

Country	Capital	Currency
Serbia and Montenegro	Belgrade	Dinar
South Africa	Cape Town	Rand
Spain	Madrid	Euro
Singapore	Singapore	Dollar
Sri Lanka	Colombo	Rupee
Syria	Damascus	Pound
Syprus	Nicosia	Pound
Taiwan	Taipei	New Taiwan Dollar
Thailand	Bangkok	Baht
Trinidad & Tobago	Port of Spain	Dollar
Tunisia	Tunis	Dinar
Turkey	Ankara	Lira
United Arab Emirates	Abu Dhabi	Dirham
Uganda	Kampala	Shilling
Ukraine	Kiev	Karbovanets
U.K.	London	Pound Sterling
U.S.A.	Washington D.C.	U.S. Dollar
Venezuela	Caracas	Bolivar
Vietnam	Ho Chi Minh City (Hanoi)	Dong
Yemen	Sana'a	Riyal
Zaire	Kinshasa	Zaire
Zambia	Lusaka	Kwacha
Zimbabwe	Harare	Dollar

River Side Cities

Town	River	Town	River
Kabul	Kabul	Canton	Si-Kiang
Allahabad	Confluence of Ganga, Basra (Iraq)	Jamuna, Saraswati	Tigris and Euphrates
Nasik	Godawari	Cairo (Egypt)	Nile
Kolkata	Hooghly	Ankara (Turkey)	Kizil
Cuttack	Mahanadi	Baghdad (Iraq)	Tigris
Patna	Ganga	Berlin (Germany)	Spree
Chittagong	Maiyani	Khartoum (Sudan)	Nile
Lucknow	Gomati	Belgrade	Dunube
Jamshedpur	Subarnarekha	Cologne (Germany)	Rhine
Haridwar	Ganga	Lisbon (Portugal)	Tangus
Delhi	Jamuna	Glasgow (Scotland)	Clyde
Kanpur	Ganga	Paris (France)	Seine
Surat	Tapti	Hamburg (Germany)	Elbe

River	Town	River
Minagat	Budapest (Hungary)	Danube
Ferozepur	Rome (Italy)	Tiber
Ludhiana	Warsaw (Poland)	Vistula
Karachi (Pak)	Bristol (U.K.)	Avon
Lahore (Pak)	London (U.K.)	Thames
Vijayawada	New Castle (U.K.)	Tyne
Varanasi	New York	Hudson
Yangon (Myanmar)	Philadelphia	Delaware
Akyab (Myanmar)	New Orleans	Mississippi
Shanghai	Montreal (Canada)	Ottawa
Nanking	Quebec (Canada)	St. Lawrence
Chungking	Yang-tse-Kiang	

Wonders of The World**Seven Wonders of the Ancient World**

1. Hanging Garden of Babylon
2. Temple of Diana at Ephesus (*Rome*)
3. Statue of Jupiter at Olympia
4. Pyramids of Egypt
5. Mausoleum of Mausolus (*Ruler of Halicarnassus*)
6. Light house of Alexandria
7. Colossus at Rhodes (*912 ft. high Statue of Helios, the Sun God*)

Seven Wonders of the Medieval World

1. Great Wall of China
2. Porcelain Tower of Nanking (*China*)
3. Colosseum of Rome (*Italy*)
4. Stone henge of England
5. Leaning Tower of Pisa (*Italy*)
6. Catacombs of Alexandria
7. Mosque at St. Sophia (*Constantinople*)

New Seven Wonders of the World

As declared on July 7, 2007 by New Seven Wonders Foundation of Switzerland, at a grand ceremony organised in 'Stadio da Lutz, Benefica stadium in Lisbon (Portugal).

1. The Taj Mahal (*Agra, India*)
2. The Great Wall of China (*China*)
3. The Pink Ruins of Petra (*Jordan*)
4. The Statue of Christ the Redeemer in Rio de Janeiro (*Brazil*)
5. Incan Ruins of Machu Pichu (*Peru*)
6. The ancient Mayan City of Chichen Itza (*Mexico*)
7. The Colosseum of Rome (*Italy*)

Other Wonders of the World

1. The Sphinx, near Gizeh (*Giza*) in Egypt
2. The Catacombs at Rome
3. The Circus Maximus at Rome
4. Angkor Wat temple in Cambodia
5. The Alhambra at Granada in S. Spain
6. Shwe Dragon Pagoda or the Golden Pagoda at Yangon in Myanmar
7. Mosque at St. Sophia (*Constantinople*)

Countries and their main Products/ Industries

Afghanistan	Dry and fresh fruits, carpets, wool
Australia	Wood, dairy products, wheat, meat, lead, zinc

Austria	Machinery, textiles, leather goods
Brazil	Coffee
Belgium	Glass, textiles
Chile	Copper Nitrate
Canada	Wheat, newsprint, machinery
China	Silk, tea, rice
Congo	Copper, uranium, cobalt, ivory
Cuba	Sugar, tobacco, cigar
Denmark	Textiles, paper
France	Textile, wine, silk
Germany	Machinery, chemical, iron and steel equipments
Ghana	Coco, gold, coffee
India	Jute, textiles, sugar, spices, tobacco, tea, cement, mica
Indonesia	Sugar, spices, rubber, rice, cinchona, petroleum
Iran	Petroleum, carpets, dry fruits
Iraq	Dates, petroleum
Italy	Mercury, textiles
Japan	Machinery, textiles, toys, silk, automobiles
Kenya	Coffee, tea, meat, sisal, hides and skins, cement, soda ash
Kuwait	Petroleum
Malaysia	Rubber, tin
Netherlands	Machinery, aircraft, electicals
Saudi Arabia	Oil, date
Spain	Lead
Sweden	Matches, timber
Switzerland	Watches, chemicals, electicals
Taiwan	Camphor, rice
UK	Textiles, medicines, machinery, cars
USA	Petroleum, wheat, machinery, coal, automobiles, iron
Russia	Petroleum, wheat, chemicals, heavy machinery
Vietnam	Tin, rice, rubber, teak

Towns Associated with some important industries

Town	Industry
Ahmedabad (Gujarat)	Cotton Textiles
Agra (U.P.)	Leather, marble
Baku (Russia)	Petroleum
Bangaluru (Karnataka)	Aircraft and telephones
Bhilai (Chhattisgarh)	Steel Plant
Bangkok (Thailand)	Ship-building, teak and wood

Town	Industry
Bhagalpur (Bihar)	Silk
Mumbai (Maharashtra)	Film industries
Buenos Aires (Argentina)	Dairy products, meat
Cadiz (Portugal)	Cork
Kolkata (W. Bengal)	Jute, paper, leather works
Chittaranjan (W. Bengal)	Locomotives
Cochin (Kerala)	Ship-building
Chicago (USA)	Agricultural equipments, automobiles
Dhaka (Bangladesh)	Jute
Dalmianagar (Bihar)	Cement
Darjeeling (W. Bengal)	Tea
Delhi (India)	Textiles, chemicals, Small Scale Industries
Detroit (USA)	Motorcar
Dhariwal (Punjab)	Woolen goods
Digboi (Assam)	Oil refinery
Ferozabad (U.P.)	Bangles, Glass refinery
Guntur (Andhra Pradesh)	Tobacco
Havana (Cuba)	Sugar, tobacco, cigars
Jamshedpur (Jharkhand)	Steel
Jharia (Jharkhand)	Coal mines
Khetri (Rajasthan)	Copper mines
Johannesberg (South Africa)	Gold mines
Kolar (Karnataka)	Gold fields
Los Angeles (USA)	Film Production
Ludhiana (Punjab)	Hosiery
Lyons (France)	Silk Industry
Chennai (Tamil Nadu)	Leather, Integral Coach Factory
Moradabad (U.P.)	Brassware, cutlery
Nagpur (Maharashtra)	Oranges, Cotton mills
Nepanagar (M.P.)	Newsprint
Pittsburgh (USA)	Iron and steel, coal, petroleum
Perambur (Tamil Nadu)	Integral Coach Factory
Raniganj (W.B.)	Coal mines
Sialkot (Pakistan)	Sports goods
Sindri (Jharkhand)	Fertilizers and chemicals
Sheffield (UK)	Cutlery
Titagarh (W. Bengal)	Paper and Jute
Venice (Italy)	Ship-building
Varanasi (U.P.)	Silk, Brocade Industry

Famous Sites (India)

Site	Location
Ajanta	Maharashtra
Akabar's Tomb	Agra (U.P.)
Amarnath Cave	Kashmir
Ambar Palace	Jaipur (Rajasthan)
Anand Bhawan	Allahabad (UP)
Bakra Dam	Bilaspur (Himachal Pradesh)
Birla Planetorium	Kolkata (West Bengal)
Island Palace	Udaipur (Rajasthan)
Jagannath Temple	Puri (Odisha)
Jai Stambh (Tower of Victory)	Chittorgarh (Rajasthan)
Jama Masjid	Delhi
Black Pagoda	Konark (Odisha)
Brihadeeshwara Temple	Tanjavur
Brindaban Gardens	Mysore (Karnataka)
Buland Darwaza	Fatehpur Sikri (U.P.)
Char Minar	Hyderabad (Telangana)
Chilka Lake	Near Bhubaneswar (Odisha)
Dal Lake	Srinagar (J & K)
Dilwara Temples	Mt. Abu (Rajasthan)
Elephanta Caves	Mumbai (Maharashtra)
Ellora Caves	Aurangabad (Maharashtra)
Gateway of India	Mumbai (Maharashtra)
Golden Temple	Amritsar (Punjab)
Gol Gumbaz	Bizapur (Karnataka)
Hanging Gardens	Mumbai
Hawa Mahal	Jaipur (Rajasthan)
Howrah Bridge	Kolkata (W. Bengal)
Mt. Girnar (Jain Temple)	Junagadh (Gujarat)
Nataraja Temple	Chennai (Tamil Nadu)
Nishat Bagh	Srinagar (J & K)
Padmanabha Temple	Thiruvananthapuram (Kerala)
Palitana	Junagadh (Gujarat)
Panch Mahal	Fatehpur Sikri (U.P.)
Pichola Lake	Udaipur (Rajasthan)
Prince of Wales Museum	Mumbai (Maharashtra)
Qutub Minar	Delhi
Raj Ghat	Delhi
Rashtrapati Bhawan	Delhi

Site	Location
Red Fort	Delhi
Jantar Mantar	New Delhi
Kailash Temple	Ellora (Maharashtra)
Kanya Kumari	Tamil Nadu
Kirti Stambha (Tower of fame)	Chittorgarh (Rajasthan)
Lal Bagh Garden	Bengaluru (Karnataka)
Lingaraj Temple	Bhubaneshwar (Odisha)
Mahakaleshwar	Ujjain (M.P.)
Maheshmukh (Trimurti) Temple	Elephanta Cave (Maharashtra)
Malabar Hills	Mumbai (Maharashtra)
Man Mandir Palace	Gwalior Fort (M.P.)
Marble Rocks	Jabalpur (M.P.)
Marina Beach	Chennai (T.N.)
Minakshi Temple	Madurai (T.N.)
Sidi Sayyid Masjid	Ahmedabad (Gujarat)
Shalimar Bagh	Srinagar (J & K)
Shahi Chashma	Srinagar (J & K)
Shanti Van	Delhi
Statue of Gomateshwara	Shravanabelagola, Hasan (Karnataka)
Sun Temple (Black Pagoda)	Konark (Odisha)
Taj Mahal	Agra (Uttar Pradesh)
Tower of Silence	Mumbai (Maharashtra)
Victoria Memorial	Kolkata (W. Bengal)
Victoria Garden	Mumbai (Maharashtra)
Vijay Ghat	Delhi

Famous Sites (World)

Site	Location	Site	Location
Al-Aqsa Mosque	Jerusalem (Israel)	Pentagon	Washington (U.S.A.)
Big Ben	London (U.K.)	Potala	Nanking (China)
Brandenburg Gate	Berlin (Germany)	Pyramid	Egypt
Broadway	New York (U.S.A.)	Red Square	Moscow (Russia)
Brown House	Berlin (Germany)	Scotland Yard	London (U.K.)
Buckingham Palace	London (U.K.)	Shwe Dragon Pagoda	Yangon (Myanmar)
Colosseum	Rome (Italy)	Sphinx	Egypt
Downing Street	London (U.K.)	Statue of Liberty	New York (U.S.A.)
Eiffel Tower	Paris (France)	Vatican	Rome (Italy)
Fleet Street	London (U.K.)	Wailing Wall	Jerusalem (Israel)
Harley Street	London (U.K.)	Wall Street	New York (U.S.A.)

Site	Location	Site	Location
Hyde Park	London (U.K.)	Westminster Abbey	London (U.K.)
India House	London (U.K.)	White Hall	London (U.K.)
Kaaba	Mecca (Saudi Arabia)	White House	Washington (U.S.A.)
Kremlin	Moscow (Russia)	Merdeka Palace	Jakarta (Indonesia)
Leaning Tower	Pisa (Rome)	Oval	London (U.K.)
Louvre	Paris (France)		

Changed Names of Cities, States and Countries

Old Name	New Name	Old Name	New Name
Abyssinia	Ethiopia	Ceylon	Sri Lanka
Angora	Ankara	Christina	Oslo
Aurangabad	Sambhaji Nagar	Cochin	Kochi
Banaras	Varanasi	Constantinople	Istanbul
Bangalore	Bangaluru	Dacca	Dhaka
Baroda	Vadodara	Dahomey	Benin
Batavia	Djakarta	Dutch East Indies	Indonesia
Basutoland	Lesotho	Dutch Guiana	Surinam
Bechuanaland	Botswana	Ellice Islands	Tuvalu
Bhatinda	Bathinda	Formosa	Taiwan
Bombay	Mumbai	Gauhati	Guwahati
British Guiana	Guyana	Gold Coast	Ghana
Burma	Myanmar	Holland	The Netherlands
Calcutta	Kolkata	Ivory Coast	Cote D'Ivoire
Calicut	Kozhikode	Jubbulpore	Jabalpur
Cape Canaveral	Cape Kennedy	Jullundur	Jalandhar
Cawnpore	Kanpur	Leopoldville	Kinshasa
Central Provinces	Madhya Pradesh	Madagascar	Malagasy
Madras	Chennai	Malaya	Malaysia
Manchukuo	Manchuria	Mesopotamia	Iraq
New Hebrides	Vanuatu	Nippon	Japan
Northern Rhodesia	Zambia	Nyasaland	Malawi
Ooty	Udhagamandalam	Orissa	Odisha
Panjim	Panaji	Peking	Beijing
Petrograd	Leningrad	Persia	Iran
Palghat	Palakkad	Pondicherry	Puducherry
Poona	Pune	Pretoria	Tshwane
Quilon	Kollam	Rangoon	Yangon
Rhodesia	Zimbabwe	Saigon	Ho Chi Minh City
Salisbury	Harare	Sandwich Islands	Hawaiian Islands

Old Name	New Name	Old Name	New Name
Siam	Thailand	Simla	Shimla
South West Africa	Namibia	Spanish Guinea	Equatorial Guinea
Stalingrad	Volgograd	Tanganyika and Zanzibar	Tanzania
Trichur	Thrissur	Trivandrum	Thiruvananthapuram
United Provinces	Uttar Pradesh	Upper Volta	Burkina Faso
Utaranchal	Uttarakhand	Vizagapattam	Visakhapatnam
Zaire	Republic of Congo	Tanjore	Thanjavur

Highest Mountain Peaks (World)

Name	Height (in metres)	Range
1. Mount Everest	8850	Himalayas
2. K-2 (Godwin Austen)	8611	Karakoram
3. Kanchenjunga	8598	Himalayas
4. Lhotse	8511	Himalayas
5. Makalu I	8481	Himalayas
6. Dhaulagiri I	8167	Himalayas
7. Manaslu I	8156	Himalayas
8. Cho Uyo	8153	Himalayas
9. Nanga Parbat	8126	Himalayas
10. Annapurna I	8091	Himalayas

Three Deepest Oceans

Name	Greatest depth (in metres)	Greatest depth location
1. Pacific Ocean	11,033	Mariana Trench
2. Atlantic Ocean	9,460	Puerto Rico Trench
3. Indian Ocean	7,542	Java Trench

Geographical Epithets (Sobriquets)

Blue Mountains	Nilgiri Hills, India
City of Sky Scrapers	New York, USA
City of Seven Hills	Rome, Italy
City of Dreaming Spires	Oxford, England
City of Golden Gate	San Francisco, USA
Cockpit of Europe	Belgium
China's Sorrow	Hwang-Ho
Dark Continent	Africa
Eternal City	Rome
Forbidden City	Lhasa, Tibet
Gate of Tears	Bab-el-Mandeb, Jerusalem

Granite City	Aberdeen, Scotland
Herring Pond	Atlantic Ocean
Hermit Kingdom	Korea
Honeymoon Lake	Titicaca Lake (on Peru and Bolivia border in Andes)
Island Continent	Australia
Island of Cloves	Madagascar
Island of Pearls	Bahrain
Key to the Mediterranean	Gibraltar
Land of Golden Fleece	Australia
Land of Mid Night Sun	Norway
Land of Rising Sun	Japan
Land of White Elephant	Thailand
Never Never Land	Prairies of N. Australia
Pearl of Antilles	Cuba
Pillars of Hercules	Strait of Gibraltar
Pearl of the Pacific	Guyayaquil Port of Ecuador
Pink City	Jaipur, India
Queen of the Adriatic	Venice, Italy
Sugar Bowl of the World	Cuba
Venice of the East	Cochin, India
Venice of the North	Stockholm
Windy city	Chicago, USA
Yellow River	Hwango-Ho

Some Important Boundary Lines

Durand Line	between Pakistan and Afghanistan
Hindenberg Line	between Germany & Poland
49th Parallel	between USA & Canada
Mac Mahon Line	between India & Tibet/China
Maginot Line	between France & Germany
38th Parallel	between North & South Korea
Oder Neisse Line	between Germany and Poland
Radcliffe Line	between India & Pakistan
17th Parallel	between India & Pakistan (as claimed by Pakistan)

Some Important Tribes and their Homeland (World)

Eskimos	Greenland, North Canada,
Alaska, N. Siberia	Lapps : N. Finland, Scandinavian country
Koryaks	N. Siberia, Eurasian Tundra, North-East Asia

Aleuts	Alaska
Bushman	Kalahari
Turroga	Sahara
India Tribes	Amazon basin
Pygmies	Congo basin, Zaire
Hausa	North Nigeria
Ainus	Japan
Maoris	New Zealand
Hotten tots	Hot Tropical Africa
Ibans	Equatorial rain forest region of South-East Asia
Kalmuk	Central Asia
Buryak	Central Asia
Yoakuts	Siberia
Berbers	N. Africa
Kareus or Meos	Myanmar

Bedouin	Sahara and Middle East
Bindibu or Aborigines	Australia
Gobi Mongols	Gobi
Orang Asli	Malaysia
Masai	East & Central Africa
Aeta	Phillipines
Tapiro	Papua New Guinea
Fulani	Western Africa
Zulus	South Africa
Kirghiz	Asiatic steppes
Kazakhs	Kazakhstan
Red Indian	N. America
Samoyeds	Siberia
Guicas	Amazon forest area
Semangs	East Sumatra

Glossary of Geographical Terms

- Ablation** : Loss of ice in the body of a glacier through melting etc.
- Abrasion** : Erosion of rocks by water, wind or ice (glacier).
- Absolute humidity** : Amount of water vapour present in a unit volume of air; usually expressed as grammes per cubic metre.
- Advection** : Transfer of heat through horizontal movement of air.
- Aeolian** : Relating to or caused by wind. Example, aeolian landforms.
- Alluvium** : The fine debris transported and deposited by a river. Landforms formed by deposition of such material are called alluvial landforms, for example, alluvial plains. Soils formed through river deposition are called alluvial soils.
- Altimeter** : A type of aneroid barometer for measuring height, used mainly in aeroplanes.
- Anemometer** : An instrument used for measuring wind velocity.
- Anticline** : The arch or crest of a fold in the rocks. Its opposite is a syncline, the bottom of a fold.
- Antipodes** : Two points diametrically opposite on the surface of earth.
- Aphelion** : The position of the earth in its orbit when it is at its greatest distance from the sun. At its nearest distance from the sun the earth is said to be in *perihelion*.
- Apogee** : The position of the moon or any other heavenly body, when it is at its greatest distance from the earth. At its shortest distance from the earth the moon is said to be in *perigee*.
- Asteroids or planetoids** : Minor planets revolving around the sun between the orbits of Mars and Jupiter.
- Atmosphere** : The envelope of air surrounding the earth. The most abundant among its constituents are nitrogen and oxygen.

Atoll : A ring or horseshoe-shaped coral reef.

Attrition : Mutual wearing down of rock particles during transportation by wind, water or ice.

Aurora Australis and Aurora Borealis : The light phenomena seen in the sky at night in the higher latitudes of the southern and northern hemisphere respectively. Aurora comprises an electrical discharge and is usually accompanied by a magnetic storm.

Avalanche : A large mass of snow and ice at high altitude, sliding downslope on a mountain. Usually a large amount of rock material is also involved in an avalanche.

Azonal soil : Soil which has not been subjected sufficiently to soil forming processes and thus has changed little from the parent material. Such soils do not have a mature profile.

Barometer : Instrument used for measuring pressure. A self-recording barometer giving a continuous record of pressure conditions in the form of a line graph is called a barograph and the graph thus provided is called a barogram.

Barysphere, Bathysphere or Centrosphere : Inner portion of the earth below the lithosphere or outer crust.

Base level : The lowest level to which a river can deepen its valley. It is the level of the surface of the water body, a lake or sea, in which the stream finally falls.

Beach : A gently sloping strip of land along the coast. This lies between the high and low tide levels and is formed by depositional action of waves.

Bearing : The horizontal angle between the direction of an object and the meridian through the observer, measured in degrees (zero to 360) clockwise from the north.

Beaufort scale : A scale identifying wind strength. The lowest point on the scale is zero which refers to calm conditions and the highest is 12 referring to a hurricane.

Biogeography : Study of geographical distribution of plants and animals.

Biosphere : That portion of the earth and its environment occupied by various forms of life.

Blizzard : A storm of powdery snow in the polar regions.

Bog : An area of soft, wet, spongy ground consisting mainly of decayed or decaying moss and other vegetable matter.

Bora : A cold and often dry wind experienced along the eastern coast of the Adriatic Sea.

Bore : A high tidal wave causing backflow of water in river.

Caatinga : Thorn-forest of Brazil.

Canyon : A narrow, deep, steep-sided river valley cut in the soft rocks.

Cape : A headland, a more or less pointed piece of land jutting out into the sea.

Cardinal points : The four main directions of the compass.

Cartography : The art of drawing maps and charts.

Celestial equator : The imaginary circle formed by the intersection of a plane through the centre of the earth perpendicular to its axis and the celestial sphere.

Celestial sphere : A sphere of infinite radius having its centre at some point in the solar system, for example, at the centre of the earth, on to which all members of the solar system may be projected.

Chaparral : The low, dense scrub, characteristic of Mediterranean type of climatic regions.

Chronometer : An accurate time-keeping instrument.

Climate : The average weather conditions of region throughout the seasons.

Climatology : The science studying climates and their influence on other components of the environment.

Clinometer : An instrument used for determining the difference in elevation between two points.

Cloud : A mass of tiny water droplets or ice crystals formed by condensation of water vapour in the atmosphere.

Condensation : The process by which a substance changes from vapour to liquid.

Condensation nuclei : Microscopic particles having an affinity for water. These serve as the nuclei for the formation of raindrops. The presence of these particles in the atmosphere is necessary for condensation to occur.

Coniferous : Cone-bearing plants with needle-shaped leaves.

Connate water : Water entrapped in the interstices of rocks during their formation; also called fossil water.

Convection : The uplift of air as a result of surface heating or instability due to other reasons. Generally this term refers to vertical movement of gases in contrast to advection.

Convection currents : Due to instability in air some vertical motions in the atmosphere are set up which are more or less in the form of currents.

Coral : A kind of rock formed of polyps forming reefs in the oceans.

Colour of the sky : Seems blue because of the selective scattering of light in the atmosphere by gases and dust particles.

Deciduous forest : Consists of trees that shed their leaves in the dry season.

Downs : Grasslands of Australia.

Denudation : Wearing away of rocks by various agencies like wind, water and ice (glaciers).

Eclipse : Partial or full obscuring of the moon when the earth comes between the sun and the moon is called **lunar eclipse**. It occurs usually on the day of the full moon.

A partial or complete obscuring of the sun because of the presence of the moon between the sun and the earth is called the **solar eclipse** and it occurs on the day of the new moon, that is, on the day the moon is not visible.

Ecliptic: The apparent track of the sun throughout the year as a result of the motion of the earth around it. The plane of the ecliptic is the plane passing through this path and is coincident with the plane of the earth's orbit.

Ecology: Studies of organisms in relation to their environment.

Edaphic: Relating to soil.

Eluviation: Removal of material in solution or suspension from the upper horizons of the soils to the lower.

Epicentre: Point on the surface of the earth vertically above the seismic focus or deep focus, that is, the point where an earthquake originates.

Estuary: Mouth of a river where tidal effects are evident and where fresh water and sea water mix. The term also refers to river valleys which have been flooded by sea due to coastal subsidence.

Eustatic movement: A large scale rise or fall of sea level.

Evapotranspiration: The term signifies total loss of water (moisture) from soil in the form of water vapour, including that lost by evaporation from open water bodies, the surface of rocks and also that lost by transpiration from growing plants.

Fathometer: Instrument used for measuring the depth of the ocean.

Fauna: The animal life of a region or a geological period.

Fjord: A glacial valley or part thereof now under the sea.

Flood-Plain: A plain bordering a river and formed by river deposition.

Flora: The plant life of a region or geological period.

Fluvial: Belonging or relating to a river.

Fog: A dense mass or small water drops or smoke or dust particles in the lower layers of the atmosphere.

Geosyncline: A large depression or trough in the earth's crust, that is a syncline on a large scale.

Geyser: A thermal spring which throws up a jet of hot water and steam intermittently.

Glacier: A moving mass of ice.

Gorge: A narrow and deep valley of a river.

Great circle: A circle on the earth's surface whose plane passes through its centre and thus bisects it into two hemispheres.

Great circle route: A route between any two points on the earth's surface which follows the great circle between them.

Gulf: A large, deep bay.

Habitat: Natural environment of a plant or animal.

Halophyte: A plant which grows naturally in saline environment.

Hemisphere: One half of the earth's surface, formed when a plane passing through its centre bisects it.

Hinterland: Area from which a port gets most of its exports.

Horse latitudes: Subtropical belt of high pressure over the oceans.

Humidity: State of the atmosphere with respect to the water vapour it contains.

Humus: Decomposed and partly decomposed organic matter in the soil.

Hydrology: The study of the water content on the earth.

Hyetograph: A self-recording rain-gauge.

Hygrometer: Instrument used for measuring humidity in the atmosphere.

Hygrophyte: Plant growing in wetlands.

Iceberg: A mass of land ice which has been broken off or carved from the end of a glacier and is afloat in the sea.

Illuviation: Deposition, in the lower soil horizon, of material removed by eluviation from the upper horizons of the soil.

Insolation: Energy radiated from the sun received by the earth.

International date line: The line approximating to 180° East or West longitude, where the date changes by one day as it is crossed. The date is one day earlier east of this line.

Intertropical convergence zone or inter-tropical front: Zone of low atmospheric pressure near the equator where the northeast and southeast trade winds converge.

Intra-zonal soil: Soil which has been influenced in its development, less by climate and vegetation than by factors like parent material and drainage.

Isopleth: Line drawn on the map along which the value of a particular phenomenon or product is uniform.

Isonomal: Isopleth of anomaly.

Isorithm: Any line representing continuous value on maps.

Isobars: Lines of equal pressure.

Isobaths: Lines of equal depth in sea.

Isobronts: Lines joining places experiencing a thunderstorm at the same time.

Isochrones: Lines joining places located at equal travel time from a common centre.

Isogonals: Lines joining places with same magnetic declination.

Isohalines: Isopleths of salinity.

Isohels: Isopleths of equal amount of sunshine.

Isohyet: Isopleth of rainfall.

Isohypse or contour lines: Isopleths of elevation above sea level.

Isonif: Isopleth of amount of snow.

Isophene: Isopleth of seasonal phenomena, for example, flowering dates of plants.

Isopotential: Surface to which artesian water can rise.

Isorymes: Lines of equal frost.

Isoseismals: Lines of equal seismic activity.

Isotherms: Isopleths of temperature.

Isthmus: A narrow strip of land joining two land masses, viz.—the isthmus of Panama joining North and South America.

Karst region or Karstland: Limestone region in which most of the drainage underground, the surface being dry and barren.

Katabatic wind: Local wind caused by the flow of air down mountain slopes and valleys.

Lagoon: Part of sea partially cut off from it by deposits of sand or coral reefs, viz. Chilika Lake in Odisha.

Lapse rate: The rate of change of temperature in atmosphere with height; it is said to be positive when temperature decreases with height, as it normally does, and negative when temperature increases with height, as in temperature inversion.

Latitude: The angular distance of a point on the earth's surface north or south of the equator, as measured from the centre of the earth. Latitudinal lines are also called parallels of latitude.

Leaching: The process by which soluble substances are washed out of the upper layers of the soils into lower layers by percolating rainwater.

Leeward: The side or direction sheltered from the wind.

Light year: Distance travelled by light in one year, the speed being 1,86,000 miles per second. The unit is used for measuring the distance of stars from the earth.

Lithosphere: The solid crust of the earth.

Loess: A deposit of fine silt or dust generally held to have been transported to its present situation by wind.

Longitude: The angular distance measured along the equator, between the meridian through a given point and a standard or prime meridian.

Lunar month: The interval of time in which the moon makes one complete revolution around the earth—about 29.5 days.

Magnetic storms: Large, irregular variations or disturbances in the earth's magnetic field.

Meridian: A line of longitude, or half of one of the great circles that pass through the poles and cut the equator at right angles.

Mesophyte: A plant that requires a moderate amount of moisture. Most common trees and shrubs are mesophytes.

Mestizo: Offspring of a European and an American Indian—the term is used mostly in South America.

Meteors: Small pieces in the atmosphere appearing as shooting stars.

Midnight sun: A phenomenon observed in high latitudes around midsummer when the sun does not sink below the horizon throughout the 24 hours of a day and night cycle and may thus be visible even at midnight.

Monsoon: A type of wind system in which there is complete reversal or almost so, of prevailing wind direction from season to season.

Moraine: The debris or fragments of rock material brought down with the movement of glacier.

Mulatto: The offspring of a white and a black person, commonly used in America.

Nivation: Erosion due to action of snow.

Nomadism: The practice, among certain primitive people, of frequently changing their habitation. These people keep moving residence in search of food and fresh pasture for animals. People following this mode of life are called nomads.

Oasis: Area in the desert where water is available.

Ocean Current: Movement of the surface water of the ocean.

Opisometer: Instrument used for measuring distances on a map.

Orbit: Path of a heavenly body through space in relation to some selected point.

Orographic rain: Rain caused by mountains standing in the path of moisture-laden winds.

Outwash Plain: Alluvial plain formed by streams originating from the melting ice of a glacier.

Pampas: The mid-latitude grasslands of South America.

Pastoralism: Practice of breeding and rearing cattle. Some pastoral communities may be nomadic in their habits.

Pedology: The science of the study of soils.

Pelagic: Belonging to the open sea.

Peninsula: A stretch of land almost surrounded by water.

Perigee: The point in the orbit of moon or a planet or in the apparent orbit of the sun, nearest to the earth.

Perihelion: The position of the earth in its orbit or any other heavily body, nearest to the sun.

Permafrost: Ground that is permanently frozen.

Petrology: The study of the composition, structure and history of rocks forming the crust of the earth.

Phenology: Science dealing with the effects of seasonal changes upon animal and plant life.

Phytogeography: The study of the distribution of plants, on the earth, in relation to environment.

Piedmont: Belonging to or related to the foot of a mountain.

Planetary winds: The general distribution of winds throughout the lower atmosphere which is determined by differences in insolation and would be set up similarly on any rotating planet possessing an atmosphere.

Planimeter: Instrument for measuring irregular plane areas on maps.

Plateau: Extensive level or near level area of elevated land.

Prairies: Mid-latitude grasslands of North America.

Precipitation: Falling water (in liquid or solid form, as the case may be) from the atmosphere to the earth.

Pressure gradient: Rate at which pressure declines horizontally on the earth's surface.

Psychrometer: Instrument used for measuring humidity of the atmosphere.

Radiation: Process by which a body emits radiant energy, viz.—in the form of heat.

Rain shadow: Area having relatively lower average rainfall because it is sheltered from the prevailing rain-bearing winds by a range of mountains or hills.

Reef: Ridge of rocks lying near the surface of the sea, which may be visible at low tide, but usually covered by water.

Reg: A stony desert. A sandy desert is called an erg.

Rhumb line of loxodrome: Line on the earth's surface which cuts all meridians at the same angle.

Saprophyte: A plant which lives on decaying organic matter. Most such plants are fungi.

Satellite: A relatively small body revolving around a planet.

Savanna: An area of tropical grassland with scattered trees.

Seismic focus or deep focus: Point below the earth's surface where an earthquake originates.

Seismograph: Instrument used for measuring and recording earthquake shocks.

Seismology: Science of the study of earthquakes.

Selvas: Dense equatorial forests of the Amazon basin in South America.

Sericulture: The culture of silkworms for production of raw silk.

Sidereal day: The period of time during which a star describes a complete circle in its apparent journey around the pole star, representing the period of one rotation of the earth on its axis and equal to 23 hours 56 minutes 4 seconds. It is thus about 4 minutes shorter than the mean solar day.

Sleet: Precipitation consisting of a mixture of snow and rain.

Smog: Fog heavily laden with smoke.

Snow-line: Lower limit of perpetual snow. The snow above this line does not melt completely even in summer.

Soil erosion: The wearing away and loss of soil mainly by the action of wind and water.

Solar constant: Intensity of the sun's radiation in space at the mean distance of the earth from the sun.

Solar day: The average period taken by the earth in making one rotation on its axis in relation to the sun—24 hours.

Solstice: The time during summer or winter when the sun is vertically above the point which represents its farthest distance north or south of the equator—the two tropics.

Steppe: Mid-latitude grasslands of Eurasia.

Strait: Narrow stretch of sea connecting two extensive areas of sea.

Syncline: Trough or inverted arch of a fold in rock strata.

Sublimation: Change of state of water from solid to vapour directly or vice-versa.

Taiga: Coniferous forestland of Siberia.

Temperature inversion: Condition when the temperature is found to be increasing instead of decreasing with height.

Theodolite: Instrument used for measuring angular distances in the vertical plane (elevation) and the horizontal plane (azimuth).

Thermograph: Self-recording thermometer—an instrument for measuring temperature.

Tidal range: Average difference in water level between height and low tide at one place.

Topographic map: Map on sufficiently large scale to show the detailed surface features of an area.

Trans-humance: Practice among pastoral communities to move with their animals seasonally between two regions of different climate.

Tributary: Smaller river which joins a larger river.

Tropics: The Tropic of Cancer and the Tropic of Capricorn located at degrees N and S, respectively, are the northward and southward limits up to which the sun's vertical rays can reach.

Tropical Zone: The area bounded by the two tropics is called the tropical zone.

Tropophyte: A plant which acts as hygrophyte in one season and xerophyte in the other.

Tsunami: A large sea wave caused by an earthquake originating on the sea bed.

Van Allen's Radiation Belts: Named after the physicist who discovered them, these are two bands of the outermost layer of the atmosphere (magnetosphere), at heights of 3,000 and 16,000 km above the earth's surface. Here the ionized particles trapped by the earth's magnetic field from the solar radiation, concentrate.

Viticulture: The culture of grape-vine.

Volcano: Vent in the earth's crust caused by magma forcing its way to the surface through which molten or solid rock flow from the interior of the earth.

Watershed: Elevated boundary line separating headstreams which are tributaries to different river systems or basins.

Weather: Condition of the atmosphere at certain time or over a certain period of time as described by meteorological phenomena including temperature, atmospheric pressure and humidity.

Weathering: Decay and disintegration of rocks of the earth's crust by exposure to the atmosphere; it is one of the main processes of denudation.

Willy-willy: Tropical cyclone in the Pacific near the east coast of Australia.

Wind vane: Instrument used to indicate the direction of the wind.

Xerophyte: Plant which is adapted to living in a region where little moisture (or dry climatic condition) is available.

Yazoo river: Tributary which is prevented from joining the main river because the latter has built up high natural levees; it thus runs parallel to the main stream for a considerable distance before joining it downstream.

Zenith: Point in the celestial sphere vertically above one's head.

Zodiac: Zone of the heavens in which lie the paths of the sun, the moon and the chief planets.

Zonal soil: A soil which owes its well developed characteristics largely to the influence of climate and vegetation. They are characterised by well-developed soil profiles.

Zoo-geography: Study of the distribution of animals and successional development on the earth's surface.

Zoophyte: An animal which resembles a plant, viz.—a coral polyp, a sponge.

Indian Polity and Constitution

4

Constitution: Constitution is the foundational law of a country which ordains the fundamental principles on which the government (or the governance) of that country is based. It lays down the framework and principal functions of various organs of the government as well as the modalities of interaction between the government and its citizens. With the exception of the United Kingdom (U.K.), almost all democratic countries possess a written constitution. India also possesses an elaborate written constitution which was enacted by a constituent assembly specifically set up for the purpose.

Our Constitution: Our present constitution—the first Constitution of India framed and given to themselves by the people of India was adopted by the Constituent Assembly on 26 November, 1949. It came into full operation with effect from 26 January, 1950. The Constitution as originally adopted had 22 parts, 395 articles and 8 schedules. Its present text is as amended from time to time.

1. Evolution of Indian Constitution

Although the systems of ancient India do have their reflections in the Constitution of India, the direct sources of the Constitution lie in the administrative and legislative developments of the British period. A concise and chronological description of the Acts, documents and events that culminated in the framing of the world's largest written Constitution is given here.

Administrative & Legislative Reforms Before 1857

Regulating Act of 1773

- > This Act was based on the report of a committee headed by the British Prime Minister Lord North.
- > Governance of the East India Company was put under British parliamentary control.
- > The Governor of Bengal was nominated as Governor General for all the three Presidencies of Calcutta, Bombay and Madras. Warren Hastings was the first such Governor General.
- > A Supreme Court was established in Calcutta (now Kolkata).
- > Governor General was empowered to make rules, regulations and ordinances with the consent of the Supreme Court.

Pitts India Act of 1784

- > It was enacted to improve upon the provisions of Regulating Act of 1773 to bring about better discipline in the Company's system of administration.
- > A 6-member Board of Controllers was set up which was headed by a minister of the British Government. All political responsibilities were given to this board.
- > Trade and commerce related issues were under the purview of the Court of Directors of the company.
- > Provinces had to follow the instructions of the Central Government, and Governor General was empowered to dismiss the failing provincial government.

Charter Act of 1793

- > Main provisions of the previous Acts were consolidated in this Act.
- > Provided for the payment of salaries of the members of the Board of Controllers from Indian revenue.
- > Courts were given the power to interpret rules and regulations.

Charter Act of 1813

- > Trade monopoly of the East India Company came to an end.
- > Powers of the three Councils of Madras, Bombay and Calcutta were enlarged, they were also subjected to greater control of the British Parliament.
- > The Christian Missionaries were allowed to spread their religion in India.
- > Local autonomous bodies were empowered to levy taxes.

Charter Act of 1833

- > The Governor General and his Council were given vast powers. This Council could legislate for the whole of India subject to the approval of the Board of Controllers.
- > The Council got full powers regarding revenue, and a single budget for the country was prepared by the Governor General.
- > The East India Company was reduced to an administrative and political entity and several Lords and Ministers were nominated as ex-officio members of the Board of Controllers.
- > For the first time the Governor-General's Government was known as the 'Government of India' and his Council as the 'Indian Council'.

Charter Act of 1853

- > This was the last of the Charter Acts and it made important changes in the system of Indian legislation.
- > This Act followed a report of the then Governor General Dalhousie for improving the administration of the company.
- > A separate Governor for Bengal was to be appointed.
- > Legislative and administrative functions of the Council were separately identified.
- > Recruitment of the Company's employees was to be done through competitive exams.
- > British Parliament was empowered to put Company's governance of India to an end at any suitable time.

Administrative & Legislative Reforms After 1857**Government of India Act, 1858**

- > British Crown decided to assume sovereignty over India from the East India Company in an apparent consequence of the Revolt of 1857, described as an armed sepoy mutiny by the British historians and remembered as the First War of Independence by the Indians.
- > The first statute for the governance of India, under the direct rule of the British Government, was the Government of India Act, 1858.
- > It provided for absolute (British) imperial control over India without any popular participation in the administration of the country.

- > The powers of the crown were to be exercised by the Secretary of State for India, assisted by a council of fifteen members, known as the Council of India.
- > The country was divided into provinces headed by a Governor or Lieutenant Governor aided by his Executive Council.
- > The Provincial Governments had to function under the superintendence, direction and control of the Governor General in all matters.
- > All the authority for the governance of India was vested in the Governor General in Council who was responsible to the Secretary of State.
- > The Secretary of State was ultimately responsible to the British Parliament.

Indian Councils Act, 1861

- > This is an important landmark in the constitutional history of India. By this Act, the powers of the crown were to be exercised by the Secretary of State for India, assisted by a council of fifteen members (known as the Council of India). The Secretary of State, who was responsible to the British Parliament, governed India through the Governor General, assisted by an Executive council.
- > This Act enabled the Governor General to associate representatives of the Indian people with the work of legislation by nominating them to his expanded council.
- > This Act provided that the Governor General's Executive Council should include certain additional non-official members also while transacting legislative business as a Legislative Council. But this Legislative Council was neither representative nor deliberative in any sense.
- > It decentralised the legislative powers of the Governor General's Council and vested them in the Governments of Bombay and Madras.

Indian Councils Act, 1892

- > The non-official members of the Indian Legislative Council were to be nominated by the Bengal Chamber of Commerce and the Provincial Legislative Councils while the non-official members of the Provincial Councils were to be nominated by certain local bodies such as universities, district boards, municipalities, zamindars etc.
- > The Councils were to have the power of discussing the Budget and addressing questions to the Executive.

Morley-Minto Reforms and the Indian Councils Act, 1909

- > Reforms recommended by the then Secretary of States for India (Lord Morley) and the Viceroy (Lord Minto) were implemented by the Indian Councils Act, 1909.
- > The maximum number of additional members of the Indian Legislative Council (Governor General's Council) was raised from 16 (under the Act of 1892) to 60 (excluding the Executive Councillors).
- > The size of Provincial Legislative Councils was enlarged by including elected non-official members so that the official majority was gone.
- > An element of election was also introduced in the Legislative Council at the centre also but here the official majority there was maintained.
- > The Legislative Councils were empowered to move resolutions on the Budget, and on any matter of public interest, except certain specified subjects, such as the Armed forces, Foreign Affairs and the Indian States.

- > It provided, for the first time, for separate representation of the Muslim community and thus sowed the seeds of separatism.
- The Government of India Act, 1915**
- > This act was passed to consolidate the provisions of the preceding Government of India Acts.
- Montague-Chelmsford Report and the Government of India Act, 1919**
- > The then Secretary of State for India Mr. E.S. Montagu and the Governor General Lord Chelmsford formulated proposals for the Government of India Act, 1919.
- > Responsible Government in the Provinces was to be introduced, without impairing the responsibility of the Governor (through the Governor General), for the administration of the Province, by resorting to device known as 'Dyarchy' or dual government.
- > The subjects of administration were to be divided into two categories **Central** and **Provincial**.
- > **Central subjects** were those which were exclusively kept under the control of the Central Government.
- > The **provincial subjects** were sub-divided into 'transferred' and 'reserved' subjects.
- > The 'transferred subjects' were to be administered by the Governor with the aid of Ministers responsible to the Legislative Council in which the proportion of elected members was raised to 70 per cent.
- > The 'reserved subjects' were to be administered by the Governor and his Executive Council with no responsibility to the Legislature.
- > The previous Central control over the provinces in administrative, legislative and financial matters was relaxed. Sources of revenue were divided into two categories so that the provinces could run the administration with the revenue raised by the provinces themselves.
- > The provincial budget was separated from the central budget.
- > The provincial legislature was empowered to present its own budget and levy its own taxes relating to the provincial sources of revenue.
- > The Central Legislature, retained power to legislate for the whole country on any subject.
- > The control of the Governor General over provincial legislation was retained by providing that a Provincial Bill, even though assented to by the Governor, would become law only when assented to also by the Governor General.
- > The Governor was empowered to reserve a Bill for the consideration of the Governor General if it was related to some specified matters.
- > The Governor General in Council continued to remain responsible only to the British Parliament through the Secretary of State for India.
- > The Indian Legislature was made more representative and, for the first time 'bi-cameral'.
- > The Upper House was named the **Council of State**. This was composed of 60 members of whom 34 were elected.

- > The Lower House was named the **Legislative Assembly**. This was composed of about 144 members of whom 104 were elected.
- > The electorates were arranged on a communal and sectional basis, developing the Morley-Minto device further.
- > The Governor General's overriding powers in respect of Central legislation were retained as follows :
 - (a) His prior sanction was required to introduce Bills relating to certain matters;
 - (b) he had the power to veto or reserve for consideration of the Crown any Bill passed by the Indian Legislature;
 - (c) he had the converse power of certifying a Bill or any grant refused by the Legislature;
 - (d) he could make Ordinances, in case of emergency.

Simon Commission

- > This commission, headed by Sir John Simon, constituted in 1927 to inquire into the working of the Act of 1919, placed its report in 1930. The report was examined by the British Parliament and the Government of India Bill was drafted accordingly.

The Government of India Act, 1935

- > The Act of 1935 prescribed a federation, taking the Provinces and the Indian States (native states) as units.
- > It was optional for the Indian States to join the Federation, and since they never joined, the **Federation never came into being**.
- > The Act divided legislative powers between the Centre and Provinces.
- > The executive authority of a Province was also exercised by a Governor on behalf of the Crown and not as a subordinate of the Governor General.
- > The Governor was required to act with the advice of Ministers responsible to the Legislature.
- > In certain matters, the Governor was required to act 'in his discretion' without ministerial advice and under the control and directions of the Governor General, and, through him, of the Secretary of State.
- > The executive authority of the Centre was vested in the Governor General (on behalf of the Crown).
- > Counsellors or Council of Ministers responsible to the Legislature was not appointed although such provisions existed in the Act of 1935.
- > The Central Legislature was bi-cameral, consisting of the Federal Assembly and the Council of State.
- > In six provinces, the legislature was bi-cameral, comprising a Legislative Assembly and a Legislative Council. In other provinces, the Legislature was uni-cameral.
- > Apart from the Governor General's power of veto, a Bill passed by the Central Legislature was also subject to **veto by the Crown**.
- > The Governor General could prevent discussion in the Legislature and suspend the proceedings on any Bill if he was satisfied that it would affect the discharge of his special responsibilities.
- > The Governor General had independent powers of legislation, concurrently with those of the Legislature.

- On some subjects no bill or amendment could be introduced in the Legislature without the Governor General's previous sanction.
- A three-fold division in the Act of 1935—There was a Federal List over which the Federal Legislature had exclusive powers of legislation. There was a Provincial List of matters over which the Provincial Legislature had exclusive jurisdiction. There was a Concurrent List also over which both the Federal and Provincial Legislatures had competence.
- The Governor General was empowered to authorise either the Federal or the Provincial Legislature to enact a law with respect to any matter which was not enumerated in the above noted Legislative Lists.
- **Dominion Status**, which was promised by the Simon Commission in 1929, was not conferred by the Government of India Act, 1935.

Cripps Mission

- In March 1942, Sir Stafford Cripps, a member of the British cabinet came with a draft declaration on the proposals of the British Government.
- These proposals were to be adopted at the end of the Second World War provided the Congress and the Muslim League could accept them.
- According to the proposals
 - ★ The Constitution of India was to be framed by an **elected Constituent Assembly** by the Indian people.
 - ★ The Constitution should give India **Dominion Status**.
 - ★ There should be one Indian Union comprising all the Provinces and Indian States.
 - ★ Any Province (or Indian State) not accepting the Constitution would be free to retain its constitutional position existing at that time and with such non-acceding Provinces the British Government could enter into separate Constitutional arrangements.

Cabinet Mission Plan

- In March 1946, Lord Attlee sent a Cabinet Mission to India consisting of three Cabinet Ministers, namely Lord Pethick Lawrence, Sir Stafford Cripps and Mr. A.V. Alexander.
- The **object of the Mission** was to help India achieve its independence as early as possible, and to set up a Constituent Assembly.
- The Cabinet Mission rejected the claim for a separate Constituent Assembly and a separate State for the Muslim.
- According to Cabinet Mission Plan there was to be a Union of India, comprising both British India and the States, and having jurisdiction over the subjects of Foreign Affairs, Defence and Communication. All residuary powers were to be vested in the Provinces and the States.
- The Union was to have an Executive and a Legislature consisting of representatives of the Provinces and the States.
- Any decision involving a major communal issue in the legislature was to require a majority support of representatives of each of the two major communities present and voting as well as a majority of all the members present and voting. The provinces could form groups with executives and legislatures, and each group could be competent to determine the provincial subjects.

The Mountbatten Plan

- The plan for transfer of power to the Indians and partition of the country was laid down in the Mountbatten Plan.
- It was given a formal shape by a statement made by the British Government on 3rd June, 1947.

The Indian Independence Act, 1947 of the British Parliament

- In pursuance of this Act, the Government of India Act, 1935, was amended by the Adaptation Orders, both in India and Pakistan, for setting up an interim Constituent Assembly to draw up the future Constitution of the country.
- From the 15th August, 1947 India ceased to be a Dependency, and the suzerainty of the British Crown over the Indian States and the treaty relations with Tribal Areas lapsed from that date.
- The office of the Secretary of State for India was abolished.
- The Governor-General and the Governors lost extraordinary powers of legislations to compete with the Legislature.
- The Central Legislature of India, composed of the Legislative Assembly and the Council of States, ceased to exist on August 14, 1947.
- The Constituent Assembly itself was to function also as the Central Legislature with complete sovereignty.

2. Constituent Assembly and Making of the Constitution

- The Cabinet Mission envisaged the establishment of a Constituent Assembly to frame a Constitution for the country. Members of the Constituent Assembly were elected by the Provincial Legislative Assemblies.
- Each Province and each Indian State were allotted seats in proportion of its population, roughly in the ratio of **one to a million**. The seats so ascertained were distributed among the main communities in each Province. The main communities recognised were Sikh, Muslim and General.

Important Committees of the Constituent Assembly and their Chairman

Sl.	Name of the Committee	Chairman
1.	Committee on the Rules of Procedure	Dr. Rajendra Prasad
2.	Steering Committee	
3.	Finance and Staff Committee	
4.	Ad hoc Committee on the National Flag	Pt. Jawahar Lal Nehru
5.	Union Constitution Committee	
6.	Union Powers Committee	
7.	State Committee	
8.	Advisory Committee on Fundamental Rights, Minorities and Tribal and Excluded Areas	Sardar Vallabhbhai Patel
9.	Drafting Committee	Dr. B.R. Ambedkar
10.	Credential Committee	Alladi Krishnaswami Ayyar
11.	House Committee	B.Pattabhi Sitaramayya
12.	Order of Business Committee	K. M. Munshi

Sl.	Name of the Committee	Chairman
13.	Committee on the Functions of the Constituent Assembly	G.V. Mavalankar
14.	Minorities Sub-Committee	H.C. Mookherjee
15.	Fundamental Rights Sub-Committee	J. B. Kripalani
16.	North-East Frontier Tribal Areas and Assam Excluded & Partially Excluded Areas Sub Committee	Gopinath Bardoloi
17.	Excluded and Partially Excluded Areas (other than those in Assam) Sub-Committee	A. V. Thakkar
>	The total number of members of the Constituent Assembly was 385, of whom 93 were representatives from the Indian States and 292 from the Provinces (British India).	
>	After the partition of India number of members of the Constituent Assembly came to 299, of whom 284 were actually present on the 26th November, 1949 and signed on the finally approved Constitution of India. The Constituent Assembly, which had been elected for undivided India, held its first meeting on December 9, 1946, and reassembled on August 14, 1947, as the sovereign Constituent Assembly for the dominion of India.	
>	It took two years, eleven months and eighteen days for the Constituent Assembly to finalise the Constitution.	
>	Objective Resolution was moved in the first session of the Constituent Assembly (on 13 December, 1946) by Pt. Jawahar Lal Nehru which was adopted after considerable deliberation and debate in the Assembly on 22 January, 1947. The following objectives were embodied in the resolution :	
★	To foster unity of the Nation and to ensure its economic and political security, to have a written Constitution, and to proclaim India as a Sovereign Democratic Republic.	
★	To have a federal form of Government with the distribution of powers between the centre and states.	
★	To guarantee and secure justice, equality, freedom of thought, expression, belief, faith, worship, vocation, association and action to all the people of India.	
★	To provide adequate safeguards for minorities, backward and tribal areas and depressed and other backward classes.	
★	To maintain the integrity of the territory of the republic and its sovereign rights on land, sea and air according to justice and the law of civilised nations.	
★	To attain rightful and honoured place in the world and make its full and willing contribution to the promotion of the world peace and the welfare of mankind.	
>	The principles of the Constitution were outlined by various committees of the Assembly, and there was a general discussion on the reports of these Committees. The Assembly appointed the Drafting Committee with Dr. B.R. Ambedkar as the Chairman on August 29, 1947.	

