3 taxes applicable under this system: CGST, SGST & IGST.
2. Socio-Economic Development

We will discuss about some of the socio-economic problems faced by India, including poverty, unemployment, illiteracy, and poor healthcare.

**Poverty**

India has the largest single concentration of the poor in the world and every fourth person in India is poor. Directly and indirectly many issues are related to poverty, including lack of regular job at a minimum decent level, unemployment, hunger, lack of shelter, illiteracy, poor health, malnutrition, lack of clean water and sanitation facility.

Population under poverty is calculated based on the poverty line. And this poverty line can be calculated in 2 ways; Income method or Consumption method.
• **Poverty line based on income level**: A person is considered poor if his or her income level falls below a given minimum level necessary to fulfil basic needs. What is necessary to satisfy basic needs is different at different times and in different countries. Therefore, poverty line may vary with time and place. Each country uses an imaginary line that is considered appropriate for its existing level of development and its accepted minimum social norms.

• **Poverty line based on calorie requirement**: A person is considered poor if his or her consumption level falls below a given minimum level. The accepted average calorie requirement in India is **2400 calories per person per day in rural areas and 2100 calories per person per day in urban areas**. The monetary expenditure per capita needed for buying these calorie requirements in terms of food grains etc. is calculated and poverty line is set. For example, for the year 2000, the poverty line for a person was fixed at Rs 328 per month for the rural areas and Rs 454 for the urban areas.

• **National Sample Survey Organisation (NSSO)**, conduct sample surveys nationwide and update the poverty line periodically (normally every five years).

• For making comparisons between developing countries, many international organisations like the World Bank use a uniform standard for the poverty line: minimum availability of the equivalent of $1 per person per day.

### Causes of Poverty

1. Low level of economic development under the British administration: British policies ruined traditional handicrafts and discouraged development of industries.
2. The failure at both the fronts: promotion of economic growth and population control perpetuated the cycle of poverty. Public and the private sector industries could provide job only for some people.
3. One of the major reasons for high income inequality is the unequal distribution of land and other resources. Benefits of **Green revolution** were limited to some parts of India.
4. Small farmers need money to buy agricultural inputs like seeds, fertilizer, pesticides etc. Since poor people hardly have any savings, they borrow. Unable to repay because of poverty, they become victims of indebtedness. So the high level of indebtedness is both the cause and effect of poverty.

### Anti-Poverty Measures

The current anti-poverty strategy of the government is based broadly on two planks:

1. **Promotion of economic growth**: Economic growth widens opportunities and provides the resources needed to invest in human development. This also encourages people to send their children, including the girl child, to schools in the hope of getting better economic returns from investing in education. However, the poor may not be able to take direct advantage from the opportunities created by economic growth. The higher growth rates after 1980s have helped significantly in the reduction of poverty.
2. **Targeted anti-poverty programmes**: Low growth in agriculture has effected poor people live in villages, who are dependent on agriculture. In these circumstances, there is a clear need for targeted anti-poverty programmes.
   a. **National Rural Employment Guarantee Act** (NREGA): provides 100 days assured employment every year to every rural household in 200 districts. One third of the proposed jobs would be reserved for women. Under the programme if an applicant is not provided employment within fifteen days he/she will be entitled to a daily unemployment allowance.

### Green Revolution

After independence, as a result of high population and comparatively low agricultural output, India faced severe shortage of food grains. As short term measure we started importing essential food grains from US under PL480. This was followed by severe famine of early 1960s along with huge expenditure in Sino-India and Indo-Pak wars.

As a remedy to the above mentioned problems, India introduced Green revolution in late 1960s, majorly in the states of Punjab and Haryana. Major components of Green Revolution are,

1. High Yield Varieties of seeds
2. Chemical fertilizers and chemical pesticides
3. Irrigation
4. Short duration and photo-insensitive varieties of seed
5. Mechanisation

Green revolution led India to become a Food surplus country and a major exporter of a variety of Agricultural products.
b. **National Food for Work Programme (NFWP):** The programme is open to all rural poor who are in need of wage employment and desire to do manual unskilled work. It is implemented as a 100% centrally sponsored scheme and food grains are provided free of cost to the states. Once the NREGA is in force, the NFWP will be subsumed within this programme.

c. **Prime Minister Rozgar Yojana (PMRY):** The aim of the programme is to create self-employment opportunities for educated unemployed youth in rural areas and small towns.

d. **Rural Employment Generation Programme (REGP):** Aim of the programme is to create self-employment opportunities in rural areas and small towns.

e. **Swarajyanti Gram Swarozgar Yojana (SGSY):** Aims at bringing the assisted poor families above the poverty line by organising them into self-help groups through a mix of bank credit and government subsidy.

f. **Pradhan Mantri Gramodaya Yojana (PMGY):** Under this scheme, additional central assistance is given to states for basic services such as primary health, primary education, rural shelter, rural drinking water and rural electrification.

### Unemployment

- Unemployment is said to exist when people who are willing to work at the going wages cannot find jobs.
- The workforce population includes people from 15 years to 59 years.
- In case of India we have unemployment in rural and urban areas. However, the nature of unemployment differs in rural and urban areas.