- The Drafting Committee, headed by Dr. B. R. Ambedkar, submitted a Draft constitution of India to the President of the assembly on 21 February, 1948.
- The members of Drafting Committee were N. Gopalaswamy Ayyangar, Alladi Krishnaswamy Ayyar, K.M. Munshi, Mohd. Saadullah, B.L. Mitter (later replaced by N. Madhava Rao), Dr. D.P. Khaitan (replaced on death by T.T. Krishnamachari).
- The third and final reading of the draft was completed on November 26, 1949. On this date, the signature of the President of the Assembly was appended to it and the Constitution was declared as passed.
- The provisions relating to citizenship, elections and provisional Parliament etc were implemented with immediate effect, that is, from the 26th November, 1949. The rest of the provisions of the constitution came into force on January 26, 1950 and this date is referred to in the Constitution as the *date of its commencement*.

3. Different Sources of the Indian Constitution

Although the skeleton of the constitution was derived from the Government of India Act 1935, many provisions were imported from other constitutions of the world. Some of them are listed below along with the Government of India Act, 1935:

Government of India Act, 1935 : This Act formed the basis or 'blueprint' of the constitution of India with the features of Federal system, office of Governor, emergency powers etc. Besides, the Constitution of India has borrowed from the—

Constitution of Britain : Law making procedures, Rule of law, Single citizenship, Bi-cameral Parliamentary system, office of CAG.

Constitution of USA : Independence of judiciary, judicial review, fundamental rights, removal of Supreme Court and High Court judges, Preamble and functions of President and Vice-president.

Constitution of Canada : Federation with strong Centre, to provide residuary powers to the Centre, Supreme Court's advisory jurisdiction.

Constitution of Ireland : Directive Principles of State policy, method of presidential elections, and the nomination of members to Rajya Sabha by the President.

Weimar Constitution of Germany : Provisions concerning the suspension of fundamental rights during emergency.

Constitution of Australia : Idea of the Concurrent List, Trade and Commerce provisions.

Constitution of South Africa : Amendment with 2/3rd majority in Parliament and election of the Members of Rajya Sabha on the basis of proportional representation.

Constitution of France : Republican System, Principles of Liberty, Equality and Fraternity.

Constitution of former USSR : Fundamental Duties, Ideals of justice in Preamble.

4. Important Articles of the Constitution

	Articles	Subject
Part I	Art. 1-4	The Union and its territory.
Part II	Art. 5-11	Citizenship

Part III Fundamental Rights	
Art. 12	Definition
Art. 13	Laws inconsistent with or in derogation of the fundamental rights
Right to Equality	
Art. 14	Equality before law
Art. 15	Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth
Art. 16	Equality of opportunity in matters of public employment
Art. 17	Abolition of untouchability
Art. 18	Abolition of titles
Right to Freedom	
Art. 19	Protection of certain rights regarding freedom of speech etc.
Art. 20	Protection in respect of conviction for offences
Art. 21	Protection of life and personal liberty
21A.	Right to education
Art. 22	Protection against arrest and detention in certain cases
Right against Exploitation	
Art. 23	Prohibition of traffic in human beings and forced labour
Art. 24	Prohibition of employment of children in factories etc.
Right to Freedom of Religion	
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Lokpal

A Lokpal is a proposed 'Ombudsman' in India. It has jurisdiction over all members of Parliament (MPs), the Prime Minister (with certain exceptions), ministers and all Civil servants etc in cases of corruption. Lokpal is empowered to sanction prosecution.

The amended 'Lokpal and Lokayukta Bill 2011' was passed on Rajya Sabha and Lok Sabha on 17th and 18th December, 2013 respectively. Samajwadi Party opposed the Bill.

The selection of the Lokpal will be held by a committee comprising the P.M., the Lok Sabha Speaker, the Leader of the opposition in Lok Sabha and the Chief Justice of India etc.

Lokpal is to have Chairperson and maximum 8 members, 50% of them judicial members and at least 50% members to be from SC/ST/women/minorities.

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Art. 326	Elections to the House of the People and to the Legislative Assemblies of States to be on the basis of adult suffrage
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Art. 328	Power of Legislature of a State to make provision with respect to elections to such Legislature
Art. 329	Bar to interference by Courts in electoral matters
Part XVI	Art. 330-342 Special provisions for certain classes
Part XVII	Art. 343-351 Official languages
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Art. 363	Bar to interference by courts in disputes arising out of certain trade agreements etc.
Art. 363A	Recognition granted to Rulers of Indian States to cease and stop purses to be abolished
Art. 364	Special provisions as to major ports and aerodromes

Art. 365	Effect of failure to comply with, or to give effect to, directions given by the Union
Part XX	Art. 368 Amendment of the Constitution
Part XXI	Art. 369-392 Temporary, Transitional and Special Provisions—Special status of States
Part XXII	Art. 393-395 Short Title, Commencement, Authoritative text in Hindi and Repeals
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	The Constitution of India at the time of its adoption had only eight Schedules to which four more were added during the succeeding sixty-five years.
1st Schedule	28 States and 7 Union Territories with Territorial demarcations
2nd Schedule	Salary and emoluments of the President and Governors of the States
Part 'A'	Omitted
Part 'B'	Salary and emoluments of the Speaker/Deputy Speaker or Chairman/Vice Chairman of the Lok Sabha, Rajya Sabha and State Legislative Assemblies or Councils.
Part 'C'	Salary and emoluments of the judge of the Supreme Court and High Courts
Part 'D'	Salary and emoluments of the Comptroller and Auditor General of India
3rd Schedule	Forms of oath and affirmations of members of legislatures, ministers and judges.
4th Schedule	Allocation of seats to States and Union Territories in the Rajya Sabha.
5th Schedule	Administration and control of Scheduled Areas and STs.
6th Schedule	Administration of Tribal Areas of North-Eastern States
7th Schedule	Distribution of power between the Union and the State Government. (Union List, State List and Concurrent List)
8th Schedule	Description of 22 languages recognised by the Constitution.
9th Schedule	Validation of certain Acts and Regulations
10th Schedule	Provisions as to disqualification on ground of defection (Anti-defection Law introduced by the 52nd Constitutional Amendment Act). This Schedule followed latest developments by 91st amendment to the constitution in 2003.
11th Schedule	Powers, authority and responsibilities of Panchayats, 29 subjects over which the Panchayats have jurisdiction (refer to the 73rd Constitutional Amendment Act).
12th Schedule	Powers, authority and responsibilities of Municipalities, 18 subjects over which the Municipalities have jurisdiction (refer to the 74th Constitutional Amendment Act).

5. Some important Amendments of the Constitution

1st Constitutional Amendment Act, 1951: This amendment added Article, 15(4) and Article, 19(6) and brought changes in the right to private property in pursuance with the decision of Supreme Court concerning fundamental rights. Ninth Schedule to the Constitution was also added by it.

7th Constitutional Amendment Act, 1956: Through this amendment the implementation of State Reorganization Act, was made possible. The categorisation of States into Part A, Part B and Part C ceased henceforth. Part C states were redesignated as Union Territories. The seats in the Rajya Sabha and in the Union and State Legislatures were reallocated. It also effected changes regarding appointment of additional and acting judges, High Courts and their jurisdictions etc.

10th Constitutional Amendment Act, 1961: Incorporated Dadra and Nagar Haveli as Union Territory.

12th Constitutional Amendment Act, 1962: Inclusion of territories of Goa, Daman and Diu into the Indian Union.

13th Constitutional Amendment Act, 1962: Insertion of Art. 371 A to make special provisions for the administration of the State of Nagaland.

14th Constitutional Amendment Act, 1962: Pondicherry, Karaikal, Mahe and Yenam, the former French territories, were specified in the Constitution as the Union Territory of Pondicherry (now Puducherry). Enabled the UTs of Himachal Pradesh, Manipur, Tripura, Goa, Daman and Diu and Pondicherry to have Legislatures and Council of Ministers.

15th Constitutional Amendment Act, 1963: It raised the age of retirement of a High Court Judge from 60 to 62. Extended the jurisdiction of a High Court to issue writs under Art. 226 to a Government or authority situated outside its territorial jurisdiction where the cause of action arises within such jurisdiction.

16th Constitutional Amendment Act, 1963: Changes were effected in Art. 19 to enable the Parliament to make laws providing reasonable restrictions on the freedom of expression in the larger interests of sovereignty and integrity of India. Amendments were made in the form of oath contained in the third Schedule with emphasis on upholding the sovereignty and integrity of India.

19th Constitutional Amendment Act, 1966: Art. 324 was amended to clarify the duties of the Election Commission. It deprived the Election Commission of the power to appoint election tribunals for deciding election disputes of members of Parliament and State Legislatures.

21st Constitutional Amendment Act, 1967: Sindhi language was included as 15th regional language in the Eighth Schedule.

24th Constitutional Amendment Act, 1971: It was a retaliatory act of the Parliament to neutralise the effect of the judgement in Golak Nath Case. It affirmed the parliament's power to amend any part of the Constitution, including Fundamental Rights by amending Arts. 368 and 13. It made obligatory for the President to give assent to Amendment Bills, when they are presented to him/her.

25th Constitutional Amendment Act, 1971 (came into force on 20.04.1972): It restricted the jurisdiction of the Courts over acquisition laws with regard to adequacy of Compensation. This amendment came primarily in the wake of Bank Nationalisation case and the word 'amount' was substituted in place of 'compensation' in Article 31.

It also provided that no law passed by the State to give effect to Directive Principles specified under clauses (b) and (c) of Art. 39 can be declared void on the ground that it was inconsistent with Fundamental Rights conferred by Arts. 14, 19 and 31.

26th Constitutional Amendment Act, 1971: This amendment withdrew the recognition to the rulers of Princely States and their privy purses were abolished.

30th Constitutional Amendment Act, 1972 (w.e.f. 27.02.1973): It provided that only such appeals can be brought to the Supreme Court which involve a substantial question of law. The valuation aspect of Rs. 20,000 for appeals in civil cases to the Supreme Court was abolished.

31st Constitutional Amendment Act, 1973: By this amendment, the seats of the Lok Sabha was increased from 525 to 545 but reduced the representation of UTs in Lok Sabha from 25 to 20.

35th Constitutional Amendment Act, 1974 (w.e.f. 01.03.1975): Accorded status of Associate State to Sikkim by ending its protectorate kingdom status which was a novel concept introduced in the Constitution.

36th Constitutional Amendment Act, 1975: Made Sikkim a full fledged State of the Union of India.

38th Constitutional Amendment Act, 1975: Clarified that declaration of emergency by the President and promulgation of Ordinance by the President or Governor cannot be challenged in any Court on any ground.

39th Constitutional Amendment Act, 1975: The disputes or questions regarding elections of President, Vice-President, Prime Minister and Speaker of Lok Sabha were taken out of the purview of judicial review of the Supreme Court or High Courts.

42nd Constitutional Amendment Act, 1976 (Mini Constitution): The 42nd Amendment made fundamental changes in the constitutional structure and it incorporated the words 'SOCIALIST', 'SECULAR' and 'INTEGRITY' in the Preamble. Fundamental Duties were added in Part IV A. Directive Principles were given precedence over Fundamental Rights and any law made to this effect by the Parliament was kept beyond the scope of judicial review by the Court. It made the power of Parliament supreme so far as amendment to the Constitution was concerned. It authorised the Supreme Court to transfer certain cases from one High Court to another and redefined the writ jurisdiction of the High Courts. It provided for Administrative Tribunals for speedy justice. It empowered the Centre to deploy armed forces in any State to deal with the grave law and order situation. It authorised the President to make Proclamation of Emergency for any part of the country or to whole of India. It made it obligatory for the President to act on the advice of the Council of Ministers. Tenure of the Lok Sabha and the State Assemblies was increased by one year.

43rd Constitutional Amendment Act, 1977 (w.e.f. 13.04.1978): The 43rd Amendment omitted many articles inserted by 42nd Amendment. It restored the jurisdiction of the Supreme Court and the High Courts, which had been curtailed under the 42nd Amendment.

44th Constitutional Amendment Act, 1978 (w.e.f. June-September, 1979): The amendment was brought by the Janata Party Government which repealed

some of the changes effected by 42nd Amendment, omitted a few and provided alterations. Right to property was taken away from the list of Fundamental Rights and placed in a new Art. 300A as an ordinary legal right. Constitutionality of the Proclamation of Emergency by the President could be questioned in a court on the ground of malafide (42nd Amendment had made it immune from judicial review). It brought the revocation of a Proclamation under Parliamentary control. In Article 321 regarding National Emergency, the words 'internal disturbance' were substituted by the words 'armed rebellion'. It authorised the President to refer back the advice to the Council of Ministers for reconsideration, but made it binding for the President to act on the reconsidered advice. The power of the Courts to decide disputes regarding election of Prime Minister and Speaker was restored. Constitutional protection on publication of proceedings of Parliament and State Legislatures was provided.

52nd Constitutional Amendment Act, 1985 : This amendment was brought about during Rajiv Gandhi regime with a view to put an end to political defections. It added Tenth Schedule to the Constitution containing the modes for disqualification in case of defection from the Parliament or State Legislature.

55th Constitutional Amendment Act, 1986 (w.e.f. 20.02.1987) : The formation of Arunachal Pradesh took place with special powers given to the Governor. It also provided for a 30-member State Assembly.

56th Constitutional Amendment Act, 1987 : Goa was made a full fledged State with a State Assembly but Daman and Diu stayed as UT.

57th Constitutional Amendment Act, 1987 : It provided for reservation of seats for Scheduled Tribes of Nagaland, Meghalaya, Mizoram and Arunachal Pradesh in Lok Sabha. Seats were also reserved for the Scheduled Tribes of Nagaland and Meghalaya in the State Assemblies of Nagaland and Meghalaya.

58th Constitutional Amendment Act, 1987 : An authoritative text of the Constitution in Hindi was provided to the people of India by the President.

59th Constitutional Amendment Act, 1988 : It amended Art. 356 to provide that the declaration of Emergency may remain in operation upto 3 years and also authorised the Government to proclaim emergency in Punjab on ground of 'internal disturbance'. The amendment made in Art. 352 thus provided that the emergency with respect to Punjab shall operate only in that State.

61st Constitutional Amendment Act, 1988 (w.e.f. 28.03.1989) : It brought about an amendment to Article 326 for the reduction of voting age from 21 to 18 years.

62nd Constitutional Amendment Act, 1989 : It increased the period of reservation of seats provided to the Scheduled Castes and Scheduled Tribes for another 10 years i.e. upto 2000 A.D. The reservation for Anglo-Indians through nomination in case of their inadequate representation, was also extended upto 2000 A.D.

65th Constitutional Amendment Act, 1990 (w.e.f. 12.03.1992) : A National Commission for Scheduled Castes and Scheduled Tribes with wide powers was provided to take care of the cause of SCs/STs.

66th Constitutional Amendment Act, 1990 : This amendment provided for the inclusion of 55 new land reform Acts passed by the States into the Ninth Schedule.

69th Constitutional Amendment Act, 1991 (w.e.f. 01.02.1992) : Arts. 239-AA and 239-AB were inserted in the Constitution to provide a National Capital

Territory designation to Union Territory of Delhi with a legislative Assembly and Council of Ministers.

70th Constitutional Amendment Act, 1992 : Altered Art. 54 and 368 to include members of legislative assemblies of Union Territories of Delhi and Pondicherry in the electoral college for the election of the President.

71st Constitutional Amendment Act, 1992 : It included Manipuri, Konkani and Nepalese languages in the 8th Schedule.

73rd Constitutional Amendment Act, 1992 (w.e.f. 24.04.1993) : The institution of Panchayati Raj received Constitutional guarantee, status and legitimacy. XIth Schedule was added to deal with it. It also inserted part IX, containing Arts. 243, 243A to 243O.

74th Constitutional Amendment Act, 1992 (w.e.f. 01.06.1993) : Provided for constitutional sanctity to Municipalities by inserting Part IX-A, containing Arts. 243P to 243ZG and the XIIth Schedule which deals with the items concerning Municipalities.

77th Constitutional Amendment Act, 1995 : By this amendment a new clause 4A was added to Art. 16 which authorised the State to make provisions for Scheduled Castes and Scheduled Tribes with regard to promotions in Government jobs.

78th Constitutional Amendment Act, 1995 : This amended the Ninth Schedule of the Constitution to insert 27 Land Reform Acts of various States. After this the total number of Acts included in the Ninth Schedule went upto 284.

79th Constitutional Amendment Act, 1999 : Amended Art. 334 to extend the reservation of seats for SCs / STs and Anglo-Indians in the Lok Sabha and in the State Legislative Assemblies upto 60 years from the commencement of the Constitution (i.e., till 2010).

80th Constitutional Amendment Act, 2000 : Amended Art. 269 and substituted a new Article for Art. 270 and abolished Art. 272 of the Constitution. This was based on the recommendation of the Tenth Finance Commission. This amendment was deemed to have come into operation from 1st April 1996. The Amendment widened the scope of the Central taxes and duties on the consignment of goods levied by the Government of India and distributed among States.

81st Constitutional Amendment Act, 2000 : Amended Art. 16(1) of the Constitution and added a new clause (4-B) after clause (4-A) to Art. 16(1) of the Constitution. The new clause (4-B) ends the 50% ceiling on reservation for Scheduled Caste and Scheduled Tribes and other Backward Classes in backlog vacancies.

82nd Constitutional Amendment Act, 2000 : This amendment restored the relaxation in qualifying marks and standards of evaluation in both job reservation and promotions to Scheduled Castes and Scheduled Tribes which was set aside by a Supreme Court's judgement in 1996.

84th Constitutional Amendment Act, 2001 (w.e.f. 21.02.2002) : This amendment provided that till the publication of the relevant figures of the first census after 2026 the ascertainment of the population of a State for following purposes shall be made on the basis of the census shown against each of them :

- > Election of the President under Art. 55—1971 census.
- > Allotment of seats to each State in Lok Sabha—1971 census.
- > Division of State into territorial Lok Sabha constituencies — 1991 census.

- Composition of Legislative Assemblies under Art. 170—1991 census.
- Reservation of seats for SC/ST in the Lok Sabha under Art. 330—1991 census.

85th Constitutional Amendment Act, 2001 : It amended clause (4-A) of Art. 16 and substituted the words "in matters of promotion, with consequential seniority to any class" for the words "in matter of promotion to any class".

The amendment provided for 'consequential seniority' to the SCs/STs for promotion in government service.

86th Constitutional Amendment Act, 2002 : Added a new Art. 21A after Art. 21 which makes the right of education for children of the age of 6 to 14 years a Fundamental Right. Substitutes Article 45 to direct the State to endeavour to provide early childhood care and education for all children until they complete the age of six years. Added a new Fundamental Duty to Part IV (Art. 51A) of the Constitution.

87th Constitutional Amendment Act, 2003 (w.e.f. 19.02.2004) : Provided that the allocation of seats in the Lok Sabha and division of each State into territorial Constituencies will be done on the basis of population as ascertained by the '2001 census' and not by '1991' census.

88th Constitutional Amendment Act, 2003 (w.e.f. 15.01.2004) : This amendment inserted a new Article 268A after Article 268 which empowered the Union of India to levy 'service tax'.

This tax shall be collected and appropriated by the Union and States in the manner as formulated by Parliament.

89th Constitutional Amendment Act, 2003 : Provided for the establishment of a separate National Commission for Scheduled Tribes by bifurcating the existing National Commission for Scheduled Castes and Scheduled Tribes. The commission shall consist of a Chairman, Vice-Chairman and three other members. They shall be appointed by the President of India.

90th Constitutional Amendment Act, 2003 : This amendment was necessitated due to creation of Bodoland Territorial Areas District within the State of Assam by agreement reached between the Centre and Bodo representatives for solving Bodoland problem. It stated that the representation of Scheduled Tribes and non-Scheduled Tribes in the Constitution of the Bodoland Territorial Areas District shall be maintained. It meant that the representation of the above categories shall remain the same as existed prior to the creation of Bodoland Territorial Areas District.

91st Constitutional Amendment Act, 2003 (w.e.f. 01.01.2004) : This amendment limits the size of Ministries at the Centre and in States. According to new Clause (1-A) the total number of Ministers, including the Prime Minister in the Union Council of Ministers or Chief Minister in the State Legislative Assemblies shall not exceed 15 per cent of the total members of the Lok Sabha in the Centre or Vidhan Sabha in the states. The new Clause (1-B) of Article 75 provides that a member of either House of Parliament belonging to any political party who is disqualified for being member of that house on the ground of defection shall also be disqualified to be appointed as a minister under Clause (1) of Art. 75 and 164 until he is again elected. However, the number of Ministers, including the Chief Minister in a State shall not be less than 12 (in smaller States like Sikkim, Mizoram and Goa).

92nd Constitutional Amendment Act, 2003 (w.e.f. 07.01.2004) : It amended the Eighth Schedule of the Constitution and has inserted 4 new languages in

it, namely—Bodo, Dogri, Maithili and Santhali. After this amendment the total number of constitutionally recognised official languages has become 22.

93rd Constitutional Amendment Act, 2005 (w.e.f. 20.01.2006) : Provided reservation in admissions in private unaided educational institutions for students belonging to scheduled castes/tribes and other backward classes.

94th Constitutional Amendment Act, 2006 : Excluded Bihar from the provision to Clause (1) of Art. 164 of the constitution which provides that there shall be a minister in charge of tribal welfare who may in addition be in charge of the welfare of the Scheduled Castes and backward classes in Bihar, Madhya Pradesh and Orissa (now Odisha). It extends the provisions of clause(1) of Art. 164 to the newly formed States of Chhattisgarh and Jharkhand.

95th Constitutional Amendment Act, 2009 : Extended the reservation of seats for SCs and STs in the Lok Sabha and State assemblies by another 10 years (beyond January 25, 2010). The time period of 60 years under Art. 334 of the constitution was to lapse on January 25, 2010. Through this amendment in Art. 334 the words 'sixty years' has been substituted by 'seventy years'.

96th Constitutional Amendment Act, 2011 (DoA* : 23.09.2011) : Substituted the word 'Oriya' by the word 'Odia' in the entry 15 in the Eighth schedule.

97th Constitutional Amendment Act, 2011 (DoA* : 12.01.2012) : Amendment of article 19 [In Part-III, in article 19, in clause (l), in sub-clause (c), after the words 'or unions', the words 'or co-operative societies' shall be inserted.]; Insertion of new article 43B in Part IV ("43B. The State shall endeavour to promote voluntary formation, autonomous functioning, democratic control and professional management of co-operative societies.")

98th Constitutional Amendment Act, 2012 (DoA* : 01.01.2013) : Insertion of article 371J (Special provisions with respect to State of Karnataka)

*DoA (Date of Assent of the President)

6. Some Special Features of the Indian Constitution

- The Constitution of India is the lengthiest and the most comprehensive of all the written Constitutions of the world.
- Originally the Constitution consisted of 395 Articles divided into 22 parts and 8 Schedules.
- Now it consists of about 442 Articles divided into 22 parts and 12 Schedules.
- Unlike the federal Constitutions of the USA and Australia the Indian Constitution lays down provisions relating to the Governmental machinery not only in the Centre but also in the States.
- The Indian Constitution provides for matters of administrative detail.
- The Constitution contains detailed provisions relating to Centre-State relations including the emergency provisions.
- Special status has been given to Jammu & Kashmir and some other states such as Nagaland, Mizoram, Assam, Gujarat etc.
- Under the Constitution the people of India are the ultimate sovereign.
- The Constitution of India establishes a parliamentary form of Government both at the Centre and in the States.

- The Indian Constitution, though written, is **sufficiently flexible**.
- The Constitution declares certain **Fundamental Rights** of the individual.
- It is a unique feature of the Indian Constitution that it makes the citizens' duties a part of the basic law of the land.
- One of the most important and unique features of the Indian Constitution is the provisions of **Directive Principles of State Policy** to secure a truly welfare State.
- The Indian Constitution distributes the legislative subjects on which the Parliament and State Legislature can enact laws under three lists viz. Union List, State List and Concurrent List.
- The Indian Constitution unlike other federal Constitutions provides for a **single unified judiciary** with the Supreme Court at the apex, the High Courts in the middle and the Subordinate Courts at the bottom.
- There are provisions in the Constitution to ensure **independence of judiciary**.
- The Constitution of India has adopted a balance between the American system of Judicial Supremacy and the British principle of Parliamentary Supremacy.
- The most remarkable feature of the Indian Constitution is that being a federal Constitution it **acquires a unitary character during the time of emergency**.
- Under the Indian Constitution every adult above 18 years of age has been given the right to elect representatives for the legislature without prescribing any qualification based either on sex, property, education or the like.
- A distinctive feature of the Indian Constitution is that it provides for the establishment of a **Secular State**. Regardless of their religious beliefs, all Indian citizens enjoy equal rights.
- The State can not discriminate against anyone on the ground of religion or caste, nor can it compel anybody to pay taxes for the support of any particular religion.
- The Indian Constitution has special **reservation of seats** for the Scheduled Castes and Tribes in public appointments and in educational institutions and in the Union and State Legislatures.
- An outstanding feature of the Constitution is **Panchayati Raj**. The idea for organising village Panchayats was provided in the Constitution under Article 40 of Part IV which received Constitutional legitimacy through the 73rd Amendment to the Indian Constitution.

7. Federal and Unitary Features of the Indian Union

- India is different from the United States of America because in United States the federation is based on an agreement between different States, and the States have the right to secede from the Union.
- The Indian Constitution has the features both of a federal and unitary forms of Government.

Federal features

- ★ Distribution of powers between Union and the States has been made as per the three lists.
- ★ The Union Government as well as the State Governments have to function

strictly in accordance with the Constitution. They can neither alter the distribution of powers nor override the dictates of the Constitution.

* Indian Constitution is entirely written. An amendment to it must be passed by the Parliament and if an amendment affects the federal structure it must be ratified by at least half the State Legislatures.

* Like other federal states our country also has an independent Judiciary as an essential feature.

Unitary features of the Indian Constitution

- ★ In a federation, people enjoy dual citizenship, that of the Centre and of the State to which they belong. But the Indian Constitution provides every Indian with single citizenship.
- ★ The most important subjects are included in the Union List which has been allocated to the centre.
- ★ The centre can legislate on the subjects in the concurrent list.
- ★ Residuary powers belong to the Centre.
- ★ Single Constitutional Framework has been provided for the Centre as well as for the State.
- ★ The proclamation of National emergency can immediately turn the federal system of India into a Unitary one.
- ★ In a federation, each State should get equal representation irrespective of its size or population. But in the Rajya Sabha in India, States are represented on the basis of population. Besides, the President has the power to nominate twelve members to the Rajya Sabha.
- ★ The Governors of the States are appointed by the President and they continue to hold office only during his pleasure.
- ★ The Indian Constitution provides for single judiciary, a single system of civil and criminal law and command All India Services.
- ★ The authority of the Comptroller and Auditor-General and the Chief Election Commissioner uniformly prevails over the Union as well as States.

8. The Preamble

- The Preamble to the Constitution states the object which the Constitution seeks to establish and promote, and also aids the legal interpretation of the Constitution where the language is found ambiguous.
- The ideals embodied in the Objectives Resolution is faithfully reflected in the Preamble to the Constitution, which, as amended in 1976, summarises the aims and objects of the Constitution.
- **Text of the Preamble :** "We, the People of India having solemnly resolved to constitute India into a **Sovereign Socialist Secular Democratic Republic** and to secure to all citizens **Justice**, social, economic and political; **Liberty** of thought, expression, belief, faith and worship; **Equality** of status and of opportunity; and to promote among them all **Fraternity** assuring the dignity of the individual and the unity and integrity of the Nation in our Constituent Assembly on this twenty sixth day of November, 1949, do hereby adopt, enact and give to ourselves this constitution."

- The Preamble specifies the source of authority, i.e. people of India, the system of Government, the objectives to be attained by the political system and the date of adaptation and enactment of the Constitution.
- Though, the Preamble is **not enforceable in a court of law**, it provides a key to the understanding and interpretation of the Constitution.
- In case of doubt, the Supreme Court has referred to the Preamble to elucidate vague aspects of the Constitution.
- In the Berubari case, the Supreme Court held that the Preamble was not part of the Constitution, but later, in the Keshavananda Bharti case, it declared that it was part of the Constitution.

9. Lapse of Paramountcy

- When the Indian Independence Act 1947, was passed, it declared the lapse of suzerainty (paramountcy) of the crown, in sec. 7(i)(b) of the Act.
- As from the appointed day—the suzerainty of His Majesty over the Indian States lapses, and with it, all treaties and agreements in force at the date of the passing of this Act between His Majesty and the rulers of Indian States, all functions exercisable by His Majesty at the date with respect to Indian States, all obligations of His Majesty existing at that date towards Indian States or the rulers thereof, and all powers, rights, authority, or jurisdiction exercisable by His Majesty at that date in or in relation to Indian States by treaty, grant, usage, sufferance or otherwise
- Of the states situated within the geographical boundaries of the Dominion of India, all (numbering 552) save Hyderabad, Kashmir, Bahawalpur, Junagadh and the N.W.F. (North-West Frontier) states (Chitral, Phulra, Dir, Swat and Amb) had acceded to the Dominion of India by the 15th August, 1947, i.e. before the 'appointed day' itself.

10. Integration and Merger of Indian States

- The main objective of shaping the Indian States into sizeable or viable administrative units was sought to be achieved by a three-fold process of integration (known as the 'Patel Scheme' after Sardar Vallabhbhai Patel, Minister-in-charge of Home Affairs)—
 1. 216 states were merged into respective Provinces, geographically contiguous (connected) to them.
 - ★ These merged states were included in the territories of the states in Part B in the First Schedule of the constitution.
 - ★ The process of merger started with the merger of Orissa and Chhattisgarh States with the then Province of Orissa on January 1, 1948.
 2. 61 states were converted into Centrally administered areas and included in Part C of the First Schedule of the Constitution.
 3. The third form of integration was the consolidation of groups of states into new viable units, known as Union of States.
 - ★ As many as 275 states were integrated into 5 Unions — Madhya Bharat, Patiala and East Punjab States Union, Rajasthan, Saurashtra

- and Travancore-Cochin. These were included in the States in Part B of the First Schedule.
- ★ The other three States included in Part B were—Hyderabad, Jammu and Kashmir and Mysore.
- ★ Jammu and Kashmir acceded to India on October 26, 1947, and so it was included as a state in Part B, but the Government of India agreed to take the accession subject to confirmation by the people of the state, and a constituent Assembly subsequently confirmed it, in November, 1956.
- ★ Hyderabad did not formally accede to India, but the Nizam issued a Proclamation recognising the necessity of entering into a constitutional relationship with the Union of India and accepting the Constitution of India subject to ratification by the Constituent Assembly of the State, and the Constituent Assembly of that state ratified this.

- It is noteworthy here that the Rajpramukhs of the five Unions as well as the Rulers of Hyderabad, Mysore, Jammu and Kashmir all adopted the Constitution of India, by Proclamations.
- The process of integration culminated in the Constitution (7th Amendment) Act, 1956, which abolished Part B states as a class and included all the states in Part A and B in one list.
- The special provisions in the constitution relating to Part B states were, consequently omitted. The Indian States thus lost their identity and became on uniform political organisation embodied in the Constitution of India.

11. The Union and its Territories

- **Article 1** lays-down that India, i.e. Bharat, shall be a Union of States. The Territory of India shall consist of 1. the Territories of the States, 2. the Union Territories and 3. any Territories that may be acquired.
- **Article 1** of the Constitution describes India as a Union of States not as a federation of states. Union of India is not the result of an agreement, nor has any State the right to secede from it.
- The Federation is called a Union of States, because it is indestructible.
- The Union Territories are not included in the 'Union of States'. Whereas the expression 'Territory of India' includes the States, the Union Territories and such other territories as may be acquired by India.
- The States and their territories are specified in the **First Schedule** to the Constitution. The Constitution empowers the Parliament for the admission or establishment of new States.
- **Article 2** provides that Parliament may by law admit new States into the Union of India or establish new States on such terms and conditions as it deems fit.
- The Parliament has admitted the French settlements of Pondicherry, Karaikal, Mahe and Yenam, the Portuguese settlements of Goa, Diu and Daman and Sikkim, etc. into India after independence.
- **Article 3** of the Constitution empowers the Parliament to form a new State by altering boundaries of existing States.

12. Reorganization of States

- A Bill seeking to create a new State or alter boundaries of existing States can be introduced in either House of the Parliament, only on the recommendation of the President.
- President refers the State Reorganization Bill to the State Legislature concerned for its opinion, fixing a time limit.
- Parliament is not bound to accept or act upon the views of the State Legislature on a state Reorganization Bill. The State Reorganization Bill requires simple majority in both Houses of the Parliament.
- It is not necessary to obtain the views of legislatures of Union territories before a bill affecting their boundaries or names is introduced.
- The States Reorganization Act, 1956 reorganised the boundaries of different States to establish a new State of Kerala and merge the former States of Madhya Bharat, Pepsu, Saurashtra, Travancore, Cochin, Ajmer, Bhopal, Coorg, Kutch and Vindhya Pradesh in other adjoining States and thus 14 states and 6 Union Territories were established in India.
- The Bombay Reorganization Act, 1960, divided the State of Bombay to establish two States of Gujarat and Maharashtra.
- In 1962 Nagaland was created as a separate State.
- In 1966, Punjab was divided into Punjab and Haryana.
- Union Territory of Himachal Pradesh was made the State of Himachal Pradesh by an Act of 1970.
- States of Manipur, Tripura, Meghalaya and Union Territories of Mizoram and Arunachal Pradesh were established in 1971. Later Mizoram and Arunachal Pradesh achieved statehood in 1986.
- Sikkim was made part of India by 36th Amendment of the Constitution.
- In 1987 Goa was made a separate State of the Union.
- Chhattisgarh came into existence on 1st November, 2000.
- Uttarakhand (now Uttarakhand) came into existence on 8th November, 2000.
- The State of Jharkhand, which was established on 15th November, 2000 is the newest (28th) State of India.
- The Union Government (on 30 July, 2013) gave a go ahead to create 'Telangana' (the proposed 29th State) bifurcating Andhra Pradesh.
- Telangana came into being on the 2nd June, 2014 and is the outcome of 15th Lok Sabha.

13. Citizenship

- The Constitution of India provides for a single and uniform citizenship for whole of India.
- Citizenship of India was granted to every person who domiciled in the territory of India at the commencement of the constitution and who was born in the territory of India or—
 - ★ Either of whose parents was born in the territory of India or
 - ★ Who had been ordinarily residing in the territory of India for not less than five years immediately preceding commencement of the Constitution.

- Indian citizens have the following rights under the Constitution which aliens do not possess:
 - ★ Some of the Fundamental Rights enumerated in part III of the Constitution. e.g. Articles 15, 16, 19, 29, 30.
 - ★ Only citizens are eligible for offices of the President, Vice-President, Judge of the Supreme Court or a High Court, Attorney-General, Governor of a State, Member of a legislature etc.
 - ★ Only citizens have the right to vote.
- Enemy aliens are not entitled to the benefit of the procedural provisions in clauses (1)-(2) of Article 22 relating to arrest and detention.
- The Citizenship Act, 1955, provides for the acquisition of Indian citizenship in the following ways :
 - ★ Generally, every person born in India on or after January, 1950, shall be a citizen of India if either of his parents was a citizen of India at the time of his birth.
 - ★ A person who was outside India on or after 26 January, 1950, shall be a citizen of India by descent, if his father was a citizen of India at the time of that person's birth.
 - ★ A person can apply for and get registered as a citizen of India by the competent authority if he satisfies the conditions laid down.
 - ★ A person residing in India for more than 7 years and having adequate knowledge of a constitutionally recognised Indian language can seek citizenship by naturalisation, provided he is not a citizen of a country where Indian citizens are prevented from becoming citizens by naturalisation.
 - ★ If any new territory becomes a part of India, the persons of the territory become citizens of India.
- Citizenship of India may be lost by :
 - ★ Renunciation of citizenship.
 - ★ Termination of citizenship, if a citizen of India voluntarily acquires the citizenship of another country.
 - ★ Deprivation of citizenship by the Government of India.

14. Fundamental Rights

- Six Fundamental Rights have been provided by the Constitution :

<ol style="list-style-type: none"> 1. Right to equality 2. Right to liberty 3. Right against exploitation 4. Right to freedom of religion 5. Cultural and educational rights 6. Right to constitutional remedy 	<ol style="list-style-type: none"> 1. Right to equality 2. Right to liberty 3. Right against exploitation 4. Right to freedom of religion 5. Cultural and educational rights 6. Right to constitutional remedy
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- Article 14 of the constitution provides that the State shall not deny any person equality before the law or equal protection of the laws within the territory of India.
- Exceptions to the provision of equality before law, allowed by the Indian Constitution are :
 - ★ The President or the Governor of a State is not answerable to any Court for the exercise and performance of the powers and duties of his office. ★ No

criminal proceeding can be instituted or continued against the President or a Governor in any Court during his term of office. ★ No civil proceeding in which relief is claimed against the President or the Governor of a State can be instituted during his term of office in any Court in respect of any act done by him in his personal capacity, without a prior notice of two months. ★ The above immunities do not bar Impeachment proceeding against the President and Suits or other appropriate proceeding against the Government of India or the Government of a State. ★ Exceptions acknowledged by the comity of nations in every civilized country, in favour of foreign Sovereigns and ambassadors. ★ The guarantee of 'equal protection' is a guarantee of equal treatment of persons in 'equal circumstances', permitting differentiation in different circumstances.

➤ Article 15 of the Constitution states that : The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them.

★ No citizen shall, on grounds only of religion, race, caste, sex, place of birth or any of them be subjected to any disability, liability restriction or condition with regard to access to shops, public restaurants, hotels and places of public entertainment or the use of wells, tanks, bathing ghats, roads and places of public resort maintained wholly or partly out of State funds or dedicated to the use of general public.

★ Nothing in this article shall prevent the State from making any special provisions for women, children or any socially and educationally backward classes.

➤ Article 16 guarantees Equality of opportunity in matters of public employment. It says that :

★ There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State.

★ No citizen shall, on grounds only of religion, race, caste, sex, descent, place of birth or any of them, be ineligible for any employment under the State.

The Mandal Commission Case

A nine-Judge Bench of the Supreme Court has laid down in *Indra Sawhney's Case* (popularly known as the Mandal Commission Case) regarding reservation in Government employment, that :

★ Under Article 16(4) provisions can be made in favour of the backward classes in the matter of employment by Executive orders also. ★ Backward class of citizens is not defined in the Constitution. A caste may also constitute a class. ★ The backwardness contemplated by Art. 16(4) is mainly social. It need not be both social and educational. ★ Income or the extent of property can be taken as a measure of social advancement and on that basis the 'creamy layer' of a given caste can be excluded. ★ The reservations contemplated in Art. 16(4) should not exceed 50%. ★ Reservation of posts under Art. 16(4) is confined to initial appointment only and cannot extend to providing reservation in promotion.

Note : Mandal Commission was set up in 1979 under the Chairmanship of B.N. Madal, M.P. (Former Chief Minister of Bihar).

- The 77th Amendment has provided to continue reservation in promotion for the S.C. and S.T.
- Identification of backward classes is subject to judicial review.
- Article 17 ensures Abolition of Untouchability. The word 'untouchability' has not been defined either in the Constitution or in the relevant Act of Parliament. It has been assumed that the word has a well known connotation.

➤ Article 18 ensures Abolition of titles. It prevents the State from conferring any title.

➤ This ban is only against the State and not against other public institutions, such as Universities.

➤ The State is not debarred from awarding military or academic distinctions, even though they may be used as titles.

➤ The State is not prevented from conferring any distinction or award which can not be used as a title. Bharat Ratna or Padma Vibhushan can not be used by the recipient as a title and therefore does not come within the Constitutional prohibition.

➤ Article 19 provides the six freedoms of :

★ Speech and expression; ★ Assemble peacefully and without arms; ★ Form associations or unions; ★ Move freely throughout the territory of India; ★ Reside and settle in any part of the territory of India; and ★ Practise any profession, or to carry on any occupation, trade or business.

➤ State can impose restrictions on the freedom of speech in the interest of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality, or in relation to contempt of Court, defamation or incitement to an offence.

➤ Restrictions can be imposed on the right to form associations in the interests of the sovereignty and integrity of India or public order or morality. Restrictions can also be imposed on freedom of movement and reside and settle in the interests of the general public or for the protection of the interests of any Scheduled Tribe.

➤ State can prescribe the professional or technical qualifications necessary for practising any profession or carrying on any occupation, trade or business. State can exclude any citizen from a business or industry run by the Government or a body of Government.

➤ There is no specific provision in the Constitution guaranteeing the freedom of the press because freedom of the press is included in the wider freedom of 'expression' which is guaranteed by freedom of expression under Art. 19.

➤ Article 20 guarantees certain protection in respect of conviction for offences. It prohibits :

★ Retrospective criminal legislation, commonly known as ex post facto legislation. ★ Double jeopardy or punishment for the same offence more than once. ★ Compulsion to give self-incriminating evidence.

➤ Article 21 (A) makes the right of education for children of the age of 6 to 14 years a fundamental right. [Ref. : 86th Amendment Act, 2002]

➤ Article 21 of Constitution provides that no person shall be deprived of his life or personal liberty except according to the procedure established by law.

➤ Under the 'Due Process' Clause of the American Constitution, the Court has assumed the power of declaring unconstitutional any law which deprives a person of his liberty without reasonableness and fairness.

➤ In England courts have no power to invalidate a law made by Parliament. In the case of Gopalan Supreme Court held that our Constitution had embodied the English concept.

- > In Maneka's case the Supreme Court held that a law made by the State which seeks to deprive a person of his personal liberty must prescribe a procedure for such deprivation which must not be arbitrary, unfair or unreasonable. It follows that such law shall be invalid if it violates the principle of natural justice.
- > Article 22 provides that no person who is arrested shall be detained in custody without being informed of the grounds for such arrest.
- > No arrested person can be denied the right to consult, and to be defended by a legal practitioner of his choice.
- > Every person who is arrested and detained in custody is to be produced before the nearest magistrate within a period of twenty-four hours of arrest excluding the time necessary for the journey from the place of arrest to the court of the magistrate and no such person can be detained in custody beyond that period without the authority of a magistrate.
- > The above safeguard is not available to an enemy alien and a person arrested or detained under a law providing for preventive detention.
- > The Constitution authorises the Legislature to make laws for **preventive detention** for the security of State, the maintenance of public order, or the maintenance of supplies and services essential to the community, or for reasons connected with Defence and Foreign Affairs [Ref.: Art. 22]
- > Article 23 provides **Right against Exploitation** in following respects:
- > Traffic in human beings and beggar and other similar forms of forced labour are prohibited.
- > The State can impose compulsory service for public purposes, and in imposing such service the State can not make any discrimination on grounds only of religion, race, caste or class or any of them.
- > Special provision for the protection of children is made in Art. 24 which provides that no child below the age of fourteen years can be employed to work in any factory or mine or engaged in any other hazardous employment.
- > Article 25-28 provides **Right to Freedom of Religion**.
- > Article 25 provides freedom of conscience and free profession, practice and propagation of religion subject to public order, morality and health.
- > Under Art. 25 State can regulate religious activities and provide for social reforms and throw open Hindu religious institutions of public character to all sections of Hindus.
- > Article 26 guarantees following rights to all religious groups subject to public order, morality and health:
 - ★ Establish and maintain institution for religious and charitable purposes;
 - ★ Manage its own affairs in matters of religion;
 - ★ Own and acquire movable and immovable property;
 - ★ Administer such property in accordance with law.
- > The State can not compel any citizen to pay any taxes for the promotion or maintenance of any particular religion or religious institution [Ref. :Art. 27]
- > No religious instruction can be provided in any educational institution wholly maintained out of State funds [Ref. : Art. 28]
- > Where a religious community is in the minority, the Constitution enables it to preserve its culture and religious interests by providing that the State shall

- not impose upon it any culture other than the community's own culture [Ref.: Art. 29(1)]
- Such community shall have the right to establish and administer educational institutions of its choice and the State shall not, in granting aid to educational institutions, discriminate against such an educational institution maintained by a minority community on the ground that it is under the management of a religious community [Ref. : Art. 30].
- Full compensation has to be paid if the State seeks to acquire the property of a minority educational institution [Ref.: Art. 30 (1A)].
- The Fundamental Rights are guaranteed by the Constitution not only against the action of the Executive but also against that of the Legislature.
- Right to constitutional remedy, which was termed '**soul of the constitution**' by Dr. B.R. Ambedkar, has been guaranteed by Art. 32 of the Constitution.

The Writs

- > For enforcement of fundamental rights, the judiciary has been armed with the power to issue the writs.
- > The power to issue these writs for the enforcement of the Fundamental Rights is given by the Constitution to the Supreme Court [Ref. : Art. 32] and High Courts [Ref. : Art. 226].
- > Supreme Court has the power to issue writs only for the purpose of enforcement of the Fundamental Rights whereas under Art. 226 a High Court can issue writs for the purpose of enforcement of Fundamental Rights and / or for the redress of any other injury or illegality.
- > Supreme Court can issue a writ against any person or Government within the territory of India, while High Court can issue a writ against a person, Government or other authority only if they are located within the territorial jurisdiction of the High Court.
- > A writ of **Habeas Corpus** calls upon the person who has detained another to produce the latter before the court, in order to let the court know on what ground he has been confined and to set him free if there is no legal justification for the imprisonment. The words 'habeas corpus' literally mean 'to have a body'. This writ may be addressed to an official or a private person, who has another person in his custody.
- > **Mandamus** literally means a command. It commands the person to whom it is addressed to perform some public or quasi-public legal duty which he has refused to perform and the performance of which can not be enforced by any other adequate legal remedy. Mandamus can not be granted against the President, or the Governor of a state, for the exercise and performance of the powers and duties of his office.
- > The writ of **prohibition** is a writ issued by the Supreme Court or a High Court to an inferior court forbidding the latter to continue proceeding therein in excess if its jurisdiction or to usurp a jurisdiction with which it is not legally vested.
- > While mandamus is available not only against judicial authorities but also against administrative authorities, prohibition and certiorari are issued only against judicial or quasi-judicial authorities.

- > Though prohibition and certiorari are both issued against Courts or Tribunals exercising judicial or quasi-judicial powers, **certiorari** is issued to quash order or decision of the Court or Tribunal while **prohibition** is issued to prohibit the Court or Tribunal from making the ultra vires order or decision. Prohibition is available during the pendency of the proceedings and before the order is made, certiorari can be issued only after the order has been made.
- > **Quo warranto** is a proceeding whereby the court enquires into the legality of the claim which a party asserts to a public office, and to oust him from its enjoyment if the claim is not well founded.
- > The conditions necessary for the issue of a writ of quo warranto are as follows:
 - ★ The office must be public and it must be created by a statute or by the constitution itself.
 - ★ The office must be a substantive one and not merely the function or employment of a servant at the will and during the pleasure of another.
 - ★ There has been a contravention of the Constitution or a statute or statutory instrument, in appointing such person to that office.
- > The **limitations on the enforcement of the fundamental rights** are as follows: Parliament has the power to modify the application of the Fundamental Rights to the members of the Armed Forces, Police Forces or intelligence organisations so as to ensure proper discharge of their duties and maintenance of discipline amongst them [Ref.: Art. 33].
 - ★ When martial law is in force, Parliament may indemnify any person in the service of the Union or a State for any act done by him [Ref.: Art. 34].
 - ★ Certain fundamental rights guaranteed by the Constitution may remain suspended, while a Proclamation of Emergency is made by the President under Art. 352.

Right to Information

- > Right to information has been granted to every citizen of India under Right to Information Act, 2005 which came into force on 12th October, 2005.
- > It is not a Fundamental Right but it entails a clause for penalty in case of delay in giving information to the applicant.
- > Information Commission has been set-up at central and state levels to oversee implementation of the Act.

15. Directive Principles of State Policy

The Directive Principles are contained in Part IV of the Constitution. They aim at providing the social and economic base of a genuine democracy.

Important Directive Principles

Broadly speaking, there are three types of Directive Principles aimed at providing social and economic justice and ushering in a welfare state.

1. **Socio-Economic Principles**: They require the State :
 - (a) to provide adequate means of livelihood to all citizens;
 - (b) to prevent concentration of wealth and means of production and ensure equitable distribution of wealth and material resources;
 - (c) to secure equal pay for equal work of men as well as women;
 - (d) to ensure a decent standard of living and leisure for all workers;
 - (e) to provide necessary opportunities and facilities to children and youth to prevent their exploitation;
 - (f) to make efforts to secure

- the right to work, education and public assistance in case of unemployment, sickness, old age etc.
2. **Gandhian Principles**: These are the embodiment of the Gandhian programme for reconstruction. These include :
 - (a) the establishment of village panchayats to function as units of self government;
 - (b) the promotion of educational and economic interests of weaker sections of society;
 - (c) the promotion of cottage industries;
 - (d) the prohibition of intoxicating drugs and drinks;
 - (e) prevention of the slaughter of cows, calves and other milch cattle etc.
 3. **Liberal Principles**: The principles are based on liberal thinking and emphasise the need for :
 - (a) a uniform civil code for the country;
 - (b) free and compulsory education for all children up to the age of 14 years;
 - (c) separation of the judiciary and executive;
 - (d) organisation of agriculture and animal husbandry along scientific lines;
 - (e) securing the participation of workers in the management of industries;
 - (f) safeguarding the forests and wildlife of the country;
 - (g) protecting monuments and places of artistic or historical importance.
- The real significance of the directive principles lies in the fact that they intend to provide social and economic democracy in the country without which political democracy is a farce.

Difference Between Fundamental Rights and Directive Principles

- > Fundamental rights constitute limitations upon State action, while the Directive Principles are instruments of instruction to the Government.
- > The directives require to be implemented by legislation while fundamental rights are already provided in the Constitution.
- > The Directives are not enforceable in the Courts and do not create any Justiciable rights in favour of the individuals, while the Fundamental Rights are enforceable by the Courts [Ref.: Arts. 32, 37, 226(1)].
- > In case of any conflict between fundamental rights and directive principles the former should prevail in the Courts.
- > **42nd Amendment Act** ensured that though the directives themselves are not directly enforceable it would be totally immune from unconstitutionality on the ground of contravention of the fundamental rights conferred by Arts. 14 and 19.
- > This attempt to confer a primacy upon the directives against the fundamental rights was foiled by the decision of the Supreme Court in **Minerva Mills Case** to the effect that a law would be protected by Art. 31C only if it has been made to implement the directive in Art. 39(b)-(c) and not any of the other Directives included in Part IV.

Directives Provided outside Part IV of the Constitution

- > State and every local authority within the state to provide adequate facilities for instruction in the mother-tongue at the primary stage of education to children belonging to linguistic minority groups. [Ref.: Art 350 A]
- > Union to promote spread of Hindi language and to develop it as a medium of expression of all the elements of the composite culture of India. [Ref.: Art. 351]

- > The claims of the members of the Scheduled Castes and the Scheduled Tribes shall be taken into consideration, consistently with the maintenance of efficiency of administration, in the making of appointments to services and posts in connection with the affairs of the union or a state. [Ref.: Art. 335]
- > Though the Directives contained in Arts. 335, 350A and 351 are not included in Part IV, Courts have given similar attention to them meaning that all parts of the Constitution should be read together.

16. Fundamental Duties

- > The Fundamental Duties are eleven in number, incorporated in Art. 51A [Part IV A], which has been incorporated by the 42nd Amendment Act, 1976.
- > Under this Article, it is the duty of every citizen of India:

 1. to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
 2. to cherish and follow the noble ideals which inspired our National Struggle for freedom;
 3. to uphold and protect the sovereignty, unity and integrity of India;
 4. to defend the country;
 5. to promote harmony and the spirit of common brotherhood amongst all the people of India;
 6. to value and preserve the rich heritage of our composite culture;
 7. to protect and improve the natural environment;
 8. to develop the scientific temper and spirit of inquiry;
 9. to safeguard public property;
 10. to strive towards excellence in all spheres of individual and collective activity;
 - II. to provide opportunities for education to his child or ward as the case may be between the age of six and fourteen years.

Note : The 11th Fundamental Duty was added by the 86th Constitutional Amendment Act, 2002.

- > There is no provision in the Constitution for direct enforcement of any of the Fundamental Duties nor for any sanction to prevent their violation.

17. Procedure for Amending the Constitution

- > The alteration of certain provisions of the Constitution are not considered amendment of the constitution. Such provisions can be altered by the Parliament by a simple majority.
- > Other provisions of the Constitution can be changed only by the process of 'amendment' prescribed in Art. 368.
- > In the case of provisions which affect the federal structure, a ratification by the Legislatures of at least half of the states, is required before the Bill is presented to the President for his assent. Such provisions are :

* The manner of election of the President [Ref : Arts. 54,55] * Extent of the executive power of the Union and the States [Ref: Arts. 73, 162]; * The Supreme Court and the High Courts [Art. 241, Chap. IV of part V, Chap. V of part VI]; * Distribution of legislative power between the Union and the States [Chap.I

- of Part XI]; * Any of the Lists in the 7th Schedule; * Representation of the States in Parliament [Arts. 80-81, 4th Schedule]; * Provisions of Art. 368 itself, There is no separate Constituent body provided for by our Constitution for the amending process.
- > An amendment of the Constitution can be initiated only by the introduction of a Bill for the purpose in either House of Parliament.
- > The Amendment Bill should be passed by each House by a **special majority** i.e. more than 50% of the total membership of that House and by a majority of not less than two-thirds of the members of that House present and voting.
- > Constitution stands amended in accordance with the terms of the Amendment Bill after President's assent is accorded to it.

The blend of rigidity and flexibility in the procedure for amendment

- > The procedure for amendment is 'rigid' in so far as it requires a **special majority** and a special procedure.
- > There is no separate body for amending the Constitution, as exists in some other countries (e.g., a Constitutional convention)
- > The State Legislatures cannot initiate any Bill or proposal for amendment of the Constitution.
- > Subject to the provisions of Art. 368, Constitution Amendment Bills are to be passed by the Parliament in the same way as Ordinary Bills.
- > The procedure for joint session is not applicable to Bills for amendment of the Constitution.
- > The **previous sanction of the President is not required** for introducing any Bill for amendment of the Constitution.
- > The requirement relating to ratification by which the state Legislatures is more liberal than the corresponding provisions in the American constitution. The latter requires ratification by three fourths of the states.
- > The amendment of Art. 368 in 1971 has made it obligatory for the President to give his assent to a Bill for amendment of the Constitution, when it is presented to him after its passage by the Legislature [Ref.: 24th Amendment 1971].

Whether Fundamental Rights are Amendable

- > Until the case of Golak Nath, Supreme Court held that no part of our Constitution was unamendable.
- > In Golak Nath's case(1967) a majority of six judges, in a special bench of eleven, overruled the previous decisions and held that if any of such rights is to be amended, a new Constituent Assembly must be convened for making a new Constitution or radically changing it.
- > Constitution (24th Amendment) Act, 1971, held that an amendment of the Constitution passed in accordance with Art. 368, will not be law within the meaning of Art. 13 and the validity of a Constitution Amendment Act shall not be questioned on the ground that it takes away or affects a fundamental right [Ref.: Art. 368(3)]
- > Validity of the 24th Constitution Amendment Act itself was challenged in the case of Keshavananda Bharati.

- > In the case of *Keshvananda Bharati* the Supreme court overruled its own decision given in the case of *Golak Nath* and held that the Parliament could amend any provision of the constitution including fundamental rights in accordance with.

The Doctrine of Basic Features

- > The Supreme court held in the case of *Keshavananda Bharati* that there are certain **basic features** of the Constitution of India, which can not be altered by an amendment under Art. 368.
- > Article 31C, introduced by 25th Amendment Act provided that if any law seeks to implement the directive principles contained in Art. 39(b)- (c) i.e. regarding *socialistic control and distribution of the material resources of the country*, such law shall not be void on the ground of contravention of Art. 14 or 19. The Supreme Court later held that Art. 368 did not empower the Parliament to take away judicial review, in the name of 'amending' the Constitution.
- > The 42nd Amendment 1976 inserted two clauses in Art. 368 to the effect that Constitution Amendment Act "shall be called in Question in any court on any ground". These clauses were nullified by the Supreme Court in the *Minerva Mills Case*.
- > There are three implications of the decision in *Keshavananda Bharati's Case*.
 - ★ Any part of the Constitution may be amended as per the procedure laid down in Art. 368.
 - ★ No referendum or reference to Constituent Assembly is required to amend any provision of the Constitution.
 - ★ Basic features of the Constitution can not be amended.
- > There is no limited list of basic features. In so many decisions the Supreme Court has declared different things as basic features. Prominent among them are the following :
 - ★ Supremacy of the Constitution.
 - ★ Rule of law.
 - ★ The principle of separation of powers.
 - ★ The objectives specified in the Preamble to the Constitution.
- > Judicial review; Art. 32.
- > Federalism.
- > Secularism.
- > The Sovereign, Democratic, Republican structure.
- > Freedom and dignity of the individual.
- > Unity and integrity of the Nation.
- > The Principle of equality, not every feature of equality, but the quintessence of equal justice.
- > The 'essence' of fundamental rights in Part III.
- > The concept of social and economic justice to build a Welfare State.
- > The balance between fundamental rights and directive principles.
- > The Parliamentary system of Government.
- > The principle of free and fair elections.
- > Limitations upon the amending power conferred by Art. 368.
- > Independence of the Judiciary.
- > Effective access to justice.
- > Powers of the Supreme Court under Arts. 32,136,141,142.

18. Executive of the Union

The President

President is the head of the Union Executive.

- > The President of India is indirectly elected by an electoral college, in accordance with the system of proportional representation by means of the single transferable vote.

The electoral college for the President consists of :

- > ★ The elected members of both Houses of Parliament;
- > ★ The elected members of the Legislative Assemblies of the states; and
- > ★ The elected members of the Legislative Assemblies of Union Territories of Delhi and Pondicherry (now Puducherry) {Ref. :Art. 54}.

In the President's election vote value of an

$$\text{MLA} = \frac{\text{Total population of the state}}{\text{Total number of elected members of state}} \div 1000$$

In the President's election vote value of an

$$\text{MP} = \frac{\text{The sum of vote value of elected members of all the Legislative Assemblies}}{\text{The sum of elected members of both the houses of Parliament}}$$

Indirect election of the President is supported on two grounds :

- > ★ Direct election by a large electorate of people would be very costly.
- > ★ Real power is vested in the Ministry, so , it would be anomalous to elect the President directly without giving him real powers.

Qualifications for election as President are :

- > ★ Be a citizen of India;
- > ★ Have completed the age of thirty-five years;
- > ★ Be qualified for election as a member of the House of the People; and
- > ★ Must not hold any office of profit under the Government of India or the Government of any State or under any local or other authority subject to the Control of any of the said Governments {Art. 58}

- > A sitting President or Vice-President of the Union or the Governor of any state or a Minister either for the Union or for any state is not disqualified for election as President {Ref.:Art. 58}

- > The President's term of office is five years from the date on which he enters upon his office.

- > President can submit **resignation** in writing under his hand addressed to the Vice-President of India.

- > The only ground for impeachment of President specified in Art 61(1) is 'violation' of the Constitution.

- > An impeachment is a quasi-judicial procedure in Parliament.

- > Either House may prefer the charge of violation of the Constitution by the President provided that :

- > ★ A resolution containing the proposal is moved after a 14 days' notice in writing signed by not less than 1/4 of the total number of members of that House; and

- > ★ The resolution is then passed by a majority of not less than 2/3 of the total membership of the House.

- > ★ Charge preferred by one House is investigated by the other House.

- > The President has a right to appear and to be represented at such investigation.
- > If a resolution is passed by not less than 2/3 of the total membership of the investigating House declaring that the charge had sustained, the President shall be removed from office [Ref.: Art. 61].
- > The President shall not be a member of either House of Parliament or of a House of the Legislature of any State.
- > If a member of either House of Parliament or a House of the Legislature of any State is elected President, he shall be deemed to have vacated his seat in that House.
- > A vacancy in the office of the President can be caused in any of the following ways:
 - ★ On the expiry of his term of five years. ★ By his death. ★ By his resignation.
 - ★ On his removal by impeachment. ★ Otherwise, e. g. on the setting aside of his election as President.
- > An election to the office of the President must be completed before the expiration of the term.
- > The outgoing President continues to hold office, notwithstanding that his term has expired, until his successor enters upon the office [Ref.: Art 56(1)(c)]. There is no scope for the Vice-President getting a chance to act as President in this case.
- > If vacancy arises other than by expiry of the term an election to fill the vacancy must be held within **six months** from the date of occurrence of the vacancy.
- > If a mid-term vacancy arises in the office of the President, Vice-President acts as President until a new President is elected.

Presidents of India

S.	Name	Tenure
1.	Dr. Rajendra Prasad (1884-1963)	26 Jan., 1950-13 May, 1962
2.	Dr. S. Radhakrishnan (1888-1975)	13 May, 1962-13 May, 1967
3.	Dr. Zakir Hussain (1897-1969)	13 May, 1967-03 May, 1969
4.	Sri V. V. Giri (1894-1980)	24 Aug., 1969-24 Aug., 1974
5.	Dr. Fakhruddin Ali Ahmed (1905-1977)	24 Aug., 1974-11 Feb., 1977
6.	Sri N. Sanjeeva Reddy (1913-1996)	25 July, 1977-25 July, 1982
7.	Giani Zail Singh (1916-1994)	25 July, 1982-25 July, 1987
8.	Sri R. Venkataraman (1910-2009)	25 July, 1987-25 July, 1992
9.	Dr. Shankar Dayal Sharma (1918-1999)	25 July, 1992-25 July, 1997
10.	Sri K. R. Narayanan (1920-2005)	25 July, 1997-25 July, 2002
11.	Dr. A.P.J. Abdul Kalam (b. 1931)	25 July, 2002-25 July, 2007
12.	Smt. Pratibha Devi Singh Patil (b. 1934)	25 July, 2007 -25 July, 2012
13.	Sri Pranab Mukherjee (b. 1935)	25 July, 2012- —

Powers of President

- Administrative power**
- > The President is the formal head of the administration. All executive actions of the Union are expressed to be taken in the name of the President. [Ref.: Art. 77]
 - > All officers of the Union are the President's subordinates and he or she has a right to be informed of the affairs of the Union [Art. 78,53(1)].

Oath and Resignation		
Post	Oath	Resignation
President	Chief Justice of SC	Vice President
V. President	President	President
Governor	Chief Justice of High Court	President
Chief Justice of India	President	President
P. Minister	President	President
Speaker, Lok Sabha	no oath	Deputy Speaker

- The President shall have the power to appoint and remove high dignitaries including : The chairman and Members of the UPSC
- ★ The Prime Minister of India
- ★ Other Ministers of the Union
- ★ The Attorney-General for India
- ★ The Comptroller and Auditor General of India*
- ★ The Chief Justice and Judges of the Supreme Court*
- ★ The Chief Justice and Judges of the High Courts of the states*
- ★ The Governors of states*
- ★ The Chief Election Commissioner and other Election Commissioners of India*
- ★ Members of Inter State Council
- ★ Chief Commissioners of Union Territories
- ★ Members of Finance Commission
- ★ Members of Language Commissions
- ★ Members of Backward Class Commission
- ★ Members of Minorities Commission
- ★ Indian Ambassadors and other diplomats

* can be removed from office through special constitutional provisions (by impeachment).

Military power

- > The Supreme command of the Defence Forces is vested in the President of India, but the Parliament can regulate or control the exercise of such powers [Ref. : Art. 53(2)].
- > Certain acts cannot be done by the President without approaching Parliament for sanction, e.g. acts which involved the expenditure of money [Ref. : Art. 114(3)], such as the raising, training and maintenance of the Defence Forces.

Diplomatic power :

- > The President is empowered to negotiate treaties and agreements with other countries on the advice of his Ministers , subject to ratification by Parliament.
- > President of India represents India in International affairs, appoints Indian representatives to other countries and receives diplomatic representatives of other States.

Legislative power :

- > President has the power to summon or prorogue the Houses of Parliament and to dissolve the Lok Sabha. [Ref. : Art. 85]
- > He also has the power to summon a joint sitting of both Houses of Parliament in case of a deadlock between them [Ref. : Art. 108].
- > The President addresses both Houses of Parliament assembled together, at the first session after each general election to the Lok Sabha and at the commencement of the first session of each year.

- The President has the right to address either Houses or their joint sitting at any time and to require the attendance of members for this purpose [Ref. : Art. 86(1)].
- In the Rajya Sabha 12 members are nominated by the President from persons having special knowledge or practical experience of literature, science, art and social service [Ref. : Art. 80(1)].
- The President is empowered to nominate not more than two Anglo-Indian members to the Lok Sabha, if that community is not adequately represented in that House [Ref. : Art. 331].
- Previous sanction or recommendation of the President is required for introducing legislation on following matters :
 - ★ A Bill for the formation of new states or the alteration of boundaries of existing states [Ref. : Art. 3]. ★ A Bill providing for any of the matters specified in art 31A (1) ★ A money Bill [Ref.: Art. 117(1)]. ★ A Bill involving expenditure from the Consolidated Fund of India [Ref.: Art. 117(3)]. ★ A Bill affecting taxation in which States are interested. ★ State Bills imposing restrictions upon the freedom of trade [Ref. : Art. 304].
- A Bill becomes an Act of the Indian Parliament only after it receives the assent of the President.
- When a Bill is presented to the President for assent :
 - ★ He may declare his assent to the Bill; or
 - ★ He may withhold his assent to the Bill; or
 - ★ He may, in the case of Bills other than Money Bills return the Bill for reconsideration of the Houses, with or without a message suggesting amendments. If the Bill is passed again by both Houses of Parliament with or without amendment and again presented to the President it would be obligatory upon him to declare his assent to it [Ref. : Art. 111].
- The veto power of the Indian President is a combination of the absolute, suspensive and pocket vetos.
- President of India has the power of disallowance or return for reconsideration of a Bill of the state legislature, which are reserved for his consideration by the Governor of the State [Ref.: Art. 201]. A Money Bill so reserved, can not be returned by the President.
- It is not obligatory upon the President to give his assent even to the Bills reconsidered by the state legislature [Ref. : Art. 201].
- The President can legislate by Ordinances at a time when it is not possible to have a Parliamentary enactment on the subject, immediately [Ref. : Art. 123].

Pardoning Power :

- President as well as the Governors possess power to grant pardon [Ref.: Arts. 72,161]
- **Pardon** rescinds (abrogates or revokes) both the sentence and the conviction and absolve the offender from all punishment and disqualifications.
- **Commutation** merely substitutes one form of punishment for another of a lighter character.
- **Remission** reduces the amount of sentence without changing its character.

➤ **Respite** means awarding a lesser sentence instead of the penalty prescribed in view of pregnancy of a woman offender etc.

➤ **Reprieve** means a stay of execution of a sentence, e.g. pending a proceeding for pardon or commutation.

Comparison Between Pardoning Powers of the President and a Governor

- President has the power to grant pardon, reprieve, respite, suspension, remission or commutation, in respect of punishment or sentence by court-martial. Governor has no such power.
- President's powers extend up to the executive power of the union. Governor's powers extend up to the executive power of the state.
- Governor has no power to pardon in case of sentence of death, but he can suspend, remit or commute a sentence of death. Only President can pardon a death sentence.

Emergency power :

- The President has extraordinary powers to deal with a situation of emergency.

Miscellaneous powers :

- The President has the Constitutional authority to make rules and regulations relating to various matters.
- He/she has the power to give instruction to a Governor to promulgate an Ordinance if a Bill containing the same provisions requires previous sanction of the President.
- President has the power to refer any question of Public importance for the opinion of the Supreme Court.
- President has the power to appoint certain commissions for the purpose of reporting on specific matters, such as, Commissions to report on the administration of Scheduled Areas and welfare of Scheduled Tribes and backward classes; the Finance Commission; Commission on Official Language; an Inter-State Council.
- President has some special powers relating to Union Territories or territories which are directly administered by the Union.
- The President shall have certain special powers in respect of the administration of Scheduled Area and Tribes, and Tribal Area in Assam.
- The President has certain special powers and responsibilities regarding the administration of the Scheduled Caste.

The Vice-President

- Vice-President is indirectly elected by means of single transferable vote.
- State Legislatures do not take part in the election of Vice-President.
- The electoral college for Vice-President consists of the members of both Houses of Parliament [Ref. : Art. 66(1)].

To be elected as Vice-President of India a person must be :

- ★ A citizen of India. ★ Over 35 years of Age. ★ Must not hold an office of profit save that of President, Vice-President, Governor or Minister for the Union or a state [Ref.: Art. 66]. ★ Qualified for election as a member of the Rajya Sabha.
- In case a member of the Legislature is elected Vice-President, he shall be deemed to have vacated his seat in the House to which he belongs.

- Term of the office of Vice-President is five years from the date on which he enters upon his office. Office of Vice-President may terminate earlier than the fixed term either by resignation or by removal.
- A formal impeachment is not required for Vice-President's removal.
- Vice-President can be removed by a resolution of the Rajya Sabha passed by a majority of its members and agreed to by the Lok Sabha [Ref.: Art 67].
- A sitting Vice-President is eligible for re-election. Dr. S. Radhakrishnan was elected as the Vice-President of India for a second term in 1957.
- No functions are attached to the office of the Vice-President. The normal function of the Vice-President is to act as the ex-officio Chairman of the Rajya Sabha.
- If any vacancy occurs in the office of the President, Vice-President acts as President until a new President is elected and enters upon his office [Ref.: Art. 65(1)].
- For the first time during the 15-day visit of Dr. Rajendra Prasad to the Soviet Union in June 1960, the then Vice-President, Dr. S. Radhakrishnan acted as the President owing to the 'inability' of the President to discharge his duties.
- The power to determine when the President is unable to discharge his duties or when he should resume his duties is understood to belong to the President himself.
- If the offices of both the President and the Vice-President fall vacant by reason of death, resignation, removal etc. the Chief Justice of India or in his absence the senior most Judge of the Supreme Court acts as President.
- For the first time in 1969 when the President Dr. Zakir Hussain died and the Vice-President Shri V. V. Giri resigned, the Chief Justice Md. Hidayatullah acted as President.
- When the Vice-President acts as President, he gets the emoluments of the President; otherwise, he gets the salary of the Chairman of the Rajya Sabha. When the Vice-President acts as President, the Deputy Chairman of the Rajya Sabha acts as its Chairman [Art. 91].
- Determination of doubts and disputes relating to the election of a President or Vice-President is described in Art. 71. Main provisions are as follows :
 - ★ Such disputes are decided by the Supreme Court whose jurisdiction is exclusive and final. ★ No such dispute can be raised on the ground of any vacancy in the electoral college. ★ If the election of the President or the Vice-President is declared void by the Supreme Court, acts done by him prior to the date of such decision of the Supreme Court is not invalidated. ★ Matters other than the decision of such disputes are regulated by law made by Parliament.

The Prime Minister and The Union Council of Ministers

- In a parliamentary system of Government, the Prime Minister occupies a unique position as the most powerful functionary who controls both the Parliament and the Executive.
- Prime Minister is appointed by the President. Other ministers are appointed and/or dismissed by the President on the advice of the Prime Minister.
- Prime Minister must be the leader of the party in majority in the Lok Sabha or a person who can win the confidence of the majority in that House.

- As the head of the Council of Ministers, the Prime Minister (PM) is the head of the Government. Also, he/she is the leader of his/her party or/and of a coalition of parties in Parliament and usually the Leader of the Popular House.
- The PM enjoys large powers of patronage. All the ministers are appointed at his/her recommendation and stand dismissed at his/her demand.
- The PM allots work among the ministers. Also, he/she can change their portfolios at will.
- The PM is the channel of communication between the Council of Ministers and the President.
- Ministers get the salaries and allowances etc as payable to members of parliament. In addition they get a sumptuary allowance at a varying scale and a residence, free of rent. Cabinet Ministers attend meeting of the Cabinet.
- Ministers of State are not members of the Cabinet and they can attend a Cabinet Meeting only if invited to attend any particular meeting.
- A Deputy Minister assists the Minister in discharge of his duties and takes no part in Cabinet meetings.
- There is no bar to the appointment of a non-MP as Minister, but he cannot continue as Minister for more than 6 months unless he secures a seat in either House of Parliament.
- Though the ministers are collectively responsible to the legislature, they are individually responsible to the President.
- A Minister can take part in the proceedings of both Lok Sabha and Rajya Sabha, but he/she can vote only if he/she is a member of that House.

The Attorney-General for India

- The Attorney-General is the first Law Officer of the Government of India, who gives advice on legal matters and performs other duties of a legal character as assigned to him by the President.
- The Attorney-General for India is appointed by the President and holds office during the pleasure of the President. He must have the same qualifications as are required to be a judge of the Supreme Court.
- He discharges the functions conferred on him by the Constitution or any other law [Ref.: Art. 76].
- The Attorney-General for India is not a member of the Cabinet. But he has the right to speak in the Houses of Parliament or in any Committee thereof, but he has no right to vote [Ref.: Art 88].
- He is entitled to the privileges of a member of Parliament [Art. 105(4)]. In the performance of his official duties, the Attorney-General has the right of audience in all Courts in the territory of India.
- He is not a whole-time counsel for the Government nor a Government servant.

The Comptroller & Auditor-General of India

- The CAG controls the entire financial system of the Union as well as the States [Ref.: Art. 148].
- Though appointed by the President, the Comptroller and Auditor-General can be removed only on an address from both Houses of Parliament on the ground of proved misbehaviour or incapacity.

- His salary and conditions of service are laid down by Parliament and can not be varied to his disadvantage during his term of office.
- The term of office of the Comptroller and Auditor-General (CAG) is 6 years from the date on which he assumes office.
- CAG vacates office on attaining the age of 65 years even without completing the 6-year term. He can resign by writing under his hand, addressed to the President of India. He can be removed by impeachment (Ref.: Arts. 148(1); 124(4)).
- His salary is equal to that of a Judge of the Supreme Court.
- Other conditions of his service are similar to an I. A. S. of the rank of Secretary to the Government of India.
- He is disqualified for any further Government office after retirement.
- The salaries etc of the Comptroller and Auditor-General and his staff and the administrative expenses of his office are charged upon the Consolidated Fund of India and thus non-votable [Ref.: Art. 148 (6)].
- The main duties of the Comptroller and Auditor-General are :
 - ★ To audit and report on all expenditure from the Consolidated Fund of India and of each state and each Union Territory having a Legislative Assembly as to whether such expenditure has been in accordance with the law. ★ To audit and report on all expenditure from the Contingency Funds and Public Accounts of the Union and of the states. ★ To audit and report on all trading manufacturing profit and loss accounts etc kept by any department of the Union or a state. ★ To see that rules and procedures in that behalf are designed to secure an effective check on the assessment, collection and proper allocation of revenue. ★ To audit and report on the receipts and expenditure of all bodies and authorities substantially financed from the Union or State revenues, Government companies; and other corporations or bodies, if so required by the laws relating to such corporations or bodies.

19. The Parliament of India

- The Parliament of India consists of the President, the Lok Sabha and the Rajya Sabha. (Ref.: Art. 79).
- The President is a part of the Legislature, even though he or she does not sit in Parliament.
- The main functions of Parliament are :
 - ★ Providing the cabinet. ★ Control of the Cabinet. ★ Criticism of the Cabinet and individual Minister. ★ Parliament secures the information authoritatively.
 - ★ Legislation i. e. making laws (Ref.: Arts. 107; 108; 245) ★ Financial control.
 - Bill passed by the House of Parliament can not become law without the President's assent.

Rajya Sabha and Lok Sabha

- The Rajya Sabha is composed of not more than 250 members of whom 12 are nominated by the President and 238 are representatives of the states and the Union Territories elected by the method of indirect election (Ref.: Art. 80).
- The 12 nominated members are chosen by the President from amongst persons specialised in science, art, literature and social service.

- Representatives of each State are elected by the elected members of the Legislative Assembly of the state in accordance with the system of proportional representation by means of the single transferable vote.
- Prescribed composition of the Lok Sabha is :
 - ★ Not more than 530 representatives of the States; ★ Not more than 20 representatives of Union Territories. ★ Not more than 2 members of the Anglo-Indian community, nominated by the President.
 - The Lok Sabha at present consists of 543 members (530 members are directly elected from the States and 13 from UTs).
- The representatives of the States are directly elected by the people of the States on the basis of adult suffrage.
- Every citizen who is not less than 18 years of age and is not otherwise disqualified is entitled to vote at such election (Ref.: Art. 326).
- There is no reservation for any minority community other than the Scheduled Castes and the Scheduled Tribes (Ref.: Arts. 330, 341, 342).
- The Council of State is not subject to dissolution. It is a permanent body. 1/3 of its members retire on the expiration of every second year.
- The normal term of the Lok Sabha is 5 years, but it may be dissolved earlier by the President.
- The normal term of Lok Sabha can be extended by an Act passed by Parliament itself during Emergency.
- The extension can not be made for a period exceeding one year at a time.
- Such extension can not continue beyond a period of six months after the proclamation of Emergency ceases to operate.
- Parliament must meet at least twice a year and not more than six months shall elapse between two sessions of Parliament.
- A session is the period of time between the first meeting of Parliament and prorogation of Parliament.
- The period between prorogation of Parliament and its re-assembly in a new session is called recess. Within a session, there are a number of daily sittings separated by adjournments which postpone the further consideration of a business for a specified time.

The sitting of a House can be terminated by dissolution, prorogation or adjournment :

- ★ While the powers of dissolution and prorogation are exercised by the President on the advice of the Council of Ministers. The power to adjourn the daily sittings of Lok Sabha and Rajya Sabha belongs to the Speaker and the Chairman, respectively.
- ★ A dissolution brings Lok Sabha to an end so that there must be a fresh election while prorogation merely terminates a session. Adjournment does not put an end to the session of Parliament but merely postpones the further transaction of business for a specified time, hours, days or weeks.
- ★ On dissolution of the Lok Sabha all matters pending before the House lapse. If these matters have to be pursued, they must be re-introduced in the next House after fresh election.

- ★ But a Bill pending in the Rajya Sabha which has not yet been passed by the Lok Sabha shall not lapse on dissolution.
- ★ Dissolution does not affect a joint sitting of the two Houses, if the President has notified his intention to hold a joint sitting before the dissolution [Ref.: Art. 108(5)].
- Adjournment has no such effect on pending business.
- Qualifications for becoming a member of Parliament are : ★ Must be a citizen of India. ★ Must not be less than 25 years of age in the case of Lok Sabha and 30 years in the case of Rajya Sabha. ★ Additional qualifications may be prescribed by Parliament by law [Ref.: Art. 84].
- A person can be disqualified for being a member of either House of Parliament, if he holds any office of profit under the Government of India or the Government of any State; ★ He is of unsound mind and stands so declared by a competent Court; ★ He is not a citizen of India or has voluntarily acquired citizenship of a foreign State or is under acknowledgment or allegiance or adherence to a foreign power; ★ He is so disqualified by or under any law made by Parliament [Ref.: Art. 102]. ★ In a dispute regarding qualification the President's decision in accordance with the opinion of the Election Commission, is final [Ref.: Art. 103]. ★ The House can declare a seat vacant if the member absents himself from all meetings of the House for a period of 60 days without permission of the house.

Speaker and Deputy Speaker of The Lok Sabha

- Speaker presides over the Lok Sabha.
- The Speaker or the Deputy Speaker, normally holds office during the life of the House, but his office may terminate earlier in any of the following ways:
 - ★ By his ceasing to be a member of the House.
 - ★ By resignation in writing, addressed to the Deputy Speaker, and vice-versa.
 - ★ By removal from office by a resolution, passed by a majority of all the then members of the House [Ref.: Art. 94].
- A resolution to remove the speaker can not be moved unless at least 14 days notice has been given of the intention to move the resolution.
- While a resolution for his removal is under consideration, the Speaker can not preside but he can speak in, take part in the proceedings of the House and vote except in the case of equality of votes [Ref.: Art. 96].
- At other meetings of the House the Speaker can not vote in the first instance but can exercise a casting vote in case of equality of votes.
- The Speaker has the final power to maintain order within the Lok Sabha and to interpret its Rules of Procedures.
- In the absence of a quorum the Speaker adjourns the House or suspends the meeting until there is a quorum.
- The Speaker's conduct in regulating the procedure or maintaining order in the House can not be questioned in a Court [Ref.: Art. 122].
- The Speaker presides over a joint sitting of the two Houses of Parliament [Ref.: Art. 118(4)].

- When a Money Bill is transmitted from the Lok Sabha to the Rajya Sabha the Speaker may certify that it is a Money Bill [Ref.: Art. 110(4)].
- The decision of the Speaker on whether a Bill is Money Bill is final.
- While the office of Speaker is vacant or the Speaker is absent from a sitting of the House, the Deputy Speaker presides, except when a resolution for his own removal is under consideration.

Chairman and Deputy Chairman of the Rajya Sabha

- Vice-President of India is ex-officio Chairman of the Rajya Sabha and functions as the Presiding Officer of that House so long as he does not officiate as the President.
- When the Chairman acts as the President of India, the duties of the Chairman are performed by the Deputy Chairman.
- The Chairman may be removed from his office only if he is removed from the office of the Vice-President.
- The powers of Chairman in the Rajya Sabha are similar to those of the Speaker in the Lok Sabha except that the Speaker has certain special powers like certifying a Money Bill, or presiding over a joint sitting of the two Houses.

Privileges of Parliament

- The privileges of each House can be divided into two groups :
 - ★ Those which are enjoyed by the members individually.
 - ★ Those which belong to each House of Parliament, as a collective body.
- The privileges enjoyed by the members individually are :
 - ★ *Freedom from Arrest* exempts a member from arrest during the continuance of a meeting of the House or Committee thereof of which he is a member and during a period of 40 days before and after such meeting or sitting.
 - ◆ This immunity is confined to arrest in civil cases and not in criminal cases or under the law of Preventive Detention.
 - ◆ A member cannot be summoned, without the leave of the House to give evidence as a witness while Parliament is in session.
 - ★ There is *Freedom of Speech* within the walls of each House.
 - ◆ The limitation on freedom of speech is that no discussion can take place in Parliament with respect to the conduct of any judge of the Supreme Court or of a High Court in the discharge of his duties except upon a motion for removal of the judge [Ref.: Art. 121].
- The privileges of the House collectively are :
 - ★ The right to publish debates and proceedings and to restrain publication by others.
 - ★ The right to exclude others.
 - ★ The right to regulate internal affairs of the House.
 - ★ The right to publish Parliamentary misbehaviour.
 - ★ The right to punish members and outsiders for breach of its privileges.

The Legislative Procedures in Parliament

- > The different stages in the legislative procedure in Parliament relating to Bills other than Money Bills are as follows :
 1. Introduction of a Bill in either House of Parliament
 2. Motions after introduction
 3. Report by Select Committee
 4. Passing of the Bill in the House where it was introduced
 5. Passage in the other House
 6. President's Assent
- > A Bill is called Money Bill if it contains only provisions dealing with all or any of the following matters :
 - ★ The imposition, abolition, remission, alteration or regulation of any tax.
 - ★ The regulation of the borrowing of money by the Government.
 - ★ The custody of or the withdrawal of moneys from the Consolidated Fund of India.
 - ★ The appropriation of moneys out of the Consolidated Fund of India.
 - ★ The declaring of any expenditure to be expenditure charged on the Consolidated Fund of India.
 - ★ The receipt of money on account of the Consolidated Fund of India or the public account of India or the custody or issue of such money or the audit of the accounts of the Union or of a State.
- > The procedure for passing of Money Bills in Parliament is :
- > A Money Bill can not be introduced in the Rajya Sabha.
 - ★ After a Money Bill has been passed by the Lok Sabha, it is transmitted to the Rajya Sabha (with the Speaker's certificate that it is a Money Bill). ★ The Rajya Sabha can neither reject a Money Bill nor amend it. It must, within a period of fourteen days from the date of receipt of the Bill, return the Bill to the Lok Sabha with its recommendations. Lok Sabha may accept or reject all or any of the recommendations of the Rajya Sabha. ★ It is upto the Lok Sabha to accept or reject the recommendations of the Rajya Sabha. If the Lok Sabha accepts any of the recommendations the Money Bill is deemed to have been passed by both Houses with the amendment recommended by the Rajya Sabha and accepted by the Lok Sabha. ★ If a Money Bill is not returned by the Rajya Sabha within fourteen days, it shall be deemed to have been passed by both Houses in the form in which it was passed by the Lok Sabha [Ref.: Art. 109].
- > Only those Financial Bills are Money Bills which bear the certificate of the Speaker as such.
- > Financial Bills which do not receive the Speaker's certificate are of two classes (Art. 117) :
 - (a) A Bill which contains any of the matters specified in Art. 110 but does not consist solely of those matters. It can be introduced in Lok Sabha only on the recommendation of President. Rajya Sabha can amend or reject such Bills.
 - (b) Any Ordinary Bill which contains provisions involving expenditure from the Consolidated Fund [Ref.: Art. 117(3)].

Joint Sittings

- > The President can summon Lok Sabha and Rajya Sabha for a joint sitting in case of disagreement between the two Houses in following ways :

If, after a Bill has been passed by one House and transmitted to the other House—

 - ★ the Bill is rejected by the other House;

- * the Houses have finally disagreed about the amendments to be made in the Bill; or
- * more than six months have elapsed from the date of the reception of the Bill by the other House without the Bill being passed by it.
- > The Speaker presides the joint sitting. In the absence of the Speaker, Deputy Speaker or Chairman of Rajya Sabha or Deputy Chairman of Rajya Sabha or a person chosen by the MPs may preside [Art. 118(4)] in the same order.

Financial legislation in Parliament

- > At the beginning of every financial year, on behalf of the President of India, a statement of the estimated receipts and expenditure of the Government of India for that year is laid before both the Houses of Parliament.
- > This is known as the 'annual financial statement' (i.e., the 'Budget') [Ref. Art. 112]
- > It also states the ways and means of meeting the estimated expenditure.
- > The Annual Financial Statement or the Budget contains :
 - ★ Estimates of expenditure. ★ Ways and means to raise the revenue. ★ An analysis of the actual receipts and expenditures of the closing year and the causes of any surplus or deficit in relation to such year. ★ An explanation of the economic policy and spending programme of the Government in the coming year and the prospects of revenue. ★ Estimates relating to expenditure charged upon the Consolidated Fund of India are not put to vote of Parliament but each House can discuss any of these estimates. ★ Estimates of other expenditure are submitted in the form of demands for grants to the Lok Sabha and it has the power to assent, or to refuse to assent to any demand.
- > No demand for a grant can be made except on the recommendation of the President. [Ref. Art. 113]
- > The scrutiny of budget proposals is done by the Parliament's **Committee on Estimates** in order to :
 - ★ Report to the House about the effect on economy, improvements in organisation, administrative reform etc. ★ Suggest alternative policies. ★ Examine whether the money is well laid out. ★ Suggest the form in which estimates are to be presented to Parliament. ★ The report of the Estimates Committee is not debated in the House.
- > The Comptroller and Auditor General is the **guardian of the public purse** and it is his function to see that not a paisa is spent without the authority of Parliament.
 - ★ The report of the Comptroller and Auditor General laid before the Parliament, is examined by the Public Accounts Committee.
 - ★ **Public Accounts Committee** is a committee of the Lok Sabha (having 15 members from that House), but seven members of the Rajya Sabha are also associated with this Committee, in order to strengthen it.
- > Public Accounts Committee examines that :
 - ★ The money disbursed was legally available and used for the right purpose.
 - ★ The expenditure conforms to the authority which governs it.
 - ★ Every re-appropriation has been made in accordance with the rules framed by competent authority.

Representation of States and Union Territories in the Rajya Sabha

State	No.	State / UT	No.
Uttar Pradesh	31	Chhattisgarh	3
Maharashtra	19	Haryana	3
Tamil Nadu	18	Jammu & Kashmir	3
West Bengal	16	Himachal Pradesh	4
Bihar	16	Uttarakhand	3
Karnataka	12	Goa	3
Andhra Pradesh	11	Manipur	1
Gujarat	11	Nagaland	1
Madhya Pradesh	11	Sikkim	1
Rajasthan	10	Tripura	1
Odisha (Orissa)	10	Arunachal Pradesh	1
Kerala	9	Mizoram	1
Assam	7	Meghalaya	1
Punjab	7	Union Territories	1
Telangana	7	Delhi	1
Jharkhand	6	Puducherry	1

Representation of States and Union Territories in the Lok Sabha

State	No.	State / UT	No.
Uttar Pradesh	80	Uttarakhand	5
Maharashtra	48	Himachal Pradesh	4
West Bengal	42	Tripura	2
Bihar	40	Manipur	2
Tamil Nadu	39	Meghalaya	2
Madhya Pradesh	29	Goa	2
Karnataka	28	Arunachal Pradesh	2
Gujarat	26	Nagaland	1
Rajasthan	25	Sikkim	1
Andhra Pradesh	25	Mizoram	1
Odisha (Orissa)	21	Union Territories	1
Kerala	20	Delhi	7
Telangana	17	Puducherry	1
Jharkhand	14	Chandigarh	1
Assam	14	Lakshadweep	1
Punjab	13	Dadra & Nagar Haveli	1
Chhattisgarh	11	Daman & Diu	1
Haryana	10	Andaman & Nicobar	1
Jammu & Kashmir	6		1

Parliamentary Terms

Question Hour : The day's business normally begins with the Question Hour during which questions asked by the members are answered by the Ministers. The different types of question are :

1. **Starred Question** is one for which an oral answer is required to be given by the Minister on the floor of the House. Supplementary decides if a question should be answered orally or otherwise. One member can ask only one starred question in a day.

2. **Unstarred Question** is one for which the Minister lays on the table a written answer. A 10-day notice has to be given to ask such questions and no supplementary questions can be asked with regard to such questions.

3. **Short Notice Question** is one for which can be asked by members on matters of public importance of an urgent nature. It is for the Speaker to decide whether the matter is of urgent nature or not. The member has also to State reasons for asking the question while serving notice.

Zero Hour : This period follows the Question Hour and it generally begins at noon. Usually the time used by the members to raise various issues for discussion.

Cut Motion: A motion that seeks reduction in the amount of a demand presented by the Government is known as a cut motion. Such motion are admitted at the Speaker's discretion. It is a device through which members (generally of the Opposition) can draw the attention of the Government to a specific grievance or problem. There are three types of cut motions :

1. **Disapproval of policy cut** which is to express disapproval of the policy underlying a particular demand, says that 'the amount of the demand be reduced by Re. 1'.

2. **Economy cut** asks for a reduction of the amount of the demand by a specific amount. The aim is to affect economy in the expenditure.

3. **Token cut** is a device to ventilate specific grievances within the sphere of the Government's responsibility. The grievance has to be specified. Usually the motion in the form, "the amount of the demand be reduced by Rs. 100".

Adjournment Motion: It is a motion to adjourn the proceedings of the House so as to take up for discussion some matter of urgent public importance. Any member can move the motion and, if more than fifty members support the demand, the Speaker grants permission for the motion. The notice for such a motion has to be given before the commencement of the sitting on the day.

Calling Attention Motion : A member may, with prior permission of the Speaker, call the attention of a Minister to any matter of urgent public interest or ask for time to make a Statement.

Privilege Motion : It is a motion moved by a member if he feels that a Minister has committed a breach of privilege of the House or of any one or more of its members by withholding facts of a case or by giving a distorted version of acts.

Point of Order : A member may raise a point of order if the proceedings of the House do not follow the normal rules. The presiding officer decides whether the point of order raised by the member should be allowed.

Vote on Account: As there is usually a gap between the presentation of the Budget and its approval, the vote on account enables the Government to draw some amount from the Consolidated Fund of India to meet the expenses in the intervening period.

Guillotine: On the last of the allotted days at the appointed time the Speaker puts every question necessary to dispose of all the outstanding matters in connection with demands for grants. This is known as guillotine. The guillotine concludes the discussion on demands for grants.

Quorum: It is the minimum number of members whose presence is essential to transact the business of the House. Article 100 provides that the quorum of either House shall be one-tenth of the total number of members of the House.

No-Confidence Motion: According to the Constitution, the Council of Ministers stays in office only so long as it enjoys the confidence of the Lok Sabha; once the confidence is withdrawn the Government is bound to resign. The rules of parliamentary procedure accordingly provide for moving a motion to ascertain this confidence. The motion is generally known as the 'no-confidence motion'.

Censure Motion: A censure motion differs from a no-confidence motion in that the latter does not specify any ground on which it is based, while the former has to mention the charges against the Government for which it is being moved. A censure motion can be moved against the Council of Ministers or against an individual Minister for failing to act or for some policy. Reasons for the censure must be precisely enumerated. The Speaker decides whether or not the motion is in order, and no leave of the House is required for moving it.

Lame-duck Session: Session held when a new parliament has been elected but the old Parliament meets for the last time before it is dissolved. The lame-ducks are the members of the parliament who have not got re-elected.

Shadow Cabinet: A Parliament practice prevalent in the UK where senior members of the Opposition cover the areas of responsibility of the actual cabinet. They will form the cabinet if their party is elected to the government.

Leader of the Opposition

- > Government has given statutory recognition to the leaders of the Opposition in the Lok Sabha and Rajya Sabha.
- > Necessary legislation to this effect was passed by parliament in 1977 and the Rules framed thereunder were brought into effect on November 1, 1977.
- > For the first time Y.B. Chavan of the Congress (I) was given the official status of Leader of the Opposition in the Lok Sabha with the rank of a Cabinet Minister.

The Funds

- > All money received by or on behalf of the Government of India is credited to either the Consolidated Fund of India, or the Public account of India.
- > The consolidated Fund of India consists of :
 - ★ All revenues received by the Government of India ★ All loans raised by the Government of India. ★ All money received by Government in repayment of loans [Ref.: Art 266(1)]. ★ All other public money received by or on behalf of the Government of India is credited to the Public Accounts of India.
- > Art. 267 of the Constitution empowers Parliament and the Legislature of a state to create a 'Contingency Fund' for India or for a State, as the case may be for meeting unforeseen expenditure.

Extents of the Powers of Rajya Sabha

- > A money Bill can not be introduced in Rajya Sabha.
- > The Rajya Sabha has no power to reject or amend a Money Bill.
- > The Speaker of the Lok Sabha has sole and final power of deciding whether a Bill is a Money Bill.
- > Though the Rajya Sabha can discuss, it cannot vote for the public expenditure and demands for grants are not submitted for the vote of the Rajya Sabha.
- > The Council of Ministers is responsible to the Lok Sabha and not to the Rajya Sabha [Ref.: Art. 75(3)].
- > Rajya Sabha suffers by reason of its numerical minority, in case of a joint session to resolve a deadlock between the two Houses [Art. 108(4)].
- > Parliament can legislate on a State subject only if Rajya Sabha resolves for this by a 2/3 majority. [Ref. : Art. 249]
- > New All-India services can be created only after Rajya Sabha resolves for this with a 2/3 majority. [Ref. : Art. 312]

20. Executive of the States

The Governor

- > The Governor of a state is appointed by the President and holds his office at the pleasure of the President.
- > Qualifications for the post of Governor are :
 - ★ Should be a citizen of India. ★ Should be over 35 years of age. ★ Must not hold other office of profit and should not be a Member of the Legislature of the Union or of any State [Ref.: Art. 158].
- > If a Member of a Legislature is appointed Governor, he ceases to be a Member immediately upon such appointment.
- > The normal term of a Governor's office is five years, but it may be terminated earlier by :
 - ★ Dismissal by the President [Ref. : Art. 156 (1)];
 - ★ Resignation [Art. 156(2)].
- > There is no bar to a person being appointed Governor more than once.

Why an appointed Governor

- > Because it would save the country from the evil consequences of still another election, run on personal issues.
- > If the Governor is elected by direct vote, then he might consider himself superior to the Chief Minister, leading to *friction* between the two.
- > The expenses involved and the elaborate machinery of election would not match the powers of Governor.
- > A second rate man of the party may get elected as Governor.
- > Through an appointed Governor the Union Government can maintain its control over the states.
- > The method of election may encourage separatist tendencies.

Powers of Governor

The Governor has no diplomatic or military powers like the President, but he has executive, legislative and judicial powers analogous to those of the President.

- Executive :** Governor has the power to appoint Council of Ministers, Advocate General and the members of the State Public Service Commission.
- The Ministers as well as Advocate General hold office during the pleasure of the Governor but the Members of the State Public Service Commission can be removed only by the President on the report of the Supreme Court and in some cases on the happening of certain disqualifications [Ref.: Art. 317].
 - The Governor has no power to appoint Judges of the State High Court but he is entitled to be consulted by the President in the matter [Ref.: Art. 217(1)].
 - Like the President the Governor has the power to nominate members of the Anglo-Indian community to the Legislative Assembly of his State.
 - To the Legislative Council, the Governor can nominate persons having special knowledge or practical experience of literature, science, art, co-operative movement and social service [Ref.: Art. 171(5)].
 - ★ 'Co-operative movement' is not included in the corresponding list for Rajya Sabha.

Legislative : Governor is a part of the State Legislature and he has the right of addressing and sending messages, and of summoning, proroguing and dissolving the State Assembly.

Judicial : The Governor has the power to grant pardons, reprieves, respites, or remission etc. of punishments [Ref.: Art. 161].

Emergency : The Governor has no emergency powers to counter external aggression or armed rebellion.

- He has the power to report to the President if Government of the State cannot be carried on in accordance with the Constitution [Ref.: Art. 356].

Chief Minister and The State Council of Ministers

- Chief Minister is the head of the State Council of Ministers.
- The Chief Minister is appointed by the Governor.
- The other Ministers are appointed by the Governor on the advice of Chief Minister.
- Any person may be appointed a Minister but he must become member of the legislature within six months of such appointment.
- The Council of Ministers is collectively responsible to the Legislative Assembly of the state but individually responsible to the Governor.
- The relation between the Governor and his Ministers is similar to that between the President and his Ministers.

Discretionary functions of the Governor

- The functions which are specially required by the Constitution to be exercised by the Governor in his discretion are :
 - ★ The Governor of Assam can determine the amount payable by the State of Assam to the District Council, as royalty accruing from licences for minerals.★ Where a Governor is appointed administrator of an adjoining Union Territory, he can function as such administrator independently of his Council of Ministers.
 - ★ The President may direct that the Governor of Maharashtra or Gujarat shall have a special responsibility for taking steps for the development of Vidarbha

and Saurashtra. ★ The Governor of Nagaland has similar special responsibility with respect to law and order in that State. ★ Governor of Manipur has special responsibility to secure the proper functioning of the Committee of the Legislative Assembly consisting of the members elected from the Hill Areas of that State. ★ Governor of Sikkim has special responsibility for peace and equitable arrangement for ensuring the social and economic advancement. ★ The Governor has the power to dismiss an individual Minister at any time. ★ Governor can dismiss a Council of Ministers or the Chief Minister, only when the Council of Ministers has lost confidence of the Legislative Assembly and the Governor does not think fit to dissolve the Assembly.

The Advocate-General

- Each state has an Advocate-General, an official corresponding to the Attorney-General of India and having similar functions for the State.
- He is appointed by the Governor of the state and holds office during the pleasure of the Governor.
- Only a person who is qualified to be a judge of a High Court can be appointed Advocate-General. He receives such remuneration as the Governor may determine.
- He has the right to speak and to take part in the proceedings of, but no right to vote in, the Houses of the Legislature of the state [Ref. : Art. 177].

The State Legislature

- Some states have bi-cameral Legislature (having two Houses). The Seven States having two Houses are Andhra Pradesh, Telangana, Bihar, Karnataka, Maharashtra, Uttar Pradesh and Jammu & Kashmir.
- In the remaining States, the Legislature is uni-cameral and has the Legislative Assembly only.
- For creation or abolition of Legislative Council, the Legislative Assembly of the State should pass a resolution by a special majority followed by an Act of Parliament [Ref. : Art. 169].
- The size of the Legislative Council may vary, but its membership should not be more than 1/3 of the membership of the Legislative Assembly but not less than 40.

- Legislative Council is a partly nominated and partly elected body.
- Election to the Legislative Council is indirect and in accordance with proportional representation by single transferable vote.

- 5/6 of the total number of members of the Council is indirectly elected and 1/6 is nominated by the Governor.

- 1/3 of the total members of the Council is elected by local bodies such as municipalities, district boards.

- 1/12 is elected by graduates of three years' standing residing in the State.

- 1/12 is elected by teachers of secondary schools or higher educational institutions.

The Strength of Legislative Councils

State	Total Seats
Andhra Pradesh	50
Telangana	40
Bihar	75
Jammu & Kashmir	36
Karnataka	75
Maharashtra	78
Uttar Pradesh	99

- > 1/3 is elected by members of the Legislative Assembly from amongst persons who are not members of the Assembly.
- > The remainder is nominated by the Governor from persons specialised in literature, science, art, co-operative movement and social service.
- > The Court cannot question the *bona fides* or propriety of the Governor's nomination in any case.
- > The Legislative Assembly of each State is directly elected on the basis of adult suffrage from territorial constituencies.
- > The Number of members of the Assembly can not be more than 500 nor less than 60.
- > The Assembly in Mizoram and Goa have only 40 members each. While the Assembly in Sikkim has only 32 members.
- > Governor can nominate one member of the Anglo-Indian community in the Assembly [Ref.: Art. 333].
- > The duration of the Legislative Assembly is five years. It may be dissolved sooner than five years, by the Governor.
- > The term of five years may be extended by the Parliament in case of a Proclamation of Emergency by the President for not more than one year at a time [Ref.: Art. 172(1).]
- > Legislative Council (Vidhan Parishad) is a permanent body like the Council of State (Rajya Sabha).
- > The Legislative Council is not dissolved. One-third of the members of Legislative Council retire on the expiry of every second year [Ref.: Art. 172(2)].
- > A Legislative Assembly has its Speaker and Deputy Speaker and a Legislative Council has its Chairman and Deputy Chairman, and the provisions relating to them are analogous to those relating to the corresponding officers of the Union Parliament.
- > Qualifications for membership of State Legislature are :
 - ★ Should be a citizen of India;
 - ★ For Legislative Assembly, not less than twenty-five years of age and for Legislative Council not less than thirty years of age;
 - ★ Should possess other qualifications prescribed in that behalf by or under any law made by Parliament [Ref.: Art. 173].

The Strength of Legislative Assembly in States/U Ts

State/U.T.	Strength	State/U.T.	Strength
Uttar Pradesh	403	Haryana	90
West Bengal	294	Jammu-Kashmir	87*
Maharashtra	288	Jharkhand	81
Bihar	243	Uttarakhand	70
Tamil Nadu	234	Delhi (NCT)	70
Madhya Pradesh	230	Himachal Pradesh	68

State/U.T.	Strength	State/U.T.	Strength
Karnataka	224	Arunachal Pradesh	60
Rajasthan	200	Manipur	60
Gujarat	182	Meghalaya	60
Andhra Pradesh	175	Nagaland	60
Odisha	147	Tripura	60
Kerala	140	Goa	40
Assam	126	Mizoram	40
Telangana	119	Sikkim	32
Punjab	117	Puducherry	30
Chhattisgarh	90	★7 seats are reserved for SC N.B. : 24 seats (Out of 111 seats) are in PoK	

Comparison of Legislative Procedures between Bi-cameral State Legislature and the Parliament

- > For Money Bills, the position is the same.
- > For other Bills the only power of the Council is to interpose a *delay* of 3 months.
- > In case of disagreement, the Bill is second time referred to the Legislative Council and this time the Council has no power to withhold the Bill for more than a month [Ref.: Art. 197(2)(b)].

Governor's Power of Veto

- > When a Bill is presented before the Governor after its approval by the Houses of the Legislature, the Governor can :
 - ★ Declare his *assent* to the Bill, in that case it would become law at once.
 - ★ Declare that he withdraws his assent to the Bill, such a Bill fails to become a law.
 - ★ Declare that he withdraws his assent to the Bill (other than a Money Bill) and the Bill is returned with a message.
 - ★ Reserve a Bill for the consideration of the President. Such reserving is compulsory where the law in question would derogate the powers of the High Court.

Power of Governor to Promulgate Ordinances

- > The Governor can promulgate Ordinance only when the Legislature, or both Houses there of, are not in session.
- > It must be exercised with the aid and advice of the Council of Ministers.
- > The Ordinance must be laid before the State Legislature when it reassembles.
- > An Ordinance ceases to have effect after 6 weeks from the date of re-assembly, unless disapproved earlier by that Legislature.
- > The Governor himself is competent to withdraw the Ordinance at any time.
- > The scope of the Ordinance-promulgating power of the Governor is confined to the subjects in Lists II and III of the Seventh Schedule.

- > Governor cannot promulgate Ordinances without instructions from the President if:
 - ★ A Bill containing the same provisions would require previous sanction of the President.
 - ★ Bill is required to be reserved for consideration of the President.
- Privileges of State Legislature**
- > Privileges of State Legislature are similar to those of Union Parliament.
- > Each House of the State Legislature can punish for breach of its privileges for contempt.
- > Each House is the sole judge of the question whether any of its privileges has been infringed. Court has no jurisdiction to interfere with the decision of the House on this point.
- > No House of the Legislature can create any new privilege for itself. Court can determine whether the House possesses a particular privilege.

21. Special Position of Jammu & Kashmir

- > The jurisdiction of the Parliament in relation to Jammu & Kashmir is confined to the Union List, and the Concurrent List.
- > Residuary power belongs to the Legislature of Jammu & Kashmir.
- > Proclamation of Emergency under Art. 352 on the ground of internal disturbance has no effect in the State of Jammu & Kashmir, without the concurrence of the Government of the State.
- > No decision affecting the disposition of the State can be made by the Government of India, without the consent of the Government of the State.
- > The Union has no power to suspend the Constitution of the State on the ground of failure to comply with the directions given by the Union under Art. 365.
- > Arts. 356-357 relating to suspension of constitutional machinery have been extended to Jammu & Kashmir by the Amendment Order of 1964. But "failure" would mean failure of the constitutional machinery of Jammu & Kashmir.
- > The Union has no power to make a Proclamation of Financial Emergency with respect to the State of Jammu & Kashmir under Art. 360.
- > Directive Principles of States Policy do not apply to the State of Jammu & Kashmir.
- > Jammu & Kashmir has its own Constitution made by a separate Constituent Assembly and promulgated in 1957.
- > The Constitution of Jammu & Kashmir (accepting the provisions relating to the relationship of the State with the Union of India), can be amended by an Act of the Legislative Assembly of the State, passed by not less than 2/3 majority.
- > No alteration of the area or boundaries of Jammu & Kashmir can be made by Parliament without the consent of the Legislature of the State.
- > The jurisdictions of the Comptroller and Auditor-General, the Election Commission, and the Special Leave jurisdiction of the Supreme Court have been extended to Jammu & Kashmir.