#### Disguised Unemployment

Disguised unemployment is a kind of unemployment in which some people look like being employed but are actually not employed fully. This situation is also known as **Hidden Unemployment.** In such a situation more people are engaged in a work than required.

Unemployment leads to,

1. Wastage of manpower resource: People who are an asset for the economy turn into a liability
2. Tends to increase economic overload: their dependency on the working population increases
3. Quality of life of an individual as well as of society is adversely affected
4. Decline in health status and rising withdrawal from the school system

Hence, unemployment has a detrimental impact on the overall growth of an economy. Increase in unemployment is an indicator of a depressed economy. It also wastes the resource, which could have been gainfully employed. If people cannot be used as a resource they naturally appear as a liability to the economy.

New Government initiatives like Skill India, Start up India, Stand up India, and many such programmes aim to solve the problem of unemployment.

### Illiteracy

Education contributes towards the growth of society. It enhances the national income, cultural richness and increases the efficiency of governance. There is a provision made for providing universal access, retention and
quality in elementary education with a special emphasis on girls. The literacy rates have increased from 18% in 1951 to 65% in 2001.

Literacy is not only a right, it is also needed if the citizen are to perform their duties and enjoy their rights properly. However, a vast difference is noticed across different sections of population.

1. Literacy among males is nearly 50% higher than females
2. It is about 50% higher in urban areas as compared to the rural areas.
3. Literacy rates vary from 96% in some district of Kerala to a below 30% in some parts of Madhya Pradesh.

The primary school system has expanded to over 5,00,000 villages in India. Unfortunately, this huge expansion of schools has been diluted by the poor quality of schooling and high dropout rates.

Steps taken for promoting education:
1. Increase in the number of primary schools
2. Sarva Siksha Abhiyan: For providing elementary education to all children in the age group of 6 to 14 by 2010. Goal is to achieve universalisation of elementary education. Along with it, bridge courses and back-to-school camps have been initiated to increase the enrolment in elementary education
3. Mid-day meal scheme has been implemented to encourage attendance and retention of children and improve their nutritional status
4. The strategy focuses on increasing access, quality, and adoption of states-specific curriculum modification, and networking on the use of information technology.
5. Focus on distant education, convergence of formal, non-formal, distant and IT education institutions
6. Setting of schools like Navodaya Vidyalaya in each district
7. Vocational streams have been developed to equip large number of high school students with occupations related to knowledge and skills

New Education Policy 2020 Highlights:
The draft was prepared by a panel of experts led by former Indian Space Research Organisation (ISRO) chief K Kasturirangan. The NEP 2020 aims at making "India a global knowledge superpower".

- Use of schools/ school complexes beyond school hours and public library spaces for adult education courses which will be ICT-equipped when possible and for other community engagement and enrichment activities
- By 2025, at least 50% of learners through the school and higher education system shall have exposure to vocational education.
- A 10-day bagless period sometime during Grades 6-8 to intern with local vocational experts such as carpenters, gardeners, potters, artists, etc.
- NIOS will develop high-quality modules to teach Indian Sign Language, and to teach other basic subjects using Indian Sign Language.
- Pre-school sections covering at least one year of early childhood care and education will be added to Kendriya Vidyalayas and other primary schools around the nation, particularly in disadvantaged areas.
- Under the aegis of the Ministry of Defence, State Governments may encourage opening NCC wings in their secondary and higher secondary schools, including those located in tribal dominated areas.
- Free boarding facilities will be built - matching the standard of Jawahar Navodaya Vidyalayas particularly for students who from socio-economically disadvantaged backgrounds.
- A dedicated unit for the purpose of orchestrating the building of digital infrastructure, digital content and capacity building will be created in the MHRD to look after the e-education needs of both school and higher education.
- A new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT. By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed degree. Stringent action will be taken against substandard stand-alone Teacher Education Institutions (TEIs).
- By 2040, all higher education institutions (HEIs) shall aim to become multidisciplinary institutions, each of which will aim to have 3,000 or more students
- The undergraduate degree courses will be of either 3 or 4-year duration, with multiple exit options. A certificate course after completing 1 year in a discipline or field, including vocational and professional areas, or a diploma after 2 years of study, or a Bachelor’s degree after a 3-year programme. The 4-year multidisciplinary Bachelor’s programme, however, shall be the preferred option.
- An Academic Bank of Credit (ABC) shall be established which would digitally store the academic credits earned.
- New Education Policy 2020 aims at promotion India as a global study destination providing premium education at affordable costs. An International Students Office at each institution hosting foreign students
The HRD Ministry has been renamed as Education Ministry. High performing Indian universities will be encouraged to set up campuses in other countries. Selected universities like those from among the top 100 universities in the world will be facilitated to operate in India.

**Poor Healthcare**

The health of a person helps him to realise his potential and the ability to fight illness. An unhealthy person becomes a liability for an organization. High poverty negatively impacted our overall health. We witnessed very high infant mortality, maternal mortality, child death, nutritional deficiency and stunted growth. Women and children are facing the most worrying health problems.