22. Panchayats

- > Part IX of the Constitution envisages a three tier system of Panchayats:
 - ★ Panchayat at the village level;
 - ★ The District Panchayat at the district level;
 - ★ The Intermediate Panchayat in States where the population is above 20 lakhs.
- > All the seats in a Panchayat is filled by direct election.
- > The electorate is named 'Gram Sabha'.
- > The Chairperson of each Panchayat is elected according to the law passed by a State.
- > Seats are reserved in Panchayat for Scheduled Castes, and Scheduled Tribes in proportion to their population [Art. 243D].
- > Out of the reserved seats, 1/3 is reserved for women belonging to Scheduled Castes and Scheduled Tribes. 1/3 of the total seats to be filled by direct election in every Panchayat is reserved for women.
- > A State can make similar reservation for Chairpersons in the Panchayats.
- > Every Panchayat can continue for 5 years from the date of its first meeting. It can be dissolved earlier in accordance with State law.
- > A Panchayat reconstituted after premature dissolution, continues only for the remainder of the period. But if the remainder of the period is less than 6 months it is not necessary to hold elections.
- > All persons above 21 years of age and qualified to be a member of the State Legislature are qualified as a member of a Panchayat [Art. 243F].
- > Panchayats can be entrusted to prepare and implement plans for economic development and social justice.
- > A State can authorise a Panchayat to levy, collect and appropriate taxes, duties, tolls etc.
- > After the 73rd amendment of the Constitution (25 April, 1993), every 5 years the States appoint a Finance Commission to review the financial position of the Panchayats and make recommendations.
- > State Election Commission consisting of a State Election Commissioner is appointed by the Governor for superintendence, direction and control of elections to Panchayats [Art. 243K].
- > The Community Development Programme was launched on Oct. 2, 1952.
- > The Democratic Decentralisation was implemented for the first time in 1958 in some areas of Andhra Pradesh on experimental basis.
- > The Panchayati Raj was introduced for the first time on Oct. 2, 1959 in Nagaur District of Rajasthan by the Prime Minister Jawahar Lal Nehru.
- > Rajasthan is the first state in India, where Panchayati Raj was implemented in the whole state.

23. Municipalities

- > PART IXA gives a constitutional foundation to the local self government units in urban area.
 - > Most provisions for municipalities are similar to those contained in PART IX, e.g. Structure, Reservation of Seats, Functions, Sources of Income etc.
 - > **Nagar Panchayat**, is for an area being transformed from a rural area to an urban area.
 - > **Municipal Council** is for a smaller urban area.
 - > **Municipal Corporation** is for a larger urban area. The municipal corporation is the topmost urban local government.
 - > The members of a municipality are generally elected by direct election.
 - > The Legislature of a State can provide for representation in municipalities of:
 - ★ Persons having special knowledge or experience in municipal administration.
 - ★ Members of Lok Sabha, State Assembly, Rajya Sabha and Legislative Council.
 - ★ The Chairpersons of Ward Committees.
- Note :** If the population is 3 lacs or more Ward Committees are constituted.
- > Two Committees constituted for preparing development plan are :
 - ★ A District Planning Committee at the district level
 - ★ A Metropolitan Planning Committee at the metropolis level

24. The Supreme Court

- > Every Judge of the Supreme Court after consulting the Chief Justice of the Supreme Court, is appointed by the President of India.
- > In appointment of the Chief Justice of India, President can consult such Judges of the Supreme Court and the High Court as he thinks appropriate.
- > A person is qualified for appointment as a judge of the Supreme Court, if he is :
 - ★ A citizen of India
 - ★ Has been a High Court Judge for at least 5 years
 - ★ Has been an Advocate of a High Court, or two or more courts in succession for at least 10 years [Ref.: Art. 124(3)].
- > No minimum age or fixed period of office is prescribed for appointment as a Judge of the Supreme Court.
- > A Judge of Supreme Court ceases to be so, on :
 - ★ Attaining the age of 65 years; ★ Resigning in writing addressed to the President; ★ On being removed by the President. ★ The only grounds for such removal are proved misbehaviour and incapacity [Ref.: Art. 124(4)].
- > Procedure for removal or impeachment of a Supreme Court Judge :
 - ★ A motion addressed to the President signed by at least 100 members of the Lok Sabha or 50 members of the Rajya Sabha is delivered to the Speaker or the Chairman.
 - ★ The motion is investigated by a Committee of 3 (2 Judges of the Supreme Court and a distinguished Jurist).
 - ★ If the Committee finds the Judge guilty, report of Committee is considered in the House where the Motion is pending.

- ★ If the motion is passed in each House by majority of the total membership of the House and by a majority of not less than two-thirds of the members present and voting the address is presented to the President.
- > The Judge is removed after the President gives his order for removal on such address.
- > The procedure for impeachment is the same for Judges of the Supreme Court and the High Courts.
- > After retirement a Judge of the Supreme Court can not plead or act in any Court or before any authority within the territory of India [Ref.: Art. 124(7)].
- > Jurisdiction of the Supreme Court is three-fold :
 1. Original; 2. Appellate; and 3. Advisory.
- > Disputes between different States of the Union or between Union and any state is within exclusive Original jurisdiction of the Supreme Court [Ref.: Art. 131].
- > The jurisdiction of the Supreme Court to entertain an application under Art. 32 for the issue of writs for the enforcement of Fundamental Rights is treated as an 'original' jurisdiction of the Supreme Court though called Writ Jurisdiction.
- > The Supreme Court is the highest court of appeal from all courts in the territory of India.
- > Supreme Court is the highest authority for interpretation of the Constitution.
- > Supreme Court may hear appeals by granting special leave against any kind of judgement or order made by any court or tribunal (except a military tribunal).
- > Under advisory jurisdiction, Supreme Court can give its *opinion* on any matter of law or fact of public importance referred to it by the President. [Ref.: Art. 143].

25. The High Court

- > The High Court is the head of the Judiciary in the State.
- > Every Judge of a High Court is appointed by the President.
- > In making appointment as a High Court Judge, President can consult the Chief Justice of India, the Governor of the State and also the Chief Justice of that High Court.
- > A Judge of the High Court can hold office until the age of 62 years.
- > A High Court Judge can leave his office :
 - ★ By resignation in writing addressed to the President.
 - ★ By being appointed a Judge of the Supreme Court or being transferred to any other High Court by the President.
 - ★ By removal by the President.
 - ★ The mode of removal of a Judge of the High Court is same as that of a Judge of the Supreme Court.
- > The qualifications for being a Judge of the High Court are :
 - ★ Be a citizen of India. ★ Not above 62 years of age. ★ Must have held for at least 10 years a judicial office in territory of India or experience of at least 10

- years as advocate of a High Court, or of two or more such courts in succession in India.
- Salaries and allowances of the High Court Judges are charged on the Consolidated Fund of the State [Art. 202(3) (d)].
- After retirement a permanent Judge of High Court can not plead or act in a Court or before any authority in India, except the Supreme Court and a High Court in which he has not worked.

The High Courts : Seats and Jurisdiction

Name	Established	Territorial Jurisdiction	Seat
Allahabad	1866	Uttar Pradesh	Allahabad (Bench at Lucknow)
Andhra Pradesh	1954	Andhra Pradesh, Telangana	Hyderabad
Bombay	1862	Maharashtra, Dadra & Nagar Haveli, Goa, Daman & Diu.	Bombay (Benches at Nagpur, Panji, Aurangabad)
Calcutta	1862	West Bengal, Andman & Nicobar Islands.	Kolkata (Bench at Port Blair)
Delhi	1966	Delhi	Delhi
Guwahati	1948	Assam, Nagaland, Mizoram and Arunachal Pradesh	Guwahati (Benches at Kohima, Aizawl and Itanagar)
Gujarat	1960	Gujarat	Ahmedabad
Himachal Pradesh	1966	Himachal Pradesh	Shimla
Jammu and Kashmir	1928	Jammu & Kashmir	Srinagar & Jammu
Karnataka	1884	Karnataka	Bengaluru (Bench-Dharwad and Gulbarga)
Kerala	1958	Kerala & Lakshadweep	Ernakulam
Madhya Pradesh	1956	Madhya Pradesh	Jabalpur (Bench-Indore, Gwalior)
Madras	1862	Tamil Nadu & Puducherry	Chennai (Bench-Madurai)
Orissa	1948	Odisha	Cuttack
Patna	1916	Bihar	Patna
Punjab & Haryana	1975	Punjab, Haryana, Chandigarh	Chandigarh
Rajasthan	1949	Rajasthan	Jodhpur (Bench-Jaipur)
Sikkim	1975	Sikkim	Gangtok
Chhattisgarh	2000	Chhattisgarh	Bilaspur
Uttarakhand	2000	Uttarakhand	Nainital
Jharkhand	2000	Jharkhand	Ranchi
Manipur	2013	Manipur	Imphal
Meghalaya	2013	Meghalaya	Shillong
Tripura	2013	Tripura	Agartala

26. Inter-State Council

- Inter-State Council was constituted in April, 1990 under Art. 263.
- Inter-State Council consists of Prime Minister, 6 Union Cabinet Ministers, the Chief Ministers of all the States and administrators of all UTs.
- The Sarkaria Commission recommended the constitution of a permanent Inter-State Council for co-ordination among States and with the Union. (Justice R.S. Sarkaria died in 2007.)
- Inter-state Council is chaired by the Prime Minister and it meets thrice a year.

27. Finance Commission

- The Constitution provides for the establishment of a Finance Commission (Art. 270, 273, 275 and 280) by the President. The first Finance Commission was constituted in 1951.

Finance Commissions of India

Sl.	Constituted	Chairman	Report Implementation Year
1.	1951	K. C. Niyogi	1952–1957
2.	1956	K. Santhanam	1957–1962
3.	1960	A. K. Chanda	1962–1966
4.	1964	Dr. P. V. Rajamannar	1966–1969
5.	1968	Mahavir Tyagi	1969–1974
6.	1972	Brahmanand Reddy	1974–1979
7.	1977	J. M. Schelet	1979–1984
8.	1982	Y. B. Chavan	1984–1989
9.	1987	N. K. P. Salve	1989–1995
10.	1992	K. C. Pant	1995–2000
11.	1998	A. M. Khusro	2000–2005
12.	Nov. 2002	C. Rangarajan	2005–2010
13.	Nov., 2007	Dr. Vijay L. Kelkar	2010–2015
14.	Jan. 2013	Y.V. Reddy	2015–2020

- The Finance Commission consists of a Chairman and four other members.
- According to the qualifications prescribed by the Parliament, the chairman is selected among persons who have had experience in public affairs, while the members are selected among persons who :
 - ★ are or have been or are qualified to be appointed judges of the High Court; or
 - ★ have special knowledge of the finance and accounts of government; or
 - ★ have had wide experience in financial matters and in administration; or
 - ★ have special knowledge of economics.
- The members of the commission hold office for such period as may be specified by the President in his orders and are eligible for reappointment.

- The main functions or *duties* of the Finance Commission are :
 - ★ To recommend to the President the basis for distribution of the net proceeds of taxes between the centre and states.
 - ★ To recommend the principles which should govern the grants in-aid to be given to states out of the consolidated Fund of India.
 - ★ To tender advice to the President on any other matter referred to the Commission in the interest of sound finance.
 - ★ To suggest amounts to be paid to the states of Assam, Bihar, Odisha and West Bengal in lieu of the assignment of system of export duty on Jute products.
- The commission submits its recommendations to the President which are generally accepted by the Central Government. The recommendations of the Commission are applicable for a period of five years.

28. Planning Commission/NITI Aayog

- Planning Commission was not mentioned in the Constitution.
- Planning Commission was an economic advisory body set up by a resolution of the Union Cabinet in March, 1950.
- Pt. Jawahar Lal Nehru was the first and Narendra Modi is the last chairman of Planning Commission
- The Planning Commission consisted of the Chairman, four Ministers as part time members and seven full-time members.
- Prime Minister had been the Chairman of Planning Commission.
- Main functions of the Planning Commission were :
 - ★ To prepare an integrated Five Year Plan for the most effective and balanced utilisation of the country's resources for economic and social development.
 - ★ To act as an advisory body to the Union Government and State Governments.
- On 15th August, 2014 the Prime Minister Narendra Modi announced that a new institution would be formed in place of the Planning Commission.
- On 1st January, 2015 the 'NITI Aayog' was announced'.

NITI Aayog

- On the 1st January 2015, by resolution the Government of India constituted a 'NITI Aayog' (*NITI stands for National Institution for Transforming India*)
- The Prime Minister of India is the chairperson and Chief Ministers of all the States and Lt. Governor of Andaman & Nicobar Islands (UT) are the members of NITI Aayog's Governing Council.
- The Aayog will have five full-time members, two permanent members, four Union Ministers as ex-officio members and three Union Ministers as special invitees.
- Arvind Panagariya (An Indo-US economist and ex-chief Economist of Asian Development Bank) is the first Vice Chairman of the NITI Aayog.
- The first meeting of the newly constituted planning body, the NITI Aayog was held on 6 February, 2015.

29. National Development Council (NDC)

- The National Development Council was formed in 1952, to associate the States in the formulation of the Plans.
- All members of the Union Cabinet, Chief Ministers of States, the Administrators of the Union Territories and member of the erstwhile Planning Commission (now NITI Aayog) are members and the Prime Minister of India is the Chairman of the NDC.
- Functions of the NDC are :
 - ★ Review working of national plan.
 - ★ Recommend measures to meet targets of national plan.
- It is an extra constitutional and extra legal body.

30. National Integration Council

- National Integration Council was set-up in 1986, to deal with welfare measures for the minorities on an All-India basis.
- It includes Union Ministers, Chief Ministers of State, representatives of National and Regional political parties, labour, women, public figures and media representatives. NDC is a **non-constitutional body**.

31. Inter-State Relations

- Art. 131 provides for the judicial determination of disputes between states by vesting the Supreme Court with exclusive jurisdiction in the matter, while Art. 262 provides for the adjudication of one class of such disputes by an extra judicial tribunal.
- Art. 263 provides for the prevention of inter State disputes by investigation and recommendation by an administrative body.
- Under Art. 262 Parliament has constituted the Inter-State Water Disputes Tribunal for adjudication of disputes between States for the waters of any inter-State river or river valley.
- Inter-State river water disputes are excluded from the jurisdiction of all Courts including the Supreme Court.
- An Inter-State Council has been constituted for co-ordinating in Inter-State disputes [Ref. : Art. 263 (a)].
- Six Zonal Councils have been established to discuss and advise on matters of common interest. These are :
 - ★ **The Central Zone** : Uttar Pradesh, Madhya Pradesh, Uttarakhand and Chhattisgarh.
 - ★ **The Northern Zone** : Haryana, Himachal Pradesh, Punjab, Rajasthan, Jammu & Kashmir, and the Union Territories of Delhi & Chandigarh.
 - ★ **The Western Zone** : Gujarat, Maharashtra, Goa and the Union Territories of Dadra & Nagar Haveli and Daman & Diu.
 - ★ **The Southern Zone** : Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, and the Union Territory of Puducherry.
 - ★ **The Eastern Zone** : Bihar, Jharkhand, West Bengal and Odisha.
 - ★ **The North - Eastern Council** : Arunachal Pradesh, Assam, Manipur, Mizoram, Tripura, Meghalaya, Nagaland and Sikkim.

- Each Zonal Council consists of the Chief Minister and two other Ministers of each of the States in the Zone and the Administrator in the case of a Union Territory.
- The Union Home Minister has been nominated to be the common chairman of all the Zonal Councils.

32. Emergency Provisions

- President can make proclamation of emergency under Art. 352 in case of war, external aggression or armed rebellion or threat thereof only on recommendation of the Cabinet.
- Every such proclamation must be laid before Parliament and it ceases to be in operation unless it is approved by resolutions of both Houses of Parliament with special majority within *one month* from the date of its issue.
- The proclamation gets a fresh lease of 6 months from the date it is approved by both Houses of Parliament.
- After the 44th amendment, proclamation of emergency under Art. 352 can be made in respect of whole of India or only a part thereof.
- During proclamation of emergency the Union can give directions to any State regarding exercise of the executive power [Ref.: Art. 353(a)].
- During emergency Parliament can extend the normal life of the Lok Sabha for one year at a time, and not exceeding 6 months after the proclamation has ceased to operate.
- Normal life of Lok Sabha was extended only once in 1976.
- During emergency, Parliament can legislate regarding State subjects.
- During Emergency the President can modify the provisions of the Constitution relating to the allocation of financial resources [Art. 268–279] between the Union and the States by his own Order. Such Order is subject to approval by Parliament [Art. 354] and has no effect beyond the financial year in which the Proclamation itself ceases to operate.
- *Effects of emergency on Fundamental Rights:*
 - ★ Art. 358 provides that the rights provided by Art. 19, would be non-existent against the State during emergency.
 - ★ Under Art. 359, the *right to move the Courts* for the enforcement of the rights can be suspended, by Order of the President.
 - ★ Articles 20 and 21 cannot be suspended during emergency.
- The first proclamation of emergency under Art. 352 was made by the President on October 26, 1962 in view of Chinese aggression in the NEFA.
- For the first time on June 25, 1975 proclamation of emergency under Art. 352 was made on the ground of "*internal disturbance*".
- A proclamation of emergency for failure of constitutional machinery can be made by the President when the Constitutional Government of State cannot be carried on for any reasons [Ref.: Art. 356].
- During Emergency under Art. 352, the Centre does not get power to suspend the State Government.

- In case of failure of the Constitutional machinery, the State Legislature is suspended and the executive authority of the state is assumed by the President in whole or in part. This is popularly called the 'President's rule'.
- Under a proclamation of emergency under Art. 352, Parliament can legislate in respect of state subjects only by itself; but under a proclamation under Art. 356 of the other kind, it can delegate its power to legislature for the State,—to the President or any other authority specified by him.
- Proclamation of emergency for failure of constitutional machinery, can be extended by Parliament upto three years [Art. 356(4), Provision 1].

33. Public Service Commissions

- Constitution provides a Public Service Commission for the Union, a Public Service Commission for each State or a Joint Public Service Commission for a group of States.
- A Joint Public Service Commission can be created by Parliament in pursuance of a resolution passed by the State Legislatures concerned.
- The Union Public Service Commission can serve the needs of a State, if so requested by the Governor of that State and approved by the President [Ref.: Art. 315].
- The appointment, determination of number of members of the Commission and their conditions of service is done by :
 - ★ The President in the case of the Union or a Joint Commission, and
 - ★ The Governor of the State in the case of a State Commission.
- Conditions of service of a member of the Public Service Commission can not be varied to his disadvantage after his appointment [Art. 318].
- Half of the members of a Commission should be persons who have held office under the Government of India or of a State for at least 10 years [Art. 316].
- The *term of service* of a member of a Commission is 6 years from the date of his entering upon office, or until the age of retirement, which ever is earlier.
- Age of retirement for a member of UPSC is **65 years**.
- Age of retirement for a member of PSC of a State or a Joint Commission is **62 years**.
- Services of a member of a Public Service Commission can be terminated by :
 - ★ *Resignation* in writing addressed to the President (to the Governor in the case of a State Commission).
 - ★ *Removal* by the President.
- President can remove a member if he is :
 - ★ adjudged insolvent; or
 - ★ engages himself in paid employment outside the duties of his office; or
 - ★ is infirm in mind or body; or
 - ★ found guilty of misbehaviour by the Supreme Court.
- Even in the case of a State Commission, only the President can remove a member, while Governor has only the power to pass an interim order of suspension.
- The expenses of the Commission are charged on the Consolidated Fund of India or of the State (as the case may be) [Ref.: Art. 322].

- Disabilities imposed upon the Chairman and members of the Commission for future employment under the Government are :
 - ★ The Chairman of the UPSC is ineligible for further employment either under the Government of India or under the Government of a State.
 - ★ The Chairman of a State Public Service Commission is eligible for appointment as the Chairman or member of the Union Public Service Commission or as the Chairman of any other State Public Service Commission, but not for any other employment either under the Government of India or under the Government of a State.
- A member of a State Public Service Commission is eligible for appointment as the Chairman of a State Public Service Commission and Chairman or member of UPSC, but not for any other employment either under the Government of India or under the Government of a State.
- The Public Service Commissions are *advisory bodies*. Government can accept its recommendation or depart from it.
- Functions of Public Service Commission :
 - ★ To conduct examination for appointments to the services of the Union and States.
 - ★ To advise on any matter so referred to them and on any other matter which the President or the Governor of a state may refer to the appropriate Commission [Art. 320]
 - ★ To exercise such additional functions as may be provided for by an act of Parliament or of the Legislature of a State.

34. Election

- The general election is held on the basis of adult suffrage.
- Every person who is a citizen of India and not less than 18 years of age is entitled to vote at the election, provided he is not disqualified by law.
- Election to Parliament or the Legislature of a State can be called in question only by an election petition in the High Court, with appeal to the Supreme Court [Art. 329].
- The exclusive forum for adjudicating disputes relating to the election of the President and Vice-president is the Supreme Court [Art. 71].

Election Commission

- In order to supervise the entire procedure and machinery for election and for some other ancillary matters, the Constitution provides for this independent body [Art. 324].
- The Election Commission is independent of executive control to ensure a fair election.
- The Election Commission consists of a Chief Election Commissioner and two other Election Commissioners .
- President can determine the number of Election Commissioners [Art. 324(2)].
- The President appoints the Chief Election Commissioner who has a tenure of 6 years, or up to the age of 65 years, whichever is earlier.

- The CEC enjoys the same status and receives the same salary and perks as available to judges of the Supreme Court.
- The Chief Election Commissioner can be removed from his office only in a manner and on the grounds prescribed for removal of judge of the Supreme Court.
- Other Election Commissioners can be removed by the President on the recommendation of the Chief Election Commissioner.
- The Election Commission has the power of superintendence, direction and conduct of all elections to Parliament and the State Legislatures and of elections to the offices of the President and Vice-President [Ref.: Art. 324(1)].
- Regional Commissioners can be appointed by the President in consultation with the Election Commission for assisting the Election Commission [Ref.: Art. 324(4)].

Chief Election Commissioner of India

Sl.	Name	Tenure
1.	Sukumar Sen	21 March, 1950–19 Dec., 1958
2.	K. V. K. Sundaram	20 Dec., 1958–30 Sept., 1967
3.	S. P. Sen Verma	01 Oct., 1967–30 Sept., 1972
4.	Dr. Nagendra Singh	01 Oct., 1972–06 Feb., 1973
5.	T. Swaminathan	07 Feb., 1973–17 June, 1977
6.	S. L. Shakdhar	18 June, 1977–17 June, 1982
7.	R. K. Trivedi	18 June, 1982–31 Dec., 1985
8.	R. V. S. Peri Shastri	01 Jan., 1986–25 Nov., 1990
9.	Smt. V. S. Rama Davi	26 Nov., 1990–11 Dec., 1990
10.	T. N. Seshan	12 Dec., 1990–11 Dec., 1996
11.	M. S. Gill	12 Dec., 1996–13 June, 2001
12.	J. M. Lyngdoh	14 June, 2001–07 Feb., 2004
13.	T. S. Krishna Murthy	08 Feb., 2004–15 May, 2005
14.	B. B. Tandon	16 May, 2005–07 Feb., 2006
15.	N. Gopalaswami	08 Feb., 2006–19 April, 2009
16.	Naveen Chawla	20 April, 2009–29 July, 2010
17.	S. Y. Quraishi	30 July, 2010–10 June, 2012
18.	V. S. Sampath	11 June, 2012–15 January, 2015
19.	H. S. Brahma	16 January 2015–18 April, 2015
20.	Naseem Zaidi	19 April, 2015–

- The main functions of the Election Commission are :
 1. The preparation of electoral rolls before each general election and registration of all eligible voters.
 2. The delimitation of constituencies.
 3. The recognition of various political parties and allotment of election symbol to these parties.
 4. The preparation of a code of conduct for the political parties.

5. The tendering of advice to the President regarding disqualification of the members of the parliaments etc.
6. The appointment of election officers to look into disputes concerning election arrangements.
7. The preparation of roster for central broadcasts and telecasts by various political parties.
8. Keep voters lists up-to-date at all times.
9. To issue identity cards to the voters.

35. Delimitation Commission of India

- > Delimitation Commission or Boundary Commission of India is a Commission established by Government of India under the provisions of the Delimitation Commission Act.
- > The main task of the Commission is to redraw the boundaries of the various assembly and Lok Sabha Constituencies based on a recent census (Art. 82).
- > The representation from each state is not changed during this exercise. However, the number of SC and ST seats in a state are changed in accordance with the census.
- > The Commission in India is a high power body whose order have the force of law and cannot be called in question before any court.
- > These orders come into force on a date to be specified by the President of India in this behalf. The copies of its orders are laid before the House of the People and the state Legislative Assembly concerned, but no modifications are permissible there in by them.
- > In India, such Delimitation Commissions have been constituted 4 times-in 1952, 1963, 1973 and in 2002.
- > The recent Delimitation Commission was set up on 12 July 2002 (after 2001 census) with Justice Kuldip Singh (retd. Judge of Supreme Court of India) as its Chairperson.
- > The recommendation of this commission was approved by the union cabinet on Jan. 10, 2008 and by the then President Pratibha Patil on 19 February 2008.
- > The Constitution of India was specifically amended in 2002 [84th Amendment Act, 2001, which amended the provisions 170 (3) of Art. 82] not to have delimitation of constituencies till the first census after 2026.
- > The recent delimitation has been done on the basis of census 2001.
- > Election Commissioners of all the States and Union Territories, along-with the Chief Election Commissioner (CEC) of India are the members of the Delimitation Commission.

Category	No. of Reserved /General seats after delimitation	
	in 1976	after 2008
SC	79	84
ST	41	47
Unreserved/General	423	412
Total Seats in Lok Sabha	543	543

Note.: Assam, Manipur, Arunachal Pradesh, Nagaland and Jharkhand are such states which could not be covered by the Delimitation Commission 2002.

36. The Official Languages

- > The Official language of the Union is Hindi in Devanagri script [Art. 343]. English was to continue to be used as principal official language of the Union side-by-side with Hindi till 1965.
- > The first Official Language Commission was appointed in 1955 under Shri B.G. Kher as Chairman and it recommended that a rigid date line for change over of language should not be prescribed. This recommendation was accepted.

Language of the State/Link Language :

- > Article 345 seeks to tackle the issue of the official language for each state and the language for intra-State official transactions.
- > The Legislature of a State can adopt any one or more languages used in the State or Hindi for the official purposes of that State. There is also a provision for the recognition of any other language for the official purpose of a State or any part thereof, upon a substantial popular demand for it being made to the President [Ref. : Art. 347].

Language of the SC and HCs and authoritative text of laws :

- > Until Parliament by law provides otherwise, English is the language of authoritative text of—
 - ★ All proceedings in the Supreme Court and in every High Court. ★ All Bills or amendments thereto moved in either House of Parliament or the State Legislature. ★ All Acts passed by Parliament or the Legislature of a State. ★ All Ordinances promulgated by the President or the Governor of a State. ★ All orders rules, regulations and by-laws issued under Constitution or under any law made by Parliament or the legislature of a State.
 - > A State Legislature can prescribe the use of any language other than English for Bills and Acts passed by itself or Subordinate Legislation made thereunder.
 - > The languages included in the 8th Schedule of the Constitution are: Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepalese, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Maithili, Santhali, Dogri and Bodo.
 - > Sindhi was inserted by the Constitution (21st Amendment) Act, 1967.
 - > Konkani, Manipuri and Nepali were inserted by the Constitution (71st Amendment) Act, 1992.
 - > Maithili, Dogri, Bodo and Santhali were inserted by the Constitution (92nd Amendment) Act, 2003.
 - > The only privileges gained by the languages included in the 8th Schedule are
 - ★ To have a member in the Official Language Commission.
 - ★ To be considered for contribution towards the development of Hindi language.

37. National Symbols

National Flag

- > The National flag is a horizontal tricolour of deep saffron (Kesaria) at the top, white in the middle and dark green at the bottom in equal proportion. The ratio of width of the flag to its length is two to three. In the centre of the white

band is a navy-blue wheel which represents the *chakra*. Its design is that of the wheel which appears on the abacus of the Sarnath Lion Capital of Ashoka. Its diameter approximates to the width of the white band and it has 24 spokes. The design of the National Flag was adopted by the Constituent Assembly of India on 22 July, 1947.

- Apart from non-statutory instructions issued by the Government from time to time, display of the National Flag is governed by the provisions of the Emblems and names (Prevention of Improper Use) Act, 1950 (No. 12 of 1950) and the Prevention of Insults to National Honour Act, 1971 (No. 69 of 1971).
- The Flag Code of India, 2002, took effect from 26 January, 2002 which brings together all such laws, conventions, practices and instructions for the guidance and benefit of all concerned.
- In an important judgement in January, 2004 the Supreme Court (under the chairmanship of the Chief Justice B. N. Khare) pronounced that unfurling (hoisting) of National Flag is a fundamental right under Article 19 (1) (A).

Note : For the first time the National Flag of India was hoisted in the mid-night of 14th August, 1947.

State Emblem

- The state emblem is an adaptation from the Sarnath Lion Capital of Ashoka. In the original, there are four lions, standing back to back, mounted on an abacus with a frieze carrying sculptures in high relief of an elephant, a galloping horse, a bull and a lion separated by intervening wheels over a bell-shaped lotus. Carved out of a single block of polished sandstone, the Capital is crowned by the Wheel of the Law (*Dharma Chakra*).
- In the state emblem, adopted by the Government of India on 26th January, 1950 only three lions are visible, the fourth being hidden from view. The wheel appears in relief in the centre of the abacus with a bull on right and a horse on left and the outlines of other wheels on extreme right and left. The bell-shaped lotus has been omitted. The words *Satyameva Jayate* from *Mundaka Upanishad*, meaning 'Truth Alone' Triumphs, are inscribed below the abacus in *Devanagari* script.
- The use of the state emblem of India, as the official seal of the Government of India, is regulated by the State of India (Prohibition of Improper Use) Act, 2005.

National Anthem

- The song *Jana-gana-mana*, composed originally in Bengali by Rabindranath Tagore, was adopted in its Hindi version by the Constituent Assembly as the National Anthem of India on 24 January, 1950. It was first sung on 27 December, 1911 at the Kolkata Session (Chairman—Pt. Vishwanath Narayan Dutt) of the Indian National Congress. The complete song consists of five stanzas.
- Rabindranath Tagore had published it in 'Tatvabodhini' in 1912 with the title 'Bharat Bhagya Vidhata' and translated it into English in 1919 with the title 'Morning song of India'. The credit of composing the present tune (Music) of our national anthem goes to Captain Ram Singh Thakur (an I N A sepoy).

➤ Playing time of the full version of the national anthem is approximately 52 seconds. A short version of the first and last lines of the stanza (Playing time approximately 20 seconds) is also played on certain occasions.

National Song

- The song '*Vande Mataram*', composed in Sanskrit by Bankimchandra Chatterji, was a source of inspiration to the people in their struggle for freedom. It has an equal status with *Jana-gana-mana*. The first political occasion when it was sung at the 1896 session (Chairman—Rahimtulla Sayani) of Indian National Congress.
- The song was published in the novel 'Anandmath', authored by Bankimchandra Chatterji and was adopted as the National Song on 26 January, 1950.
- Playing time of this song one (1) minute and five (5) seconds (65 seconds). No body can be forced to sing the National Song.

Note : Session of Parliament begins with '*Jana-gana-mana*' and concludes with '*Vande Mataram*'.

National Calendar

- The National Calendar based on the Saka Era, Chaitra as its first month and a normal year of 365 days was adopted from 22nd March 1957 along with the Gregorian calendar for the following official purposes: (i) Gazette of India, (ii) news broadcast by All India Radio, (iii) calendars issued by the Government of India and (iv) Government communications addressed to the members of the public.
- Dates of the National Calendar have a permanent correspondence with dates of the Gregorian calendar, 1 Chaitra falling on 22 March normally and on 21 March in leap year.

National Animal : The magnificent tiger, *Panthera tigris*.

National Bird : The Indian peacock, *Pavo cristatus*.

National Flower : Lotus (*Nelumbo Nucifera Gaertn.*)

National Tree : The Banyan Tree (*Ficus benghalensis*).

National Fruit : Mango (*Manilkara indica*).

National Aquatic Animal : The mammal Ganges River Dolphin (*Platanista gangetica*).

38. Glossary of Constitutional Terms

Act of God, is a direct, violent, sudden and irresistible act of nature, which could not be foreseen or resisted.

Act of Parliament, means a bill passed by the two Houses of Parliament and assented to by President and in the absence of an express provision to the contrary, operative from the date of notification in the Gazette.

Act of State, means the act of sovereign power of a country or its agent (if acting intra-vires). By its very nature such an act can not be questioned by any Court of Law.

Address of President, is the prepared speech delivered by the President of India to both Houses of Parliament assembled together at the commencement of the first

Session after each general election to Lok Sabha and at the commencement of the first Session of each year informing Parliament of the causes of its summons which is later laid before and discussed on a formal Motion of Thanks in each House of Parliament or an address by the President of India to either House of Parliament of both Houses, assembled together on any other occasion.

Adjournment Motion, if Speaker gives his consent after satisfying himself that the matter to be raised is definitely urgent and of public importance and holds that the matter prepared to be discussed is in order, he shall call the member concerned who small rise in his place and ask for leave to move the adjournment of the House. If objection to leave being granted is taken, the Speaker shall request those members who are in favour of leave being granted to rise in their places, and if not less than fifty members rise accordingly, the Speaker shall intimate that leave is granted, if not, he shall inform the House that the members have not to leave the House.

Adjournment of House, in Lok Sabha the Speaker determines when sitting of House is to adjourn *sine die* or to a particular day or to an hour or part of same day while in Rajya Sabha it is the Chairman who determines.

Admonition, is a judicial or ecclesiastic censure or reprimand.

Advocate-General, the Attorney-General and after him, the Advocate-General of a State have precedence over other advocates.

Affirmation, is a solemn declaration without oath.

Amendment, is a device to alter a motion moved or question under discussion in the legislature, includes omission, substitution, addition and insertion of certain words, figures or marks to the clause of a bill, a resolution or a motion or to an amendment made thereof.

—Is a structural improvement.

Anglo-Indian, is of a British birth but living or having lived long in India.

Appeal, is the judicial examination of the decision by a higher court of the decision of an inferior court.

Appropriation Bill, is the act of devoting or reserving for special or distinct purpose or of destining to a particular end; anything set aside especially money for a specific use.

Arrest, is the restraining of the liberty of a man's person in order to compel obedience to the order of a court of justice, or to prevent the commission of a crime, or to ensure that a person charged or suspected of a crime may be forthcoming to answer it.

—Is when one is taken into custody and restrained from his liberty.

Assent to Bill, is ratification, sovereign's formal acquiescence in a measure passed by legislature.

Attorney-General, is the Chief Law Officer of a country, legal adviser to the Chief Executive.

Backward Classes, the list of OBCs are prepared by the Central Government and are revised after the expiry of every 10 years.

—Are the classes slow in development.

Ballot, is a small ball ticket or paper used in secret voting.

Begar, is a labour or service exacted by court or a person in power without giving remuneration.

Bill, is a draft of a law proposed to a lawmaking body.

—Is the draft or form of an Act presented to a legislature but not enacted.

Breach of privilege, disregard of any of the privileges, rights and immunities either of the members of Parliament individually or of either House of Parliament in its collective capacity or of its committees, also includes action which obstruct the House in the performance in its functions and thereby lower its dignity and authority such as disobedience of its legitimate order or libel upon itself, or its member or officers which are called contempt of the House.

Budget, refers to the statement of the estimated receipts and expenditure of the Government of India known as annual financial statement; it is caused to be laid before both House of Parliament by the President in respect of every financial year on such day as he may direct.

Bulletin, is an official notice of a public transaction or matter of public importance.

Business to the House, is the relative order of the items of business in the House of a legislature to be taken up on a particular day.

Cabinet, is a private and confidential assembly of the most considerable minister of State of concert measures for the administration of public affairs.

Censure Motion, is a motion moved against the government censuring its policy in some direction or an individual minister or minister of the Government.

Certiorari, is a writ of High Court to an inferior court to call up the records of a case therein depending that conscientious justice may be therein administered.

—Is issued by the superior Court to inferior judicial or quasi-judicial body, grounds for invoking are excess of jurisdiction, violation of natural justice, fraud and terms on the face of the record. Conditions for issuing this writ are: (i) a body of persons having legal authority, (ii) to determine questions altering rights of subjects, (iii) having the duty to act judicially, (iv) act in excess of their legal authority, (v) issued on constitutional grounds also.

Chief whip, is the chief of the whips of different political parties in Parliament (generally the Minister of Parliamentary Affairs).

Citizen, is a member of a State or nation, especially one with a republican form of government, who owes allegiance to it by birth or naturalisation and is entitled to full civil rights.

Closure, is the Parliamentary Procedure by which debate is closed and the measure under discussion brought up for an immediate vote.

—Is the procedure in deliberative assemblies whereby debate is closed.

Coalition, usually takes place in multi-party system in which no single party is able to command support of a working majority.

Comptroller and Auditor-General, is the officer who is responsible for the auditing of all public accounts.

Concurrent List, is a list of subjects appended to a federal Constitution in respect of which the federal legislature and the State or regional legislatures have power to make laws, federal law prevailing in case of conflict.

Consolidated fund, is a repository of public money which now comprises the produce of customs, excise, stamps and several other taxes, and some small receipts from the royal hereditary revenue surrendered to its public use.

Constituent Assembly, is a legislative body charged with task of framing or revising a Constitution, set up for India after it became independent in 1947 for the purpose of framing its Constitution.

Constitution, is the system of fundamental laws and principles of a government written or unwritten.

— is the basic law defining and delimiting the principal organs of Government and their jurisdiction as well as the basic rights of men and citizens.

Contempt of court, is a disobedience to or disregard of the rules, orders, process, or dignity of a court, which has power to punish for such offence by committal.

Contingency fund, is placed at the disposal of the executive to meet the unforeseen expenditure.

Court, is a place where justice is judicially administered.

Debate, is a Parliamentary discussion.

Defection, is abandonment of loyalty, duty, principle etc.,

Delegated legislation, is rules and regulations with the effect of law made by the executive under statutory sanction by Parliament.

Deprivation, is a loss of dismissal from office.

— refers to property taken under the power of eminent domain.

Deputy Speaker, is the Officer of the House of a legislature who takes the Chair during the absence of the Speaker and performs his duties in relation to all proceedings in the House.

Directive Principles of State Policy, lay down guidelines which can be implemented only by passing legislation.

Discrimination, is a difference in treatment of two or more persons or subject.

— is an act of depriving an individual or a group of equality of opportunity.

Dissolution, is the civil death of Parliament.

Doctrine of severability, is a rule of interpretation; it means that where some particular provision of statute offends against a constitutional limitation, but that provision is severable from the rest of the statute, only the offending provision will be declared void by the court and not the entire statute.

Double jeopardy, is subjection of an accused person to repeated trial for the same alleged offence.

Due process of law, is the law in conformity with due process a concept adopted by the American Constitution; the process of law which hears before it condemns; judiciary can declare a law bad, if it is not in accordance with due process even though the legislation may be within the competence of the legislature concerned.

Election, is act of selecting one or more form a greater number for an office.

Election Commission, is a constitutional body created for the purpose of holding elections to Parliament, State Legislatures and Offices of President and vice-President.

Electoral college, is an intermediary body chosen by electors to choose the representatives in an indirect election.

Electoral roll, is known as voter's list in common parlance; is the basic document on which the whole electoral process is founded.

Equal protection, all individuals and classes will be equally subjected to the ordinary law administered by the law courts.

Equality, is the state of being equal in political, economic and social rights.

Existing law, is the law in force at the passage of an Act.

Expulsion, is the unseating of members for offences committed against the House or for grave misdemeanours.

Extradition, is the surrender by a foreign State of a person accused of a crime to the State where it was committed.

Financial memorandum, is a memorandum required to accompany all bills involving expenditure.

Fundamental duties, are certain obligations on the part of a citizen which he or she owes towards the State so that the individual may not overlook his duties to the community while exercising his fundamental right or commit wanton destruction of public property or life.

Fundamental rights, is protected and guaranteed by the written Constitution of a State.

Gazette, is the official newspaper of the Government.

— Is known as the Gazette of India or the Official Gazette of a State.

Government, is a established system of political administration by which State is governed.

Habeas corpus, commands a Judge of the inferior court to produce the body of the defendant with a statement of the cause of his detention, to do and to receive whatever the higher court shall decree.

Hung Parliament, is a Parliament wherein no party has won a working majority.

Impeachment, a person found guilty may be removed from his office.

Joint sitting, is a joint sitting of both Houses of a bicameral legislature for settling a disagreement between them.

Judgment, order or sentence given by a judge or law court.

Judicial review, is the power of the court to review statutes or administrative acts and determine their constitutionality. The examination of federal and State legislature statutes and the acts of executive officials by the Courts to determine their validity according to written Constitutions.

Judiciary, is the body of officers who administer the law.

Law, all the rules of conduct established and enforced by the authority.

Legislative relations, in case of conflict the union law prevails.

Legislature, is the body of persons in a State authorised to make, alter and repeal law. It may consist of one or two Houses with similar or different powers.

Liberty, is something which results from a permission given to or something enjoyed under sufferance by a particular person or body or persons as opposed to enjoyment by all and sundry.

Locus standi, means a place for standing, right to be heard.

Maiden speech, is one's first or earliest speech especially in Parliament.

Martial law, is arbitrary in its decisions and is not built on any settled principles.

Migration, means coming to India with the intention of residing here permanently.

Minority, is racial, religious or political groups smaller than and differing from larger, controlling group of which it is a party.

Money Bill, is a bill which contains only provisions dealing with the imposition, repeal, remission, alteration or regulation of taxes etc.

Motion, is a proposal made in the House of a legislature to elicit its decision on a subject.

Oath, is a ritualistic declaration, based on an appeal to God or some revered person or object that one will speak the truth, keep a promise, remain faithful etc.

Office of profit, is an employment with fees and emoluments attached to it; where pay or salary is attached to an office, it immediately and indisputably makes the office an 'office of profit'.

Official gazette, means the Gazette of India or the Official Gazette of a State.

Ordinance, is a State paper operative as a fundamental law, yet not describable as either a Constitution or a statute.

Personal liberty, consists in the power of locomotion, of changing situation or moving one's person to whatever place one's own inclination may direct, without imprisonment or restraint unless by due course of law.

Petition, is a solemn, earnest supplication or request to a superior or to a person or group in authority.

Pith and substance, is a doctrine relating to the interpretation of statutes, evolved by the Privy Council, to solve the problem of two competing legislatures.

Preamble, is an introduction, especially one to a constitutional statute etc, stating its reason and purpose.

President, is Chief executive of a Republic.

Presumption of constitutionality, is an assumption made failing proof of the contrary that an enactment is in accordance with the Constitution. The presumption is always in favour of the constitutionality of an enactment and the burden is upon him who attacks it to show that there has been a clear transgression of the constitutional principles.

Privilege, is an exceptional right or advantage.

Privy purse, was the sum fixed by the Government of India for covering the expenses of each of the rulers of former Indian States and their families in consideration of their agreement of merger in the Indian Union.

Probationer, is one who is on probation or trial.

Procedure established by law, is the procedure prescribed by the law of the State. It does not mean the due process of law.

Prohibition, is a remedy provided by the Common Law against the encroachment of jurisdiction.

Proportional representation, is a method of representation designed to secure the election of candidates in proportion to the numerical strength of each section of political opinion thus accurately reflecting the political feeling of the country in Parliament.

Question hour, is the time fixed for asking and answering oral questions in a sitting in a legislature; it is fixed under the rules of the House or standing orders.

Qua warranto, is a writ ordering a person to show by what right he exercises an office, franchise or privilege.

Quorum, is a minimum number required to be present at an assembly before it can validly proceed to transact business.

Reasonable restriction, is restrictions imposed by State on the enjoyment of the fundamental rights.

Religion, is the specific system of belief, worship, conduct involving a Code of ethics and philosophy.

Repugnancy, is contradictory of each other, set of clauses in statutes, will etc.

Res judicata, is final judgment already decided between the same parties or their privies on the same questions by a legally constituted court having jurisdiction is conclusive between the parties, and the issue can not be raised again.

Rule, is an established guide or regulation for action, conduct.

Rule of law, is absolute supremacy or predominance of regular law as opposed to the influence of arbitrary power's equality before the law or the equal subjection of all classes to the ordinary law court; Constitution is the result of the ordinary law of the land.

Session, connotes the sitting together of the legislative body for the transaction of business.

Shadow cabinet, is a body of opposition leaders meeting from time to time and ready to take office.

State, comprises people, territory, government through which its policies are implemented and sovereignty having authority to make final legal decisions and having physical power to enforce them.

State Act, is an Act passed by Legislature of a State established or continued by the Constitution.

Statute, is synonymous with Act of Parliament.

Subordinate legislation, is a making of statutory instruments or orders by a body subordinate to the legislature in exercise of the power within specific limits conferred by the legislature, also covers statutory instruments themselves.

Swear, is to make a solemn declaration or affirmation with an appeal to God or to someone or something held sacred for confirmation.

Untouchability, is social disabilities historically imposed on certain classes of people by reason of their birth in certain castes.

Vote, is a decision by one or more persons on a proposal, resolution expressed by ticket, ballot, or voice.

Vote on account, is estimate of an advance payment to enable Government Departments to carry on their work from beginning of financial year till the passing of Appropriation Act.

Walk out, is a strike, an informal or unauthorised strike, an action of leaving a meeting or organisation as an expression of disapproval; continued absence from the meetings of an organisation as an expression of disapproval.

Zero hour, is a time set for the beginning of an attack or other military operation; any crucial or decisive moment.

—Is usually noisy interregnum between the Question Hour and the beginning of the rest of day's business in a legislature; members raise often without notice various matters during this period.

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Indian Economy

5

1. Highlights of Indian Economy

- The growth rate of Gross Domestic Product (GDP) at constant (2011-12) market prices is estimated at 7.3% in 2014-15 (Provisional Estimates). The growth of Gross Value Added (GVA) at basic prices for agriculture & allied sectors, industry sector and services sector are estimated at 0.2%, 6.1% and 10.2% respectively in 2014-15 as compared to the corresponding rates of 3.7%, 4.5% and 9.1% respectively in 2013-14.
- Overall growth in the Index of Industrial Production (IIP) was 2.8% as compared to (-) 0.1% in the previous year.
- In the year 2014-15, Eight core infrastructure industries (in six sectors viz. crude oil, natural gas, refinery products, fertilizers, cement and electricity) grew by 3.6% as compared to 4.2% growth in the previous year.
- Foreign exchange reserves were US\$ 352.5 billion at end-May 2015 as compared to US\$ 341.4 billion at end-March 2015 and US\$ 312.4 billion at end-May 2014.
- As per the provisional accounts released by the Controller General of Accounts for 2014-15, **fiscal deficit** was 4.0% of GDP and **revenue deficit** was 2.8% of GDP.
- The growth rate of Gross Domestic Product (GDP) at constant (2011-12) market prices is estimated at 7.3% in 2014-15 (provisional estimates), as compared to 6.9% and 5.1% in 2013-14 and 2012-13 respectively.
- The growth rate of Gross Value Added (GVA) at constant (2011-12) basic prices for agriculture & allied sectors, industry sector and services sector are estimated to be at 0.2%, 6.1% and 10.2% respectively in 2014-15 compared to the corresponding rate of 3.7%, 4.5% and 9.1% respectively in 2013-14.
- The final consumption expenditure as a percentage of GDP increased from 69.8% in 2012-13 to 71.0% in 2013-14 and further to 71.5% in 2014-15. Gross fixed capital formation (GFCF) as a percentage of GDP declined from 31.4% in 2012-13 to 29.7% in 2013-14 to 28.7% in 2014-15.
- There was a **decline in the rate of gross domestic saving** from 33.9% of the GDP in 2011-12 to 31.8% in 2012-13 and further to 30.6% in 2013-14. This was caused mainly by the sharp decline in the rate of household physical savings.
- **All India production of food grains**: As per the 3rd advance estimates released by Ministry of Agriculture on 13.05.2015, production of total food grains during 2014-15 is estimated at 251.1 million tonnes, compared to 265.6 million tonnes in 2013-14 and 257.1 million tonnes in 2012-13.
- The number of telephone subscribers in India increased to 999.7 million at the end of April 2015. The **overall tele-density in India** stood at 79.6 at end-April 2015; the urban tele-density was 149.1 and rural tele-density was 48.4.
- The rail freight (tonnes originating) grew by 4.2% during 2014-15. The net tonne kilometers of rail freight grew by 5.2% during 2014-15. Total revenue from commodities increased by 12.2% in 2014-15.
- The total installed capacity for electricity was 272503.0 MW as on 31st May 2015 of which the share of thermal, hydro, renewable and nuclear sources was 69.5%, 15.3%, 13.1% and 2.1% respectively.

- **Current Account Deficit (CAD)** narrowed sharply to US\$ 27.9 billion (1.3% of GDP) in 2014-15 from US\$ 32.4 billion (1.7% of GDP) in the previous year.
- **Net capital inflows** increased to US\$ 89.3 billion (4.4% of GDP) in 2014-15 from US\$ 47.9 billion (2.6% of GDP) in 2013-14 owing largely to higher net inflows of FDI, portfolio investment and NRI deposits.
- India's **External Debt** remains within manageable limits as indicated by the external debt-GDP ratio of 23.2% at end-December 2014 vis-à-vis 23.7% at end-March 2014. External debt stock stood at US\$ 461.9 billion at end-December 2014 recording an increase of 3.5% over the level at end-March 2014. Short-term external debt was US\$ 85.6 billion at end-December 2014, declining of 6.7% over the level at end-March 2014. Long-term debt accounted for 81.5% of the total external debt at end-December 2014 (79.5% at end-March 2014).
- The average WPI inflation rate for the last 12 months (June 2014 to May 2015) was 0.6% as compared to 6.2% during the corresponding period last year.
- The budget estimates the **fiscal deficit for 2015-16** is 3.9% as compared to 4.0% in 2014-15 (provisional actual). The budget estimates for revenue deficit for 2015-16 is 2.8%, the same as the provisional actual in 2014-15.

Some Major Economic Decisions in May, 2015

- The Central Government notified 1st June 2015 as the date from which the rate of Service Tax of 14% would become applicable. The provisions levying Education Cess and Secondary and Higher Education Cess would also cease to have effect from same date as the same would be subsumed in the service tax rate of 14%.
- The Union Cabinet has given its approval to review of Foreign Direct Investment (FDI) Policy on investments by Non-Resident Indians (NRIs), Persons of Indian Origin (PIOs) and Overseas Citizens of India (OCIs). The decision that NRI includes OCI cardholders as well as PIO cardholders is meant to align the FDI policy with the stated policy of the Government to provide PIOs and OCIs parity with NRIs in respect of economic, financial and educational fields. Further the decision that NRIs investment under Schedule 4 of FEMA (Transfer or Issue of Security by Persons Resident Outside India) Regulations will be deemed to be domestic investment made by residents, is meant to provide clarity in the FDI policy as such investment is not included in the category of foreign investment. The measure is expected to result in increased investments across sectors and greater inflow of foreign exchange remittance leading to economic growth of the country.
- The Union Cabinet gave approval to allow the Real Estate Investment Trusts (REITs) as an eligible financial instrument/structure under the Foreign Exchange Management Act (FEMA) 1999.
- High Level Committee on Direct Tax Matters, headed by Justice A.P. Shah, was constituted to examine the levy of MAT on FIIS for the period prior to 01.04.2015. The Committee will also examine the related legal provisions, judicial/quasi judicial pronouncements and relevant aspects.

[Source : MER—May 2015 (MOF DOEA)]

2. Economy and Economics

Economy : It is the state of a country or region in terms of the production and consumption of goods and services and the supply of money.

Economics : It is the branch of knowledge concerned with the production, consumption, and transfer of wealth.

Types of Economic System

There are four primary types of economic system in the world :

1. **Traditional Economic System** : A traditional economic system is the most traditional and ancient type of economy in the world. Products and services that are direct result of their beliefs, customs, traditions, religions etc. are produced in this system. There are certain elements of a traditional economy that those in more advanced economies, such as Mixed.
2. **Command Economic System** : In terms of economic advancement, the command economic system is the next step up from a traditional economy. The most important feature of this system is that a large part of the economic system is controlled by centralised power, often, a federal government.
3. **Market Economic System** : A market economy is very similar to a free market. The government does not control vital resources, valuable goods or any other major segment of the economy. In this way, organizations run by the people determine how the economy runs, how supply is generated, what demands are necessary, etc.
4. **Mixed Economic System** : A mixed economic system also known as a **Dual Economy**, is a combination of economic systems, but it primarily refers to a mixture of a market and command economy. In this type of economic system the market is more or less free of government ownership except for a few key areas (usually not the resources that a command economy controls).

3. Characteristics of Indian Economy

Main characteristics and various aspects of Indian Economy are :

1. **Agrarian Economy** : Even after six-decades of independence, 48.9% of the work force of India is still agriculturist and its contribution to National Income in 2013-14 is 13.9%.
2. **Mixed Economy** : Indian Economy is a unique blend of public and private sector, i.e. a mixed economy. After liberalisation, Indian Economy is going ahead as a capitalist economy or market economy.
3. **Developing Economy** : The following facts show that Indian Economy is a developing economy :
 - (a) **National Income** (is the net national income of factor cost) of India during 2013-14 at current prices is estimated at ₹ 92.4 lakh crore and at constant (2004-05) prices, at 49.3 lakh crore. At constant (2004-05) prices, the National Income has shown a growth of 4.2%, while at current prices the growth rate of National Income is 11.9%.
 - (b) According to Planning commission of India's report, India has 27 crore people or 21.9% population living below *Poverty Line* (as on 31st March 2012).