- **Neonatal mortality rate:** It is the number of neonates dying before reaching 28 days of age, per 1,000 live births in a given year.
- **Infant mortality rate:** It is the number of deaths of infants under one year old per 1,000 live births. This rate is often used as an indicator of the level of health in a country.
- **Child mortality rate:** The under-5 mortality rate is the number of children who die by the age of five, per thousand live births per year.
- **Maternal mortality rate:** It is the annual number of female deaths per 100,000 live births from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes).
- **Birth rate:** It is the total number of live births per 1,000 of a population in a year.
- **Death rate:** It is a measure of the number of deaths in a particular population per unit of time.

But implementation of schemes like *National health mission, integrated child development scheme, mission Indradhanush* and many others, has shown some good results. Almost all the health indicators have shown continued progress. Our *National health policy*, aims at improving the accessibility of health care, family welfare and nutritional service with a special focus on the under-privileged segment of population. The measures adopted as part of this policy have increased the life expectancy; Infant mortality rate (IMR) has come down; Crude birth rates have dropped and death rates also came down. Increase in longevity of life is an indicator of good quality of life marked by self-confidence. Reduction in infant mortality involves the protection of children from infection, ensuring nutrition along with other and childcare.

**Pradhan Mantri Jan Arogya Yojana (PMJAY) or Ayushman Bharat Yojana highlights:**

- Launched in September by Prime Minister Narendra Modi, the Ayushman Bharat Yojana aims to cater to 50 crore beneficiaries. It has a provision for a health cover of Rs.5 lakh for families living below the poverty line. The health cover itself is totally free with the annual premiums being footed by the central and state governments in a 60:40 ratio.
- Beneficiaries for the scheme are picked up from the Socio Economic Caste Census of 2011. These 10 crore beneficiary families comprise of 8 crore families from the rural areas and 2 crore families residing in urban India.
- The scheme provides those in need to get secondary healthcare benefits provided by specialists like cardiologists and urologists. Moreover, advanced medical treatment like that for cancer, cardiac surgery and other is also covered.

Removing the burden of out-of-pocket expenses, PMJAY aims to make the entire process of paying for healthcare cashless. Additionally, PMJAY beneficiaries can avail treatment throughout India.

**3. Indian Economy at a Glance**

Indian farmers follow subsistence agriculture with rudimentary methods, and it is mostly dependent on monsoon. But introduction of Green revolution revamped the agricultural sector with higher productivity, making India surplus in food grain production. Currently we are aiming for a second green revolution which is
composed of sustainable farming practices. Govt. has also introduced the *Agriculture Produce Market Committee (APMC)* act to regularise the farm markets (mandis) and tackle the menace of middle men. 49% of Indian population is employed under the Primary sector and its contribution to National Income is around 19%. Making per capita income of people employed here, very low.

Post-independence, Industrial sector was considered as the prime moving force of the economy and thus Public Sector Enterprises were given more attention. And it was expected that the effect of the growth will trickle down further. By late 1970s and 1980s, PSUs became highly underperforming due to inefficiency, political interference, lack of competition and a very large work force. This led to Govt. investing more in PSUs without getting return, which led to major financial setbacks by 1990. To handle this crisis, we introduced LPG reforms and the New Industrial Policy. These initiatives de-regulated many important sectors and opened up those for the private sector to bring in more competition and efficiency. This sector still lacks skilled man power and initiatives like skill India aims at imparting vocational trainings and thus bring in the extra workforce from the agricultural sector to the manufacturing sector.

LPG reforms led to a rise in service sector and later India became one of the leading exporters of services in the world. Major components of service sector are IT service, banking services, tourism, healthcare services, education, etc. Around 27% of our population is employed here, and its contribution to National Income is 49%, making the per capita income of people employed here, much more than that of the people employed in primary sector. This sector requires highly skilled work force, and hence concentrated in certain urban centres.
**Fundamental units:-**

There are different systems of measurements present and international science community has accepted SI unit as the international system of measurement. It includes seven fundamental units.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Quantity name</th>
<th>Fundamental Unit</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mass</td>
<td>kilogram</td>
<td>kg</td>
</tr>
<tr>
<td>2</td>
<td>Length</td>
<td>meter</td>
<td>m</td>
</tr>
<tr>
<td>3</td>
<td>Time</td>
<td>second</td>
<td>s</td>
</tr>
<tr>
<td>4</td>
<td>Electric current</td>
<td>ampere</td>
<td>A</td>
</tr>
<tr>
<td>5</td>
<td>Temperature</td>
<td>Kelvin</td>
<td>K</td>
</tr>
<tr>
<td>6</td>
<td>Luminous intensity</td>
<td>candela</td>
<td>Cd</td>
</tr>
<tr>
<td>7</td>
<td>Quantity of matter</td>
<td>mole</td>
<td>Mol</td>
</tr>
</tbody>
</table>

**Force:-**

Force is anything which causes a change in the position of a static object or change in the velocity of a dynamic object. Unit of force is Newton. For studying force and its effect on bodies, we can make use of Newton's laws of motion.

**Newton's Laws of Motion:-**

- **Newton's 1st Law of Motion:** It states an object continues its uniform motion or stays at its original position unless it is acted by a force. This theory also gives us the concept of Inertia
- **Newton's 2nd Law of Motion:** It states applied force is directly proportional to the mass of the object and its acceleration. This law gives us the famous equation, \( F=ma \)
- **Newton's 3rd Law of Motion:** It states for every action there will be an equal and opposite reaction. Application of this theory is seen during rowing a boat.