BPL : According to the Rangarajan Committee, 30.95% people in rural areas and 26.4% in urban areas (as compared to 25.7% and 13.7% respectively as per the Tendulkar Methodology) were below the poverty line in 2011-12.

[Source : The IE, 4 July, 2015]

- (c) Level of unemployment is very high. Unemployment in India is mainly structural in nature because the productive capacity is inadequate to create

sufficient number of jobs. There is an acute problem of disguised unemployment in the rural areas. A person is considered employed if he/she works for 27 days of a year for eight hours every day.

- (d) Savings are low in India due to low national income and high consumption expenditure. The low savings results in shortage of capital formation. Capital is an important factor of production.
- (e) India is the second most populated country of the world. During 2001-2011, population increased by 17.69%. With this high growth rate of population, about 1.83 crore new persons are being added to Indian population every year. According to 2011 census, the total Indian population stands at a high level of 121.07 crore which is 17.5% of the world's total population. To maintain 17.5% of world population India holds only 2.42% of total land area of the world. India lacks in large industrialisation based on modern and advanced technology, which fails to accelerate the pace of development in the economy.

Important facts relating to characteristics of Indian Economy

- > Primary sector of Indian Economy is agriculture and the related sectors.
- > Secondary sector of Indian Economy is related to industry, manufacturing, electricity etc.
- > Tertiary sector of Indian Economy is related to business, transport, communication and services.
- > The best indicator of economic development of any country is per capita income.

The following factors are important in Economic Development of a developing country : 1. Natural resources, 2. Capital gain, 3. Skilled labour force, 4. Surplus sale of agriculture, 5. Justified social organisation, 6. Political freedom, 7. Freedom from corruption, 8. Technological knowledge and general education

4. Agriculture and Land Development

- > Agriculture is the mainstay of the Indian Economy.
- > The agricultural output depends on monsoon as nearly 60% of area sown is dependent on rainfall.
- > Area for Land utilisation statistics is available of 30,59,03,000 hectares for 2010-11.

Agriculture Production Board

SL.	Board	Headquarter	Act
1.	Coffee Board	Bengaluru (Karnataka)	Coffee Act, 1942
2.	Rubber Board	Kottayam (Kerala)	Rubber Act (Kerala), 1947
3.	Tea Board	Kolkata (West Bengal)	Tea Act, 1953
4.	Tobacco Board	Guntur (Andhra Pradesh)	Tobacco Act (A.P.), 1975
5.	The Spices Board	Kochi (Kerala)	Spices Act, 1986
6.	National Meat and Poultry Processing Board	Delhi	26 Dec, 2008
7.	Indian Grape Processing Board	Pune (Maharashtra)	2nd Jan, 2009

Figures provided by the Central Statistical Organisation reveal that between 1950-51 to 1960-61, the share of agriculture in GDP has been in the range of

55 to 52%. The share of agriculture indicated a sharp decline and reached a level of 13.9% in 2013-14.

Importance of agriculture in the national economy is indicated by many facts, e.g.—agriculture is the main support for India's transport systems, secure bulk of their business from the movement of agricultural goods. Internal trade is mostly in agricultural products.

Agricultural growth has direct impact on poverty eradication. It is also an important factor in containing inflation raising agricultural wages and employment generation.

But, since 2002-03, Indian agricultural sector is almost going through a crisis—huge food grains surplus wiped out, large imports of wheat being planned and farmers' suicides more frequent all over the country.

Besides, the allied sectors like horticulture, animal husbandry, dairy and fisheries have an important role in improving the overall economic conditions and nutrition of the rural masses.

To maintain the ecological balance, there is need for sustainable and balanced development of both agriculture and the allied sectors.

Commercial crops are those crops which are produced for trade purpose and not for self consumption by the farmers. It includes—Oil-seeds crops, Sugar crops, Fibre crops, Narcotic crops, Beverage crops.

To encourage the agricultural products, the government announces to minimum support price for important agricultural crops.

The function of Agriculture Cost and Price Commission (ACPC) is to decide the minimum support prices on behalf of the government.

Minimum Support Price (MSP) announced by the government is that price at which government is ready to purchase the crop from the farmers directly, if crop price falls below the MSP.

For providing facilities relating to storage of agriculture products, "National Co-operative Development and Warehousing Board" was established in 1956 and 'Central Warehousing Corporation' was established in 1957. Thereafter in states also the State Warehousing Corporation were established.

The programme of High Yielding Variety Seeds was combined with a guiding project I.A.D.P. and a target was set to extend this system of development in entire country.

The credit of green revolution in India is given to the Agriculture Scientist Dr. Norman Borlaug. However, the contribution of Dr. M.S. Swaminathan is not less. But, its termed name is the contribution of American scientist Dr. William Gande.

Due to horrible famine during 1965-66 and 1966-67, the government implemented the new agriculture policy of high yielding seeds so as to increase agriculture production.

India is the largest milk producing country in the world.

Speedy increase in the field of milk production is called White Revolution.

To increase the pace of White Revolution, the Operation Flood was started.

In milk production of the country the share of Buffalo, Cow and Goat is 50%, 46% and 45% respectively.

- The **Father of Operation Flood** was Dr. Verghese Kurien.
- The **Operation Flood** was the largest integrated dairy development programme of the world. It was started by National Dairy Development Board in 1970.
- The increase in oil-seeds production was due to 'Yellow Revolution'.
- The progress in increase of fish production was called 'Blue Revolution'.
- Assam is the biggest tea producer in the country.
- India ranks **sixth in world coffee production** and contributes only 4% of world coffee production.
- Cuba is known as the *Sugar Bowl of the world*. Here, sugar is made of Beetroot.
- India holds first position in the world in the production of sugar-cane and sugar.
- The importance of agriculture in the industrial sector is not only for supply of raw material, but it provides foodgrains for the people working in that sector and market for industrial products.

Agricultural Production

- Indian agriculture still depends upon monsoon.
- Agricultural production can be divided into two parts—Foodgrains and Non-foodgrains, in which the share of foodgrains is two-third and non-foodgrains is one-third.
- The percentage of plan outlay on agriculture and allied sectors to total plan outlay varied between 31% and 14.9% from the First Plan to Tenth Plan.
- Actual outlay on the agricultural sector ranged between 18 and 24% of the total Plan outlay (except during the First Plan, it was as high as 31%).
- During Eleventh Plan (2007-12) the plan outlay on agriculture has declined to only 18.5%.
- During the first decade of planning (1951-61) when the First and Second Five Year Plans were implemented, the annual rate of growth in agriculture was 3.3%.
- During the *Eleventh Plan* also, the Planning Commission had fixed the target of 4% rate of growth in agriculture.
- During the 11th Plan period a growth rate of 4.1% has been achieved in agricultural sector.
- The **Tenth Plan** was the first plan which did not fix targets of crop production.
- Green revolution did not cover barley, ragi and minor-millets.
- The Green revolution was confined only to High Yielding Varieties (HYV) mainly rice, wheat, maize and jowar.
- National Agriculture Insurance Scheme was implemented in Oct, 1999.

Foodgrains Production
This was at a record high
of 259.32 million tonnes in
2011-12 in India.

National Food Security Act (NFSR) 2013

Objective : To provide food and nutritional security in human life cycle, by ensuring access to adequate quantity of quality food at affordable prices to live a life with dignity. The Act provides for coverage of upto 75% of the rural population and upto 50% of the urban population for receiving subsidised food grains under TPDS (Targeted Public Distribution System), thus covering about two-thirds of the population.

The Act also lays special focus on the nutritional support to women and children.

Land Reforms Programmes in India include

- Elimination of intermediaries
- Tenancy Reforms
- Determination of ceiling of holdings per family
- Distribution of surplus land among landless people
- Consolidation of holdings (Chakbandi)
- By the end of first five year plan middlemen had been removed (except small areas).
- The following measures were made effective for the betterment of farmers :

1. Regulation of tax
2. Security for the rights of farmers
3. Right of land ownership for the farmers

For the reorganisation of agriculture land holding mainly two measures were taken—1. Land ceiling and 2. Chakbandi.

Land ceiling determines the maximum land which can be held by a farmer. Holding more than that area will be illegal.

Chakbandi of land means to aggregate the divided and broken land.

The land within area less than 1 hectare, is called *marginal land holding*, 1 to 4 hectare area is called *small land holding* and the land within area more than 4 hectare, is called *large land holding*.

Chakbandi was implemented first time in India in the year 1920 in Baroda.

Green Revolution was started in the Third Five Year Plan.

The most positive effect of Green Revolution was on wheat. There was 500% increase in crop production.

Unorganised sources of agriculture finance are money-lenders, money-dealers, relatives, businessmen, landlords and commission agents.

Organised sources of agriculture finance are Co-operative Committees, Co-operative Banks, Commercial Banks, Regional Rural Banks, the Government etc.

Co-operative Credit Organisation started first time in 1904.

Primary Co-operative Committees provide credit for short period.

State Co-operative Agriculture and Rural Development Banks provide credit for long period.

Land Development Bank was established in the year 1919 in the form of Land Mortgage Bank. Land Development Bank provides long-term loans.

National Bank for Agriculture and Rural Development (NABARD) is the apex institution of Rural Credit. It was established on 12th July, 1982 by the merger of Agriculture Credit department and reconstruction of Agriculture and Development Corporation of the Reserve Bank of India. Its establishment is based on the recommendations of Shivraman Committee.

Per Capita Real (Net National) Income

The per capita real income, i.e. per capita net national income at factor cost at constant (2004-05) prices, as per the advance estimates for 2013-14 turns out to be ₹ 39,961 as against the first revised estimate of ₹ 38,856 for 2012-13. This indicates a growth of per capita real income of about 2.8% during 2013-14.

The per capita income at current prices during 2013-14 is estimated at ₹ 74,920 as compared to ₹ 67,839 in 2012-13 showing a rise of 10.4%.

- > Authorised share capital of NABARD was Rupees 500 crore. However, after an amendment its authorized share increased upto 5,000 crore with effect from 1st February, 2001.
- > NABARD's total refinance operations grew to ₹ 1,02,089 crore during the year 2013-14, an effective growth rate of 24% over the previous year. The long term refinance given against medium and long term loans, which is an indicator of Capital formation in the agricultural sector, stood at ₹ 21,482 crore, displaying a growth rate of 21.50% over the previous year.
- > Food stocks are maintained by the central government for 3 purposes:
 1. Maintaining prescribed buffer stock norms for food security,
 2. Monthly supply through Public Distribution System (PDS),
 3. Market intervention to stabilise open market prices.
- > **Minimum Buffer stock** as on January, 2014 was a 99.30 metric tonnes in a year.
- > Major crops of India :
 - (a) **Kharif Crops**: Sown in July and harvested in October. They include Rice, Jowar, Bajra, Maize, Cotton, Sugar-cane, Soyabean, Groundnut.
 - (b) **Rabi Crops**: Sown in October and harvested in March/April. They include Wheat, Barley, Gram, Tuar, Rapeseed, Mustard.
 - (c) **Zayad Crops** : Sown during March to June. It include Watermelons, Vegetables, Moong etc.

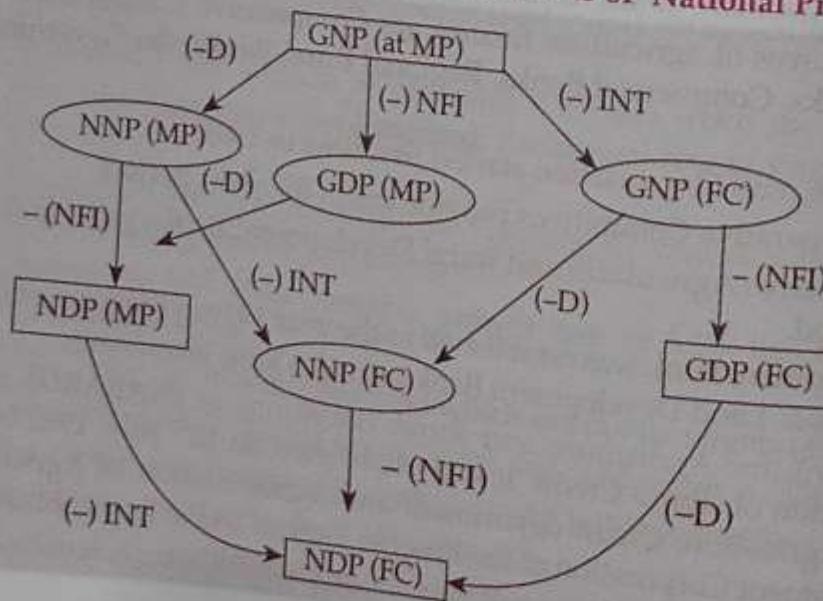
5. National Income

- > National income is the measurement of flow of services and goods in economic system.
- > **Comparison between National income with National wealth** : The national wealth is the measurement of present assets available on a given time, while the National income is the measurement of the production power of economic system in a given time period.
- > The figures of National income are based on the financial year (i.e. from 1st April to 31st March).

National Income

According to the data of World Bank (updated on June 10, 2015) the Gross National Income of India in 2013 was \$ 6.7001 Trillion PPP (Purchasing Power Parity) dollars.

Relationship among different forms of National Products



$$GNP_{(MP)} \rightarrow GDP_{(MP)} + X - M$$

Where :

GNP	→ Gross National Product
NNP	→ Net National Product
NDP	→ Net Domestic Product
GDP	→ Gross Domestic Product
MP	→ Market Price
FC	→ Factor Cost
D	→ Depreciation
INT	→ Indirect Net Tax

$$GNP_{(MP)} = GDP_{(MP)} + X - M$$

Where :

X = Income earned and received by nationals within the boundaries.
M = Income received by foreign nationals within the country.

NFI → Net Foreign Income.

- NNP at Factor Cost = NNP at market prices - Indirect Taxes + Subsidies = GNP at market prices - Indirect Taxes + Subsidies = National Income
- > The base of one year is taken for calculating National income, as all the seasons come in a year.
 - > The data of estimation of India's National income are issued by Central Statistical Organisation (CSO).

6. Economic Planning

- > Economic Planning is the process in which the limited natural resources are used skillfully so as to achieve the desired goals. The concept of Economic Planning in India, is derived from Russia (the then USSR).
- > 'Planning' in India derives its objectives and social premises from the Directive Principles of State Policy enshrined in the Constitution.
- > In the year 1934, the proposal relating to economic planning came for the first time in the book of Vishveshwariya titled 'Planned Economy for India'. Thereafter in 1938, the All India Congress Committee demanded for the same. In 1944 efforts were made by 8 industrialists under 'Bombay Plan'.
- > Thereafter, in the same year, 'Gandhian Plan' by Mr. Mannarayan, in April, 1944 the 'People's Plan' by labour leader M.N. Roy and in January 30, 1950 the 'Sarvodaya Plan' by Mr. Jai Prakash Narayan were presented.
- > After independence, in 1947, the committee on economic planning was constituted under the chairmanship of Jawahar Lal Nehru. Thereafter, on the recommendation of this committee, Planning Commission was constituted in March, 1950 and the format of first Five Year Plan was prepared in 1951.
- > The *Planning Commission* was constituted in India in 1950 as a non-constitutional and advisory corporation. The Indian Constitution did not provide for the formation of Planning Commission.
- > On 1st January, 2015, the newly formed 'NITI Aayog' has replaced the Planning Commission.
- > The basic aim of economic planning in India is to bring about rapid economic growth through development of agriculture, industry, power, transport and communications and all other sectors of the economy.
- > In India, more than 11th Five Year-Plans have been implemented so far. The target and achievements of these plans are given in the following table :

Five Year Plan	Period	Target growth rate of GDP (In % age)	Achievement (In % age)	Model
First Plan	1951-56	2.1	3.6	Harrod-Domar Model

Five Year Plan	Period	Target growth rate of GDP (In % age)	Achievement (In % age)	Model
Second Plan	1956-61	4.5	4.21	Prof. P.C. Mahalanobis
Third Plan	1961-66	5.6	2.72	Sukhmoy Chakraborty and Prof. Saddy
Fourth Plan	1969-74	5.7	2.05	Ashok Rudra and Alon S. Manley
Fifth Plan	1974-79	4.4	4.83	A like Fourth Five-Year Plan, which is called 'Investment Model of Planning Commission'.
Sixth Plan	1980-85	5.2	5.54	Based on Investment Yojana, Infrastructural changing and trend to growth model
Seventh Plan	1985-90	5.0	6.02	Alike Sixth Five-Year plan prepared © Pranav Mukherjee)
Eighth Plan	1992-97	5.6	6.68	John W. Miller Model
Ninth Plan	1997-02	6.5	5.5	Created by 'Planning Commission'
Tenth Plan	2002-07	8.0	7.7	— do —
Eleventh Plan	2007-12	9.0	—	Prepared by Prof. C. Rangarajan

Source : Planning Commission, Ninth Five Year Plan (1997-2002), Vol. I and Tenth Five Year Plan (2002-07), INDIA 2015 etc.

First Five Year Plan (1951-1956)

- > First five year plan was based on the 'Harrod-Domar Model'.
- > The aim of this plan was to start process of balanced development of economy. Agriculture was on top priority in this plan.
- > The First Plan emphasised, as its immediate objectives the rehabilitation of refugees, rapid agricultural development so as to achieve food self-sufficiency in the shortest possible time and control of inflation.
- > This plan was successful and achieved the growth rate of 3.6%, which was more than its aim.
- > During this plan there was increase of 18% in national income and 11% in per capita income.

Second Five Year Plan (1956-1961)

- > This plan was based on the P.C. Mahalanobis model.
- > To establish socialist order, derived from Soviet model, the Second Plan aimed at rapid industrialisation with particular emphasis on the development of basic and heavy industries.
- > In this plan, Industries and Minerals were on top priority and 20.1% of total outlay was allocated for this sector.
- > Second priority was given to Transport and Communication for which 27% of total plan outlay was allocated.

Growth Targets

The growth targets for the first three plans were set with respect to National Income. In the Fourth Plan it was the Net Domestic Product. In plans thereafter it has been the Gross Domestic Product at factor cost.

- > This plan was also successful and it achieved 4.1% rate of growth. Various important large industries like Steel Plant at Durgapur, Bhilai and Rourkela were established during this plan.

Third Five Year Plan (1961-1966)

- > The aim of this plan was to make the economy independent and to reach self active take off position. This plan is also called 'Gadgil Yojana'.
- > This plan could not achieve its aim of 5.6% growth rate.
- > In this plan, agriculture and industry both were on its priority.
- > The main reason of failure of this plan was Indo-China war, Indo-Pakistan war and unprecedeted drought.
- > A growing trade deficit and mounting debt obligation led to more and more borrowings from the International Monetary Fund. The rupee was devalued in June, 1966 to little success as it soon turned out.

Plan Holiday (From 1966-1967 to 1968-1969)

- > The miserable failure of the Third Plan forced the Government to declare 'plan holiday'. Three Annual Plans were drawn in this intervening period. The economy faced another year of drought during 1966-67.
- > During this period three separate plans were prepared.
- > Equal priority were given to agriculture, its allied sectors and the industry sector.
- > The main reason of plan holiday was Indo-Pakistan war, lack of resources and increase in price-level.

Fourth Five Year Plan (1969-1974)

- > The two main objectives of this plan were 'growth with stability' and 'progressive achievement of self reliance'.
- > In this plan 'Establishment of socialist order' was specially aimed.
- > 'Growth with justice' and 'Garibi Hatao' (Removal of poverty) were the main objectives of this plan.
- > This plan failed to achieve its aim and it achieved only 3.3% annual rate of growth as against its aim of 5.7%.
- > The shortfall during this plan was due to the adversity of climate and arrival of refugees from Bangladesh.

Fifth Five Year Plan (1974-1979)

- > The Fifth Plan draft as originally drawn up was part of a long term Perspective Plan covering a period of 10 years from 1974-75 to 1985-86.
- > The two main objectives of this plan were poverty eradication and attainment of self-reliance.
- > During the plan, initially, the growth rate target was fixed at 5.5%, however, it was amended to 4.4% later on.
- > Top priority was given to agriculture, next came industry and mines.
- > Originally the approach paper of the Fifth Plan was prepared under C. Subramaniam in 1972, but final draft of the Plan was prepared and launched by D.P. Dhar.
- > This plan was generally successful. However there was no significant decline in poverty and unemployment.

- > This plan, which was started by the then ruling Janata Government was later terminated in the year 1978.

Rolling Plan (1978-1980)

- > The new pattern started by Janata Government, which meant that every year performance of the plan would be assessed and a new plan based on such assessment be made for the subsequent year.
- > The rolling plan started with an annual plan for 1978-79 and as a continuation of the terminated Fifth Plan.

Sixth Five Year Plan (1980-1985)

- > The Janata Government originally introduced this plan for the period 1978-83, but later a new Sixth Plan replaced it, for the period 1980-85.
- > The basic objective of the Sixth Plan was removal of poverty. The plan aimed at achieving economic and technological self-reliance, reducing poverty, generating employment and improving the quality of life of the poorest through the Minimum Needs Programme etc.
- > During this period the Indian economy made all round progress and most of the targets fixed by the Planning Commission were realised, though during the last year of the plan (1984-85) many parts of the country faced severe drought conditions.
- > The target growth rate in this plan was fixed at 5.2% and it achieved successfully 5.7% of annual rate of growth.
- > In this plan, important programmes like Integrated Rural Development Programme (IRDP), Minimum Needs Programme (MNP) were started.

Seventh Five Year Plan (1985-1990)

- > The objectives of this plan include establishment of self sufficient economy, creation of more opportunities for productive employment, slowing down the rate of population growth, to provide people with adequate nutrition and energy and environmental protection. But main aim of the plan was to increase production in all sectors and to generate opportunities for employment.
- > There was increase in per capita income at the rate of 3.6% per annum.
- > In this plan, for the first time private sector was given priority in comparison to public sector.
- > In this plan, employment generating programmes like Jawahar Rozgar Yojana were started.
- > One of the major worries during this period was widening gap between the income and expenditure of the Government, which led to mounting fiscal deficit.

Annual Plans

The Eighth Five-Year Plan (1990-95) could not take off due to the fast changing political situation at the Centre. The new government, which assumed power at the Centre in June 1991, decided that the Eight Five-Year Plan would commence on April 1, 1992 and that 1990-91 and 1991-92 should be treated as separate Annual Plans. Formulated within the framework of the Approach to the Eighth Five-Year Plan (1990-95), the basic thrust of these Annual Plans was on maximisation of employment and social transformation.

Eighth Five Year Plan (1992-1997)

- > The fourth version of the Eighth Plan (1992-97) was approved at a time the country was going through a severe economic crisis, a rising debt burden, ever-widening budget deficits, mounting inflation and recession in industry.
- > The P.V. Narasimha Rao Government initiated the process of fiscal reforms as also economic reforms.
- > In this plan the utmost priority was given to 'Development of Human Resources' i.e. Employment, Education and Public Health. In addition to this, the important aim made in this plan was to strengthen the basic infrastructure by the end of the decade.
- > This plan was successful and got 6.8% annual rate of growth, which was more than its target of 5.6%.
- > During this period, Pradhan Mantri Rozgar Yojana (PMRY) was started in the year 1993.

Ninth Five Year Plan (1997-2002)

- > The Ninth Plan was launched in the fiftieth (50th) year of India's Independence.
- > Planning Commission released the draft Ninth Plan document on March 1, 1998.
- > The focus of the plan is 'Growth with Social Justice and Equity'.
- > It assigned the priority to agriculture and rural development with a view to generating adequate productive employment and eradication of poverty. However, the plan failed to achieve the GDP growth target of 7% and realized only 5.35% average GDP growth.
- > The recession in international economy was held responsible for the failure of ninth plan.

Tenth Five Year Plan (2002-2007)

- > In the Tenth five year plan, it had been proposed to eradicate poverty and unemployment and to double the per capita income in next 10 years.
- > The Tenth Plan has indicated that the current backlog of unemployment is around 35 million persons, i.e. 9% of the labour force.
- > The Tenth Plan was expected to follow a regional approach rather than sectoral approach to bring down regional inequalities.

Some creditable achievements of the 10th Plan

- > Gross domestic savings (as percent of GDP at market prices) averaged 28.2% in 10th Plan as against 23.1% in the 9th Plan.
- > India's foreign exchange reserves reached a level of US \$ 185 billion in February 2007.
- > Though the 10th Plan could not achieve its target of 8% growth of GDP, but has taken the economy to a higher trajectory of growth rate at 7.6% as against 5.5% in the 9th Plan.
- > Foreign investment flows were of the order of US \$ 20.2 billion in 2005-06-US \$ 7.7 billion in the form of Foreign Direct Investment (FDI) and US \$ 12.5 billion in the form of Portfolio Investment (PI). In 2006-07, out of total inflows of the order of \$ 29.1 billion, FDI accounted for \$ 22.1 billion (i.e. 76% of total).

Eleventh Five Year Plan (2007-2012)

- > The National Development Council (NDC), country's highest policy making body, endorsed the 11th Plan document on 19th December, 2007.

- > It envisages an average 9% GDP growth in the first four years to end the five-year period with a growth of 10% during the terminal year 2011-12.
- > Earlier 7.6% growth rate in the 10th Plan and 5.52% in the 9th Plan was achieved.
- > Total Plan expenditure for the 11th Plan period (2007-12) has been proposed to the tune of Rs. 36,44,718 crore, which is more than the double of the Plan expenditure of the 10th Plan.
- > Of the total Plan expenditure fixed for the 11th Plan, Centre's share would be Rs. 21,56,571 crore whereas the share of the States would be to the tune of Rs. 14,88,147 crore.
- > Gross Budgetary Support (GBS) for the Plan expenditure of 2007-12 has been fixed to Rs. 14,21,711 crore, where as it was Rs. 8,10,400 crore for the 10th Plan.
- > Of the GBS 74.67% will be for the Priority sectors and the rest 25.33% for non priority sectors. For the 10th Plan it was 55.20% and 44.80% respectively.
- > In the 11th plan (2007-12), overall rate of growth of GDP was 8.0%. Under-achiever was the agriculture, rate of growth of which remained low at 3.3% over the plan period, as compared to the 4% target rate of growth.
- > The 11th plan visualised "Faster and more inclusive growth" as its objective.
- > Balance of trade deficit has reached US\$ 644 billion in this plan period (2007-12), indicating at payment crisis during the terminal year of the 11th FYP. It was this payment crisis which led to sudden depreciation of rupee in 2012, when rupee plunged from ₹ 48.70 per US dollar in February 2012 up to ₹ 58 per US dollar by June 2012.
- > It is noteworthy here that India's trade-deficit which was of the order of \$10.69 billion in 2003-04 has shot up to \$185 billion in 2011-12.
- > CAD (current account deficit) has been on rise since 2006-07 and by the year 2010-11 it had reached \$45.9 billion.
- > Under the shadow of deceleration in our economic growth especially industrial growth, galloping inflation, depreciation of rupee and balance of payment problems, the 12th FYP has begun.

Twelfth Five Year Plan (2012-2017)

- > The Approach Paper of the 12th Plan, approved by the NDC (National Development Council) in 2011, had set a target of 9% average-growth of GDP over the plan period (2012-17).
- > The broad vision and aspirations of the 12th FYP (Five Year Plan) are reflected in the subtitle 'Faster, Sustainable and More Inclusive Growth'.
- > The 12th Plan sets an ambitious target of one lakh MW in power generation, whereas actual realization in 11th Plan was 50,000 MW, on account of slippage in public sector power projects.
- > It seems that Government is intending to withdraw from infrastructure sector in the 12th Plan and laying more emphasis on PPP (Public Private Partnership). The Approach Paper of 12th FYP states that India has 1017 PPP projects accounting for ₹ 4,86,603 crores.
- > Today India is second only to China in terms of number of PPP projects and terms of investments it is second to Brazil.

Types of planning

Imperative Planning : In this type of planning the Central Planning authority decides upon every aspect of the economy and the targets set and the processes delineated to achieve them are to be strictly followed. This type of planning is mainly practised in the socialist economies.

Indicative Planning : In this type of planning the State sets broad parameters and goals for the economy. It is different from centralised planning as unlike in the latter, the State does not see Plan targets to the minutest details, but only broadly indicates the targets to be achieved. It was adopted in our country since the 8th Five-Year Plan, as practised in many developed countries.

Perspective Planning : It's a type of planning for a long period of time, usually 15-20 years. As a highly specialised task, it is operationalised through the Five Year and Annual Plans. In such form of planning, the planners formulate a perspective Plan that broadly defines the direction desired to be taken by the economy.

Rolling Plan : Under the scheme of rolling Plans, there are three different steps. First, a plan for the current year which includes the annual budget. Second, a plan for a fixed number of years, say three, four or five. It is revised every year as per the requirements of the economy. Third, a perspective plan for 10, 15 or 20 years.

Core Plan : As per this concept, the Planning Commission asks the states to submit their projected revenue estimates. On the basis of these estimates, Planning Commission determines the expenditure heads for State Annual Plans. This helps in keeping the Plan target to realistic limits and prevents diversion of funds from the priority items to the non-plan account. The concept of 'Core Plan' has emerged recently.

Models of economic development

Nehru-Mahalanobis Model :

- > Nehru-Mahalanobis model of development emerged as the driving force of the strategy of development adopted at the time of formulation of the Second Five Year Plan and has continued right up to the eighties.
- > It aimed at enlargement of opportunities for the less privileged sections of the society.
- > Growth with social justice was the goal of Nehru-Mahalanobis model since it intended to foster a self-generating path of development with an assurance to the common man that poverty, unemployment, disease and ignorance would be removed so that individuals could realise their potential with the extension of social and economic opportunities.
- > In the Nehru-Mahalanobis model the *State controlled the commanding heights of the economy through the public sector*.

The Gandhian Model of Growth

- > 'Gandhian Plan' was brought out by Acharya S.N. Agarwala in 1944 and was re-affirmed in 1948, formed the basis of Gandhian model of growth.
- > The basic objective of this model is to raise the *material as well as the cultural level* of the Indian masses so as to provide a basic standard of life.
- > It aims primarily at improving the economic conditions of the villages of India and hence, it lays the greatest emphasis on the scientific development of agriculture and rapid growth of cottage and village industries.

- The Gandhian model aims at the reform of agriculture as the most important sector in economic planning in India.
- The Gandhian model's primary aim is the attainment of maximum self-sufficiency in village communities. Hence, the plan emphasises the rehabilitation, development and expansion of cottage industries side by side with agriculture. Spinning and weaving are given the first place.
- While Nehru wanted to give prime importance to heavy industries, the Gandhian model attempts to give primacy to agriculture supported by handicrafts and cottage industries.

LPG Model of Development

- The LPG Model of development was introduced in 1991 by the then Finance Minister Dr. Manmohan Singh.
- This model was intended to charter a new strategy with emphasis on liberalisation, Privatisation and Globalisation (LPG).
- LPG Model of development emphasises a bigger role for the private sector.
- It envisages a much larger quantum of foreign direct investment to supplement our growth process.
- It aims at a strategy of export led growth as against import substitution practised earlier.
- It also aims at reducing the role of the State significantly and thus abandons planning fundamentalism in favour of a more liberal and market driven pattern of development.

PURA Model of Development

- The Union Cabinet on 20th January, 2004 accorded in principle approval for the execution of PURA within the gross budgetary support for bridging the rural-urban divide and achieving balanced socio-economic development.
- Though, Dr. A.P.J. Abdul Kalam, ever since he became the President of India has been advocating his *Vision 2020*, and, to eradicate poverty from India, he has been emphasising the adoption of PURA (*Providing Urban Amenities in Rural Areas*); however, it was Mahatma Gandhi who underlined the exploitation of rural society by its urban counterpart.
- The objective of PURA is to propel economic development without population transfers.
- The PURA concept is the response to the need for creating social and economic infrastructure which can create a conducive climate for investment by the private sector to invest in rural areas.
- Although PURA draws its inspiration from the Gandhian model of development which emphasises rural development as a fundamental postulate, yet in the prescription, it is neo-Gandhian in the sense, that it intends to bring rural regeneration with the avowed objective of taking modern technology and modern amenities to the rural areas.
- It does emphasize the enlargement of employment as the sole objective to make use of rural manpower in various development activities.
- The PURA model, however, attempts a reconciliation between employment and GDP growth objectives.
- The 11th Plan (2007-12) has provided Rs. 248 crores for implementing the PURA scheme in compact rural areas in Public-Private Partnership (PPP) mode.

7. Unemployment

- In common parlance anybody who is not gainfully employed in any productive activity is called unemployed. However, it can be of two kinds 1. voluntary unemployed and 2. involuntary unemployed. Here we are concerned with the second category of unemployed persons.
- Hence, unemployment can be defined as a situation when persons able and willing to work are seeking jobs at the prevailing wage level but they are unable to get the same.
- Unemployment in developing economies like India is not the result of deficiency of effective demand in the Keynesian sense, but a consequence of shortage of capital equipment or other complementary resources.
- In India unemployment is structural in nature due to lack of productive capacity and resources.

Types of Unemployment

1. **Cyclical unemployment** : It is the result of depression in an economy.
2. **Frictional unemployment** : This kind of unemployment is temporary. It is the result of a situation when new industries drive out old ones and workers change over to better jobs.
3. **Open unemployment** : It refers to those who have no work to do even though they are able and willing to do work.
4. **Seasonal unemployment** : This occurs at certain period of the year when work load is comparatively less, and hence people are rendered jobless. For example, in the period between past harvest and next sowing, agricultural labourers are unemployed.
5. **Educated unemployed** : This is mainly found in urban areas. Those educated persons who are unable to get work come under this category.
6. **Under-employment (Disguised unemployment)** : It results when a person contributes to production less than what he or she is capable of, for example, an engineer working as a clerk is underemployed.
7. **Compulsory unemployment** : It means the labour power which is ready to work on the current rate but does not get the work.
8. **Seasonal unemployment** : It means the unemployment of the farmers and farm labourers during non-crop seasons.
- During Ninth Plan, total 3.6 crore fresh unemployed began to look for employment.
- Before its replacement by the 'NITI Aayog' the Planning Commission had to collect data of unemployment on the basis of 'Lakadawala Formula' effective from 11th March, 1997 and prior to this the process to collect data was on the basis of surveys of National Sample Survey Organisation (NSSO).
- In 8th Plan, the aim was to create 1 crore employment. During Ninth Plan the additional requirement of work opportunities was approximately 5 crore 30 lakhs.
- In India, the data relating to unemployment are collected by National Sample Survey Organisation (NSSO). This Organisation has the following concepts with regard to unemployment :

- General status of unemployment:** In this category, generally, those unemployed for more than one year are included. As such it is a long-term unemployment.
 - Weekly-unemployment:** The persons who have not got work for even one hour in a week are included in this category.
 - Daily unemployment:** It is considered the best concept of unemployment.
- > The main reasons for unemployment in India are slow economic development, population explosion, outdated technique, improper education system and limited effect of government planning.

Development and Employment Programmes : At a glance

Sl. N.	Programme/Plan/ Institution	Year of beginning	Objective/Description
1.	Community Development Programme (CDP)	1952	Over all development of rural area with people's participation.
2.	Intensive Agriculture Development Programme (IADP)	1960-61	To provide loan, seeds, fertilizer tools to the farmers.
3.	Intensive Agriculture Area Programme (IAAP)	1964-65	To develop the Special harvests.
4.	High Yielding Variety Programme (HYVP)	1966-67	To increase productivity of food grains by adopting latest varieties of inputs for crops.
5.	Indian Tourism Development Corporation (ITDC)	Oct, 1966	To arrange for the construction of Hotels and Guest houses at various places of the country.
6.	Green Revolution	1966-67	To increase the foodgrains, specifically wheat production (Credit goes to Dr. M.S. Swaminathan in India and Nobel laureate Dr. Norman Borlaug in the world).
7.	Nationalisation of 14 Banks	19 July, 1969	To provide loans for agriculture, rural development and other priority sectors.
8.	Employment Guarantee Scheme of Maharashtra	1972-73	To assist the economically weaker sections of the rural society.
9.	Accelerated Rural Water Supply Programme (ARWSP)	1972-73	For providing drinking water in the villages.
10.	Small Farmer Development Agency (SFDA)	1974-75	For technical and financial assistance to small farmers.
11.	Command Area Development Programme (CADP)	1974-75	To ensure better and rapid utilisation of irrigation capacities of medium and large projects.
12.	Twenty Point Programme (TPP)	1975	Poverty eradication and raising the standard of living.
13.	National Institution of Rural Development (NIRD)	1977	Training, investigation and advisory organisation for rural development.
14.	Desert Development Programme (DDP)	1977-78	For controlling the desert expansion and maintaining environmental balance.
15.	Food for Work Programme (FWP)	1977-78	Providing foodgrains to labour for the works of development.

Sl. N.	Programme/Plan/ Institution	Year of beginning	Objective/Description
16.	Antyodaya Yojana	1977-78	To make the poorest families of the village economically independent (only in Rajasthan State).
17.	Training Rural Youth for Self-Employment (TRYSEM)	August 15, 1979	Programme of training rural youth for self-employment.
18.	Integrated Rural Development Programme (IRDP)	October 2, 1980	All-round development of the rural poor through a programme of asset endowment for self-employment.
19.	National Rural Employment Programme (NREP)	1980	To provide profitable employment opportunities to the rural poor.
20.	Development of Women and Children in Rural Areas (DWCRAs)	September, 1982	To provide suitable opportunities of self-employment to the women belonging to the rural families who are living below the poverty line.
21.	Rural Landless Employment Guarantee Programme (RLEGPs)	August 15, 1993	For providing employment to landless farmers and labourers.
22.	Self Employment to the Educated Unemployed Youth (SEEUY)	1983-84	To provide financial and technical assistance for self-employment.
23.	Farmer Agriculture Service Centre's (FASCs)	1983-84	To popularise the use of improved agricultural instruments and tool kits.
24.	National Fund for Rural Development (NFRD)	February, 1984	To grant 100% tax rebate to donors and also to provide financial assistance for rural development projects.
25.	Industrial Reconstruction Bank of India	March 1985	To provide financial assistance to sick and closed industrial units for their reconstruction.
26.	Comprehensive Crop Insurance Scheme	April 1, 1985	For insurance of agricultural crops.
27.	Council for Advancement of People's Action and Rural Technology (CAPART) (H.Q.- New Delhi)	Sep. 1, 1986	To provide assistance for rural prosperity.
28.	Self-Employment Programme for the Urban Poor (SEPUP)	Sept., 1986	To provide self-employment to urban poor through provision of subsidy and bank credit.
29.	Formation of Securities and Exchange Board of India (SEBI)	April, 1988	To safeguard the interest of investors in capital market and to regulate share market.
30.	Jawahar Rozgar Yojana	April 1, 1989	For providing employment to rural unemployed.
31.	Nehru Rozgar Yojana	October, 1989	For providing employment to urban unemployed.
32.	Agriculture and Rural Debt Relief Scheme (ARDRS)	1990	To exempt bank loans upto Rs.10,000 of rural artisans and weavers.

Sl. N.	Programme/Plan/ Institution	Year of beginning	Objective/Description
33.	Scheme of Urban Micro Enterprises (SUME)	1990	To assist the urban poor people for small enterprise.
34.	Scheme of Urban Wage Employment (SUWE)	1990	To provide wages employment after arranging the basic facilities for poor people in the urban areas where population is less than one lakh.
35.	Scheme of Housing and Shelter Upgradation (SHASU)	1990	To provide employment by means of shelter upgradation in the urban areas where population is between 1 to 20 lakh.
36.	Supply of Improved Toolkits to Rural Artisans	July, 1992	To supply modern toolkits to the rural craftsmen except the weavers, tailors, embroiders and tobacco labourers who are living below the poverty line.
37.	Employment Assurance Scheme (EAS)	October, 2, 1993	To provide employment of at least 100 days in a year in villages.
38.	Members of Parliament Local Area Development Scheme (MPLADS)	December, 23, 1993	To sanction Rs. 5 crore per year to every Member of Parliament for various development works in their respective areas through DM of the district.
39.	District Rural Development Agency (DRDA)	1993	To provide financial assistance for rural development.
40.	Mahila Samridhi Yojana	October 2, 1993	To encourage the rural women to deposit in Post Office Savings Account.
41.	Child Labour Eradication Scheme	August 15, 1994	To shift child labour from hazardous industries to schools.
42.	Prime Minister's Integrated Urban Poverty Eradication Programme (PMIUPEP)	November 18, 1995	To attack urban poverty in an integrated manner in 345 towns having population between 50,000 to 1 lakh.
43.	Group Life Insurance Scheme in Rural Areas	1995-96	To provide insurance facilities to rural people on low premium.
44.	National Social Assistance Programme	1995	To assist people living below the poverty line.
45.	Ganga Kalyan Yojana	1997-98	To provide financial assistance to farmers for exploring and developing ground and surface water resources.
46.	Kasturba Gandhi Education Scheme	August 15, 1997	To establish girls schools in districts having low female literacy rate.
47.	Swarna Jayanti Shahari Rozgar Yojana (SJSRY)	December, 1997	To provide gainful employment to urban unemployed and under employed poor through self-employment or wage employment.
48.	Bhagya Shree Bal Kalyan Policy	Oct. 19, 1998	To uplift the girls conditions.
49.	Rajrajeshwari Mahila Kalyan Yojana (RMKY)	Oct. 19, 1998	To provide insurance protection to women.

Sl. N.	Programme/Plan/ Institution	Year of beginning	Objective/Description
50.	Annapurna Yojana	March, 1999	To provide 10 kg foodgrains to senior citizens (who do not get pension).
51.	Swarna Jayanti Gram Swarozgar Yojana (SJGSY)	April, 1999	For eliminating rural poverty and unemployment and promoting self-employment.
52.	Jawahar Gram Samridhi Yojana (JGSY)	April 1999	Creation of demand driven community village infrastructure.
53.	Jan Shree Bima Yojana	Aug. 10, 2000	Providing Insurance Security to people living below the poverty line.
54.	Pradhan Mantri Gramodaya Yojana	2000	To fulfill basic requirements in rural areas.
55.	Antyodaya Anna Yojana	Dec. 25, 2000	To provide food security to the poor.
56.	Ashraya Bima Yojana	June, 2001	To provide compensation to labourers who have lost their employment.
57.	Pradhan Mantri Gram Sadak Yojana (PMGSY)	Dec. 25, 2000	To line all villages with Pucca Road.
58.	Khetihar Mazdoor Bima Yojana	2001-2002	Insurance of Landless Agricultural workers.
59.	Shiksha Sahyog Yojana	2001-2002	Education for Children below Poverty Line.
60.	Sampurna Gramin Rozgar Yojana	Sept. 25, 2001	Providing employment and food security to rural people.
61.	Jai Prakash Narain Rozgar Guarantee Yojana	Proposed in 2002-03 Budget	Employment Guarantee in most poor districts.
62.	Swajaldhara Yojana	2002	Started in Dec. 2002, for ensuring drinking water supply to all villages by 2004.
63.	Hariyali Pariyojana	2003	Inaugurated on January 27, 2003 by the Prime Minister. It aims at tackling the problems of irrigation and drinking water, along with boosting tree plantation programme and fisheries developments in rural areas.
64.	Social Security Pilot Scheme	Jan. 23, 2004	Scheme for labourers of unorganised sector for providing family pension, insurance and medical.
65.	Vande Matram Scheme	Feb. 9, 2004	Major initiative in Public-Private Partnership during pregnancy check-up.
66.	National Food for Work Programme	November 14, 2004	Inaugurated by the Prime Minister on November 14, 2004. This programme is to be implemented initially in 150 districts of the country. It aims at providing 100 days' employment in a year to all able bodied unemployed rural folk.
67.	Janani Suraksha Yojana	April 12, 2005	Takes the place of National Maternity Benefit Scheme. It will be a part of the National Rural Health Mission (NRHM).

Sl. N.	Programme/Plan/ Institution	Year of beginning	Objective/Description
68.	Bharat Nirman Yojana	Dec. 16, 2005	Development of Rural infrastructure including six components: Irrigation, Water supply, Housing, Road, Telephone and Electricity.
69.	National Rural Employment Guarantee Programme (NREGP)	Feb. 2, 2006	The provisions are the same as for food for work programme. The scheme was enforced in 200 districts of the country to begin with. To provide atleast 100 days wages employment in rural areas in a year. The scheme is 100% centrally sponsored.

Bharat Nirman Yojana

- > The Union Government launched a new comprehensive scheme, named '**Bharat Nirman Yojana**' on December 16, 2005.
- > This scheme aims at developing rural infrastructure.
- > The major **six sectors** of Bharat Nirman Yojana are Irrigation, Roads, Housing, Water supply, Electrification and Rural Communication.
- > Bharat Nirman Yojana, the flagship rural infrastructure development programme of the UPA government still remains work in progress (in 2014-15).

Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)

- > The National Rural Employment Guarantee Bill was passed by Parliament on September 7, 2005. It secured Presidential assent later in 2005 itself and became an Act.
- > The Act provides for at least 100 days of employment to one able bodied person in every rural household every year.
- > The Act (NREGA) came into force from Feb. 2, 2006. Initially 200 districts have been selected for the enforcement of the scheme.
- > The central Government and the State governments bear 75% and 25% of the cost of material, wages of skilled and semi-skilled workers.
- > The Government has extended the NREGA to 654 districts of the country. This scheme has been provided a sum of ₹ 34,699 crore for the FY-2015-16.
- > ₹ 1,65,500 crore has been allocated for MNREGA for 12th plan (2012-17).

Note : The Govt. of India, October 2, 2009 renamed the NREGA as the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA).

Employment Guarantee Act, 2005

The Government, on the advice of the National Advisory Council, has passed the National Rural Employment Guarantee Act. The main features of the Act are:

1. Every household in rural India will have a right to atleast 100 days of guaranteed employment every year for at least one adult member. The employment will be in the form of casual manual labour at the statutory minimum wage, and the wages shall be paid within 7 days of the week during which work was done.
2. Work should be provided within 15 days of demanding it, and the work should be located within 5 kilometer distance.

3. If work is not provided to anybody within the given time, he/she will be paid a daily unemployment allowance, which will be at least one-third of the minimum wages.
4. Workers employed on public works will be entitled to medical treatment and hospitalization in case of injury at work, along with a daily allowance of not less than half of the statutory minimum wage. In case of death or disability of a worker, an ex-gratia payment shall be made to his legal heirs as per provisions of the Workmen Compensation Act.
5. 5% of wages may be deducted as contribution to welfare schemes like health insurance, accident insurance, survivor benefits, maternity benefits and social security schemes.
6. For non-compliance with rules, strict penalties have been laid down.
7. For transparency and accountability, all accounts and records of the programme will be made available for public scrutiny.
8. The District Collector /Chief Executive Officer will be responsible for the programme at the district level.
9. The Gram Sabha will monitor the work of the Gram Panchayat by way of social audit.

Some Important Development and Employment Programmes

- > During the Seventh Five-Year Plan, a scheme called '**Jawahar Rozgar Yojana**' was introduced from April, 1989 to solve the problem of unemployment in the rural sector. The former ongoing two main rural employment programmes National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEG) were merged with Jawahar Rozgar Yojana.
- > The total expenditure on Jawahar Rozgar Yojana was shared by the Centre and the State Government in the ratio of 80 : 20.
- > Under the Jawahar Rozgar Yojana, 30% employment opportunities was reserved for women.
- > Under the Jawahar Rozgar Yojana, it was made compulsory to spend 60% of the total expenditure on labour used in the works completed under the scheme.
- > A sub-plan of Jawahar Rozgar Yojana—'**Indira Awas Yojana**' was made an independent scheme in itself on January 1, 1996.
- > The **Employment Assurance Scheme (EAS)**, was introduced on October 2, 1993, in selective rural areas. The aim of this scheme is to provide work in the form of unskilled physical labour to all the employment seeking men and women (of ages between 18 years to 60 years) in rural areas. The expenditure on this scheme is shared by the Centre and the States in the ratio of 80 : 20. From maximum of 2 members from one family can be benefitted under this scheme. Since January 1, 1996, the Integrated Jawahar Rozgar Yojana (IJRY) has been merged with Employment Assurance Scheme (EAS).
- > The **Integrated Rural Development Programme (IRDP)** was started on an experimental basis in 1978-79. This programme was launched in the whole country on October 2, 1980. The basic aim of IRDP was to provide assistance to rural poor families living below the poverty line.
- > The Integrated Rural Development Programme is financially assisted by the Centre and States in the ratio of 50 : 50.

- Under the Integrated Rural Development Programme, targeted group includes atleast 50% families belonging to scheduled caste and scheduled tribe. Apart from this, among the beneficiaries, 50% were females and 3% physically handicapped persons.
- Development of Women and Children in Rural Areas (**DWCRA**) and Training Rural Youth for Self Employment (**TRYSEM**) were the sub-plans of Integrated Rural Development Programme (IRDP).
- The objective of TRYSEM was to provide training to those rural youth (ages 18-35 years) who belong to the families living below the poverty line. This programme was started on August 15, 1979.

Development of Women and Children in Rural Area Programme (DWCRA) was started in September, 1982. Under this programme, a group of 10-15 women was taken, who belong to the families living below the poverty line and they were given training for starting any economic activity. Every group was given the economic assistance of Rs. 25,000.

Swarna Jayanti Shahari Rozgar Yojana

- The Urban Self Employment Programme and Urban Wage Employment Programmes of the Swarna Jayanti Shahari Yojana, which substituted (in December, 1997) various programmes operated earlier for poverty alleviation.
- SJSRY is funded on 75 : 25 basis between the Centre and the States.
- During the 3-year period (1997-98 and 1999-2000), a total of Rs. 353 crores were spent on SJSRY generating 21.8 million mandays of employment.

Swarna Jayanti Gram Swarozgar Yojana (SGSY) : The Government has introduced Swarna Jayanti Gram Swarozgar Yojana on April 1, 1999 and the previous six ongoing schemes have been merged with this scheme, they are—**1. IRDP 2. TRYSEM 3. DWCRA 4. MWS 5. SITRA 6. Ganga Kalyan Yojana**. The SGSY is a holistic programme covering all the aspects of self employment. The scheme is funded on 75 : 25 basis by the centre and states.

- The **Drought-prone Area Programme** was started in 1973 with the objective of developing the drought-prone area and also re-establishing the environmental balance. This programme is financially assisted by the Centre and the concerned State Governments in the ratio of 50 : 50.
- The **Desert Development Programme** was started in 1977-78 to end the ill-effects of drought in desert areas and also to stop the process of desert expansion. This programme is implemented on the basis of cent-per-cent financial assistance rendered by the Central Government.
- The **Rural Landless Employment Guarantee Programme (RLEG)** began on August 15, 1993 and National Rural Employment Programme (NREP) on October 2, 1980. During Seventh Five Year Plan, these programmes were merged with Jawahar Rozgar Yojana.
- Council for Advancement of Peoples Action and Rural Technology (**CAPART**) is an independent section of the Rural Development Department of the Government of India; which was established on September 1, 1986. For rural development works, 'CAPART' provides grants to voluntary organisations. The head office of CAPART is at New Delhi.

- Following programmes are being implemented by the Ministry of the Urban Development to eradicate **Urban Poverty**—**1. Nehru Rozgar Yojana 2. Urban Basic Services for the Poor 3. Programme of Environment Improvement of Urban Slums**.
- The **Nehru Rozgar Yojana** began on October, 1989 which was revised in March, 1990. Under this Yojana following schemes were included—**1. Scheme of Urban Micro Enterprises—SUME 2. Scheme of Urban Wage Employment—SUWE 3. Scheme of Housing and Shelter Upgradation—SHASU**.
- The **Prime Minister's Rozgar Yojana (PMRY)** was started for October 2, 1993 for the educated unemployed youth and initially was in operation in urban areas. From April 1, 1994 onwards the scheme is being implemented throughout the country. Its objective was to give employment to 10 lakhs educated unemployed urban youth by establishing 7 lakh micro enterprises during the Eighth Five Year Plan. During 1993-94, this yojana was implemented in urban areas only but since April 1, 1994 it was extended to the whole country.
- ★ SHGs (Self-Help Groups) are considered eligible for financing under the PMRY, effective from December 8, 2003 (terms modified on July 30, 2004) provided all members individually satisfy the eligibility criteria laid down and total membership does not exceed twenty (20). There is also a ceiling on the loan amount.

New schemes and plans of Union and State Government

PAHAL Scheme

- More than 60% of LPG customers in the country have joined the ambitious PAHAL scheme for receiving cash subsidy so that they can buy cooking gas (LPG) at market price.
- Over 9 crore consumers, out of a total customer base of 15.33 crore, have joined the Direct Benefit Transfer for LPG (DBTL) scheme and Rs 2,262 crore in cash has been transferred to them.
- The DBTL Scheme for LPG consumers (PAHAL) was launched on November 15, 2014 in 54 districts and in the rest of the country on January 1, 2015. The Scheme aims to transfer the subsidy on LPG directly into the bank accounts of over 15 crore LPG consumers.

Beti Bachao-Beti Padhao

- The 'Beti Bachao-Beti Padhao' scheme, which seeks to address gender imbalance and discrimination against the girl child, was launched by Prime Minister Narendra Modi at Panipat in Haryana.
- Mahendergarh and Jhajjar districts of Haryana are badly effected with imbalanced Sex ratios where there are just about 775 girls for 1,000 boys, the lowest in India.
- Haryana Chief Minister launched a scheme for girl child- 'Aapki Beti Humari Beti'-with an aim to combat the problem of declining child sex ratio in the state.