**Circular Motion:-**

In circulation motion two forces come into play, Centripetal and Centrifugal forces. As shown in the image, centripetal force acts towards the centre and centrifugal force acts away from the centre. Normally during a circular motion, both the forces are equal in magnitude and acts in opposite direction, hence cancels each other. When the person releases the object during the circular motion, it moves in the path of inertia with a force equals to centrifugal force.

**Planetary Motion:-**

- Geocentric theory was proposed by Ptolemy
- Copernicus proposed heliocentric theory
- Kepler laid the foundation of modern astronomy

**Kepler's Laws of Planetary Motion:-**

- **Law of orbits:** All planets revolve around the sun in elliptical orbits, with sun situated at one of the foci.
- **Law of areas:** Line that joins a planet to sun, sweeps equal areas in equal intervals of time.
- **Law of Periods:** Square of the time period of revolution of a planet is proportional to the cube of the semi-major axis of the ellipse traced out by the planet.

**Work:-**

With force we do different types of works, and in physics, Work done by a force in displacing an object is calculated by taking the scalar product of force and displacement. That mean, \( \text{Work}=F.d=Fdcos\theta \), where '\( \theta \)' is the angle between force and displacement. Rate of doing work is called **Power** and its unit is **Joules/second**, it is also represented as **Watt**. Horse Power (HP) is another unit of measurement of work done. \( 1 \text{ HP} = 746 \text{ Watts} \)
Energy:
It is the ability to do work and its unit is Joule. There are normally two types of energies.

1. Kinetic Energy: An object gets this energy, because of its motion. And it is calculated as, kinetic Energy \( = \frac{1}{2}mv^2 \), where ‘m’ is the mass of the object and ‘v’ velocity
2. Potential Energy: An object gains potential energy, because of its position, and it is calculated as, Potential Energy \( = mgh \), where ‘m’ is mass of the object; ‘g’ is acceleration due to gravity and ‘h’ is the height from the ground

Pressure:
It is the force applied per unit area and its unit is Pascal. Atmospheric pressure is the force exerted by the atmospheric gases per unit area, and Barometer is used to measure it. As per Pascal’s Law, pressure at any point at the same height of a confined incompressible liquid will be same. And this principle is used in hydraulic lifts.

Newton’s Universal Law of Gravitation:
This law states that there is a force acting between any two bodies having mass, and this force is directly proportional to the masses of bodies and inversely proportional to the square of the distance between them. Hence Gravitational force, \( F = \frac{Gm_1m_2}{r^2} \), where ‘G’ is the gravitational constant, \( m_1 \) and \( m_2 \) are the masses of two bodies and ‘r’ is the distance between the bodies. In the same way there is a force acting between us and Earth, and that force is force of gravity. And acceleration due to this gravity is ‘g’ which is equal to 9.8m/s². In planetary motion, the gravitational force between the sun and the planet acts as the centripetal force of revolution.

Heat:
Heat is a form of energy and like other forms of energy, this too can be transferred from one form to another. Specific heat is the amount of heat required to raise the temperature of a substance of unit mass by one degree. Since substances differ in their basic composition, their specific heats will be different.

Electricity and Ohm’s Law:
A flow of electron is electricity and the most important condition to have electricity is ‘potential difference’. Ohm’s Law in this regard states that the potential difference across an ideal conductor is proportional to the current passing through it. And thus we got the famous equation of \( V = IR \), where ‘V’ is the potential difference in volts, ‘I’ is the current passing through it measured in Amperes, and ‘R’ is the resistance in the conductor measured in ‘ohms’. Based on the ability to conduct electricity, materials are generally classified as metals and non-metals.

Magnetism:
Magnetic field is the region around a magnet, where a magnetic substance experiences a force. Every magnet has two poles, North and South. Force between two magnetic poles is calculated using Coulomb’s Law, which states this force is directly proportional to the product of their pole strength and inversely proportional to the square of the distance between them.

Waves:
They are the propagation of energy. There are two types of waves, mechanical and electromagnetic waves.

1. Mechanical wave: They need a medium to travel. Ripple created in water, when you throw a stone is example for mechanical wave. They are also known as ‘elastic waves’, because their propagation depends on the elastic properties of the medium.
2. Electromagnetic Wave: They don’t need a medium to travel, which means they can travel even in vacuum. Sun light is one example for electromagnetic waves.
In another classification wave is classified into two, transform and longitudinal.

1. **Transform waves**: here direction of propagation of wave is perpendicular to the direction of vibration of particles. Example is light waves. In the given figure, transform waves are shown as ‘b’

2. **Longitudinal waves**: Here direction of propagation is in the direction of vibration of particles. Example is sound wave. In the given figure, transform waves are shown as ‘a’.

**Doppler Effect**: It is the change in frequency of a wave (sound or light) due to the motion of the source or observer.

**Light**: Sir Isaac Newton had described light as a particle, but it was Young’s double slit experiment which showed that light has a wave nature. But later Albert Einstein described light to have dual nature, which means light acts as both particle as well as wave. Properties of light include, reflection, refraction, diffraction and interference.