Sukanya Samridhhi Accounts

- Rate of interest 9.1% Per Annum(2014-15), calculated on yearly basis ,Yearly compounded.
- Minimum INR. 1000 and Maximum INR. 1,50,000 in a financial year. Subsequent deposit in multiple of INR 100. Deposits can be made in lump-sum. No limit on number of deposits either in a month or in a Financial year.

- Account can be opened up to age of 10 years only from the date of birth.
- If minimum ₹ 1000 is not deposited in a financial year, account will become discontinued and can be revived with a penalty of ₹ 50 per year with minimum amount required for deposit for that year.
- Partial withdrawal, maximum up to 50% of balance standing at the end of the preceding financial year can be taken after Account holder's attaining age of 18 years.
- Account can be closed after completion of 21 years.

Jan Dhan Yojana

Aim-scheme to promote financial inclusion: Prime Minister Narendra Modi launched 'Pradhan Mantri Jan Dhan Yojana' to help the poor open bank accounts.

The slogan for the Pradhan Mantri Jan Dhan mission is "*Mera Khata - Bhagya Vidhaata*".

- Every individual who opens a bank account will become eligible to receive an accident insurance cover of up-to ₹ 1 Lakh.
- HDFC Ergo General Insurance will provide the accident cover under the scheme.
- An additional ₹ 30,000 life insurance cover will be provided for those opening bank accounts before January 26, 2015.
- LIC (Life Insurance Corporation) will provide the life insurance cover of ₹ 30,000 under the scheme.
- Rs. 5,000 overdraft facility for Aadhar-linked accounts, *Ru Pay Debit Card* with and minimum monthly remuneration of Rs. 5,000 to business correspondents who will provide the last link between the account holders and the bank Capital Infusion in Banks.

Pradhan Mantri Kaushal Vikas Yojana

- The Union Cabinet on March 21, 2015 cleared a scheme to provide skill training to 1.4 million youth, with an overall outlay of ₹ 1,120 crore.
- The Pradhan Mantri Kaushal Vikas Yojana, to be implemented by the new Ministry of Skill Development and Entrepreneurship through the National Skill Development Corporation, will focus on fresh entrants to the labour market especially Class-X and Class-XII dropouts.

Salient features of the scheme :

- The target for skilling would be aligned to demands from other flagship programmes launched in recent times such as Make in India, Digital India, National Solar Mission and Swachh Bharat Abhiyan.
- Training under this scheme will include soft skills, personal grooming, behavioural change for cleanliness, good work ethics, etc. Sector Skill Councils and the State Governments would closely monitor skill training that will happen under PMKVY.
- Under the scheme, a monetary reward of about ₹ 8,000 will be given to trainees upon certification by third-party assessment bodies.
- Skill training would be done on the basis of demand assessed by the NSDC for the period 2013-17.

Social Security Schemes

- After providing bank accounts to crores of unbanked people under *Jan Dhan Yojana* the Prime Minister has launched three social security schemes, including at Rs. 1 per day insurance cover.
- 1. The schemes Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)
- 2. Pradhan Mantri Suraksha Bima Yojana (PMSBY) and
- 3. Atal Pension Yojana (APY) were simultaneously launched at 115 locations throughout the country.

1. **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)** will offer a renewable one year life cover of ₹ 2 lakh to all savings bank account holders in the age group of 18-50 years, covering death due to any reason, for a premium of ₹ 330 per annum per subscriber.

2. **Pradhan Mantri Suraksha Bima Yojana (PMSBY)** will offer a renewable one year accidental death-cum-disability cover of ₹ 2 lakh for partial/permanent disability to all savings bank account holders in the age group of 18-70 years for a premium of ₹ 12 per annum per subscriber.

3. **Atal Pension Yojana** will focus on the unorganised sector and provide subscribers a fixed minimum pension of ₹ 1,000, ₹ 2,000, ₹ 3,000, ₹ 4,000 or ₹ 5,000 per month, starting at the age of 60 years, depending on the contribution option exercised on entering at an age between 18 and 40 years.

8. Trade and Commerce

- Indian Trade was extremely developed during ancient time.
- After the British East India Company was established in 1600, the trade between India and Britain was in India's favour till 1757.
- At that time East India Company used to purchase clothes and spices in exchange for costly metals.
- The British Government decided to impose heavy Duty on the clothes to destroy the structure of Industries.
- During the later part of 18th Century, after Industrial revolution in Britain there was heavy production of cheap items. To sell those cheap items in world market, the tradition of colonisation began.
- British Companies established monopoly on the sale of cotton. As a result, the Indian weaver got costly raw material and thus Indian products became costly. By 1813, Indian Handloom business was completely ruined.
- In the later part of 19th Century, the establishment of modern industries on the basis of power machines started. First time in India, the textile industries came into being.
- *First Factory of Cotton Textile* in India was established in 1818 at Ghughari near Kolkata, which failed.
- The Second Factory of Cotton Textile was established by a businessman Kawas Ji Nana Bhai in Mumbai in 1853.
- In 1855, first Jute Factory was established in Rishara (West Bengal).
- In 1853, after the establishment of railway in India industrial development got momentum here. Rapid expansion of Indian industries started due to development of the means of communication.
- Jamshedji Tata established first Steel Factory in Jamshedpur in 1907.

9. New Economic Policy

- New Economic Policy is related to economic reforms. Its aim is to bring about reforms in production pattern, to obtain new technology and to use full capacity expeditiously and in toto.
- The New Economic Policy was devised and implemented, for the first time in the year 1985 during the period of Prime Minister Rajiv Gandhi.
- The second wave of new economic reforms came in the year 1991 during the period of P.V. Narsimha Rao government.
- The main reason to start new economic policy (1991) was Gulf-War and problem of balance of payment in India.
- Three main objectives of new economic policy were—Liberalisation, Privatisation, and Globalisation.
- Main sectors of new economic reform policy, 1991 were—Fiscal Policy, Monetary Policy, Value Fixation Policy, Foreign Policy, Industrial Policy, Foreign Investment Policy, Business Policy and Public Sector Policy.
- The following four main steps were taken under the Fiscal Policy, 1991:
 1. To control public expenditure strictly
 2. To expand Tax Net
 3. To observe discipline in management of funds of Central and State governments
 4. To curtail grants (subsidy)
- Under the Monetary Policy, steps were taken to control inflation.
- Measures implemented under the Industrial Reforms Policy, 1991 were:
 1. Delicensing of industries except the list of 18 industries.
 2. M.R.T.P. norms were relaxed for disinvestment.
 3. The areas reserved for public sector were opened to private sector.
- The objectives fixed for reforms in the Foreign Investment Policy, 1991 were:
 1. Direct foreign investment upto 50% was given automatic approval, in many industries.
 2. Foreign companies, involved in export activities were allowed to invest upto 51% capital.
 3. The government gave automatic approval for Technology Agreement in the industries of high priorities.
- Under the Trade Policy 1991, steps were taken to abolish the excessive protection given to many industries, for the promotion of international integration of economy.
- The measures implemented to bring efficiency and market discipline under the Public Sector Policy, 1991 were as under :
 1. Number of reserved industries decreased to 8. Presently these are only four.
 2. The work of rehabilitation of sick industries handed over to Board of Industrial Financial Reconstruction.
 3. Industries were made powerful with the help of Memorandum of Understandings (MoU).
 4. Voluntary Retirement Schemes started to cut down the size of work force.

Economic Reforms

- Economic Reforms were introduced in 1991 in India. *First Generation Reforms* were aimed at stabilisation of Indian economy and were macro level in nature. It includes liberalisation and deregulation of industry, financial sector reforms, taxation reforms etc. *Second Generation Reforms* aimed at structural changes and are micro level in nature. It will include labour reforms, land reforms, capital market reforms, expenditure reforms and power sector reforms etc.
- Since economic reform, poverty has been declining from 36% in 1993 to 26% by the end of 10th plan. But as far as inequality is concerned it has increased. A World Bank Report 1999-2000 confirms this rise in inequality.
- The New Economic Reforms Policy, by making progress from 1991 to 2005-06 has become more open, liberal and global.
- Disinvestment means to decrease the share of government in the industries.
- In 1996, **Disinvestment Commission** was constituted to review, give suggestions and make regulations on the issue of disinvestment.
- Shri G.V. Ramkrishna was the **first Chairman** of Disinvestment Commission.
- In the year 1992, **National Renewal Fund** was constituted for rehabilitation of displaced labourers of sick industrial units affected due to industrial modernization, technological development etc.
- '**Navratna**' is a company which is rising at world level. To encourage these companies, the government has given them complete autonomy.
- In the second phase of economic reforms programme, the main aim is to eradicate poverty from the country and development at the rate of 7 to 8%.

Some Important Terminology Relating to the New Economic Reforms Policy

- **Privatisation** : To increase participation of private sector in the public sector companies by capital investment or by management or both or to hand over a public sector unit to a private company is called Privatisation.
- **Liberalisation** : Liberalisation is the process by which government control is relaxed or abolished. In this process privatisation is also included.
- **Globalisation** : The process of amalgamation of an economy with world economy is called Globalisation. It is signified by lower duties on import and export. By doing so, that sector will also get private capital and foreign technology.
- **Disinvestment** : To reduce the government share in the public sector is called disinvestment.

10. Indian Financial System

- Indian Financial System is a system in which People, Financial Institutions, Banks, Industrial Companies and the Government demand for fund and the same is supplied to them.
- There are two parts of Indian Financial System—first demand side and second supply side. The representative of demand side can be Individual investor, Industrial and Business Companies, Government etc and the representative of supply side will be Banks, Insurance Companies, Mutual Fund and other Financial Institutions.

- The Indian financial system, which refers to the borrowing and lending of funds or to the demand for and supply of funds of all individuals, institutions, companies and of the Government consists of two parts, viz., the Indian money market and the Indian capital market.
- The Indian **money market** is the market in which short-term funds are borrowed and lent. The capital market in India, on the other hand, is the market for medium-term and long-term funds.
- The Indian financial system performs a crucial role in economic development of India through saving-investment process, also known as capital formation.
- The financial system is, commonly, classified into : 1. Industrial finance, 2. Agricultural finance, 3. Development finance and 4. Government finance.
- **Devaluation** means lowering the official value of the local money in terms of foreign currency or gold.
- **Balance of Payments**(BoP) is a systematic record of all the economic transactions between one country and the rest of the world in a given period.
- **Balance of Trade** (BoT) is the difference between the value of goods exported and the value of goods imported per annum. Services not included in BoT.
- BOP is divided in current account and capital account.
- EXIM Policy 2000-01 introduced Special Economic Zones Scheme (SEZ).
- 1994-95, Indian Rupee was made fully convertible on current account.
- Fiscal Policy is the policy relating to public revenue and public expenditure and allied matters.
- Usually, the Indian money market is classified into organised sector and the unorganised sector.
- The unorganised sector consists of indigenous bankers including the Non-Banking Financial Companies (NBFCs). Besides, these two, there are many sub-markets in the Indian money market.
- The organised banking system in India can be broadly divided into three categories, viz., the central bank of the country known as the Reserve Bank of India, the commercial banks and the co-operative banks which includes private sector and public sector banks and also foreign banks.
- The highest financial institution in organized sector is Reserve Bank of India and in addition to this Banks of Public Sector, Banks of Private Sector, Foreign Banks and other financial institutions are also part of organized sector.
- The **Reserve Bank of India** regulates and controls the money of the country.
- The **RBI** was established under the Reserve Bank of India Act, 1934 on 1st April, 1935 with a capital of Rs. 5 crore. It was nationalised on 1st January, 1949; on the recommendation of Parliamentary Committee in 1948. It is the Central Bank of India.
- The Reserve Bank of India is the supreme monetary and banking authority in the country and has the responsibility to control the banking system in the country. It keeps the reserves of all commercial banks and hence is known as the 'Reserve Bank'. Its financial year is 1st July to 30th June.

The Indian Capital Market

- The Indian capital market is the market for long-term capital; it refers to all the facilities and institutional arrangements for borrowing and lending 'term funds'— medium term and long term funds.
- The Capital Market in India includes : 1. Government Securities (Gilt-edged market) 2. Industrial Securities Market 3. Development financial institutions like IFCL, IDBI, ICICI, SFCs, IIBI, UTI etc 4. Financial Intermediaries like Merchant banks.
- Individuals who invest directly on their own in securities are also supplier of fund to capital market. The trend in the capital market is basically affected by two important factors : 1. operations of the institutional investors in the market and 2. the excellent results flowing in from the corporate sector.
- The capital market in India can be classified into :
 - ★ Gilt-edged market or market for Government and semi-government securities;
 - ★ Industrial securities market;
 - ★ Development financial institutions and
 - ★ Non-banking financial companies.
- *The gilt-edged securities market* is the market for Government and Semi government securities which carry fixed interest rates.
- *The industrial securities market* is the market for equities and debentures of companies of the corporate sector. This market is further classified into—
 - (a) new issue markets for raising fresh capital in the form of shares and debentures (commonly referred to as *primary market*), and
 - (b) old issues market (or *secondary market*) for buying or selling shares and debentures of existing companies—this market is commonly referred to as the stock market or stock exchange.
- If shares or debentures of private corporations, primary sureties of government companies or new sureties and issue of bonds of public sector are sold or purchased in the capital market, then the market is called **Primary Capital Market**.

Important Share Price Index of the World

Share Price Index	Stock Exchange
1. Bovespa	Brazil
2. Dow Jones	New York
3. FTSE—100	London
4. HANG SENG	Hong Kong
5. IPC	Mexico
6. Jakarta Composite	Indonesia
7. KLSE Composite	Malaysia
8. KOSPI	Korea
9. MIBtel	Italy
10. MID DAX	Frankfurt
11. NASDAQ	U.S.A.
12. Nikkei	Tokyo
13. S & P	Canada
14. Seoul Composite	S. Korea
15. SHANGHAI Com	China
16. SET	Thailand
17. Straits Times Index	Singapore (SGX)/SIMEX [Singapore International Monetary Exchange (old name)]
18. TAIEN	Taiwan

- **Secondary Market** includes transactions in the stock exchange and gilt-edged market.
- Merchant Bank, Mutual Fund, Leasing Companies, Risk Capital Companies etc. collect and invest public money into the capital market.
- Unit Trust of India (UTI) is the biggest Mutual Fund Institution of India.

Stock Exchange

- The stock exchange is the market for buying and selling of stocks, shares, securities, bonds and debentures etc. It increases the marketability of existing securities by providing simple method for public and others to buy and sell securities.

Credit Rating Agency in India & World

Indian credit rating industry mainly comprises of CRISIL, ICRA, CARE, ONICRA, FITCH (India Ratings & Research) & SMERA.

CRISIL : Credit Rating Information Services of India Limited, Headquarter—Mumbai

ICRA : Investment information and Credit Rating Agency, Headquarter—Gurgaon, India

CARE : Credit Analysis and Research, Headquarters—Mumbai

ONICRA : Headquarter—Gurgaon, India

SMERA : Headquarters—Mumbai

FITCH (India Ratings & Research) : Headquarters—Mumbai

Standard & Poor's (S&P) : Headquarter—New York, US

MOODY'S : Headquarter—New York, US

Fitch : Headquarter—New York, US

Note : CRISIL is the largest credit rating agency in India, with a market share of greater than 60%.

Some Important Share Price Index of India

- **BSE SENSEX** : This is the most sensitive share index of the Mumbai Stock Exchange. This is the representative index of 30 main shares. Its base year is 1978-79. BSE is the oldest stock exchange of India, founded in 1875.
- **BSE 200** : This represents 200 shares of Mumbai Stock Exchange. Its base year is 1989-90.

- **DOLLEX** : Index of 200 BSE Dollar Value Index is called DOLLEX. Its base year is 1989-90.
- **NSE-50** : From 28th July, 1998, its name is **S and P CNX Nifty**. National Stock Exchange has launched a new share Price Index, NSE-50 in place of NSE-100 in April 1996. NSE-50 includes 50 companies shares. This stock exchange was founded on Ferwani Committee's recommendation in 1994.
- CRISIL, set up in 1988, is a credit rating agency. It undertakes the rating fixed deposit programmes, convertible and non-convertible debentures and also credit assessment of companies.
- **CRISIL 500** is the new share Price Index introduced by Credit Rating Agency the 'Credit Rating Information Services of India Limited' (CRISIL) on January 18, 1996.
- The **National Stock Exchange (NSE)** has launched a new version of its online trading software called 'National Exchange for Automatic Trading' (NEAT).

Regulators in India

Regulator	Sectors	Chairman	Headquarter
Reserve Bank of India (RBI)	Financial system and monetary policy, Money Market	Raghuram Rajan	Mumbai
Securities and Exchange Board of India (SEBI)	Security & Capital Market, Stock broking & Merchant Banking, Nidhis, Chit Fund Companies	U.K. Sinha	Mumbai
Insurance Regulatory and Development Authority (IRDA)	Insurance industry	T.S. Vijayan	Hyderabad
Telecom Regulatory Authority of India (TRAI)	Telecommunication Industry	Rahul Khullar	New Delhi
Forward Markets Commission	Commodity Market	Ramesh Abhishek	Mumbai
Pension Fund Regulatory and Development Authority(PFRDA)	Pension Fund Regulatory and Pension sector	Hemant Contractor	New Delhi

Ranking of India in different Indexes (As in March, 2015)

1. India has emerged as the **second-most trusted country** in the world in terms of faith reposed on its institutions. The list is topped by UAE with 84% trust.
2. Transparency International India (TII)-Corruption Index-India ranked 85th among 175 (Denmark Topped).
3. World Bank-'Ease of Doing Business' Report-India ranked 142 among the 189 countries (Singapore Top).
4. World Economic Forum's 2015 **Gender gap Index**-114 (Iceland top the list, followed by Finland & Norway).
5. **Global Hunger Index Report 2014**-55 (Mauritius top, followed by Thailand and Albania).
6. **Human Development Index 2014**-135 (Norway top, followed by Australia).
7. **Intellectual Property (IP) environment 2015**- 29 (US top, Thailand last).
8. **World Press Freedom Index 2015**-136 in the list of 180 countries.
9. **World's best countries for doing business 2014**-134.

10. **Global Peace Index 2014**—143 (Iceland top the list, while Syria is the most violent place).
11. **Global Innovation Index 2014**—76
12. **Global Competitiveness Index 2014**—71 (Switzerland is the most competitive economy, followed by Singapore).

11. Indian Fiscal System

- **Fiscal System**: It refers to the management of revenue and capital expenditure finances by the state. Hence, fiscal system includes budgetary activities of the government that is revenue raising, borrowing and spending activities.
- **Fiscal Policy**: Fiscal Policy refers to the use of taxation, public expenditure and the management of public debt in order to achieve certain specified objectives.
- Indian Fiscal System includes or refers to the management of revenue sources and expenditure of the Central and State governments, Public debt, Deficit financing, Budget, Tax structure etc.
- **Sources of Revenue for Centre**: The revenue of the Central Government consists of the following elements : 1. Tax revenue and 2. Non-tax revenue. Tax revenue comes broadly from three sources—(a) taxes on income and expenditure (b) taxes on property and capital transactions and (c) taxes on commodities and services. Non-tax revenue, consists of—(a) currency, coinage and mint—(b) interest receipts and dividends and other non-tax revenue.
- **Sources of Revenue for State** : The main sources are (a) state tax revenue, (b) share in central taxes, (c) income from social, commercial and economic service and profits of state-run enterprises. State tax revenue includes among others, land revenue, stamp, registration and estate duty etc.
- **Expenditure of the Centre** : The central government makes expenditures broadly under two heads : 1. Plan expenditure and 2. Non-plan expenditure.
- Under Plan expenditure comes outlay for agriculture, rural development, irrigation and flood control, energy, industry and minerals, transport, communications, Science and Technology, environment and economic services etc.
- The major non-plan expenditures are interest payments, defence, subsidies and general services.
- **Expenditure of State** : Like the Union Government, the State Governments too have two broad heads of expenditure : (a) Non-Development Expenditure and (b) Development Expenditure.
- Public debt of the government of India is of two kinds—Internal and External.
- **Internal debt** : It comprises loans raised from the open market, compensation bonds, prize bonds etc treasury bills issued to the RBI, commercial banks etc.
- **External debt** : It consists of loans taken from World Bank, IMF, ADB and individual countries like USA, Japan etc.
- **Deficit Financing** is a fiscal tool in the hands of the government to bridge the gap between revenue receipt and revenue expenditure.
- **Deficits**
- In a budget statement, there is a mention of four types of deficits : 1. revenue, 2. budget, 3. fiscal and 4. primary.

1. **Revenue Deficit** refers to the excess of revenue expenditure over revenue receipts. [In fact, it reflects one crucial fact : what is the government borrowing for ? As an individual if you are borrowing to play the house rent, then you are in a situation of revenue deficit, i.e. while you are borrowing and spending, you are not creating any durable asset. This implies that there will be a repayment obligation (sometime in the future) and at the same time there is no asset creation via investment.]

$$\begin{aligned}\text{Revenue Deficit} &= \text{Total Revenue Expenditure} - \text{Total Revenue Receipts} \\ &= \text{Non-plan Expenditure} + \text{Plan Expenditure} - (\text{net tax revenue} \\ &\quad + \text{non-tax revenue})\end{aligned}$$

2. **Budget Deficit** refers to the excess of total expenditure over total receipts. Here, total receipts include current revenue and net internal and external capital receipts of the government.

$$\begin{aligned}\text{Budget Deficit} &= \text{Total Expenditure} - \text{Total Receipts} \\ &= (\text{non-plan expenditure} + \text{plan expenditure}) - (\text{Revenue} \\ &\quad \text{Receipts} + \text{Capital Receipts})\end{aligned}$$

3. **Fiscal Deficit** refers to the difference between total expenditure (revenue, capital, and loans net of repayment) on one hand; and on the other hand, revenue receipts plus all those capital receipts which are not in the form of borrowings but which in the end accrue to the government.

$$\text{Fiscal Deficit} = \text{Revenue Receipts} (\text{net tax revenue} + \text{non-tax revenue}) + \text{Capital} \\ \text{Receipts} (\text{only recoveries of loans and other receipts}) - \text{Total Expenditure} (\text{plan} \\ \text{and non-plan})$$

4. **Primary Deficit** refers to fiscal deficit minus interest payments. In other words, it points to how much the government is borrowing to pay for expenses other than interest payments. Also, it underscores another key fact : how much the government is adding to future burden (in terms of repayment) on the basis of past and present policy.

$$\text{Primary Deficit} = \text{Revenue Deficit} - \text{Interest Payments}$$

$$\text{Monetised Deficit} = \text{Increment in Net RBI Credit to the Central Government.}$$

Budget

- The Budget of the Government of India, for any year, gives a complete picture of the estimated receipts and expenditures of the Government for that year on the basis of the budget figures of the two previous years.
- Every budget, for instance, gives three sets of figures : (a) actual figures for preceding year, (b) budget and revised figures for the current year and (c) budget estimates for the following year.
- The core of the budget is called the Annual financial statement. This is the main budget document. Under article 112 of the constitution, a statement of estimated receipts and expenditure of the Govt. of India has to be laid before the parliament in respect of every financial year running from April 1 to March 31 while under article 202 of the constitution a statement of estimated receipts and expenditures of the state Governments has to be laid before the house of the state legislature concerned.

- The **Annual Budget** of the Central Government provides estimates of receipts and expenditures of the Government. The Budget consists of two parts viz. 1. Revenue Budget 2. Capital Budget.
- **Revenue Budget** : All 'current' 'receipts' such as taxation, surplus of Public enterprises, and 'expenditures' of the Government.
- **Capital Budget** : All 'Capital' 'receipts' and 'expenditure' such as domestic and foreign loans, loan repayments, foreign aid etc.
- **Finance Bill** is ordinarily introduced every year to give effect to the financial proposals of the Government for the following financial year.

12. Banking in India

- The Reserve Bank of India was established on 1st April, 1935 and it was nationalized on 1st January, 1949.
- The Finance Ministry issues Currency Notes and Coins of rupee one, all other Currency Notes are issued by the Reserve Bank of India.
- The first bank of limited liability managed by Indians was Oudh Commercial Bank founded in 1881. Subsequently, Punjab National Bank was established in 1894.
- Swadeshi movement, which began in 1906, encouraged the formation of a number of commercial banks.
- The Banking Companies Act was passed in February, 1949, which was subsequently amended to read as Banking Regulation Act, 1949.
- Commercial banks mobilise savings in urban areas and make them available to large and small industrial and trading units mainly for working capital requirements.
- The Indian banking system consists of commercial banks, both in public and private sector, Regional Rural Banks (RRBs) and cooperative banks.
- As on June 30, 2009, Commercial Banking system in India consisted of 171 scheduled commercial banks out of which 113 were in public sector, including 86 RRBs. The remaining 27 banks, other than RRBs, in the public sector, consisted of 19 nationalized banks, 7 banks in SBI group and IDBI Bank Limited. Public sector banks (excluding RRBs) accounted for about 76.6% of the deposits of all scheduled commercial banks. Commercial banks are broadly classified into nationalised or public sector banks and private sector banks, with a few foreign banks. The public sector banks account for more than 92% of the entire banking business in India occupying

MUDRA Bank

MUDRA stands for Micro Units Development Refinance.

MUDRA Bank has been set up through a statutory enactment. It is responsible for development and refinancing through Pradhan Mantri MUDRA Yojana.

It will partner with local coordinators and provide finance to 'Last Mile Financiers' of micro businesses.

It has been targeted towards mainstreaming young, educated or skilled workers and entrepreneurs including women entrepreneurs.

This bank will nurture small businesses through different stages of growth and development of businesses termed as Shishu (when the business is just starting), Loan cover in this stage will be upto ₹ 50,000), Kishor (Loan cover ranging from ₹ 50,000 to ₹ 5 lakh) and Tarun (Loan cover upto 10 lakh).

Launched on 8 April, 2015 by the Prime Minister, the MUDRA Bank was proposed in Budget 2015-16 with an initial corpus of ₹ 20,000 crore and a credit guarantee fund of ₹ 3,000 crore.

- a dominant position in the commercial banking. The State Bank of India and its 7 associate banks along with another 19 banks are the public sector banks. Oudh Commercial Bank was the **first complete Commercial Bank of India**.
- The Imperial Bank was established in the year 1921 by merging three main Presidency Banks.
- The largest bank-Imperial Bank was nationalised in 1955 on recommendation of Gorewala Committee and rechristened as State Bank of India.
- In 1959, 7 regional banks were nationalised and given the status of Associate Banks of State Bank of India.
- On 19th July, 1969, 14 big commercial banks with deposits worth Rs. 50 crores or more and on 15th April, 1980, six other scheduled banks were nationalised, bringing total number of nationalised banks to 27 (19 + SBI + 7 SBI Associates).
- Before the merger of New Bank of India in Punjab National Bank (in 1993) the total number of nationalised banks was 28 (8 SBI and Associates + 14 + 6).

★ After the merger of 'State Bank of Saurashtra' and 'State Bank of Indore' in the State Bank of India, the number of Associates of SBI has come to 6.

Lead Bank Scheme

- After the nationalisation of 14 banks the Lead Bank Scheme of the RBI was adopted in 1969 for branch expansion programme of banks.
- Under the scheme, all the nationalised banks and private banks were allotted specific districts where they were asked to take the lead in surveying the scope of banking development particularly expansion of credit facilities.

Banking Reforms

- On the recommendation of Narsimham Committee, a number of steps taken to improve functioning of banking sector. SLR and CRR were reduced.
- Banks were given freedom to open new branches. Rapid computerisation of banks was undertaken.
- Banking 'Ombudsmen Scheme' started functioning to expedite inexpensive resolution of customer's complaints.

Scheduled and Non-scheduled Banks

- The scheduled banks are those which are entered in the second schedule of the RBI Act, 1934. These banks have a paid-up capital and reserves of an aggregate value of not less than Rs. 5 lakhs and satisfy the RBI that their affairs are carried out in the interest of their depositors.
- All commercial banks (Indian and foreign), regional rural banks and state co-operative banks are scheduled banks. Non-scheduled banks are those which are not included in the second schedule of the RBI Act 1934. At present there is only one such bank in the country.

Regional Rural Banks

- The Regional Rural Banks (RRBs), the newest form of banks, have come into existence since middle of 1970s (sponsored by individual nationalised commercial banks) with the objective of developing rural economy by providing credit and deposit facilities for agriculture and other productive activities of all kinds in rural areas.

- The emphasis is on providing such facilities to small and marginal farmers, agricultural labourers, rural artisans and other small entrepreneurs in rural areas. The number of branches of RRBs (in 635 districts) is 18,299 (as on 31.12.2013).
- First Regional Rural Bank was established on 2nd October, 1975.

Co-operative Banks

- Co-operative banks are so called because they are organised under the provisions of the Co-operative Credit Societies law of the states. The major beneficiary of the Co-operative Banking is the agricultural sector in particular and the rural sector in general. The first such bank was established in 1904.
- The Co-operative credit institutions operating in the country are mainly of two kinds : agricultural (dominant) and non-agricultural.
- At the apex is the State Co-operative Bank (SCB) (co-operation being a state subject in India), at the intermediate (district) level are the Central Co-operative Banks (CCBs), and at the village level are Primary Agricultural Credit Societies (PACs); Long-term agricultural credit is provided by the Land Development Banks.
- In the year 1991, Narsimham Committee was constituted to advise on the issue of reconstruction of banking system.

Bharatiya Mahila Bank

With a purpose to promote gender equality and economic empowerment of women, Government of India has set up India's first Women's Bank—'Bhartiya Mahila Bank Limited'. Bharatiya Mahila Bank Ltd is incorporated under the Companies Act 1956 on 5 August, 2013, the Bank received the certificate of commencement of Business on 22 August, 2013 and the Banking License from RBI on 25 September, 2013. The Bank's Corporate Office is at the IFCI towers, 9th floor, Nehru Place, New Delhi.

Launched on 19th November, 2013, the Bank has carved a niche for itself as a pan India Bank with 60 branches across the country.

The Bank has designed many women centric products keeping in mind the core strengths of women so as to enable them to unleash their hidden potentials, engage in economic activities and contribute to the economic growth of the country. Most of the products are offered with a concession in the rate of interest for women customers.

Mrs. Usha Ananthasubramanian is the first Chairman and Managing Director of the Bank and S. M. Swathi is the first Executive Director of Bank.

The Bank has been allocated with an initial capital of Rs. 1,000 Crores.

Development Banks

- Industrial Development Bank of India (IDBI), established in 1964. Main functions : Providing finance to large and medium scale industrial units.
- Industrial Finance Corporation of India (IFCI), established in 1948. Main functions : (a) Project finance (b) Promotional services.
- Industrial Credit and Investment Corporation of India Limited (ICICI), established in 1991. Main functions : Providing term loans in Indian and foreign currencies; Underwriting of issues of shares and debentures.
- Small Industries Development Bank of India (SIDBI), established in 1989. Main functions : Providing assistance to small scale industries through state finance corporations, state industrial development corporations, commercial banks etc.

- EXIM BANK (Export Import Bank of India) was established in 1982.

Main functions : Coordinating the working of institutions engaged in financing export and import trade, Financing exports and imports. Networth of the Bank (as on 31.03.2014) was ₹ 8,310 crore.

- National Housing Bank (NHB) started operations in 1988.

Main functions : Development of housing finance in the country.

- NABARD (National Bank for Agriculture and Rural Development) was established in 1982. The paid-up capital of NABARD stood at Rs. 2,000 crore as on 31 March, 2010.

Main functions : To serve as an apex refinancing agency for institutions engaged in providing agricultural finance to develop credit delivery system to coordinate rural financing activities.

Insurance

- The basic concept of insurance is of spreading the loss of a few over many. Insurance industry includes two sectors—Life Insurance and General Insurance. Life Insurance in India was introduced by Britishers. A British firm in 1818 established the Oriental Life Insurance Company at Calcutta, now Kolkata.
- Life Insurance Corporation (LIC) of India was established in September, 1956. General Insurance Corporation (GIC) was established in November, 1972.
- Indian Insurance sector has low penetration particularly in rural areas. It also has low turnover and profitability despite high premium rate. The committee on Insurance Sector Reforms was set-up in 1993 under the chairmanship of R.N. Malhotra which submitted its report in 1994.
- The insurance sector was opened up for private participation with the enactment of the Insurance Regulatory and Development Authority Act, 1999 (IRDA). The headquarter of IRDA is at Hyderabad.
- The Life Insurance Corporation has its Central Office in Mumbai, 8 Zonal Offices at Mumbai, Kolkata, Delhi, Chennai, Hyderabad, Kanpur, Bhopal and Patna, 113 Divisional Offices, 73 Customer Zones, 2048 Branch Offices and 1346 Satellite Offices as on 31 March, 2014, spreads the message of Insurance the length and breadth of India.
- At present LIC is operating internationally through Branch Offices in Fiji, Mauritius and U.K. and through Joint Venture Companies in Bahrain, Nepal, Sri Lanka, Kenya and Saudi Arabia. A wholly owned subsidiary, LIC (Singapore) established in April 2012.

Important Banking Terminology:

1. **Bank Rate :** Bank Rate is the rate at which central bank of the country (e.g. RBI in India) allows finance to commercial banks. Bank Rate is a tool, which central bank uses for short-term purposes. Any upward revision in Bank Rate by central bank is an indication that banks should also increase deposit rates as well as Base Rate/Benchmark Prime Lending Rate. Thus any revision in the Bank rate indicates that it is likely that interest rates on customer's deposits are likely to either go up or go down, and it can also indicate an increase or decrease in customer's EMI.

2. **Basis points**: It is the increase in interest rates in percentage terms. For instance, if the interest rate increases by 50 basis points (bsp), then it means that interest rate has been increased by 0.50%. One percentage point is broken down into 100 basis points. Therefore, an increase from 2 to 3% is an increase of one percentage point or 100 basis points.
3. **CRR (Cash Reserve Ratio)**: CRR is the amount of funds that the banks have to keep with RBI. If RBI increases CRR, the available amount with the banks comes down. RBI is using this method (increase of CRR), to drain out the excessive money from the banks.
4. **SLR (Statutory Liquidity Ratio)**: SLR is the amount a commercial banks needs to maintain in the form of cash, or gold, or govt. approved securities (Bonds) before providing credit to its customers. SLR rate is determined and maintained by RBI in order to control the expansion of the bank credit. **Need of SLR**: With the SLR, the RBI can ensure the solvency of a commercial banks. **SLR**: SLR is used to control inflation and propel growth. Through SLR rate the money supply in the system can be controlled effectively.
5. **Repo Rate**: Repo rate is the rate at which commercial banks borrows rupees from RBI. A reduction in the repo rate will help banks to get money at cheaper rate. When the repo rate increases borrowing from RBI becomes more expensive.
6. **Reverse Repo Rate**: Reverse Repo rate is the rate at which RBI borrows money from commercial banks. Banks are always happy to lend money to RBI since their money is in the safe hands with a good interest. An increase in reverse repo rate can cause the banks to transfer more funds to RBI due to this attractive interest rates. Reverse Repo Rate is **always 1 percent less** than the Repo Rate.
7. **NEFT (National Electronic Fund Transfer)**: NEFT enables funds transfer from one bank to another but works a bit differently than RTGS. NEFT is slower than RTGS. The transfer is not direct and RBI acts as the service provider to transfer the money from one account to another. You can transfer any amount through NEFT, even a rupee.
8. **RTGS (Real Time Gross Settlement)**: RTGS system is funds transfer system where transfer of money or securities takes place from one bank to another on a 'real time' and on 'gross' basis. Settlement in 'real time' means payment transaction is not subjected to any waiting period. The transactions are settled as soon as they are processed. **Minimum & Maximum Limit of RTGS**: 2 lakh and no upper limit.
9. **Liquidity Adjustment Facility (LAF)**: is a monetary policy tool which allows banks to borrow money through repurchase agreements. LAF is used to aid banks in adjusting the day to day mismatches in liquidity. LAF consists of repo and reverse repo operations.
10. **Marginal Standing Facility (MSF)**: MSF rate is the rate at which banks borrow funds overnight from the Reserve Bank of India (RBI) against approved government securities. **MSF is always 1 percent more than the Repo Rate**.
11. **NOSTRO Account**: A Nostro account is maintained by an Indian Bank in the foreign countries.
12. **VOSTRO Account**: A Vostro account is maintained by a foreign bank in India with their corresponding bank.

13. **CRAR(Capital to Risk Weighted Assets Ratio)**: Capital to risk weighted assets ratio is arrived at by dividing the capital of the bank with aggregated risk weighted assets for credit risk, market risk and operational risk.
 14. **SDR (Special Drawing Rights)**: SDR are new form of International reserve assets, created by the International Monetary Fund in 1967. The value of SDR is based on the portfolio of widely used currencies and they are maintained as accounting entries and not as hard currency or physical assets like Gold.
 15. **BOND**: Publicly traded long term debt securities issued by corporations and governments, whereby the issuer agrees to pay a fixed amount of interest over a specified period of time and to repay a fixed amount of principal maturity.
 16. **Non Performing Assets (NPA)**: An asset (loan), including a leased asset, becomes non performing when it stops generating income for the bank.
- Note** : Once the borrower has failed to make interest or principle payments for 90 days the loan is considered to be a non-performing asset.

13. Tax System

- A compulsory contribution given by a citizen or organisation to the Government is called Tax, which is used for meeting expenses on welfare work.
- Tax imposing and Tax collecting is at three levels in India—Central level, State level and Local level.
- The distribution of tax between Centre and State has been clearly mentioned in the provisions of Indian Constitution. For rationalising it from time to time, Finance Commission has been constituted.
- The tax system has been divided into two parts :
 - Tax by Central Government**: Custom Duty, Income Tax and Corporate Tax etc.
 - Tax by State Government** : The state government has right to collect all the taxes in this category and to spend them.
- There are two types of taxes : 1. Direct Taxes 2. Indirect Taxes :
 - ★ **Direct Taxes** : The taxes levied by the central government on incomes and wealth are important direct taxes. The important taxes levied on incomes are—corporation tax and income tax. Taxes levied on wealth are wealth tax, gift tax etc.
 - ★ **Indirect Taxes** : This type of tax is not paid by someone to the authorities and it is actually passed on to the other in the form of increased cost. They are levied on goods and services produced or purchased. **Excise Tax, Sales Tax, Vat, Entertainment Tax** are indirect taxes. The main forms of indirect taxes are customs and excise duties and sales tax. The central government is empowered to levy customs and excise duties (except on alcoholic liquors and narcotics) whereas sales tax is the exclusive jurisdiction of the state governments.
- However, the union excise duties form the most significant part of central taxes. The major tax revenue sources for states are their shares in union excise duties and income tax, commercial taxes, land revenue, stamp duty, registration fees, state excise duties on alcohol and narcotics etc. Sales tax forms the most important component of commercial taxes.

Total Tax – GDP ratio

17.87% in 2013-14 (EB)

17.22% in 2012-13 (RE)

16.29% in 2011-12

[Source : IPFS 2013-14]

- **Progressive Tax**: A tax that takes away a higher proportion of one's income as the income rises is known as progressive tax. Indian Income Tax is a progressive and direct tax.
- **R. Chelliah Committee** was constituted in August, 1991 for suggesting reforms in Tax Structure.
- **Chelliah Committee** recommended Income Tax for agricultural income of more than Rs. 25,000 p.a. Chelliah Committee also recommended for lowering down the tax rates and reducing the tax slabs.
- **K.L. Rekhi Committee** was constituted in 1992 for suggesting uniform regulations for indirect taxation (Custom Duty and Excise Duty).

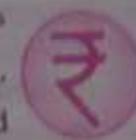
Finance Commission

- Finance Commission is constituted by the President under Art 280 of the constitution. Since Independence, 12 Finance Commissions have submitted their reports.
- 1st Finance Commission was constituted under chairmanship of K. C. Neogi while 12th Finance Commission was constituted under chairmanship of Dr. C. Rangarajan. The recommendations of 12th Finance Commission cover period 1st April, 2005 to 31st March, 2010.
- 13th Finance Commission, for the period 2010-2015, had been constituted in November, 2007 with Dr. Vijay L. Kelkar as the Chairman.
- The 14th Finance Commission, for the period 2015-2020, has been constituted on January 2, 2013 with Y. V. Reddy as the Chairman.

Important Taxes Imposed in India

- **Tax on Income and Wealth**: The central government imposes different types of tax on income and wealth, viz. income tax, corporate tax, wealth tax and gift tax. Out of them income tax and corporate tax are more important from the revenue point of view.
- **Personal Income Tax**: Personal income tax is generally imposed on an individual combined Hindu families and total income of people of any other communities.
- In addition to tax, separate surcharges are also imposed some times.
- Agricultural income in India is free from income tax.
- **Corporate Tax**: Corporate Tax is imposed on Registered Companies and Corporations.
- The rate of corporate tax on all companies is equal. However, various types of rebates and exemptions have been provided.
- **Custom Duties**: As per the Constitutional provisions, the central government imposes import duty and export duty both. Import and Export duties are not only sources of income but with the help of it the central government regulates the foreign trade.
- **Import Duties**: Generally import duties are ad-velorem in India. It means import duties are imposed on the taxable item on percentage basis.
- **Export Duties**: Export Duties are more important, compared to Import Duties in terms of revenue and regulation of foreign trade.
- **Excise Duties**: Excise duties are commodity tax as it is imposed on production of an item and it has no relevance with its sale. This is the largest source of revenue for the Central Government.

- Except liquor, opium and other drugs, production of all the other items is taxable under Central Excise Duties.
- On July 15, 2010 Indian rupee got its symbol, just like other leading currencies of the world viz. Dollar, Euro, Pound Sterling and Yen.
- The new symbol is an amalgamation of Devanagari 'Ra' and the Roman 'R' without the stem. Till now the rupee was written in various abbreviated forms in different languages.
- On March 5, 2009 the Government announced a contest to create a symbol for the Rupee.
- Over 3,000 entries received only 5 entries had been selected by the jury, headed by the Deputy Governor of R.B.I.
- The new symbol designed by D. Udaya Kumar, a post-graduate of IIT Bombay, was finally selected by the Union Cabinet on July 15, 2010.
- Though the symbol '₹' will not be printed or embossed on currency notes or coins, it would be included in the 'Unicode Standard' and major scripts of the world to ensure that it is easily displayed and printed in the electronic and print media.
- One Coin and One Rupee note belong to 'Legal Tender Money' category.
- M₁ is known as Narrow Money.
- M₃ is known as Broad Money.



Types of Tax

Direct Tax	Income Tax, Property Tax, Gift Tax etc.
Indirect Tax	Sales Tax, Excise Duty, Custom Duty etc.
Taxes imposed by the Central Government	Income Tax, Corporate Tax, Property Tax, Succession Tax, Wealth Tax, Gift Tax, Custom Duty, Tax on agricultural wealth etc.
Taxes imposed by the State Government	Land revenue tax, Agricultural income tax, Agricultural Land Revenue, State Excise Duty, Entertainment Tax, Stamp duty, Road Tax, Motor Vehicle Tax etc.

Some Financial institutions and their year of establishment

1. Industrial Credit and Investment Corporation of India	Jan., 1955
2. Industrial Finance Corporation of India	1948
3. Unit Trust of India (Head Office—Mumbai)	1 Feb., 1964
4. National Bank for Agricultural and Rural Development (NABARD)	12 July, 1982
5. Industrial Reconstruction Bank of India	20 March, 1985
6. Small Scale Industries Development Bank of India (SIDBI) (Head Office—Lucknow)	1990
7. Export-Import Bank of India (EXIM Bank)	1 Jan., 1982
8. Regional Rural Bank (RRB) (Head Office—Kolkata)	2 October, 1975
9. Life Insurance Corporation of India (LIC) (Head Office—Mumbai)	Sept., 1956

14. Industry

- India started her quest for industrial development after independence in 1947.
- The Industrial Policy Resolution of 1948 marked the beginning of the evolution of the Indian Industrial Policy.
- In the Industrial Policy of 1948, the importance of both public sector and private sector was accepted. However, the responsibility of development of basic industries was handed over to Public Sector.

- The Industrial Policy Resolution of 1956 gave the public sector strategic role in the economy.
- Earmarking the pre-eminent position of the public sector, it envisaged private sector co-existing with the state and thus attempted to give the policy framework flexibility.
- The main objective of the Industrial Policy of 1956 was to develop public sector, co-operative sector and control on private monopoly.
- There were four categories of industries in the Industrial Policy of 1948 which was reduced to three in the Industrial Policy of 1956.
- In 1973, Joint Sector was constituted on the recommendations of Dutta Committee.
- The Industrial Policy of 1980 was influenced by the concept of federalism and the policy of giving concession to agriculture based industries was implemented through it.
- Various liberalised steps to be taken were declared at comprehensive level, in the Industrial Policy declared on 24th July, 1991.
- Privatisation and liberalisation are the main thrust areas in the New Industrial Policy.

New Industrial Policy, 1991

This new policy deregulates the industrial economy in a substantial manner. The Major Features of NIP, 1991 are :

- **Abolition of industrial licensing:** In a major move to liberalise the economy, the new industrial policy abolished all industrial licensing, irrespective of the level of investment, except for certain industries related to security and strategic concerns, social reasons, concerns related to safety and over-riding environmental issues, manufacture of products of hazardous nature and articles of elitist consumption.
- **Entry of foreign investment and technology made easier:** For the promotion of exports of Indian products in world markets, the government would encourage foreign trading companies to assist Indian exporters in export activities. Approval would be given for direct foreign investment up to 51% foreign equity in high priority industries.
- **Public sector's role diluted:** The new industrial policy has removed all these (the number of industries reserved for the public sector since 1956 was 17) industries from the Reserved List. Industries that continue to be reserved for the public sector are in areas where security and strategic concerns predominate. These areas are 1. arms and ammunition and allied items of defence equipment, defence aircraft and warships, 2. atomic energy, 3. mineral oils and minerals specified in the schedule to the atomic energy, (control of production and use) order, 1953, 4. railways.
- **MRTP Act:** Under the MRTP Act, all firms with assets above a certain size (Rs. 100 crore since 1985) were classified as MRTP firms. Such firms were permitted to enter selected industries only and this also on a case-by-case approval basis. The new industrial policy scrapped the threshold limit of assets in respect of 'MRTP' and dominant undertakings.
- In 2002, a competition Act was passed, which has replaced the MRTP Act. In place of the MRTP Commission, the Competition Commission has started functioning.

Liberalisation of Industrial location policy : The new Industrial policy provides that in locations other than cities of more than one million population, there will be no requirement of obtaining industrial approvals from the centre, except for industries subject to compulsory licensing. In cities with a population of more than one million, industries other than those of a non-polluting nature will be located outside 25 kms. of the periphery.

Abolition of Phased Manufacturing Programmes for new projects : To force the pace of indigenisation in manufacturing, Phased Manufacturing Programmes have been in force in a number of engineering and electronic industries.

Mandatory convertibility clause removed : A large part of industrial investment in India is financed by loans from banks and financial institutions. These institutions have followed a mandatory practice of including a convertibility clause in their lending operations for new projects. This has provided them an option of converting part of their loans into equity, if felt necessary by their management. This has often been interpreted as an unwarranted threat to private firms of takeover by financial institutions. This mandatory convertibility clause put forward by the financial institutions has been abolished by the new industrial policy.

➤ In the Union Budget of 1997-98, nine public sector undertakings, which performed very well were given the name of 'Navratna' and were made autonomous. These 'Navratnas' included :

Steel Authority of India Limited (SAIL)	Bharat Electronics Limited (BEL)
Indian Oil Corporation, IOC (Sept. 1964)	Hindustan Aeronautics Limited (HAL)
Bharat Petroleum Corporation Limited, BPCL (Aug. 1, 1977)	Oil and Natural Gas Corporation, ONGC (Estd. Aug. 14, 1956)
Hindustan Petroleum Corporation Limited, HPCL (Estd. July 15, 1974)	National Thermal Power Corporation (NTPC)
Bharat Heavy Electricals Limited (BHEL)	

Some more PSUs viz. GAIL (Aug., 1984), MTNL, NMDC, PFC, PGCIL, REC, NALCO, SCI and CIL were included in this list later.

- **Navratna** Public sector enterprises have been given enhanced autonomy and delegation of powers to incur capital expenditure (without any monetary ceiling), to enter into technology joint ventures, to raise capital from domestic and international market, to establish financial joint ventures and to wholly own subsidiary.
- PSUs were further categorised as 'Maharatna', 'Navratna' and 'Miniratna' CPSEs.

List of Maharatna CPSEs (as on 26 October, 2014)

1. NTPC Limited
2. Coal India Limited (CIL)
3. GAIL (India) Limited
4. Indian Oil Corporation Limited (IOC)
5. Bharat Heavy Electricals Limited (BHEL)
6. Oil & Natural Gas Corporation Limited (ONGC)
7. Steel Authority of India Limited (SAIL)

List of Navratna CPSEs (as on 26 October, 2014)

1. Bharat Electronics Limited
2. NMDC Limited
3. Oil India Limited
4. Engineers India Limited
5. Hindustan Aeronautics Limited (HAL)
6. Hindustan Petroleum Corporation Limited (HPCL)
7. Mahanagar Telephone Nigam Limited
8. National Aluminium Company Limited
9. Rashtriya Ispat Nigam Limited
10. Bharat Petroleum Corporation Limited
11. Container Corporation of India Limited
12. Neyveli Lignite Corporation Limited
13. Power Finance Corporation Limited
14. Power Grid Corporation Limited
15. National Buildings Construction Corporation Limited
16. Rural Electrification Corporation Limited
17. Shipping Corporation of India Limited

Public Sector

- > In terms of ownership Public Sector Enterprise (PSE) comprises all undertakings that are owned by the government, or the public, whereas private sector comprises enterprises that are owned by private persons.
- > **The main Objectives of Public Sector are :**
 - ★ To promote rapid economic development through creation and expansion of infrastructure;
 - ★ To generate financial resources for development;
 - ★ To promote redistribution of income and wealth;
 - ★ To create employment opportunities;
 - ★ To encourage the development of small scale and ancillary industries;
 - ★ To promote exports on the new side and import substitution on the other and
 - ★ To promote balanced regional development.

Disinvestment and Privatisation

- > There is a difference between privatisation and disinvestment. Privatisation implies a change in ownership resulting in a change in management. Disinvestment is a wider term extending from dilution for the stake of the government to the transfer of ownership (when govt. stake reduced beyond 51%).
- > The Government of India constituted the **Disinvestment Commission** with Mr. G.V. Ramakrishna as the chairman in August, 1996 to advise it on disinvestment programme of public sector enterprises. It has suggested classification of PSE in to core and non core. In core sector maximum of 49% disinvestment would be allowed while in non core disinvestment would be upto 74%. PSEs shares will given to small investors and employees to ensure wide dispersal of shares thus introduce mass ownership and workers shareholding. It has also suggested greater autonomy to PSEs.
- > To minimize the financial burden on the Public Sector Enterprises the Government has started Voluntary Retirement Scheme (VRS) for the employees by giving full compensation to employees. This is called '**Golden Hand Shake Scheme**'.
- > Privatisation refers to a general process of involving the private sector in the ownership, or operation of a state owned enterprise. Thus it refers to private purchase of all or part of a company.

Disinvestment (2013-14)

As against the budgeted target of ₹ 40,000 crore in 2013-14, actual disinvestment receipts were ₹ 15,819 crore.

[Source: INDIA 2015]

Small Scale Industries

Small scale and cottage industries have an important role to play in a labour surplus developing economy like India. Their importance can be explained as

1. **Employment Generation**: Large scale industries are generally capital intensive. Small scale industries, on the other hand, are generally labour intensive and have a substantially higher employment potential.
2. **Equitable Distribution** : The ownership of SSIs is more wide spread inter of both individuals as well as areas. Thus, these ensure equitable distribution of income individually and regionally.
3. **Mobilisation of Small Savings** : S.S.I.s. can be run with the help of small capital. Thus, they facilitate mobilisation of small savings.
4. **Export Contribution** : The share of small industries in the total export has increased over the years. It contributes 35% of total exports.
5. **Environment Friendly** : As these are dispersed far away from urban centres they do not pollute urban environment.

However, Small Scale Industries are suffering from a number of problems like

- (a) Lack of timely, adequate and easy finance,
- (b) Lack of availability of raw material,
- (c) Lack of sound marketing system,
- (d) Competition with large scale sector.

- > **Sick Industries** : A sick unit is one which is in existence for at least five years and had found at the end of accounting year that it had fully eroded its net worth. 30,000 units fall sick every year. A weak unit is one which erode 15% or more of its net worth.

Textiles Industries

- > Textile industry is the largest industry in the country. The share of Textile and Clothing industry in total industrial production is about 14%. It also contributes 13.14% in total merchandise exports of the country.
- > Indian Textiles Industry contributes about 14% to industrial production, 4% to GDP and 11% to the country's exports earnings.
- > The textile sector is the **second largest provider of employment** after agriculture.
- > This industry provides employment to about 350 lakh people in the country.
- > There are 112 cotton mills in Gujarat. In Ahmedabad alone, there are 66 mills. It is known as Boston of East. In Maharashtra there are 104 mills out of which 54 alone are in Mumbai. Mumbai is called cottonopolis. In Kanpur there are 10 cotton mills and this city is called Manchester of North India.
- > The first cycle making factory of India was established in Calcutta in 1932. India holds second place in the field of cycles production in the world. About 90 lakh cycles are produced annually in India.
- > Small and Cottage industries were given high priority in the Industrial Policy of 1977. District Industry Centres were established in 1977.
- > With the aim to provide finance, **Small Industries Development Bank of India (SIDBI)** was established in 1990.
- > **Abid Husain Committee** is related to reforms in small industries.
- > The industries in which maximum Rs.1 crore is invested are called Small industries.