**Atomic Concept**: 

Atom is the smallest component of a matter and the major constituents of an atom includes, Proton, Neutron and Electron. Proton is positively charged, Electron is negatively charged and Neutron is neutral. An atom is electrically neutral. Atom has a nucleus at the centre where mass of the atom is concentrated. Nucleus has both neutrons and protons. Negatively charged electrons revolve around the positively charged nucleus in fixed path, called orbits. Orbits are named K, L, M, etc.

- Atomic Number (Z) = Number of electrons in an atom = Number of protons
- Mass Number (A) = Number of proton + Number of neutrons
- Isotopes: Atoms of same element having same atomic number but different mass number. They differ in the number of neutrons.
- Isobars: Atoms of different elements having same mass number, but different atomic number.

**Molecule**: 

Two or more atoms combine together and form molecule. Molecules of different elements combine to form different chemicals. Example is water. The force with which atoms are held together in a chemical is called chemical bond. There are different types of chemical bonds, namely ionic bond, covalent bond, co-ordinate bond etc.

**Periodic Table**: 

It is the arrangement of different elements in the order of their atomic number. First element in the periodic table is hydrogen, which is also the lightest element. Dmitri Mendeleev is referred as the father of the periodic table.
Metals and Non-metals:

Elements can be classified in different ways and one way classifying it is into metals and non-metals.

1. **Metals**: Metallic properties include; good conductors of heat and electricity, high melting and boiling point, high tensile strength and density.
2. **Non-Metals**: Non-metallic properties include; bad conductors of heat and electricity, low melting and boiling point, low tensile strength and density.

**Acid, Base, and Neutral:**

All substances can be divided into three categories acidic, basic or neutral. Special type of substances, known as indicators are used to check whether a substance is acidic or basic. And with the help of **pH scale**, we check how acidic or basic a substance is. If pH of a substance is equal to seven, then that substance is neutral, if its pH is less than seven it’s acidic, and if the pH value is more than seven then it is basic in nature.

<table>
<thead>
<tr>
<th>Name of Acid</th>
<th>Found in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tartaric acid</td>
<td>Tamarind</td>
</tr>
<tr>
<td>Citric acid</td>
<td>Citrus fruits</td>
</tr>
<tr>
<td>Formic acid</td>
<td>Ant’s sting</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>Vinegar</td>
</tr>
<tr>
<td>Lactic acid</td>
<td>Curd</td>
</tr>
<tr>
<td>Sodium hydroxide/Potassium hydroxide</td>
<td>Soap</td>
</tr>
<tr>
<td>Magnesium hydroxide</td>
<td>Milk of magnesia</td>
</tr>
<tr>
<td>Ammonium hydroxide</td>
<td>Window cleaner</td>
</tr>
</tbody>
</table>

**CELL**

Robert Hook invented cell in 1665. A cell is the smallest basic structural and functional unit of any living organism. Important organelles of a cell are given below:

1. **Mitochondria**: generates energy needed for the cell and hence known as the power house of the cell
2. **Ribosome**: produces some important proteins and is also known as the factory of protein
3. **Lysosome**: Destroys excess or worn-out organelles of the cell, so they are also known as the suicide bag of the cell.
4. **Chromosomes**: They are the physical carriers of the hereditary traits
5. **Pseudopodia in amoeba** help capture food and movement, it changes shape

Many cells together forms tissue. Tissues together form an organ and organs together form an organ system. And organ systems together form an organism.

- A white blood cell (WBC) in human blood is a single cell which can change its shape
- Egg of a hen represents a single cell and is big enough to be seen by the unaided eye
- Egg of ostrich is the largest cell
- Prokaryotic cell: Cells having nuclear material without nuclear membrane. Example, bacteria
- Eukaryotic cell: Cells having well organised nucleus with a nuclear membrane. Example, animal cell

**Nutrients:**

The components of food, which are needed by our body for its proper functioning are called **nutrients**. The major nutrients are carbohydrates, fats, proteins, vitamins and minerals. Carbohydrates and fats provide energy, proteins are required for the growth and repair of our body and vitamins help in protecting our body. There
different types of vitamins, namely vitamin A, vitamin C, vitamin D etc. If the food that you are consuming doesn't have enough nutrients, it will lead to deficiency diseases.

Digestion: we need energy for doing work and the source of this energy is the food that we eat. This food has many complex ingredients and the first step involves the process of breaking down the complex components of the food into smaller components, which are easily absorbable by the body. This is called digestion. Different components of the food are digested at different parts of the body, and absorbed. Components of human digestive system are shown in the diagram above.

Respiration: the simpler components of the food, taken in during the process of digestion is used in cells to provide energy for various life processes and this is called respiration. So release of energy is the output of respiration. Respiration can be of two types,

1. Aerobic respiration: respiration using oxygen
2. Anaerobic respiration: respiration without using oxygen

Organisms require oxygen for aerobic respiration and during this process oxygen is converted into carbon dioxide. So these organisms should make it sure that a continuous intake of oxygen and removal of carbon dioxide (result of respiration) is taking place. And breathing is the process which ensures it. Human respiratory system (components of the same has shown in the figure) helps to maintain this continuous flow of oxygen to different cells.