- > Industrial Finance Corporation of India (IFCI) was established on 1st July, 1948 by a special Act of Parliament.
- > The main aim of IFCI was to make available long term and mid term credit to the Industries of private and public sectors.
- > Industrial Credit and Investment Corporation of India (ICICI) was established in 1955 under the Indian Companies Act.
- > The function of ICICI is to support the establishment, development and modernization of industries in the private sector.
- > Industrial Development Bank of India (IDBI), established on 1st July, 1964, is an apex institution in the field of industrial finance.
- > Industrial Reconstruction Board of India (IRBI) was established in 1971 with the aim to reconstruct the sick industrial units.
- > Unit Trust of India (UTI), established in 1964, collects small savings of people through sale of units and invests them into sureties.
- > Life Insurance Company now Life Insurance Corporation of India or (LIC) was established in September 1956.
- > The head office of Life Insurance Corporation of India is in Mumbai. Presently it has 7 zonal offices and 100 regional offices.
- > General Insurance Company of India (GIC) was established in 1972.
- > Indian Industrial Investment Bank Limited was established on 17th March, 1997 by the government, under Companies Act 1956. Presently, its authorized capital is 1000 crore rupees and its head office is in Kolkata.

Industrial Growth

- > The industrial sector showed a swift recovery from the global slowdown by registering growth rates of 5.3% and 8.2% respectively in 2009-10 and 2010-11.
- > The industrial growth started decelerating from 2011-12. The IIP showed growth of 2.9% during 2011-12 and only 1.1% in 2012-13.
- > In 2013-14, it further slowed down to (-) 0.1%.
- > The slowdown in industrial growth was mainly on account of negative growth recorded in mining sector (-0.6%) and in the manufacturing sector (-0.8%).

Current Industrial Production

- > The growth rate of Industrial Production, as per the Quick Estimates of Index of Industrial Production (IIP) with base year 2004-05, indicates a modest turn around, which is also evident from the GDP estimate for growth of industry for the First Quarter of 2014-15 by 4.2%.
- > India is the second largest manufacturer of cement in the world. Cement industry is one of the most advanced industries in the country.
- > At present there are 190 large cement plants with an installed capacity of 324.50 million tonnes and more than 360 mini cement plants with an estimated capacity of 11.10 million tonnes per annum.
- > India is the second largest manufacturer of cement, after China, in the world.
- > Automobile Industry was delicensed in July, 1991 with the announcement of the New Industrial Policy.

- > The passenger car was however delicensed in 1993.
- > At present 100% Foreign Direct Investment (FDI) is permissible under automatic route in this sector including passenger car segment.
- > The industry also offers substantial scope of employment with 4.5 lakh direct employment and about one crore indirect employment.

Steel

- > Iron and steel Industry took birth in India in the year 1870 when Bengal Iron Woks Company established its plant at Kulti, West Bengal.
- > Large scale iron and steel production was started in 1907 by TISCO, established at Jamshedpur (Jharkhand).
- > As per the data from International Iron and Steel Institute (IISI) India is the 7th largest producer of steel in the world.
- > At present India is the 9th largest Crude Steel producing country in the world.
- > Today, India is the largest producer of sponge iron in the world.

Small Enterprises Sector

- > The employment provided by the sector is estimated to be over 280 lakh persons at present.
- > In recognition of this role, the SE sector had been assigned targets of 12% annual growth in production and creation of 44 lakh additional employment opportunities in the Tenth Five Year Plan.

Micro, Small and Medium Enterprise Development Act, 2006

- > Small and Medium Enterprised Development Bill, 2005 (which was introduced in the Parliament on May 12, 2005) has been approved by the President and thus became an Act.
- > This new Act, named as 'Small and Medium Enterprise Development Act, 2006' has become effective from October 2, 2006.
- > This Act makes a different category for medium level enterprises.
- > This Act provides the first-ever legal frame work for recognition of the concept of 'enterprise' (comprising both manufacturing and services) and integrating the three tiers of these enterprises, viz., micro, small and medium.

15. Foreign Trade

- > Before independence, the foreign trade of India was being operated on the principles of colonialism. But after independence, there have been huge changes in its state and direction.
- > After independence, inward looking foreign trade policies were accepted and the policy of import replacement was its base.
- > Efforts were made for trade liberalisation during the decade of 1980 and the comprehensive policy of liberalisation and globalisation was made in the decade of 1990s (after the year 1991).

Volume of India's Foreign Trade

- > After independence, Indian foreign trade has made cumulative progress both qualitatively and quantitatively. Though the size of foreign trade and its value both have increased during post-independence era, this increase in foreign

trade cannot be said satisfactory because Indian share in total foreign trade of the world has remained remarkable low.

- > In 1950, the Indian share in the total world trade was 1.78%, which came down to 0.6% in 1995. According to the Economic Survey 2001-02 this share percentage of 0.6% continued in years 1997 and 1998. Since 1970, this share has remained around 0.6% which clearly indicates that India has failed to increase its share in the total world trade.
- > India's total external trade (exports + imports including re-exports) in the year 2013-14 reached a level of Rs. 18,94,181 crore registering a growth of 15.9%.

S. No.	Country	Major Trading Partners of India Contribution (in %) in total trade (Imp/Exp)	
		2011-12	2012-13 (Apr-Sep)
1.	China	9.52	8.95
2.	UAE	9.03	9.74
3.	America	7.46	8.23
4.	Saudi Arabia	4.63	5.43
5.	Switzerland	4.22	3.50
6.	Singapore	3.21	2.53
7.	Germany	3.50	2.75
8.	Hong-Kong	2.97	2.53
9.	Indonesia	2.68	2.50
10.	Iraq	2.48	2.73
11.	Japan	2.32	2.29
12.	Belgium	2.22	1.91
13.	Kuwait	2.21	2.38
14.	Korea	2.20	2.30
15.	Nigeria	2.19	2.14

Source : ES 2012-13

Composition of India's Foreign Trade

- > Imports have been classified into Bulk imports and Non-bulk imports.
- > Bulk imports are further sub-divided into Petroleum, Oil and Lubricants (POL) and non-POL items such as consumption goods, fertilizers and iron and steel.
- > Non-bulk items comprise capital goods (which include electrical and non-electrical machinery), pearls, precious and semiprecious stones and other items.
- > The structural changes in imports since 1951 show : (a) rapid growth of industrialisation necessitating increasing imports of capital goods and raw materials; (b) growing imports of raw materials on the basis of liberalisation of imports for export promotion; and (c) declining imports of food grains and consumer goods due to the country becoming self-sufficient in food grains and other consumer goods through agricultural and industrial growth.
- > Exports of India are broadly classified into four categories : 1. Agriculture and allied products which include coffee, tea, oil cakes, tobacco, cashew kernels, spices, sugar, raw cotton, rice, fish and fish preparations, meat and meat preparations, vegetable oils, fruits, vegetables and pulses; 2. Ores and minerals which include manganese ore, mica and iron ore; 3. Manufactured goods which include textiles and ready made garments, jute manufactures, leather and footwear handicrafts including pearls and precious stones, chemicals, engineering goods and iron steel and 4. Mineral fuels and lubricants.
- > Exports of India over the years show a clear decline in the importance of agriculture and allied products and a substantial increase in the importance of manufactured goods. This has been due to changing production structure of the economy and the overall growth of the economy.

India's Foreign Trade Partners : Top 10 countries (2014-15)

Rank	Country	Export	Import	Total Trade	Trade Balance
1	China PRP	11,935.54	60,409.76	72,345.30	-48,474.22
2	USA	42,449.21	21,817.53	64,266.74	20,631.67
3	UAE	33,034.10	26,008.43	59,042.53	7,025.67
4	Saudi Arabia	11,167.18	28,242.01	39,409.20	-17,074.83
5	Switzerland	1,068.57	22,133.16	23,201.73	-21,064.60
6	Germany	7,536.91	12,788.96	20,325.87	-5,252.05
7	Hong Kong	13,602.62	5,571.99	19,174.61	8,030.63
8	Indonesia	4,043.30	14,995.58	19,038.88	-10,952.28
9	Korea RP	4,603.01	13,528.51	18,131.52	-8,925.50
10	Singapore	9,999.53	7,124.20	17,123.74	2,875.33

Direction of Foreign Trade

- > India is having maximum trade with OECD countries (mainly the USA, EU and Japan).
- > The direction of Indian trade registered a change during recent past years. Indian trade has been partially shifted from West Europe to East Asia and OECD countries.
- > The high growth rate in Japan and ASEAN countries gave a high demand and favourable market to Indian exports. This has been one of the major reasons responsible for increasing Indian exports to East Asian region of the world.

Foreign Trade Policy (2015-2020)

- > In the Foreign Trade Policy (FTP) for the year 2015-20 announced on 1st April, 2015, the Government spelt out a vision to strengthen merchandise and services exports with a targeted value of \$ 900 billion by 2020.
- > The FTP 2015-20 sought to consolidate all previous export incentive schemes under two : Merchandise Exports from India Scheme (MEIS) and Services Exports from India Scheme (SEIS).
- > It aims to raise India's share in world exports from 2 to 3.5%.

Exim Policy 2002-07 : Major Highlights

1. Removal of quantitative and packaging restrictions on agri exports.
2. Transport assistance for movement of agri goods.
3. Export thrust on items identified in Medium Term Export Strategy.
4. Continuance of existing duty neutralisation schemes till the Value Added Tax (VAT) becomes fully operational.
5. Extension of the period for fulfilling export obligations under Export Promotion Capital Goods (EPCG) Scheme from 8 to 12 years.
6. Exemption of banking units set up in SEZs from statutory requirements like SLR and CRR.
7. Easing of external commercial borrowing norms by permitting less than three years tenure loans.
8. Provision for repatriation of export earnings within 360 days in stead of the earlier 180 days.
9. Retention of entire export earnings in Export Earners Foreign Currency Account (EEFA).

10. Tax benefits on sales from domestic tariff areas to Special Economic Zones (SEZs).
11. Reduction of processing fees, fewer physical inspections, same day licensing in all offices of DGFT (Director Gen. of Foreign Trade).
12. Common classification for DGFT and customs department to eliminate classification related disputes.
13. No licence requirement for relocation of overseas industrial plants in India.
14. Industrial towns such as Tirpur, Panipat and Ludhiana to get Market Access Initiative (MAI) funds, priority for infrastructure development.
15. Allocation to states from Rs. 350 cr. Assistance to States for Infrastructure Development (ASIDE) fund linked to their export performance.
16. Permission for captive power generation and duty free import of fuel for power generation, for exporters.
17. Reduction in the eligibility for getting Export House status from Rs. 15 crores to Rs. 5 crores.

Balance of Payment: A statement of all transactions of a country with the rest of the world during a given period. Transactions may be related to trade, such as imports and exports of goods and services; movement of short-term and long-term investments; gifts, currency and gold. The balance of payments may be classified into current account, capital account, unilateral transfer account and gold account.

Balance of Trade: Part of the nation's balance of payments concerning imports and exports. A favourable balance of trade means that exports exceed imports in value.

Invisibles: A term used to describe those items, such as financial series, included in the current Balance of Payments accounts, as distinct from physically visible Imports and Exports of goods. Invisibles include government grants to overseas countries and subscriptions to international organizations, net payment for shipping services, travel, royalties, commissions for banking and other services, transfers to or from overseas residents, Interest, Profits and Dividends received by or from overseas residents.

Foreign Exchange Reserves in India

- > The foreign exchange reserves of the country include three important components : 1. Foreign Exchange Assets of RBI 2. Gold Stock of RBI 3. SDR holdings of the Government.
- > After 1991, Indian foreign exchange reserves have rapidly increased due to various reasons which are as follows : 1. Devlauation of Rupee. 2. Availability of loans from international institutions. 3. Availability of foreign exchange from NRIs under various schemes. 4. Increased foreign investment (both direct and indirect). 5. Full convertibility of Rupee on current account.
- > FEMA (Foreign Exchange Management Act) came into force in July, 2000. This FEMA has replaced Foreign Exchange Regulation Act, 1973 (FERA-1973).
- > Under FEMA provisions related to foreign exchange have been modified and liberalised so as to simplify foreign trade and payments. FEMA will make favourable development in foreign Money Market.

Foreign Exchange Reserves in India, on end March, 2015 was US \$ 304.2 billion.

India's Foreign Trade

Year	Exports (Rs. crore)	Imports (Rs. crore)	Total trade (Rs. crore)	Trade Balance (Rs. crore)
2001-2002	2,09,018	2,45,200	4,54,218	-36,182
2002-2003	2,55,137	2,97,206	5,52,343	-42,069
2003-2004	2,93,367	3,59,108	6,52,475	-65,741
2004-2005	3,75,340	5,01,065	8,76,405	-1,25,725
2005-2006	4,56,418	6,60,409	11,16,827	-2,03,991
2006-2007	5,71,779	8,40,506	14,12,285	-2,68,727
2007-2008	6,55,864	10,12,312	16,68,176	-3,56,448
2008-2009	8,40,755	13,74,436	22,15,191	-5,33,681
2009-2010	8,45,534	13,63,736	22,09,270	-5,18,202
2010-2011	11,42,922	16,83,467	28,26,389	-5,40,545
2011-2012	14,65,959	23,45,463	38,11,422	-8,79,504
2012-2013	16,34,319	26,69,162	43,03,481	-10,34,843
2013-2014	18,94,181	27,14,182	46,08,364	-8,20,060

(Courtesy : India 2015)

- > India's total merchandise trade as a percentage of GDP increased from 29.5% in 2004-05 to 44.1% in 2013-14.
- > India's merchandise exports as a percentage of GDP increased from 12.6% in 2004-05 to 18.1% in 2013-14.
- > The year 2013-14 witnessed a reversal in the trend of trade deficit that had ballooned to 190.3 billion US \$ by 2012-13 from 6 billion US \$ in 2000-01.
- > The deficit fell sharply in 2013-14 by 27.8% to 137.5 billion US \$ on the back of 8.3% contraction of imports over the previous year and mild growth of 4.1% of exports.
- > The global growth in 2013-14 was marked by persistent uncertainty caused by crisis in Euro area and general slowdown in global economy. Consequently India also suffered deceleration in growth which was further compounded by domestic structural constraints and inflationary pressures.
- > India's GDP growth has come down from 8.6% in 2009-10 to 4.7% in 2013-14 as per provisional estimates.
- > As per the rankings for the year 2013 by WTO, in April, 2014, India was the 19th largest exporter (with a share of 1.7%) and 12th largest importer (with a share of 2.5%) of merchandise trade in the world.
- > In Commercial Service, India is the sixth largest exporter (with a share of 3.3%) and seventh largest importer (with a share of 2.9%).
- > As per WTO, growth in Global Trade was 2.1% in 2013 against 2.3% in 2012.
- > Global Trade is expected to grow by 4.7% in 2014 and by 5.3% in 2015. However, the growth of 4.7% in 2014 is still below 20 years (1983-2013) average of 5.3%.
- > As per IMF's World Economic Outlook (WEO) July, 2014, growth in volume of world trade increased marginally to 3.1% in 2013 over 2.8% in 2012 and is

- projected to accelerate further to 4% and 5.3% in 2014 and 2015 respectively.
- Emerging market and developing economies is projected to grow at the rate of 4.6% and 5.2% in 2014 and 2015 while advanced economies are projected to grow at the rate of 1.8% and 2.4% in 2014 and 2015.
- Services surplus (net services) financed around 53% of merchandise trade deficit during 2013-14.
- As per the disaggregated data on export of principal commodities during 2013-14, the top five commodities of exports include petroleum (Crude and Products), Gems and Jewellery, Transport Equipments, Machinery and Instruments and Drugs, Pharmaceuticals and Fine Chemicals.
- Top five import items during 2013-14, constitute Petroleum (Crude and Products), Electronic Goods, Gold, Pearls, Precious and Semi-Precious Stones and Machinery except Electrical and Electronic goods.
- During 2012-13, imports increased to ₹ 26,69,162 crore with a positive growth of 13.80% from the previous year in the year, 2013-14, India's imports were as high as ₹ 27,14,182 crore, with a growth rate of 1.69% from the previous year.
- In US \$ terms, imports reached a level of 490.7 billion in 2012-13 with growth rate of 0.29% from last year, before declining to the level of 450.1 billion in 2013-14.
- The Trade deficit during 2013-14 decreased to ₹ 8,20,000 crore as against ₹ 10,34,843 crore during 2013-13 in US \$ terms trade deficit decreased to US \$ 137.5 billion in 2013-14 from US \$ 190.3 billion in the previous year.
- India has trading relations with all the major trading blocks and all geographical regions of the world. During the period 2013-14, the share of Asia region comprising East Asia, ASEAN, West Asia-Gulf Cooperation Council (GCC), Other West Asia, NE Asia and South Asia accounted for 49.45% of India's total exports.
- The share of Europe in India's exports stood at 18.57% of which EU Countries (27) comprises 16.44%.
- Both North and Latin America stand third together as a region with a share of 17.23% in India's total exports.
- During 2013-14 in the top destinations USA (12.42%) has been the most important country of export destination followed by United Arab Emirates (9.7%), China (4.77%), Hong Kong (4.05%) and Singapore (3.94%).
- As far as the direction of trade in terms of imports is concerned during the period 2013-14, Asia accounts for the highest percentage share in India's total imports with the share of 60.78%, followed by Europe (15.62%) and America (12.79%).
- Among the individual countries, the share of China was the highest (11.39%) followed by Saudi Arabia (8.12%), United Arab Emirates (6.41%), USA (4.99%) and Switzerland (4.14%).

Trade Organisations

- International Monetary Fund (IMF) was established on 27th December, 1945 on the basis of decision taken in the Bretton Wood Conference and it started functioning w.e.f. 1st March, 1947.
- The total member countries of IMF in 2002 were 183.

- The function of IMF is to encourage financial and economic co-operation between member countries and to extend world trade.
- International Bank for Reconstruction and Development (IBRD) was established in 1945.
- IBRD along with other institutions is also called World Bank. The other institutions are International Finance Corporation, International Development Agency and Multilateral Investment Guarantee Agency.
- Presently, it is helping member countries in capital investment and encouraging long-term balanced development.
- General Agreement on Tariffs and Trade (GATT), came into being on 30th October, 1947 and started functioning from 1st January, 1948.
- The principle of GATT was equal tariffs policy, to remove quantitative ban and disposal of business dispute in a democratic way.
- On 1st January, 1995 the World Trade Organisation took over the place and position of GATT.
- The Headquarter of WTO is in Geneva and the number of its member countries in the year 2003 was 146. India is a founder member of it.
- The India-ASEAN Trade in Goods Agreement has come into effect on Jan. 1, 2010, though it was signed on August 13, 2009.
- The signing of the India-ASEAN Trade in Goods Agreement paves the way for the creation of one of the world's largest free trade areas (FTA)—market of almost 1.8 billion people with a combined GDP of US \$ 2.75 trillion.

FDI Limits* in different sectors (As in March, 2015)

1. Defence	49
2. Pension	49
3. Insurance	49
4. Print Media	26
5. Civil Aviation	49
6. Public Sec. Banks	20
7. Private Sec. Banks	74
8. Multi Brand	51
9. Single Brand	100
10. Tourism	100

* May change with Govt. decision.

16. Miscellaneous Facts

- The planned Development Model was adopted in India from April 1, 1951.
- IRDA (Insurance Regulatory and Development Authority) was set up in India on April 2000.
- International Monetary Fund was established on 27th December 1945 at Hampshire, USA under 'Bretton Woods Agreement'.
- Principle of population was given by Thomas Robert Malthus in 1798. According to this theory population increases in geometrical progression. Malthus said—"Population growth will always tend to outrun the food supply and the betterment of humankind is impossible stern limits on reproduction." This thinking is also known as Malthusianism.
- Phillips Curve—This is the relationship between rates of unemployment and corresponding rates of inflation that results in an economy (In simple words—'Decreased unemployment in an economy will correlate with higher rates of inflation').
- Increase in CRR leads to decrease in bank credit. In simple words increase in Cash Reserve Ratio means the banks have to park more of their cash assets with the Central Bank that leads to decrease in loanable funds.

- 'Financial Inclusion' was the theme of Global Financial Development Report 2014.
- Ministry of Finance is the controlling Authority of government expenditure.
- Effective Revenue Deficit was introduced in the Union Budget 2011-12.
- Interest payment is an item of Revenue Expenditure.
- By the export of textile India earns maximum foreign exchange.
- **Hot currency** is Foreign currency which has a tendency of quick migration.
- National Food Security mission includes rice, wheat and pulses.
- Ad hoc Treasury Bill System of meeting budget deficit in India was abolished on 31st March, 1997.
- Service Tax was introduced in India in 1994-95.
- The components of Bharat Nirman are Water Supply, Housing, Irrigation, Rural Electricity, Roads and Rural Telephony.
- National Product at factor cost is equal to National Product at Market Prices—Indirect taxes + subsidies.
- In Jun 2014 Navaratna status was granted to Engineers India Ltd. and National Buildings Construction cooperations Ltd by the Union Government.
- Continuous growth of per capita real income over a period of time in an economy is called **Economic Growth**.
- In the case of direct taxes the payment liability and the ultimate burden of the tax lies upon the person on whom it has been imposed.
- Capitalism is based on the principle of surplus value.
- According to the data released by the International Comparison Programme (ICP), hosted by the Development Data Group at the World Bank Group on April 30, 2014, on the basis of the purchasing power parity, the economy of India is the third largest economy in 2011.
- In the production of vegetables, India is on the second^{*} position (after China).
- India is on the first^{*} position in the production of milk.
- The highest producer of milk in India is Uttar Pradesh^{*}.
- India is the third^{*} largest producer of Tobacco. The largest producer and consumer of tobacco is China.
- Four industries which have been reserved for public sector are : Arms and Ammunition, Atomic Energy, Rail Transportation and Minerals mentioned in the scheduled list of Atomic Energy.
- The position of India is first^{*} as a producer of pulses.
- The Centre receives maximum net revenue through Excise Duty.
- First Hydel Power Plant in India was started in Darjiling.
- The Money Order System in India was launched in 1880.
- First postal stamp was launched in India in 1852.
- Maharashtra is the 1st state which accorded the status of Industry to agriculture in 1997.
- The 'Big Push Theory' has been given by R. Rodan.
- Alfred Marshal propounded the 'Principle of consumer surplus'.

- Central Agmark Laboratory is in Nagpur.
- First Cotton Industry of the country was established in Kolkata in 1818 and the second by Kovas Jee Nana Bhai in Mumbai in 1853.
- Sindri Fertilizer Factory, Chittaranjan Locomotives, Indian Telephone Industry, Integral Coach Factory, Penciline Factory, Indian Telephone Industry were all established during first five year plan.
- The largest number of co-operative institutions is in India.
- Unorganised sectors are creating more employment than organised sector in India.
- The share of groundnut is the highest^{*} in the production of oil seeds.
- Three cities of India have more than 1 crore population—Mumbai, Kolkata and Delhi.
- Urbanisation is highest^{*} in Goa in India.
- Asian Development Bank was established in 1966. (Head Office—Manila)
- The social accounting method of estimating national income was developed by Richard Stone.
- **TRIFED** : Tribal Co-operative Marketing Development Federation of India Ltd. established by government in 1987 to benefit small tribal farmers.
- **NAFED** : National Agricultural Co-operative Marketing Federation of India Ltd. was established for marketing the agricultural products.
- In 1993 **FERA** (Foreign Exchange Regulation Act, 1973) was replaced by **FEMA** (Foreign Exchange Management Act).
- Small Industries have been completely relaxed from licensing.
- Since 2002, price of all petroleum products are market determined. Kerosene and domestic LPG is supplied at subsidised rates to target groups.
- Foreign exchange rates are not fixed. It changes with market conditions. But for example the exchange rate as on June 23, 2015 :

1 US Dollar	= 63.59 Rupees	₹ 1 = \$ 0.016 (US Dollar)
1 British Pound	= 100.35 Rupees	₹ 1 = £ 0.01 (British Pound)
1 Euro	= 71.40 Rupees	₹ 1 = € 0.014 (Euro)

- Average size of holding in India is continuously decreasing due to rigid population growth.
- Agriculture Income Insurance Scheme was announced in 2004 to provide insurance safeguards and economic security to farmers.
- Department of Agriculture and Co-operation formulated the Farm Income Insurance Scheme.
- Green Revolution is associated with the use of HYVS (High Yielding Variety Seeds), Chemical fertilizers and new techniques.
- Seed Crop Insurance is operational since 1999-2000.
- Seed Bank is in operation since 1999-2000. Its functions include meeting contingency requirement, development infrastructure for production and distribution of seeds.

- > Types of loans provided to Indian Farmers :
 - (a) **Short Term Loans** : Less than 15 months
 - (b) **Medium Term Loans** : 15 months to 5 years
 - (c) **Long Term Loans** : More than 5 years
- > Loans are acquired from Institutional Sources (Banks) and Non-institutional sources (money-lenders).
- > Export-Import (EXIM) Bank was set up in 1982 for financing exports and imports.
- * Subject to change.

17. Glossary of Economic and Financial Terms

Accrued interest : The interest due on a bond since the last interest payment was made. The buyer of the bond pays the market price plus accrued interest.

Acquisition : The acquiring of control of one corporation by another. In 'unfriendly' take over attempts, the potential buying company may offer a price well above current market values, new securities and other inducements to stockholders. The management of the subject company might ask for a better price or try to join up with a third company.

Active Market : This is a term used by stock exchange which specifies the particular stock or share that deals in frequent and regular transactions. It helps the buyers to obtain reasonably large amounts any time.

Administered Prices : When the prices of an item or a commodity are decided by the central power, generally the government or any other agency and not on the basis of demand and supply, such types of prices are called Administered Prices.

Ad-valorem Tax : Ad-valorem tax is a kind of indirect tax in which goods are taxed by their values. In the case of ad-valorem tax, the tax amount is calculated as the proportion of the price of the goods. Value Added Tax (VAT) is an ad-valorem tax. In other words when the tax is determined on the basis of value of a commodity, it is known as Ad-valorem tax.

Amalgamation : It means 'merger'. As and when necessity arises two or more companies are merged into a large organisation. The old firms completely lose their identity when the merger takes place.

American Depository Receipt (ADR) : A security issued by a U.S. bank in place of the foreign shares held in trust by that bank, thereby facilitating the trading of foreign shares in U.S. markets.

Amortization : Accounting for expenses or charges as applicable rather than as paid. Includes such practices as depreciation, depletion, write-off of intangibles, prepaid expenses and deferred charges.

Annual report : The formal financial statement issued yearly by a firm, composing or corporation. The annual report shows assets, liabilities, revenues, expenses and earnings—how the company stood at the close of the business year, how it fared profit-wise during the year, as well as other information of interest to shareowners.

Appreciation : Appreciation means an increase in the value of something e.g. stock of raw materials or manufactured goods. It also includes an increase in the traded value of currency. It is an increase in the value of assets over a particular

time period. Example : land, building, paintings etc. Appreciation is just opposite to depreciation. When the prices rise due to inflation, appreciation may occur.

Arbitrage : A technique employed to take advantage of differences in price. If, for example, ABC stock can be bought in New York for \$ 10 a share and sold in London at \$ 10.50, an arbitrageur may simultaneously purchase ABC stock here and sell the same amount in London, making a profit of \$.50 a share, less expenses. Arbitrage may also involve the purchase of rights to subscribe to a security, or the purchase of a convertible security and the sale at or about the same time of the security obtainable through exercise of the rights or of the security obtainable through conversion.

Arbitration : Where there is an industrial dispute, the Arbitration comes to the force. The judgement is given by the Arbitrator. Both the parties have to accept and honour the Arbitration. Arbitration is the settlement of labour disputes that takes place between employer and the employees.

Assets : Everything a corporation or an organisation owns or that is due to it: cash, investments, money due it, materials and inventories, which are called current assets; buildings and machinery, which are known as fixed assets; and patents and goodwill, called intangible assets.

Auction : When a commodity is sold by auction, the bids are made by the buyers. Who so ever makes the highest bid, gets the commodity which is being sold. The buyers make the bid taking into consideration the quality and quantity of the commodity.

Auction market : The system of trading securities through brokers or agents on an exchange such as the Bombay Stock Exchange. Buyers compete with other buyers while sellers compete with other sellers for the most advantageous price.

Auditor's report : Often called *the accountant's opinion*, it is the statement of the accounting firm's work and its opinion of the corporation's financial statements, especially if they conform to the normal and generally accepted practices of accountancy.

Autarchy : It means self-sufficiency and self-reliance of an economy. Autarchy is an indicator of self-sufficiency. It means that the country itself can satisfy the needs of its population without making imports from other countries.

Averages : Various ways of measuring the trend of securities prices, one of the most popular of which is the Dow Jones Industrial Average of 30 industrial stocks listed on the New York Stock Exchange. The prices of the 30 stocks are totaled and then divided by a divisor that is intended to compensate for past stock splits and stock dividends, and that is changed from time to time. As a result, point changes in the average have only the vaguest relationship to dollar-price changes in stocks included in the average.

Balance of Payment : It is the difference between country's payments and receipts from other countries during a year. In other words the balance of payment shows the relationship between the one country's total payment to all other countries and its total receipts from them. Balance of payment not only includes visible export and imports but also invisible trade like shipping, banking, insurance, tourism, royalty, payments of interest on foreign debts.

Balance of Trade : It refers to the relationship between the values of country's imports and its export, i.e., the visible balance. Balance of trade refers to the total value of country's export commodities and total value of imports commodities. Thus, balance of trade includes only visible trade i.e. movement of goods (exports and imports of goods). Balance of trade is part of Balance of Payment statement.

Balance Sheet : Balance sheet is a statement showing the assets and liabilities of a business at certain date. Balance sheet helps in estimating the real financial situation of a firm.

Bank : Bank is a financial institution. It accepts funds on current account and savings accounts. It also lends money. The bank pays the cheques drawn by customers against current or savings bank account. The bank is a trader that deals in money and credit.

Bank Draft : Banker's draft (Demand Draft) is a negotiable claim drawn upon a bank. Drafts are as good as cash. The drafts cannot be returned unpaid. Bank Draft is safer than a cheque.

Bankruptcy : It is a situation in which a person is unable to discharge his debt obligations.

Basket of Currency : In this system the exchange value of a country's currency is fixed in terms of some major international currencies. Indian rupee is valued against US Dollar, British Pound, Japanese Yen, French Franc and German Deutsche Mark. India opted for this system in 1975.

Bear and Bull : These terms are used in stock exchange. 'Bear' is an individual who sells shares in a hope that the stock's price would fall. 'Bull' is an individual who buys shares in a hope that the stock's price would rise.

Bearer bond : A bond that does not have the owner's name registered on the books of the issuer. Interest and principal, when due, are payable to the holder.

Bid and Asked : Often referred to as a quotation or quote. The bid is the highest price anyone wants to pay for a security at a given time, the asked is the lowest price anyone will take at the same time.

Bill of Exchange : It is an unconditional order in writing addressed by one person to another requiring the addressee to pay on demand or at a fixed future time a certain sum of money to the order of the specified person or to the bearer.

Birth Rate : Birth Rate (or Crude Birth Rate) is number of the births per thousand of the population during a period, usually a year. Only live births are included in the calculation of birth rate.

Black Money : It is unaccounted money which is concealed from tax authorities. All illegal economic activities are dealt with this black money. Howala market has deep roots with this black money. Black money creates parallel economy. It puts an adverse pressure on equitable distribution of wealth and income in the economy.

Block : A large holding or transaction of stock—popularly considered to be 10,000 shares or more.

Blue Chip : It is the most reliable industrial shares on a stock exchange. It is concerned with such equity shares whose purchase is extremely safe. It is a safe investment. It does not involve any risk.

Blue Collar Jobs : These Jobs are concerned with factory. Persons who are unskilled and depend upon manual jobs that require physical strain on human muscle are said to be engaged in Blue Collar Jobs. In the age of machinery, such Jobs are on the decline these days.

Blue Sky Laws : A popular name for laws various states have enacted to protect the public against securities frauds. The term (generally used in the context of U.S.A.) is believed to have originated when a judge ruled that a particular stock had about the same value as a patch of blue sky.

Book value : An accounting term. Book value of a stock is determined from a company's records, by adding all assets then deducting all debts and other liabilities, plus the liquidation price of any preferred issues. The sum arrived at is divided by the number of common shares outstanding and the result is book value per common share. Book value of the assets of a company or a security may have little relationship to market value.

Boom : The point at which price and employment are the maximum. The trade is also at its highest point and beyond this no upward movement is possible.

Bounty : It is a subsidy paid by the government to exporters. It reduces the price of exportable goods and hence act as incentive to enhance exports.

Brain-Drain : It means the drift of intellectuals of a country to another country. Scientists, doctors and technology experts generally go to other prominent countries of the world to better their lot and earn huge sums of money. This Brain-Drain deprives a country of its genius and capabilities.

Bridge loan : A loan made by a bank for a short period to make up for a temporary shortage of cash. On the part of borrower, mostly the companies, for example, a business organisation wants to install a new company with new equipments etc. While its present installed company or equipments etc. are not yet disposed off. Bridge loan covers this period between the buying the new and disposing of the old one.

Broad Banding : It means providing more flexibility to manufacturers to produce wider variety of products with same raw material mix so as to ensure optimum capacity.

Broker : An agent who handles the public's orders to buy and sell securities, commodities or other property. A commission is charged for this service.

Brokers' loans : Money borrowed by brokers from banks or other brokers for a variety of uses. It may be used by specialists to help finance inventories of stock they deal in; by brokerage firms to finance the underwriting of new issues of corporate and municipal securities; to help finance a firm's own investments; and to help finance the purchase of securities for customers who prefer to use the broker's credit when they buy securities.

Budget : It is a document containing a preliminary approved plan of public revenue and public expenditure. It is a statement of the estimated receipt and expenses during a fixed period. It is a comparative table giving the accounts of the receipts to be realised and of the expenses to be incurred.

Budget Deficit : Budget deficit is the difference between the estimated public expenditure and public revenue. The government meets the deficit by way of printing new currency or by borrowing. Budget may take a shape of deficit when the public revenue falls short to public expenditure.

Buffer stocks : These are the stocks (generally of primary goods) accumulated by a government agency when supply is plentiful. These stocks are released in case of shortage of supply. In India Food Corporation of India (FCI) accumulates foodgrains as buffer stocks.

Bullion : It is gold or silver having a specific degree of purity. Generally it is in the form of gold or silver bars.

Bull Market : It is a market where the speculators buy shares or commodities in anticipation of rising prices. This market enables the speculators to resale such shares and make a profit. The opposite is Bear Market.

Buoyancy : In the inflationary period, the increase in tax revenue is known as buoyancy. When the government fails to check inflation, it raises income tax and the corporate tax. Such a tax is called Buoyancy. It concerns with the revenue from taxation in the period of inflation.

Buyer's market : When the market is favourable to buyer's market. This situation occurs when there is a change from boom to recession i.e. demand is less than supply.

Buy side : The portion of the securities business in which institutional orders originate.

Callable : A bond issue, all or part of which may be redeemed by the issuing firm, institution or organisation under specified conditions before maturity. The term also applies to preferred shares that may be redeemed by the issuing organisation.

Call Money : It is a loan that is made for a very short period of a few days only or for a week. It carries a low rate of interest. In case of stock exchange market, the duration of the call money may be for a fortnight.

Capital : The stock of goods which are used in production and which themselves have been produced. It is one of the major factors of production, the other being land, labour and entrepreneurship.

Capitalism : The economic system based on free enterprise and private profit. Capitalism is an economic system in which all means of production are owned by private individuals. Self-profit motive is the guiding feature for all the economic activities under capitalism. Under pure capitalist system economic conditions are regulated solely by free market forces. This system is based on 'Laissez-faire system' i.e., no state intervention. Sovereignty of consumer prevails in this system.

Capital Market : It is a market for long term loans. Capital market is the market which gives medium term and long term loans. It is different from money market which deals only in short term loans.

Capital stock : All shares representing ownership of a business, including preferred and common.

Capitalization : Total amount of the various securities issued by organisation or a company. Capitalization may include bonds, debentures, preferred and common stock, and surplus. Bonds and debentures are usually carried on the books of the issuing company in terms of their par or face value. Preferred and common shares

may be carried in terms of par or stated value. Stated value may be an arbitrary figure decided upon by the director or may represent the amount received by the company from the sale of the securities at the time of issuance.

Cash flow : Reported net income of a corporation plus amounts charged off for depreciation, depletion, amortization, and extraordinary charges to reserves, which are book-keeping deductions and not paid out in actual rupees and paise or dollars and cents.

Cash sale : A transaction on the floor of the stock exchange that calls for delivery of the securities the same day. In 'regular way' trade, the seller is to deliver on the third business day, except for bonds, which are the next day.

Ceiling Prices : This is the maximum limit fixed generally by government or its agency. Beyond it the prices can not rise.

Certificate : The actual piece of paper that is evidence of ownership of stock in a company or an organisation. Watermarked paper is finely engraved with delicate etchings to discourage forgery.

Certificate of Deposit (CD) : A money market instrument characterized by its set date of maturity and interest rate. There are two basic types of CDs: traditional and negotiable. Traditional bank CDs typically incur an early-withdrawal penalty, while negotiable CDs have secondary market liquidity with investors receiving more or less than the original amount depending on market conditions.

Cheap Money : It indicates a situation when bank rate and other rates of interest are low.

Cheque : Cheque is an order in writing issued by the drawer to a bank. If the customer has sufficient amount in his account, the cheque is paid by the bank. Cheques are used in place of cash money.

Clearing House : Clearing house is an institution which helps to settle the mutual indebtedness that occurs among the members of its organisation.

Closed Economy : Closed economy refers to the economy having no foreign trade (i.e. export and import). Such economies depend exclusively on their own internal domestic resources and have no dependence on outside world.

Collateral : Securities or other property pledged by a borrower to secure repayment of a loan.

Commercial paper : Debt instruments issued by companies to meet short-term financing needs.

Commission : The broker's basic fee for purchasing or selling securities or property as an agent.

Commission broker : An agent who executes the public's orders for the purchase or sale of securities or commodities.

Common stock : Securities that represent an ownership interest in a company. If the company has also issued preferred stock, both common and preferred have ownership rights. Common stockholders assume the greater risk, but generally exercise the greater control and may gain the greater award in the form of dividends and capital appreciation. The terms common stock and capital stock are often used interchangeably when the company has no preferred stock.

Competitive trader: A member of the exchange who trades in stocks on the floor for an account in which there is an interest. Also known as a registered trader.

Conglomerate: A company or an organisation that has diversified its operations usually by acquiring enterprises in widely varied industries.

Consolidated balance sheet: A balance sheet showing the financial condition of a corporation and its subsidiaries.

Convertible: A bond, debenture or preferred share that may be exchanged by the owner for common stock or another security, usually of the same company, in accordance with the terms of the issue.

Core Industries: Core Industries include strategic, basic and critical industries which remain generally under state control, e.g. defence, iron and steel, fertilizers etc.

Core Sector: Economy needs basic infrastructure for accelerating development. Development of infrastructure industries like cement, iron and steel, petroleum, heavy machinery etc can only ensure the development of the economy as a whole. Such industries are core sector industries.

Corporate Tax: It is a direct tax levied on company's profit. It is calculated on profits after interest and allowance (i.e. capital allowance) have been deducted.

Correspondent: A securities firm, bank or other financial organization that regularly performs services for another in a place or market to which the other does not have direct access. Securities firms may have correspondents in foreign countries or on exchanges of which they are not members. Correspondents are frequently linked by private wires.

Cost Price Index (CPI): It is used for measuring cost of living and it covers large number of commodities than Wholesale Price Index (WPI) which is used for measuring rate of inflation.

Coupon bond: Bond with interest coupons attached. The coupons are clipped as they come due and presented by the holder for payment of interest.

Credit Control: It implies the measures employed by central bank of a country to control the volume of credit in the banks.

Credit Rating: It is the assessed credit worthiness of prospective customer.

Credit Rationing: Credit rationing takes place when the banks discriminates between the borrowers. Credit rationing empowers the bank to lend to someone and refuse to lend others. In this way credit rationing restricts lending on the part of bank.

Credit Squeeze: Monetary authorities restrict credit as and when required. This credit restriction is called credit squeeze. In other words when the credit control is very tight and restrict, this situation is known as credit squeeze.

Cumulative preferred: A stock having a provision that if one or more dividends are omitted, the omitted dividends must be paid before dividends may be paid on the company's common stock.

Current assets: Those assets of a company that are reasonably expected to be realized in cash, sold or consumed during one year. These include cash, Government bonds, receivables and money due usually within one year, as well as inventories.

Current liabilities: Money owed and payable by a company, usually within one year.

Custom Duty: It implies tax on imports. Custom duty is a duty that is imposed on the products received from exporting nations of the world. It is also called protective duty as it protects the home industries.

Cyclical Unemployment: It is that phase of unemployment which appears due to the occurrence of the downward phase of the trade cycle. Such an employment is reduced or eliminated when the business cycle turns up again.

Day order: An order to buy or sell that, if not executed, expires at the end of trading day on which it was entered.

Dealer: An individual or firm in the securities business who buys and sells stocks and bonds as a principal rather than as an agent. The dealer's profit or loss is the difference between the price paid and the price received for the same security. The dealer's confirmation must disclose to the customer that the principal has been acted upon. The same individual or firm may function, at different times, either as a broker or dealer.

Death Rate: Death rate signifies the number of deaths in a year per thousand of the population. It is mostly known as *crude death rate*. Life expectancy is important determinant of death rate. A country having high life expectancy will have a high crude death rate.

Debentures: It is a document which enlists the terms or conditions of a loan. The debentures are used by corporate sector (companies). The debenture holders are to be paid a fixed annual rate of interest and they have the first claim on the assets of a company as creditors.

Debit balance: In a customer's margin account, that portion of the purchase price of stock, bonds or commodities that is covered by credit extended by the broker to the margin customer.

Decentralisation: Decentralisation means the establishment of various units of the same industry at different places. Large scale organisation or industry can not be run at one particular place or territory. In order to increase the efficiency of the industry, various units at different places are located.

Deed: It is a written contract signed under legal seal.

Deflation: Deflation is a fall in the general price level over a particular period of time. It is opposite to inflation.

Demand Draft: It is a bill of exchange payable at sight.

Depletion accounting: Natural resources, such as metals, oil, gas and timber, that conceivably can be reduced to zero over the years, present a special problem in capital management. Depletion is an accounting practice consisting of charges against earnings based upon the amount of the asset taken out of the total reserves in the period for which accounting is made. A book-keeping entry, it does not represent any cash outlay nor are any funds earmarked for the purpose.

Depository Trust Company (DTC): A central securities certificate depository through which members effect security deliveries between each other via computerized book-keeping entries thereby reducing the physical movement of stock certificates.

Depreciation: It is the reduction in the value of a fixed asset due to wear and tear.

Depression: It is just opposite to 'boom'. It implies a state of economy when lack of demand result in heavy unemployment and stagnation in economy.

Devaluation: It is the reduction in the official rate of a currency in terms of a foreign currency. Indian rupee has been devalued thrice in 1949, 1966 and 1991.

Director: Person elected by shareholders to serve on the board of directors. The directors appoint the president, vice presidents, and all other operating officers. Directors decide, among other matters, if and when dividends shall be paid.

Direct Tax: It is a tax whose burden cannot be shifted i.e. the burden of direct tax is borne by the person on whom it is initially fixed, e.g.- personal income tax, social security tax paid by employees, death tax etc.

Discount: The amount by which a preferred stock or bond may sell below its par value. Also used as a verb to mean 'takes into account' as the price of the stock has discounted the expected dividend cut.

Discretionary account: An account in which the customer gives the broker or someone else discretion to buy and sell securities or commodities, including selection, timing, amount, and price to be paid or received.

Diversification: Spreading investments among different types of securities and various companies in different fields.

Dividend: It is earnings on stocks paid to shareholders.

Dow theory: A theory of market analysis based upon the performance of the Dow Jones Industrial Average and transportation stock price averages. The theory says that the market is in a basic upward trend if one of these averages advances above a previous important high, accompanied or followed by a similar advance in the other. When both averages dip below previous important lows, this is regarded as confirmation of a downward trend. The Dow Jones is one type of market index.

Dumping: It means selling goods in international market at a price which is lower than that in domestic or home market.

Earnings report: A statement, also called an income statement, issued by a company showing its earnings or losses over a given period. The earnings report lists the income earned, expenses and the net result.

Elasticity of demand: The responsiveness of demand of a commodity to the change in its price is known as elasticity of demand.

Embargo: It means prohibition of entry of goods from certain countries into a particular country.

Engel's law: Ernest Engel, the 19th century German statistician, analysed the budget data of working families and established a relationship between the families' income and expenditure. According to the Law 'When a family's income increases the percentage of its income spent on food decreases'.

Equity: The ownership interest of common and preferred stockholders in a company. Also refers to excess of value of securities over the debit balance in a margin account.

Exchange Rate: The rate at which central banks will exchange one country's currency for another.

Excise Tax: Tax imposed on the manufacture, sale or the consumption of various commodities, such as taxes on textiles, cloth, liquor etc.

Ex-dividend: A synonym for 'without dividend'. The buyer of a stock selling ex-dividend does not receive the recently declared dividend. When stocks go ex-dividend, the stock tables include the symbol 'x' following the name.

Ex-rights: Without the rights. Corporations/Companies raising additional money may do so by offering their stockholders the right to subscribe to new or additional stock, usually at a discount from the prevailing market price. The buyer of a stock selling ex-rights is not entitled to the rights.

Extra: The short form of 'extra dividend'. A dividend in the form of stock or cash in addition to the regular or usual dividend the company has been paying.

Face value: The value of a bond that appears on the face of the bond, unless the value is otherwise specified by the issuing company. Face value is ordinarily the amount the issuing company promises to pay at maturity. Face value is not an indication of market value. Sometimes referred to as par value.

Factor cost: It is the sum total of amount paid to four main factors of production i.e. Land (rent), Labour (compensation of employees), Capital (interest), entrepreneurship (profit). It is exclusive of taxes or subsidies.

FINRA: The Financial Industry Regulatory Authority (f/k/a National Association of Securities Dealers), is the largest non-governmental regulator for all securities firms doing business in the United States. FINRA was created in July 2007 through the consolidation of NASD and the member regulation, enforcement and arbitration functions of the New York Stock Exchange.

Fiscal year: A firm's or company's or a corporation's accounting year. Due to the nature of their particular business, some companies do not use the calendar year for their bookkeeping. A typical example is the department store that finds December 31 too early a date to close its books after the Christmas rush. For that reason many stores wind up their accounting year January 31. Their fiscal year, therefore, runs from February 1 of one year through January 31 of the next. The fiscal year of other companies may run from July 1 through the following June 30. Most companies, though, operate on a calendar year basis.

Fixed charges: A company's fixed expenses, such as bond interest, which it has agreed to pay whether or not earned, and which are deducted from income before earnings on equity capital are computed.

Flat income bond: This term means that the price at which a bond is traded includes consideration for all unpaid accruals of interest. Bonds that are in default of interest or principal are traded flat. Income bonds that pay interest only to the extent earned are usually traded flat. All other bonds are usually dealt in 'and interest', which means that the buyer pays to the seller the market price plus interest accrued since the last payment date.

Floating of a Currency: When the exchange value of a currency in terms of other currencies is not fixed officially, that currency is said to be floating.

Floor: The huge trading area - about the size of a football field - where stocks, bonds and options are bought and sold on the Stock Exchange.

Floor broker: A member of the stock exchange who executes orders on the floor of the Exchange to buy or sell any listed securities.

Foreign Exchange Reserves: Foreign Exchange Reserves of a country includes foreign currency assets and interest bearing bonds held by it. In India it also includes SDR and value of gold.

IRA: Individual retirement account. A pension plan with tax advantages. It permits investment through intermediaries like mutual funds, insurance companies and banks, or directly in stocks and bonds through stockbrokers.

Issue: Any of a company's securities, or the act of distributing such securities, contribute funds to finance a firm in return for 'shares' in the company.

Keogh plan: Tax-advantaged personal retirement program that can be established by a self-employed individual.

Laissez-faire: Literally it means 'to let people do as they choose'. It is an economic doctrine which emphasizes the superiority of 'free' trade and 'free' markets over state's interference in economic affairs. It is of French origin of which British variation is 'Laissez-faire'.

Legal Tender: It is the currency (coins and bank notes) which have to be accepted in payment.

Leverage: The effect on a company when the company has bonds, preferred stock, or both outstanding. Example: If the earnings of a company with 10,000 common shares increases from \$ 10,00,000 to \$ 15,00,000, earnings per share would go up from \$1 to \$ 1.50, or an increase of 50%. But if earnings of a company that had to pay \$ 5,00,000 in bond interest increased that much, earnings per common share would jump from \$.50 to \$ 1 a share, or 100%.

Liabilities: All the claims against a corporation. Liabilities include accounts, wages and salaries payable; dividends declared payable; accrued taxes payable, and fixed or long-term liabilities, such as mortgage bonds, debentures and bank loans.

Limit, limited order, or limited price order: An order to buy or sell a stated amount of a security at a specified price, or at a better price, if obtainable after the order is represented in the trading crowd.

Liquidation: The process of converting securities or other property into cash. The dissolution of a company, with cash remaining after sale of its assets and payment of all indebtedness being distributed to the shareholders.

Liquidity: The ability of the market in a particular security to absorb a reasonable amount of buying or selling at reasonable price changes. Liquidity is one of the most important characteristics of a good market.

Listed stock: The stock of a company that is traded on a securities exchange.

Load: The portion of the offering price of shares of open-end investment companies in excess of the value of the underlying assets. Covers sales commissions and all other costs of distribution. The load is usually incurred only on purchase, there being, in most cases, no charge when the shares are sold (redeemed).

Locked in: Investors are said to be locked in when they have profit on a security they own but do not sell because their profit would immediately become subject to the capital gains tax.

Manipulation: An illegal operation. Buying or selling a security for the purpose of creating false or misleading appearance of active trading or for the purpose of raising or depressing the price to induce purchase or sale by others.

Margin: The amount paid by the customer when using a broker's credit to buy or sell a security. Under Federal Reserve regulations, the initial margin requirement since 1945 has ranged from the current rate of 50% of the purchase price up to 100%.

Margin call: A demand upon a customer to put up money or securities with the broker. The call is made when a purchase is made; also if a customer's account declines below a minimum standard set by the exchange or by the firm.

Market order: An order to buy or sell a stated amount of a security at the most advantageous price obtainable after the order is represented in the trading crowd.

Market price: The last reported price at which the stock or bond sold, or the current quote.

Market value: The market value of an equity share is the price at which it is traded in the market. This price can be easily established for a company that is listed on the stock market and actively traded. (For a company that is listed on the stock market but traded very infrequently, it is difficult to obtain a reliable market quotation. For a company that is not listed on the stock market, one can merely conjecture as to what its market price would be if it were traded.)

Maturity: The date on which a loan or bond comes due and is to be paid off.

Merchant Banking: In Merchant Banking banks act as 'underwriter' and do business on behalf of corporate sector. Such banking helps in larger participation of people in capital market e.g. ICICI.

Merger: Combination of two or more corporations.

MODVAT: The modified system of value added taxation is based on the idea of tax final products and not inputs that go into production.

Money Market: It is a market engaged in short-term lending and borrowing of money linking together the financial institutions, companies and the government.

Money market fund: A mutual fund whose investments are in high-yield money market instruments such as federal securities, CDs and commercial paper. Its intent is to make such instruments, normally purchased in large denominations by institutions, available indirectly to individuals.

Monopoly: It is a type of market structure having one seller and many buyers. There is a lack of substitute products and entry of new firms into market is not possible.

Mortgage bond: A bond secured by a mortgage on a property. The value of the property may or may not equal the value of the bonds issued against it.

MoU: The concept of **Memorandum of Understanding** (MoU) was introduced in 1988. The main objective of MoU is to reduce the quantity of control and increase the quality of accountability. The emphasis is on achieving the negotiated and agreed objectives rather than interfering in the day-to-day affairs.

Mutual Fund: It is a form of collective investment that is useful in spreading risks and optimising returns.

Nasdaq: An automated information network that provides brokers and dealers with price quotations on securities traded over-the-counter. Nasdaq is an acronym for National Association of Securities Dealers Automated Quotations.

National Income: It is equal to the total money value of goods and services produced over the given time period less capital consumption.

Negotiable: Refers to a security, the title to which is transferable by delivery.

Net asset value: Usually used in connection with investment companies to mean net asset value per share. An investment company computes its assets daily, or

even twice daily, by totaling the market value of all securities owned. All liabilities are deducted, and the balance is divided by the number of shares outstanding. The resulting figure is the net asset value per share.

Net change: The change in the price of a security from the closing price on one day to the closing price the next day on which the stock is traded. The net change is ordinarily the last figure in the newspaper stock price list.

Net Domestic Product (NDP): The money value of a nation's annual output of goods and service, less capital consumption (depreciation) experienced in producing that output.

Net National Product (NNP): Net National Product is equal to Net Domestic Product plus Net factor income from abroad.

New York Futures Exchange (NYSE): A subsidiary of the New York Stock Exchange devoted to the trading of futures products.