Anatomy

- Liver is the largest visceral organ, and it secrets bile juice which is later stored in gall bladder.
- There are mainly two types of blood vessels, Arteries and Veins. Arteries carry oxygenated blood from the heart except the pulmonary artery and veins carry de-oxygenated blood to heart except the pulmonary vein.
- Cerebrum is the largest part of the brain.

Important Laws and Theories:

1. Boyle’s Law: it states that at constant temperature, volume of a given mass of gas is inversely proportional to the pressure of the gas.
2. Charles’s Law: it states that at constant temperature, volume of a given mass of gas is directly proportional to the temperature measured in Kelvin.
3. Avogadro’s Law: it states that equal volumes of all gases under similar pressure and temperature conditions, contain equal number of molecules.
4. Archimede’s Principle: it states that the body immersed in a fluid is buoyed up by a force equal to the weight of the displaced fluid.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>Oryza sativa</td>
</tr>
<tr>
<td>Potato</td>
<td>Solanumtubersum</td>
</tr>
<tr>
<td>Onion</td>
<td>Allium cepa</td>
</tr>
<tr>
<td>Bamboo</td>
<td>Bambosaridinarifolia</td>
</tr>
<tr>
<td>Banana</td>
<td>Musa paradisicum</td>
</tr>
<tr>
<td>Banyan</td>
<td>Ficus benghalensis</td>
</tr>
<tr>
<td>Mango</td>
<td>Mangifera indica</td>
</tr>
<tr>
<td>Tiger</td>
<td>Pantheratigris</td>
</tr>
<tr>
<td>Scorpion</td>
<td>Archinidascorpionida</td>
</tr>
<tr>
<td>Lion</td>
<td>Pantheraleo</td>
</tr>
<tr>
<td>Kangaroo</td>
<td>Macropus macropodidae</td>
</tr>
<tr>
<td>Horse</td>
<td>Equus caballus</td>
</tr>
<tr>
<td>Cat</td>
<td>Felis catus</td>
</tr>
<tr>
<td>Cobra</td>
<td>Elapidaenaja</td>
</tr>
<tr>
<td>Camel</td>
<td>Camelus camelidae</td>
</tr>
<tr>
<td>Cheetah</td>
<td>Acinonyx jubatus</td>
</tr>
<tr>
<td>Chimpanzee</td>
<td>Pan troglodytes</td>
</tr>
<tr>
<td>Dog</td>
<td>Canis familiaris</td>
</tr>
</tbody>
</table>

Some facts about Human Body

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Largest bone in the body</td>
<td>Femur</td>
</tr>
<tr>
<td>Smallest bone in the body</td>
<td>Stapes</td>
</tr>
<tr>
<td>Largest white blood cell</td>
<td>Monocytes</td>
</tr>
<tr>
<td>Smallest white blood cell</td>
<td>Lymphocyte</td>
</tr>
<tr>
<td>pH of blood</td>
<td>7.4</td>
</tr>
<tr>
<td>Normal Blood Pressure</td>
<td>120/80 mm Hg</td>
</tr>
<tr>
<td>Largest endocrine gland</td>
<td>Thyroid gland</td>
</tr>
<tr>
<td>Normal heart beat</td>
<td>72 beats per minute</td>
</tr>
<tr>
<td>Largest gland</td>
<td>Liver</td>
</tr>
<tr>
<td>Universal blood donor</td>
<td>O</td>
</tr>
<tr>
<td>Universal blood recipient</td>
<td>AB</td>
</tr>
</tbody>
</table>
5. **Bernoulli’s Principle**: it states that for an inviscid flow of a non-conducting fluid, an increase in the speed of the fluid occurs simultaneously with a decrease in pressure or a decrease in the fluid’s potential energy.

### Different branches of Science:

<table>
<thead>
<tr>
<th>Branch of Science</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genetics</td>
<td>Study of the phenomena of Heredity</td>
</tr>
<tr>
<td>Cytology</td>
<td>Study of cells</td>
</tr>
<tr>
<td>Cardiology</td>
<td>Study of the functions and the diseases of heart</td>
</tr>
<tr>
<td>Astronomy</td>
<td>Study of Heavenly bodies</td>
</tr>
<tr>
<td>Ornithology</td>
<td>Study of Birds</td>
</tr>
</tbody>
</table>

### Branches of Science:

<table>
<thead>
<tr>
<th>Branch of Science</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virology</td>
<td>Study of Viruses</td>
</tr>
<tr>
<td>Pisciculture</td>
<td>The Breeding, Rearing, and Transplantation of Fish</td>
</tr>
<tr>
<td>Sericulture</td>
<td>Production of Raw Silk by rearing of Silk Worms</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>Study of bacteria and the diseases caused by them</td>
</tr>
<tr>
<td>Anthropology</td>
<td>Study of the origin and development of mankind</td>
</tr>
<tr>
<td>Neurology</td>
<td>Study of the Nervous system, its functions and its disorders</td>
</tr>
<tr>
<td>Etiology</td>
<td>Study of causes of Diseases</td>
</tr>
<tr>
<td>Otology</td>
<td>Study of Ears and their diseases</td>
</tr>
<tr>
<td>Osteology</td>
<td>Study of bones</td>
</tr>
<tr>
<td>Dermatology</td>
<td>Study of skin</td>
</tr>
</tbody>
</table>

### A list of Scientific instruments:

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anemometer</td>
<td>to measure the speed, direction and pressure of the wind</td>
</tr>
<tr>
<td>Barometer</td>
<td>to measure the atmospheric pressure</td>
</tr>
<tr>
<td>Thermometer</td>
<td>to measure the temperature</td>
</tr>
<tr>
<td>Endoscope</td>
<td>to examine the internal parts of the body</td>
</tr>
<tr>
<td>Lactometer</td>
<td>to measure the relative density of the milk</td>
</tr>
<tr>
<td>Rain Gauge</td>
<td>To measure rainfall</td>
</tr>
<tr>
<td>Microscope</td>
<td>for magnified view of very small objects</td>
</tr>
<tr>
<td>Gramophone</td>
<td>for reproducing recorded sound</td>
</tr>
<tr>
<td>Seismograph</td>
<td>for recording the intensity and the origin of earthquake</td>
</tr>
<tr>
<td>Hygrometer</td>
<td>to measure the humidity of air</td>
</tr>
</tbody>
</table>

---

### Components of Blood:

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma</td>
<td>Fluid part of the blood</td>
</tr>
<tr>
<td>Red Blood Cells (RBC)</td>
<td>Contains haemoglobin, which binds with oxygen and transports it to all the parts of the body</td>
</tr>
<tr>
<td>White Blood Cells (WBC)</td>
<td>Fight germs that enter our body</td>
</tr>
<tr>
<td>Platelets</td>
<td>Helps in blood clotting</td>
</tr>
</tbody>
</table>

### Vitamin Deficiency diseases:

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Deficiency disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Night blindness</td>
</tr>
<tr>
<td>B1</td>
<td>Beriberi</td>
</tr>
<tr>
<td>B2</td>
<td>Ariboflavinosis</td>
</tr>
<tr>
<td>B3</td>
<td>Pellagra</td>
</tr>
<tr>
<td>B5</td>
<td>Paresthesia</td>
</tr>
<tr>
<td>B6</td>
<td>Peripheral neuropathy</td>
</tr>
<tr>
<td>B7</td>
<td>Dermatitis</td>
</tr>
<tr>
<td>B9</td>
<td>Megaloblast and birth defects in pregnant ladies</td>
</tr>
<tr>
<td>B12</td>
<td>Megaloblastic anemia</td>
</tr>
<tr>
<td>C</td>
<td>Scurvy</td>
</tr>
<tr>
<td>D</td>
<td>Rickets and Osteomalacia</td>
</tr>
<tr>
<td>E</td>
<td>anemia</td>
</tr>
<tr>
<td>K</td>
<td>Bleeding diathesis</td>
</tr>
</tbody>
</table>
**GENERAL AWARENESS**

India, our country stands 7th in the world based on the area and 2nd based on population. India is normally referred as a subcontinent, because all the physiographic features seen in a continent are seen here also. It has 7500 km long coastal area.

- National Anthem: Jana-gana-mana, was composed by Rabindranath Tagore. It was adopted on 24th January 1950. It was first sung in the Kolkata session of INC in 1911. Duration of National Anthem is approximately 52 seconds
- National Song: Vande Mataram, was composed by Bankimchandra Chatterji.
- National Calendar is based on the Saka Era
- India is a Parliamentary democracy and its capital is New Delhi.
- There are 28 states and 9 Union Territories. J&K and Ladakh are the most recently formed UTs
- State emblem is an adoption from the Saranath Lion Capital of Ashoka. There are four lions, elephant, horse, bull, and a lion.
- The word ‘Satyameva Jayate’ has taken from ‘Mundaka Upanishad’, meaning ‘truth alone triumphs’, written in ‘Devanagiri script’

**Neighbours & Border**

- Neighbours of India: Pakistan, China, Nepal, Bangladesh, Bhutan, Myanmar, and Afghanistan
- India is sharing its largest territorial boundary with Bangladesh
- Durand Line is the international border between India and Afghanistan
- MacMohan Line: International border with China
- Radcliffe Line: International border with Pakistan

**Demography**

Population of India: 1.32 billion
Most populated state in India: Uttar Pradesh
Least populated State: Sikkim
State with highest population density: Bihar
State with lowest population density: Arunachal Pradesh
State with highest literacy rate: Tripura
State with lowest literacy rate: Bihar

**Awards**

Highest civilian award in India: Bharat Ratna
Highest war time gallantry ward: Param Vir Chakra
Highest peace time gallantry award: Ashok Chakra

**National Bird** | Peacock
---|---
**National Flower** | Lotus
**National Animal** | Royal Bengal Tiger
**National Aquatic Animal** | Gangetic Dolphin
**National Game** | Hockey
**National Tree** | Banyan Tree

**Different form of Martial Arts**

<table>
<thead>
<tr>
<th>Name</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalaripayattu</td>
<td>Kerala</td>
</tr>
<tr>
<td>Silambam</td>
<td>Tamil Nadu</td>
</tr>
<tr>
<td>Gatka</td>
<td>Punjab</td>
</tr>
<tr>
<td>Thangta</td>
<td>Manipuri</td>
</tr>
<tr>
<td>Madranikhel</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>Pari-Khanda</td>
<td>Bihar</td>
</tr>
</tbody>
</table>

Longest river: Ganga
Largest Lake: Lake Chilka
Highest Point: Mt. K2
Lowest point: Kuttanad

**Classical languages of India**

Tamil, Sanskrit, Telugu, Malayalam, Kannada, and Odia.
Highest honorary award in literature: Jnanpith

Highest honorary award in the field of cinema: Dadasaheb Phalke Award

Highest honour for achievement in sports: Rajiv Gandhi Khel Ratna

**Important Islands:-**

1. Diu: 4th most densely populated Island in the world.
2. Sriharikota: Rocket launching site
3. Wellington: Naval base, Kochi
5. Butcher Island: An island off the coast of Mumbai
6. Kachativu: This Island was given to Sri Lanka by India in 1974
7. Pamban: Located between peninsular India and Sri Lanka
8. Important Passes in India

<table>
<thead>
<tr>
<th>Name</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bara-lacha-la</td>
<td>Jammu and Kashmir</td>
</tr>
<tr>
<td>Banihal</td>
<td>Jammu and Kashmir</td>
</tr>
<tr>
<td>Fotu la</td>
<td>Jammu and Kashmir</td>
</tr>
<tr>
<td>Jelel La</td>
<td>Sikkim</td>
</tr>
<tr>
<td>Nathu La</td>
<td>Sikkim</td>
</tr>
<tr>
<td>Rohtang</td>
<td>Himachal Pradesh</td>
</tr>
<tr>
<td>Zojila</td>
<td>Jammu and Kashmir</td>
</tr>
</tbody>
</table>

**First in India**

<table>
<thead>
<tr>
<th>Position</th>
<th>Holder</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Dr. Rajendra Prasad</td>
</tr>
<tr>
<td>Woman President</td>
<td>Pratibha Patil</td>
</tr>
<tr>
<td>Prime Minister</td>
<td>Jawaharlal Nehru</td>
</tr>
<tr>
<td>Woman Prime Minister</td>
<td>Indira Gandhi</td>
</tr>
<tr>
<td>Speaker of Lok Sabha</td>
<td>G V Mavlankar</td>
</tr>
<tr>
<td>Woman Speaker of Lok Sabha</td>
<td>Meira Kumar</td>
</tr>
<tr>
<td>Woman President of UN general assembly</td>
<td>Vijayalakshmi Pandit</td>
</tr>
<tr>
<td>Woman ruler of Delhi</td>
<td>Razia Sultana</td>
</tr>
<tr>
<td>To climb Mt. Everest</td>
<td>Tenzing Norway</td>
</tr>
<tr>
<td>Woman to climb Mt. Everest</td>
<td>Bachendri Pal</td>
</tr>
<tr>
<td>Indian to get Nobel Prize</td>
<td>Rabindranath Tagore</td>
</tr>
<tr>
<td>Woman judge of Supreme Court</td>
<td>Justice Fathima Bevi</td>
</tr>
<tr>
<td>Miss World</td>
<td>Reita Faria</td>
</tr>
<tr>
<td>Miss Universe</td>
<td>Sushmita Sen</td>
</tr>
<tr>
<td>Governor General of Independent India</td>
<td>Lord Mountbatten</td>
</tr>
<tr>
<td>Chief Justice of India</td>
<td>Justice H J Kania</td>
</tr>
<tr>
<td>Woman Astronaut</td>
<td>Kalpana Chawla</td>
</tr>
<tr>
<td>Indian Satellite</td>
<td>Aryabhatta</td>
</tr>
</tbody>
</table>

**Major Agricultural revolutions in India:-**

1. Green Revolution: Food grain production
2. Blue Revolution: Fish production
5. Golden Fiber Revolution: Jute production
6. Grey Revolution: Fertilizer revolution
7. Pink Revolution: Onion/Prawn production
8. Red Revolution: Meat & Tomato production
9. Round Revolution: Potato Revolution
10. Silver Revolution: Egg production
11. Silver Fiber Revolution: Cotton revolution
12. White Revolution: Milk production
13. Yellow Revolution: Oil seeds production
14. Evergreen Revolution: Overall development of agriculture

**Folk and Tribal Dances of Indian States:-**

1. Gujarat: Garba, Dandiya Rass, Tippani, Gomph
2. Maharashtra: Dandaniya, Lavani, Gafa, Mauni, Dasavtar
3. Karnataka: Huttari, Suggi Kunittha, Yakshagana
4. Kerala: Kaikottikali, Kaliyattam
5. Tamil Nadu: Kolattam, Karagam, Kummi, Kavadi, Pinnal
6. Andhra Pradesh: Burrakatha, Veedhi Natakam, Ghanta Mardala
7. Orissa: Chhua, Chadya Dandanata, Ghumara Sanchar
8. West Bengal: Kathi, Chhau, Baul, Kirtan, Jatra, Lama
9. Assam: Bihu, Khel Gopal, Rash Lila, Tabal Chongli, Canoe
10. Haryana: Daph, Gagar, Khoria, Gugga, Loor, Dhamal, Phag dance, Jhumar
11. Himachal Pradesh: Jhora Jhali, Dangli, Mahasu, Jadda, Jhainta, Chharhi
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