New York Stock Exchange (NYSE): The largest organized securities market in the United States, founded in 1792. The Exchange itself does not buy, sell, own or set the prices of securities traded there. The prices are determined by public supply and demand. The Exchange is a non-profit corporation of 1,366 individual members, governed by a board of directors consisting of 10 public representatives, 10 Exchange members or allied members and a full-time chairman, executive vice-chairman and president.

Noncumulative: A type of preferred stock on which unpaid dividends do not accrue. Omitted dividends are, as a rule, gone forever.

NYSE Composite Index: The composite index covering price movements of all common stocks listed on the New York Stock Exchange. It is based on the close of the market December 31, 1965, as 50 and is weighted according to the number of shares listed for each issue. The index is computed continuously and printed on the ticker tape. Point changes in the index are converted to dollars and cents so as to provide a meaningful measure of changes in the average price of listed stocks. The composite index is supplemented by separate indexes for four industry groups: industrial, transportation, utility and finance.

Octroi: It is an internal tariff system among different regions of a country.

Odd Lot: An amount of stock less than the established 100-share unit.

Off-board: This term may refer to transactions over-the-counter in unlisted securities or to transactions of listed shares that are not executed on a national securities exchange.

Offer: The price at which a person is ready to sell. Opposed to bid, the price at which one is ready to buy.

Overbought: An opinion as to price levels. May refer to a security that has had a sharp rise or to the market as a whole after a period of vigorous buying which, it may be argued, has left prices 'too high'.

Oversold: The reverse of overbought. A single security or a market which, it is believed, has declined to an unreasonable level.

Over-the-counter: A market for securities made up of securities dealers who may or may not be members of a securities exchange. The over-the-counter market is conducted over the telephone and deals mainly with stocks of companies without

sufficient shares, stockholders or earnings to warrant listing on an exchange. Over-the-counter dealers may act either as principals or as brokers for customers. The over-the-counter market is the principal market for bonds of all types.

Paper profit (loss): An unrealized profit or loss on a security still held. Paper profits and losses become realized only when the security is sold.

Par: In the case of a common share, par means a dollar amount assigned to the share by the company's charter. Par value may also be used to compute the dollar amount of common shares on the balance sheet. In the case of preferred stocks it signifies the dollar value upon which dividends are figured. With bonds, par value is the face amount, usually \$ 1,000.

Participating preferred: A preferred stock that is entitled to its stated dividend and to additional dividends on a specified basis upon payment of dividends on the common stock.

Passed dividend: Omission of a regular or scheduled dividend.

Penny stocks: Low-priced issues, often highly speculative, selling at less than \$ 1 a share. Frequently used as a term of disparagement, although some penny stocks have developed into investment-caliber issues.

Per Capita Income: It implies income per person. It is obtained by dividing national income of country by its population.

Plastic Money: It refers to use of instruments like 'credit cards' instead of cash in business transactions. It is called so because credit cards are made of plastic. Plastic Money also carries information about its holder in coded form which makes it theft proof. No one, but the holder is able to use the card.

Point: In the case of shares of stock, a point means \$ 1. If ABC shares rise 3 points, each share has risen \$ 3. In the case of bonds a point means \$ 10, since a bond is quoted as a percentage of \$ 1,000. A bond that rises 3 points gains 3% in \$ 1,000, or \$ 30 in value. An advance from 87 to 90 would mean an advance in dollar value from \$ 870 to \$ 900. In the case of market averages, the word point means merely that and no more.

Portfolio: Holdings of securities by an individual or institution. A portfolio may contain bonds, preferred stocks, common stocks and other securities.

Poverty Line: The poverty line has been fixed by the planning commission on the basis of an average daily intake of 2400 calories per person in rural areas and 2100 calories per capita in urban areas. In monetary terms the poverty line is commented to be Rs. 32 per month in rural and Rs. 47 in urban areas in terms of 2011-12 prices.

Preferred stock: A class of stock with a claim on the company's earnings before payment may be made on the common stock and usually entitled to priority over common stock if the company liquidates. Usually entitled to dividends at a specified rate - when declared by the board of directors and before payment of a dividend on the common stock-depending upon the terms of the issue.

Premium: The amount by which a bond or preferred stock may sell above its par value. May refer, also, to redemption price of a bond or preferred stock if it is higher than face value.

Price-to-earnings ratio: A popular way to compare stocks selling at various price levels. The P/E ratio is the price of a share of stock divided by earnings per share for a 12 month period. For example, a stock selling for \$ 50 a share and earning \$ 5 a share is said to be selling at a price-to-earnings ratio of 10.

Primary distribution: Also called primary or initial public offering. The original sale of a company's securities.

Prime rate: The lowest interest rate charged by commercial banks to their most credit-worthy customers; other interest rates, such as personal, automobile, commercial and financing loans are often pegged to the prime.

Principal: The person for whom a broker executes an order, or dealers buying or selling for their own accounts. The term 'principal' may also refer to a person's capital or to the face amount of a bond.

Profit-taking: Selling stock that has appreciated in value since purchase, in order to realize the profit. The term is often used to explain a downturn in the market following a period of rising prices.

Prospectus: The official selling circular that must be given to purchasers of new securities registered with the Securities and Exchange Commission. It highlights the much longer Registration Statement file with the Commission.

Proxy: Written authorization given by a shareholder to someone else to represent him or her and vote his or her shares at a shareholders meeting.

Proxy statement: Information given to stockholders in conjunction with the solicitation of proxies.

Recession: Recession cycle characterised by a modest downturn in the level of economic activity means fall up of demand.

Reflation: It is an increase in the level of **National Income and Output**. Reflation is often deliberately brought about by the authorities in order to secure full employment and to increase the rate of economic growth.

Quote: The highest bid to buy and the lowest offer to sell a security in a given market at a given time. If you ask your financial advisor for a 'quote' on a stock, he or she may come back with something like '45 1/4 to 45 1/2'. This means that \$ 45.25 is the highest price any buyer wanted to pay at the time the quote was given on the floor of the exchange and that \$ 45.50 was the lowest price that any seller would take at the same time.

Rally: A brisk rise following a decline in the general price level of the market, or in an individual stock.

Record date: The date on which you must be registered as a shareholder of a company in order to receive a declared dividend or, among other things, to vote on company affairs.

Redemption price: The price at which a bond may be redeemed before maturity, at the option of the issuing company. Redemption value also applies to the price the company must pay to call in certain types of preferred stock.

Refinancing: Same as refunding. New securities are sold by a company and the money is used to retire existing securities. The object may be to save interest costs, extend the maturity of the loan, or both.

Registered bond: A bond that is registered on the books of the issuing company in the name of the owner. It can be transferred only when endorsed by the registered owner.

Registrar: Usually a trust company or bank charged with the responsibility of keeping record of the owners of a corporation's securities and preventing the issuance of more than the authorized amount.

Regulation T: The federal regulation governing the amount of credit that may be advanced by brokers and dealers to customers for the purchase of securities.

Regulation U: The federal regulation governing the amount of credit that may be advanced by banks to customers for the purchase of listed stocks.

Rights: When a company wants to raise more funds by issuing additional securities, it may give its stockholders the opportunity, ahead of others, to buy the new securities in proportion to the number of shares each owns. The piece of paper evidencing this privilege is called a right.

Scheduled bank: It is a bank included in the second schedule of RBI. It has a minimum cash reserve of 'Rs. 5 lakh'.

Scale order: An order to buy (or sell) a security, that specifies the total amount to be bought (or sold) at specified price variations.

Scripophily: A term coined in the mid 1970s to describe the hobby of collecting antique bonds, stocks and other financial instruments. Values are affected by beauty of the certificate and the issuer's role in world finance and economic development.

SEBI: It was set up in 1988 by the Government of India to regulate the operations in stock market of India. The SEBI stands for Securities and Exchange Board of India.

Self Reliance: Self Reliance, in short, can mean attainment of economic independence which, in turn, implies capability to sustain a higher rate of growth of economy essentially with the help of the domestic resources.

Seller's Market: It is market situation which exists for a short time period. During this period there is an excess demand for good and services at current prices which forces price up to the advantage of the seller.

Sell side: The portion of the securities business in which orders are transacted. The sell side includes retail brokers, institutional brokers and traders, and research departments. If an institutional portfolio manager changes jobs and becomes a registered representative, he or she has moved from the buy side to the sell side.

Sensex: The Stock Exchange Sensitive Index (popularly referred to as 'the SENSEX) reflects the weighted arithmetic average of the price relative of a group of share included in the index of sensitive shares. For example, Bombay Stock Exchange Sensitive Index is a group of 30 sensitive shares.

Serial bond: An issue that matures in part at periodic stated intervals.

Settlement: Conclusion of a securities transaction when a customer pays a broker / dealer for securities purchased or delivers securities sold and receives from the broker the proceeds of a sale.

Shares: These are the equal portions of the capital of a limited company. Shares in a company do not carry fixed rate of interest. The holders of the **ordinary shares** carry the residual risk of the business; they rank after **debenture holders** and **preference shareholders** for the payment of dividends and they are liable for losses, although this liability is limited to the value of the shares and to the limit of guarantee given by them. **Preference shares** are such shares of a company on which interest is paid before any others, and owners have prior right to repayment of capital if company is wound up.

Share Capital: Money raised by issuing of shares is called Share Capital.

Share Index: It is the statistical indicator of overall share values, based on selected group.

Short covering : Buying stock to return stock previously borrowed to make delivery on a short sale.

Short sale : A transaction by a person who believes a security will decline and sells it, though the person does not own any. Sometimes people will sell short a stock they already own in order to protect a paper profit. This is known as selling short against the box.

Sinking fund : Money regularly set aside by a company to redeem its bonds, debentures or preferred stock from time to time as specified in the indenture or charter.

Speculation : The employment of funds by a speculator. Safety of principal is a secondary factor.

Speculator : One who is willing to assume a relatively large risk in the hope of gain.

Spin off : The separation of a subsidiary or division of a corporation from its parent company by issuing shares in a new corporate entity. Shareowners in the parent company receive shares in the new company in proportion to their original holding and the total value remains approximately the same.

Split : The division of the outstanding shares of a corporation into a larger number of shares. A 3-for-1 split by a company with 1 million shares outstanding results in 3 million shares outstanding. Each holder of 100 shares before the 3-for-1 split would have 300 shares, although the proportionate equity in the company would remain the same; 100 parts of 1 million are the equivalent of 300 parts of 3 million. Ordinarily, splits must be voted by directors and approved by shareholders.

Stock exchange : An organized marketplace for securities featured by the centralization of supply and demand for the transaction of orders by member brokers for institutional and individual investors.

Stock dividend : A dividend paid in securities rather than in cash. The dividend may be additional shares of the issuing company, or in shares of another company (usually a subsidiary) held by the company.

Stockholder of record : A stockholder whose name is registered on the books of the issuing corporation.

Stop limit order : A stop order that becomes a limit order after the specified stop price has been reached.

Stop order : An order to buy at a price above or sell at a price below the current market. *Stop buy orders* are generally used to limit loss or protect unrealized profits on a short sale. *Stop sell orders* are generally used to protect unrealized profits or limit loss on a holding. A *stop order* becomes a market order when the stock sells at or beyond the specified price and, thus, may not necessarily be executed at that price.

Street name : Securities held in the name of a broker instead of a customer's name are said to be carried in 'street name'. This occurs when the securities have been bought on margin or when the customer wishes the security to be held by the broker.

Swapping : Selling one security and buying a similar one almost at the same time to take a loss, usually for tax purposes.

Syndicate : A group of investment bankers who together underwrite and distribute a new issue of securities or a large block of an outstanding issue.

Technical research : Analysis of the market and stocks based on supply and demand. The technician studies price movements, volume, trends and patterns, which are revealed by charting these factors, and attempts to assess the possible effect of current market action on future supply and demand for securities and individual issues.

Tender offer : A public offer to buy shares from existing stockholders of one public corporation by another public corporation under specified terms good for a certain time period. Stockholders are asked to 'tender' (surrender) their holdings for stated value, usually at a premium above current market price, subject to the tendering of a minimum and maximum number of shares.

Third market : Trading of stock exchange-listed securities in the over-the-counter market by non-exchange member brokers.

Ticker : A telegraphic system that continuously provides the last sale prices and volume of securities transactions on exchanges. Information is either printed or displayed on a moving tape after each trade.

Trader : Individuals who buy and sell for their own accounts for short-term profit. Also, an employee of a broker/dealer or financial institution who specializes in handling purchases and sales of securities for the firm and/or its clients.

Transfer : This term may refer to two different operations. For one, the delivery of a stock certificate from the seller's broker to the buyer's broker and legal change of ownership, normally accomplished within a few days. For another, to record the change of ownership on the books of the corporation by the transfer agent. When the purchaser's name is recorded, dividends, notices of meetings, proxies, financial reports and all pertinent literature sent by the issuer to its securities holders are mailed directly to the new owner.

Transfer agent : A transfer agent keeps a record of the name of each registered shareowner, his or her address, the number of shares owned, and sees that certificates presented for transfer are properly canceled and new certificates issued in the name of the new owner.

Treasury stock : Stock issued by a company but later reacquired. It may be held in the company's treasury indefinitely, reissued to the public or retired. Treasury stock receives no dividends and has no vote while held by the company.

Turnover rate : The volume of shares traded in a year as a percentage of total shares listed on an exchange, outstanding for an individual issue or held in an institutional portfolio.

Unlisted stock : A security not listed on a stock exchange.

Up tick : A term used to designate a transaction made at a price higher than the preceding transaction. Also called a 'plus' tick. A 'zero-plus' tick is a term used for a transaction at the same price as the preceding trade but higher than the preceding different price. Conversely, a down tick, or 'minus' tick, is a term used to designate a transaction made at a price lower than the preceding trade. A plus sign, or a minus sign, is displayed throughout the day next to the last price of each stock at the trading post on the floor of the New York Stock Exchange.

Variable annuity: A life insurance policy where the annuity premium (a set amount of dollars) is immediately turned into units of a portfolio of stocks. Upon retirement, the policyholder is paid according to accumulated units, the dollar value of which varies according to the performance of the stock portfolio. Its objective is to preserve, through stock investment, the purchasing value of the annuity which otherwise is subject to erosion through inflation.

VAT: It seeks to tax the value added at every stage of manufacturing and sale with a provision of refunding the amount of VAT already paid at earlier stages to avoid double taxation.

Volume: The number of shares or contracts traded in a security or an entire market during a given period. Volume is usually considered on a daily basis and a daily average is computed for longer periods.

Voting right: Common stockholders' right to vote their stock in affairs of a company. Preferred stock usually has the right to vote when preferred dividends are in default for a specified period. The right to vote may be delegated by the stockholder to another person.

Warrants: Certificates giving the holder the right to purchase securities at a stipulated price within a specified time limit or perpetually. Sometimes a warrant is offered with securities as an inducement to buy.

Working control: Theoretically, ownership of 51% of a company's voting stock is necessary to exercise control. In practice—and this is particularly true in the case of a large corporation—effective control sometimes can be exerted through ownership, individually or by a group acting in concert, of less than 50%.

Yield: Also known as return. The dividends or interest paid by a company expressed as a percentage of the current price.

Yield to maturity: The yield of a bond to maturity takes into account the price discount from or premium over the face amount. It is greater than the current yield when the bond is selling at a discount and less than the current yield when the bond is selling at a premium.

Zero coupon bond: A bond that pays no interest but is priced, at issue, at a discount from its redemption price.

18. Some Noteworthy Facts

- > Inflation, in theory, occurs when money supply grows at a higher rate than GDP in real terms.
- > The existence of a large parallel economy, fluctuations in agricultural and industrial output and indirect taxation are the reasons for : *cost-push inflation*.
- > Among the supply side measures to contain inflation is : *to increase the supply of products or commodities*.
- > Population experts refer to the possible 'demographic bonus' that may accrue to India around 2016 A.D. They are referring to the phenomenon of : *a surge in the population in the productive age group*.
- > The significant change in the new FEMA which has replaced FERA is that the emphasis from imprisonment will be shifted to : *Voluntary compliance*

'Level playing field' argument industries requires : *Domestic industry to be treated at par with MNCs*

One of the disadvantages of the Wholesale Price Index in India is that : *It does not cover the services sector*

Check off system refers to the verification of membership through : *deduction of subscription from pay*

Direct taxation is a better form of taxation because : *it allows for taxation according to means*

Lender of the last resort, periodic inspection of commercial banks, issue of bank notes of all denominations are the functions of : *Reserve Bank of India*

Multi Fibre Agreement deals with : *Textiles*

Under the Medium Term Fiscal Restructuring Programme, state governments have been permitted to borrow from international financial institutions like the World Bank and Asian Development Bank (ADB) to : *replace their high cost debt with low cost funds*

Open market operation of RBI Refers to trading in securities.

The new definition of fiscal deficit was suggested by : *Chakravarthy Committee*

According to the Chakravarthy Committee, one of the principal causes affecting price stability in India is : *Violent fluctuation in agricultural production*

The concept of Total Fertility Rate (TFR) in population means the average number of children born to a woman during her lifetime.

Tarapore Committee recommended that before capital account was made convertible the rate of inflation should be brought down for three years within 3-4%.

Tarapore Committee recommended that foreign exchange reserves should not be below the requirements of import for 6 months.

The first bank managed by Indians was : *Oudh Bank*

The statement, "India has achieved national food security but has not ensured household food security" means : *there is sufficient food stock but all households do not have access to it*

The permit for duty free trade issued by the East India Company at a price to private traders was called : *Diwani*

The demand for establishment of a department of agriculture in India was made by : *Manchester Cotton Supply Association*

The birth rate measures the number of births during a year per : *1000 of population*

Structural unemployment arises due to : *inadequate productive capacity*

'Disguised unemployment' refers to : *more persons employed for a job which a few can accomplish*

The Securities and Exchange Board of India (SEBI) has imposed a restriction on money flow in equity through 'P-Notes'. The full form of 'P-Notes' is : *Participatory Notes.*

- The money which government of India spends on the development of infrastructure in country comes from the following sources—Loan from World Bank / ADB etc., Taxes collected from the people, Loan from the RBI etc.
- 'Investor Protection Fund' has been established by : *Stock Exchange*
- The full form of FII is :
- The Finance Ministry (on Feb. 15, 2008) has allowed companies to issue Foreign Exchangeable Bonds (FCEBs) with a maturity of five years to raise funds from the overseas market by unlocking part of the holding in group companies. The investment under the scheme shall comply with Foreign Direct Investment (FDI) policy as well as the External Commercial Borrowing (ECB) policy requirements.
- The Union Government, on March 3, 2008, launched a conditional cash transfer scheme for the girl child. The conditions of this scheme include registration of birth of the girl, following a total immunisation schedule, school enrolment and delaying of marriage until the age of 18 years. The name of the scheme is : *Dhan Laxmi*
- The Securities and Exchange Board of India (SEBI), on May 29, 2008 has allowed overseas sovereign wealth fund to register as foreign institutional investors (FIIs) and invest in shares and government securities.
- The Centre approved the amendment to the Prevention of Money Laundering Act (PMLA), a move aimed at bringing casinos, international credit card payment gateways such as VISA and Master Card, full fledged money changers (FFMCs) and money transfer service providers (MTSPs) such as the Western Union under the purview of Indian laws.
- The Central Government has decided on April 6, 2008 to form a strategic reserve of 5 million tonnes of foodgrains, to be consisted of 3 million tonnes of wheat and 2 million tonnes of rice.
- The National Association of Software and Service Companies (NASSCOM), the premier trade body represents : *the IT and BPO industry*
- The biggest consumer of natural gas in the world is : *the USA*
- The country which leads in oil-consumption in the world is : *the USA*
- The country which leads in Internet users in the world is : *the USA*
- World's leading gold producer country is : *South Africa*
- Entry for Normal Loss is recorded in : *Trading Account*
- In Product Life Cycle the cost per unit is generally highest in the stage of : *Introduction*
- Accounting acronym GAAP stands for : *Generally Accepted Accounting Practices*
- Limited Liability is available in the kind of business organisation called : *Company*
- Bank account is called : *Real Account*
- The form of accounting states that transactions are to be recorded in the period that they occur is : *Accrual basis of accounting*

- The most important ratio for the Sales Tax Department from the control point of view is : *Gross Profit Ratio*
- The most important ratio for the Income Tax Department from the control point of view is : *Net Profit Ratio*
- The abbreviations for debit and credit (Dr. and Cr.) come from the language : *Latin, 'debere and credere'*
- A Public Limited Company tries to maximise : *Wealth of Shareholders*
- Anticipated losses are recorded in the books of accounts as per : *Matching of Cost and Revenue*
- Goodwill is recorded in the books of accounts only when : *It is valued*
- Depreciation Account is called : *Nominal Account*
- Monopoly is when there is single : *Seller*
- We can get the current Ratio by : *dividing current assets by current liabilities*
- The major rubber producing state in India is : *Kerala*

Some Important Books on Economics

<i>The Wealth of Nations</i>	Adam Smith
<i>Money Illusion</i>	Irwin Fisher
<i>Capital and Growth</i>	Hicks
<i>General Theory of Employment, Interest and Money</i>	J. M. Keynes
<i>Planned Economy for India</i>	M. Vishveshwariaya
<i>The Value and Capital</i>	Hicks
<i>The Canon (theory) of Consumer's Surplus</i>	Marshall
<i>Big Push Theory</i>	A. R. Rodon
<i>Datt & Sundaram Indian Economy</i>	Gaurav Datt and Ashwani Mahajan

Appendix-1 : Highlights of the Economic Survey 2014-15

- GDP growth is expected to accelerate between 8.1 and 8.5 % in 2015-16.
- Inflation is likely to remain in the 5-5.5% range in 2015-16.
- The current account deficit estimated to be 1.0% in the fiscal year 2015-16.
- Food grains production for 2014-15 is estimated at 257.07 million tones.
- It calls for complementing *Make in India* initiative with Skill India initiative to enable a larger section of the population to benefit from the structural transformation that such sectors will facilitate.
- The Model APMC Act, 2003 should be amended along the lines of the Karnataka Model that has successfully introduced an integrated single licensing system.
- In the short run, the need for accelerated fiscal consolidation will be conditioned by the recommendations of the Fourteenth Finance Commission (FFC).
- Food Subsidy Bill stands at 1,07,823.75 crore rupees during 2014-15 (up to January 2015) which means an increase of 20% over previous year.
- The direct fiscal cost of select subsidies is roughly 3,78,000 crore rupees or 4.2% of GDP in 2011-12.

- > 41% of subsidy given for the PDS kerosene is lost as leakage and only 46 percent of the remaining 59% is consumed by households that are poor.

Appendix-2 : Highlights of Socio Economic and Caste Census-2011

- > Provisional Data of Socio Economic and Caste Census (SECC) 2011 for rural India was released on 3 July, 2015 by the Finance Minister of India.
- > SECC 2011 is a unique paperless census. The enumeration of the data was done using over 6.4 lakh electronic handheld device.
- > The survey has been completed in all the 640-districts.
- > Conducted between 2011 and 2013, the census covered 24.39 crore households across the country- 17.91 crore are rural households.

7 Deprivation Criteria

1. Household with room, Katcha walls, Katcha roof : 13.25%
2. Household with no adult member : 3.64%
3. Female as household head, no adult member : 3.85 %
4. Household with disabled member, no able adult : 3.99%
5. SC/ST household : 21.53%
6. Household with no literate adult above 25 years : 23.52%
7. Landless household, major income from manual, casual labour : 29.97%

- > Andhra Pradesh (73%) and Tamil Nadu (73%) are on top in the list of landless rural households, followed by Kerala (72%), West Bengal (70%), Punjab and Bihar (both 65%) are the states above national average (56%).
- > According to SECC data 31.26% of the total rural households can be broadly identified as "poor".
- > As many as 74.49% rural households survive on a monthly income of less than ₹ 5,000 of its highest earner. The highest number of such households is in Chhattisgarh (over 90%).
- > 5% rural households derive salaries from government jobs, 1.11% from public and 3.57% from private sources.
- > Overall, 94% of households own houses, but only 17.70% of SC and 10.50 % of ST households have their own houses.
- > Only 4.58% rural households pay income tax.
- > 70% of total SC households and 38.27% rural households (SC) are "landless households deriving major part of their income from manual casual labour". The highest are in Tamil Nadu (55.80%) and Bihar (54.33%).
- > The largest proportion of households with "destitute living on alms" is in Odisha.



Physics

Unit: The chosen standard used for measuring a physical quantity is called unit.
Unit should be :

1. well defined
2. easy to reproduce
3. easy to compare
4. internationally accepted
5. independent of changes in physical conditions

Units are of two types : 1. Fundamental Unit and
2. Derived Unit

System of Units : Units depend on choice. Each choice of units leads to a new system (set) of units. The internationally accepted systems are 1. CGS system, 2. MKS System 3. FPS System 4. SI Units.

In SI Units, there are seven fundamental units given in the following table :

Physical Quantity	SI Unit	Symbol	Physical Quantity	SI Unit	Symbol
Length	metre	m	Temperature	kelvin	K
Mass	kilogram	kg	Luminous intensity	candela	Cd
Time	second	s	Amount of substance	mole	mol
Electric Current	ampere	A			

Besides these seven fundamental units, two supplementary units are also defined, viz., radian [rad] for plane angle and steradian (sr) for solid angle.

- > All the units which are defined / expressed in terms of fundamental units are called derived units.

Some important derived units.

S. No.	Physical Quantity	cgs units	SI unit	Relation
1.	Force	dyne	newton	1 newton = 10^5 dyne
2.	work	erg	joule	1 joule = 10^7 erg

Some practical units of length, mass and time

Length	Mass	Time
Light year = distance travelled by light in one year in vacuum. 1LY = 9.46×10^{15} m	$1 \text{ Quintol} = 10^2 \text{ kg}$ $1 \text{ Metric ton} = 10^3 \text{ kg}$ $1 \text{ Atomic Mass Unit (amu)} = 1.66 \times 10^{-27} \text{ kg}$ $1 \text{ Dalton} = 1.66 \times 10^{-27} \text{ kg}$ $1 \text{ Slug} = 14.59 \text{ kg}$	$1 \text{ Solar day} = 86400 \text{ sec.}$ $1 \text{ Year} = 365 \frac{1}{2} \text{ solar days}$ $1 \text{ Lunar month} = 27.3 \text{ solar days.}$
$1 \text{ Astronomical Unit (A.U.)} = 1.5 \times 10^{11} \text{ m}$		
$1 \text{ Parsec} = 3.26 \text{ ly}$ $= 3.08 \times 10^{16} \text{ m}$	$1 \text{ Pound} = 0.4537 \text{ kg}$ $1 \text{ Chandrashekhar limit} = 1.4$ times the mass of sun $= 2.8 \times 10^{30} \text{ kg}$	
$1 \text{ Nautical mile or Seamile} = 6020 \text{ ft.}$		
$1 \text{ Micron} = 1 \mu\text{m} = 10^{-6} \text{ m}$		
$1 \text{ Angstrom (\AA)} = 10^{-10} \text{ m}$		

Prefixes used in metric system

Prefix	Symbol	Multiplier	Prefix	Symbol	Multiplier
deci	d	10^{-1}	deca	da	10^1
centi	c	10^{-2}	hecto	h	10^2
milli	m	10^{-3}	kilo	k	10^3
micro	μ	10^{-6}	mega	M	10^6
nano	n	10^{-9}	giga	G	10^9
pico	p	10^{-12}	tera	T	10^{12}
femto	f	10^{-15}	peta	P	10^{15}
atto	a	10^{-18}	exa	E	10^{18}
zepto	z	10^{-21}	zetta	Z	10^{21}
yocto	y	10^{-24}	yotta	Y	10^{24}

2. Motion

Scalar Quantities : Physical quantities which have magnitude only and no direction are called scalar quantities.

Example : Mass, speed, volume, work, time, power, energy etc.

Vector Quantities : Physical quantities which have magnitude and direction both and obey triangle law are called vector quantities.

Example : Displacement, velocity, acceleration, force, momentum, torque etc.

Electric current, though has a direction, is a scalar quantity because it does not obey triangle law.

Note : Moment of inertia, refractive index, stress are tensor quantities.

Distance : Distance is the length of actual path covered by a moving object in a given time interval.

Displacement : Shortest distance covered by a body in a definite direction is called displacement.

➤ Distance is a scalar quantity whereas displacement is a vector quantity but both having the same unit (metre)

➤ Displacement may be positive, negative or zero whereas distance is always positive. In general, magnitude of displacement \leq distance

Speed : Distance travelled by the moving object in unit time interval is called speed i.e. speed = $\frac{\text{Distance}}{\text{Time}}$

It is a scalar quantity and its SI unit is metre/second (m/s).

Velocity : Velocity of a moving object is defined as the displacement of the object in unit time interval i.e. velocity = $\frac{\text{Displacement}}{\text{Time}}$

It is a vector quantity and its SI unit is metre/second.

Acceleration : Acceleration of an object is defined as the rate of change of velocity of the object i.e. acceleration = $\frac{\text{Change in Velocity}}{\text{Time}}$

It is a vector quantity and its SI units is metre/second² (m/s²)

If velocity decreases with time then acceleration is negative and is called retardation.

Circular Motion : If an object describes a circular path (circle) its motion is called circular motion. If the object moves with uniform speed, its motion is uniform circular motion.

Uniform circular motion is an accelerated motion because the direction of velocity changes continuously, though the magnitude of velocity i.e. speed of the body remains unchanged.

Angular Velocity : The angle subtended by the line joining the object from the origin of circle in unit time interval is called angular velocity.

It is generally denoted by ω and $\omega = \frac{\theta}{t}$

If T = time period = time taken by the object to complete one revolution, n = frequency = no. of revolutions in one second.

then $nT = 1$ and $\omega = \frac{2\pi}{T} = 2\pi n$.

➤ In one revolution, the object travels $2\pi r$ distance.

∴ Linear speed = $\frac{2\pi r}{T} = \omega r$ = angular speed \times radius

Newton's laws of motion : Newton, the father of physics established the laws of motion in his book "principia" in 1687.

Newton's first law of motion : Every body maintains its initial state of rest or motion with uniform speed on a straight line unless an external force acts on it.

➤ First law is also called law of Galileo or law of inertia.

➤ **Inertia** : Inertia is the property of a body by virtue of which the body opposes change in its initial state of rest or motion with uniform speed on a straight line.

Inertia is of two types 1. Inertia of rest 2. Inertia of motion

Some examples of Inertia :

- When a car or train starts suddenly, the passengers bends backward.
- When a running horse stops suddenly, the rider bends forward.
- When a coat / blanket is beaten by a stick, the dust particles are removed.

➤ First law gives the definition of force.

➤ **Force** : Force is that external cause which when acts on a body changes or tries to change the initial state of rest or motion with uniform velocity of the body.

Momentum : Momentum is the property of a moving body and is defined as the product of mass and velocity of the body. i.e.

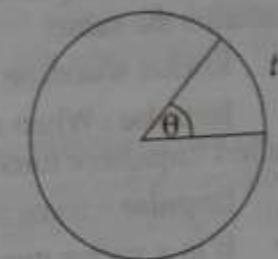
$$\text{momentum} = \text{mass} \times \text{velocity}$$

It is a vector quantity. Its SI unit is kg m/s.

Newton's second law of motion : The rate of change in momentum of a body is directly proportional to the applied force on the body and takes place in the direction of force.

If F = force applied, a = acceleration produced and m = mass of body then

$$F = ma$$



- Newton's second law gives the magnitude of force.
- Newton's first law is contained in the second law.

Newton's Third Law of Motion: To every action, there is an equal and opposite reaction.

Examples of third law-**1.** Recoil of a gun **2.** Motion of rocket **3.** Swimming
4. While drawing water from the well, if the string breaks up the man drawing water falls back.

Principle of conservation of linear momentum : If no external force acts on a system of bodies, the total linear momentum of the system of bodies remains constant.

As a consequence, the total momentum of bodies before and after collision remains the same.

Rocket works on the principle of conservation of linear momentum.

Impulse : When a large force acts on a body for very small time, then force is called impulsive force. Impulse is defined as the product of force and time.

$$\text{Impulse} = \text{force} \times \text{time} = \text{change in momentum.}$$

➤ It is a vector quantity and its direction is the direction of force. Its SI unit is newton second (Ns).

Centripetal Force : When a body travels along a circular path, its velocity changes continuously. Naturally an external force always acts on the body towards the centre of the path.

The external force required to maintain the circular motion of the body is called centripetal force.

If a body of mass m is moving on a circular path of radius R with uniform speed v , then the required centripetal force, $F = \frac{mv^2}{R}$

Centrifugal Force : In applying the Newton's laws of motion, we have to consider some forces which can not be assigned to any object in the surrounding. These forces are called pseudo force or inertial force.

Centrifugal force is such a pseudo force. It is equal and opposite to centripetal force.

➤ Cream separator, centrifugal drier work on the principle of centrifugal force.
 ➤ Centrifugal force should not be confused as the reaction to centripetal force because forces of action and reaction act on different bodies.

Moment of force : The rotational effect of a force on a body about an axis of rotation is described in terms of moment of force.

Moment of a force about an axis of rotation is measured as the product of magnitude of force and the perpendicular distance of direction of force from the axis of rotation.

➤ i.e. Moment of force = Force \times moment arm
 ➤ It is a vector quantity. Its SI unit is newton metre (Nm)

Centre of Gravity : The centre of gravity of a body is that point through which the entire weight of body acts. The centre of gravity of a body does not change with the change in orientation of body in space.

The weight of a body acts through centre of gravity in the downward direction. Hence a body can be brought to equilibrium by applying a force equal to its weight in the vertically upward direction through centre of gravity.

Equilibrium : If the resultant of all the forces acting on a body is zero then the body is said to be in equilibrium.

If a body is in equilibrium, it will be either at rest or in uniform motion. If it is at rest, the equilibrium is called static, otherwise dynamic.

➤ Static equilibrium is of the following three types :

1. Stable Equilibrium : If on slight displacement from equilibrium position, a body has tendency to regain its original position, it is said to be in stable equilibrium.

2. Unstable equilibrium : If on slight displacement from equilibrium position, a body moves in the direction of displacement and does not regain its original position, the equilibrium is said to unstable equilibrium. In this equilibrium, the centre of gravity of the body is at the highest position.

3. Neutral Equilibrium : If on slight displacement from equilibrium position a body has no tendency to come back to its original position or to move in the direction of displacement, it is said to be in neutral equilibrium. In neutral equilibrium, the centre of gravity always remains at the same height.

Conditions for stable Equilibrium : For stable equilibrium of a body, the following two conditions should be fulfilled.

1. The centre of gravity of the body should be at the minimum height.
2. The vertical line passing through the centre of gravity of the body should pass through the base of the body.

3. Work, Energy and Power

Work : If a body gets displaced when a force acts on it, work is said to be done. Work is measured by the product of force and displacement of the body along the direction of force.

If a body gets displaced by S when a force F acts on it, then the work $W = F S \cos\theta$

where θ = angle between force and displacement

If both force and displacement are in the same direction, then $W = FS$

➤ If force and displacement are perpendicular to each other,
 $W = 0$ as $\cos 90^\circ = 0$.

For example, in case of uniform circular motion work done by the centripetal force is zero.

Work is a scalar quantity and its SI unit is joule.

Energy : Capacity of doing work by a body is called its energy.

- Energy is a scalar quantity and its SI unit is joule.
- Energy developed in a body due to work done on it is called mechanical energy.
- Mechanical energy is of two types : **1. Potential Energy** **2. Kinetic Energy**

Potential Energy : The capacity of doing work developed in a body due to its position or configuration is called its potential energy.

Example : **1.** energy of stretched or compressed spring **2.** energy of water collected at a height **3.** energy of spring in a watch.

PE of a body in the gravitational field of earth is mgh .

where m = mass, g = acceleration due to gravity, h = height of the body from surface of the earth.

Kinetic Energy: Energy possessed by a body due to its motion is called Kinetic Energy of the body.

If a body of mass m is moving with speed v , then kinetic energy of the body is $\frac{1}{2}mv^2$

Principle of Conservation of Energy

Energy can neither be created nor can be destroyed. Only energy can be transformed from one form to another form. Whenever energy is utilized in one form, equal amount of energy is produced in other form. Hence total energy of the universe always remains the same. This is called the principle of conservation of energy.

Some Equipments used to Transform Energy

S.	Equipment	Energy Transformed
1.	Dynamo	Mechanical energy into electrical energy
2.	Candle	Chemical energy into light and heat energy
3.	Microphone	Sound energy into electrical energy
4.	Loud Speaker	Electrical energy into sound energy
5.	Solar Cell	Solar energy into electrical energy
6.	Tube light	Electrical energy into light energy
7.	Electric Bulb	Electrical energy into light and heat energy
8.	Battery	Chemical energy into electrical energy
9.	Electric motor	Electrical energy into mechanical energy
10.	Sitar	Mechanical energy into sound energy

Relation between Momentum and Kinetic Energy

$$K.E = \frac{p^2}{2m} \text{ where } p = \text{momentum} = mv$$

Clearly when momentum is doubled, kinetic energy becomes four times.

Power: Rate of doing work is called power.

It an agent does W work in time t , then power of agent = $\frac{W}{t}$

SI unit of power is watt named as a respect to the scientist James Watt,

watt = joule/sec.

$1\text{ kW} = 10^3 \text{ watt}$

$1\text{ MW} = 10^6 \text{ watt}$

Horse power is a practical unit of power. $1\text{ H.P.} = 746 \text{ watt}$.

$1 \text{ watt second} = 1 \text{ watt} \times 1 \text{ second} = 1 \text{ joule}$.

$1 \text{ watt hour (Wh)} = 3600 \text{ joule}$

$1 \text{ kilowatt hour (kWh)} = 3.6 \times 10^6 \text{ joule}$.

$W, \text{ kW}, \text{ MW} \& \text{ H.P.}$ are units of power.

$Ws, \text{ Wh}, \text{ kWh}$ are units of work and energy.

4. Gravitation

Gravitation: Every body attracts other body by a force called force of gravitation.

Newton's law of Gravitation: The force of gravitational attraction between two point bodies is directly proportional to the product of their masses and inversely proportional to the square of the distance between them.

Consider two point bodies of masses m_1 and m_2 placed at a distance r . The force of gravitational attraction between them, $F = G \frac{m_1 m_2}{r^2}$

Here G is constant called universal gravitational constant. The value of G is $6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$.

Gravity: The gravitational force of earth is called gravity i.e. gravity is the force by which earth pulls a body towards its centre.

The acceleration produced in a body due to force of gravity is called acceleration due to gravity (denoted as g) and its value is 9.8 m/s^2 .

Acceleration due to gravity is independent of shape, size and mass of the body.

Variation in g

1. value of g decreases with height or depth from earth's surface.
2. g is maximum at poles.
3. g is minimum at equator.
4. g decreases due to rotation of earth.
5. g decreases if angular speed of earth increases and increases if angular speed of earth decreases.
- If angular speed of earth becomes 17 times its present value, a body on the equator becomes weightless.

Weight of a body in a lift

1. If lift is stationary or moving with uniform speed (either upward or downward), the apparent weight of a body is equal to its true weight.
2. If lift is going up with acceleration, the apparent weight of a body is more than the true weight.
3. If lift is going down with acceleration, the apparent weight of a body is less than the true weight.
4. If the cord of the lift is broken, it falls freely. In this situation the weight of a body in the lift becomes zero. This is the situation of weightlessness.
5. While going down, if the acceleration of lift is more than acceleration due to gravity, a body in the lift goes in contact of the ceiling of lift.

Kepler's Laws of planetary motion

1. All planets move around the sun in elliptical orbits, with the sun being at rest at one focus of the orbit.
2. The position vector of the planet with sun at the origin sweeps out equal area in equal time i.e. The areal velocity of planet around the sun always remains constant.

A consequence of this law is that the speed of planet increases when the planet is closer to the sun and decreases when the planet is far away from sun.

Speed of a planet is maximum when it is at perigee and minimum when it is at apogee.

3. The square of the period of revolution of a planet around the sun is directly proportional to the cube of mean distance of planet from the sun.

If T is period of revolution and r is the mean distance of planet from sun then $T^2 \propto r^3$.

Clearly distant planets have larger period of revolution. The time period of nearest planet Mercury is 88 days where as time period of farthest planet Pluto is 247.7 years.

Satellite : Satellites are natural or artificial bodies revolving around a planet under its gravitational attraction. Moon is a natural satellite while INSAT-IB is an artificial satellite of earth.

Orbital speed of a satellite

1. Orbital speed of a satellite is independent of its mass. Hence satellites of different masses revolving in the orbit of same radius have same orbital speed.
 2. Orbital speed of a satellite depends upon the radius of orbit (height of satellite from the surface of earth). Greater the radius of orbit, lesser will be the orbital speed.
- > The orbital speed of a satellite revolving near the surface of earth is 7.9 km/sec.

Period of Revolution of a satellite : Time taken by a satellite to complete one revolution in its orbit is called its period of revolution.

$$\text{i.e. period of revolution} = \frac{\text{circumference of orbit}}{\text{orbital speed}}$$

1. Period of revolution of a satellite depends upon the height of satellite from the surface of earth. Greater the height, more will be the period of revolution.
 2. Period of revolution of a satellite is independent of its mass.
- > The period of revolution of satellite revolving near the surface of earth is 1 hour 24 minute (84 minute)

Geo-Stationary Satellite : If a satellite revolves in equatorial plane in the direction of earth's rotation i.e. from west to east with a period of revolution equal to time period of rotation of earth on its own axis i.e. 24 hours, then the satellite will appear stationary relative to earth. Such a satellite is called Geo-stationary satellite. Such a satellite revolves around the earth at a height of 36000 km. The orbit of Geo-stationary satellite is called parking orbit. Arthur C. Clarke was first to predict that a communication satellite can be stationed in the geosynchronous orbit.

Escape velocity : Escape velocity is that minimum velocity with which a body should be projected from the surface of earth so as it goes out of gravitational field of earth and never return to earth.

- > Escape velocity is independent of the mass, shape and size of the body and its direction of projection.
- > Escape velocity is also called second cosmic velocity.
- > For earth, escape velocity = 11.2 km/s.
- > For moon, escape velocity = 2.4 km/s.

R = Radius of earth, i.e. $V_e = \sqrt{gR}$ and escape velocity $V_e = \sqrt{2gR}$ where velocity.

Therefore if the orbital velocity of a satellite is increased to $\sqrt{2}$ times (increased by 41%), the satellite will leave the orbit and escape.

5. Pressure

Pressure : Pressure is defined as force acting normally on unit area of the surface.

$$\text{Pressure } (P) = \frac{F}{A} = \frac{\text{Normal force on the surface}}{\text{Area of the surface}}$$

SI unit of pressure is N/m^2 also called pascal (Pa). Pressure is a scalar quantity. Atmospheric pressure : Atmospheric pressure is that pressure which is exerted by a mercury column of 76 cm length at 0°C at 45° latitude at the sea-level. It is equal to weight of 76 cm column of mercury of cross-sectional area 1 cm^2 . Generally it is measured in bar. $1\text{ bar} = 10^5 N/m^2$

Atmospheric pressure $1\text{ atm} = 1.01\text{ bar} = 1.01 \times 10^5 N/m^2 = 760\text{ torr}$

One torr is the pressure exerted by a mercury column of 1 mm length.

- > Atmospheric pressure decreases with altitude (height from earth's surface). This is why 1. It is difficult to cook on the mountain 2. The fountain pen of a passenger leaks in aeroplane at height.
- > Atmospheric pressure is measured by barometer. With the help of barometer, weather forecast can be made.
- > Sudden fall in barometric reading is the indication of storm.
- > Slow fall in barometric reading is the indication of rain.
- > Slow rise in the barometric reading is the indication of clear weather.

Pressure in liquid : Force exerted on unit area of wall or base of the container by the molecules of liquid is the pressure of liquid.

The pressure exerted by liquid at depth h below the surface of liquid is given as $p = hdg$ where d is the density of liquid.

- > Regarding pressure, the following points are worth noting :
- 1. In a static liquid at same horizontal level, pressure is same at all points.
- 2. Pressure at a point in a static liquid has same value in all directions
- 3. Pressure at a point in a liquid is proportional to the depth of the point from the free surface.
- 4. Pressure at a point in a liquid is proportional to the density of the liquid.

Pascal law for pressure of liquid

1. If gravitational attraction is negligible, in equilibrium condition, pressure is same at all points in a liquid.
2. If an external pressure is applied to an enclosed fluid, it is transmitted undiminished to every direction.
- > Hydrolic lift, hydrolic press, Hydrolic brake work on Pascal law.

Effect of pressure on Melting Point and Boiling Point

1. The M.P. of substances which expands on fusion increases with the increase in pressure; for example - wax.
2. The M.P. of substances which contracts on fusion decreases with the increase in temperature for example - ice.
3. Boiling point of all the substances increases with the increase in pressure.

6. Floatation

Buoyant Force: When a body is immersed partly or wholly in a liquid, a force acts on the body by the liquid in the upward direction. This force is called Buoyant force or force of buoyancy or upthrust. It is equal to the weight of liquid displaced by the body and acts at the centre of gravity of displaced liquid. Its study was first made by Archimedes.

Archimedes Principle: When a body is immersed partly or wholly in a liquid, there is an apparent loss in the weight of the body which is equal to the weight of liquid displaced by the body.

Law of Floatation

A body floats in a liquid if

1. Density of material of body is less than or equal to the density of liquid.
2. If density of material of body is equal to density of liquid, the body floats fully submerged in liquid in neutral equilibrium.
3. When body floats in neutral equilibrium, the weight of the body is equal to the weight of displaced liquid.
4. The centre of gravity of the body and centre of gravity of the displaced liquid should be in one vertical line.

Centre of Buoyancy: The centre of gravity of the liquid displaced by a body is called centre of buoyancy.

Meta Centre: When a floating body is slightly tilted from equilibrium position, the centre of buoyancy shifts. The point at which the vertical line passing through the new position of centre of buoyancy meets with the initial line is called meta centre.

Conditions for stable equilibrium of Floating body

1. The meta centre must always be higher than the centre gravity of the body.
2. The line joining the centre of gravity of the body and centre of flotation should be vertical.

Density: Density is defined as mass per unit volume.

$$\text{Density} = \frac{\text{mass}}{\text{volume}}. \text{ Its SI unit is } \text{kg/m}^3.$$

$$\text{Relative density} = \frac{\text{density of material}}{\text{density of water at } 4^\circ\text{C}}$$

Since relative density is a ratio, it is unitless.

> Relative density is measured by Hydrometer.

> The density of sea water is more than that of normal water. This explains why it is easier to swim in sea water.

> When ice floats in water, its $\frac{1}{10}$ the part remain outside the water.

> If ice floating in water in a vessel melts, the level of water in the vessel does not change.

> Purity of milk is measured by lactometer.

7. Surface Tension

Cohesive Force: The force of attraction between the molecules of same substance is called cohesive force. Cohesive force is maximum in solids. This is why solids have a fixed shape. Cohesive force is negligible in case of gases.

Adhesive Force: Force of attraction between the molecules of different substances is called adhesive force. Due to adhesive force, one body sticks to other.

Surface Tension: Surface tension is the property of a liquid by virtue of which it has the tendency to have the area of its free surface minimum as if it were under tension like a stretched elastic membrane.

A liquid drop attains spherical shape due to surface tension as for given volume, sphere has minimum surface area.

Surface tension of a liquid is measured by the normal force acting per unit length on either side of an imaginary line drawn on the free surface of liquid and tangential to the free surface.

So, if a force F acts on an imaginary line of length l , then surface tension, $T = F/l$.

- > Work done in increasing the surface area of a liquid by unity under isothermal condition is equal to surface tension of liquid. According to this definition, unit of surface tension is joule / meter².
- > Surface tension of a liquid decreases with the increase of temperature and becomes zero at critical temperature.

Capillary tube: A tube having very narrow (fine) and uniform bore is called a capillary tube.

Capillarity: If a capillary tube is dipped in a liquid, liquid ascends or descends in the capillary tube. This phenomenon is called capillarity.

- > The height by which liquid ascends or decends in a capillary tube depends upon the radius of the tube.

The capillarity depends on the nature of liquid and solid both. The liquid which wets the wall of tube rises in the tube and the liquid which does not wet the wall of tube descends in the tube. For example, when a glass capillary tube is dipped in water, water rises in the tube and shape of water meniscus is concave, similarly when a glass capillary tube is dipped in mercury, mercury descends in the tube and shape of mercury meniscus is convex.

Illustrations of capillarity

1. A piece of blotting paper soaks ink because the pores of the blotting paper serve as capillary tubes.
2. The oil in the wick of a lamp rises due to capillary action of threads in the wick.
3. The root hairs of plants draws water from the soil through capillary action.
4. To prevent loss of water due to capillary action, the soil is loosened and split into pieces by the farmers.
5. If a capillary tube is dipped in water in an artificial satellite, water rises up to other end of tube because of its zero apparent weight, how long the tube may be.
6. Action of towel in soaking up water from the body is due to capillary action of cotton in the towel.
7. Melted wax, in a candle rises up to wick by capillary action.

- > If a clean and dry needle is kept slowly on the surface of water, it floats due to surface tension.
- > The addition of detergent or soap decrease the surface tension of water and thus increases the cleaning ability.
- > Bubbles of soap solution are big because addition of soap decreases the surface tension of water.
- > When kerosene oil is sprinkled on water, its surface tension decreases. As a result the larva of mosquitoes floating on the surface of water die due to sinking.
- > Warm soup is tasty because at high temperature its surface tension is low and consequently the soup spreads on all parts of the tongue.

8. Viscosity

Viscous force: The force which opposes the relative motion between different layers of liquid or gases is called viscous force.

Viscosity: Viscosity is the property of a liquid by virtue of which it opposes the relative motion between its different layers.

- > Viscosity is the property of liquids and gases both.
- > The viscosity of a liquid is due to cohesive force between its molecules.
- > The viscosity of a gas is due to diffusion of its molecules from one layer to other layer.
- > Viscosity of gases is much less than that of liquids. There is no viscosity in solids.
- > Viscosity of an ideal fluid is zero.
- > With rise in temperature, viscosity of liquids decreases and that for gases increases.
- > Viscosity of a fluid is measured by its coefficient of viscosity. Its SI unit is decapoise (kg/ms) or pascal second. It is generally denoted by η .

Terminal Velocity: When a body falls in a viscous medium, its velocity first increases and finally becomes constant. This constant velocity is called Terminal velocity.

In this situation, the weight of the body is equal to the sum of viscous force and force of buoyancy i.e. the net force on the body is zero.

Terminal velocity of a spherical body falling in a viscous medium is proportional to the square of radius of the body.

Streamline Flow: If a fluid is flowing in such a way that velocity of all the fluid particles reaching a particular point is same at all time, then the flow of fluid is said to be streamline flow. Thus in streamline flow, each particle follows the same path as followed by a previous particle passing through that point.

Critical Velocity: The maximum velocity up to which fluid motion is streamline is called critical velocity. Clearly, if the velocity of flow is below critical velocity, flow is streamline and if the velocity is above the critical velocity, flow is turbulent.

If the velocity of flow is less than critical velocity, the rate of flow of fluid depends basically on viscosity of fluid. If the velocity of flow is more than critical velocity, the rate of flow depends on the density of fluid and not on viscosity. Due to this reason, on eruption of the volcano, the lava coming out of it flows very swiftly although it is very dense having large viscosity.

Bernoulli's theorem: According to Bernoulli's theorem, in case of streamline flow of incompressible and non viscous fluid (ideal fluid) through a tube, total energy (sum of pressure energy, potential energy and kinetic energy) per unit volume of fluid is same at all points.

Venturimeter, a device used to measure rate of flow of fluid, works on Bernoulli's theorem.

9. Elasticity

Elasticity: Elasticity is the property of material of a body by virtue of which the body acquires its original shape and size after the removal of deforming force.

Elastic Limit: Elastic limit is the maximum value of deforming force upto which a material shows elastic property and above which the material loses its elastic property.

Stress: The restoring force per unit area set up inside the body subjected to deforming force is called stress.

Strain: The relative change in dimension or shape of a body which is subjected to stress is called strain.

It is measured by ratio of change in length to the original length (longitudinal strain), change in volume to original volume (volume strain).

Hooke's law: Under elastic limit, stress is proportional to strain
i.e. stress \propto strain or $\frac{\text{stress}}{\text{strain}} = E$ (constant)

E is called elastic constant or modulus of elasticity. Its value is different for different material. Its SI unit is Nm^{-2} also called pascal.

Elastic constant is of three types :

1. Young's modulus of elasticity $Y = \frac{\text{Longitudinal stress}}{\text{Longitudinal strain}}$
2. Bulk modulus of elasticity $K = \frac{\text{Volume stress}}{\text{Volume Strain}}$
3. Rigidity modulus (η) = $\frac{\text{Tangential (or shear) stress}}{\text{Shear strain}}$

10. Simple Harmonic Motion

Periodic Motion: Any motion which repeats itself after regular interval of time is called periodic or harmonic motion. Motion of hands of a clock, motion of earth around the sun, motion of the needle of a sewing machine are the examples of periodic motion.

Oscillatory Motion: If a particles repeats its motion after a regular time interval about a fixed point, motion is said to be oscillatory or vibratory. i.e. oscillatory motion is a constrained periodic motion between precisely fixed limits. Motion of piston in an automobile engine, motion of balance wheel of a watch are the examples of oscillatory motion.

Time period: Time taken in one complete oscillation is called time period. Or, Time after which motion is repeated is called time period.

Frequency = Frequency is the no. of oscillations completed by oscillating body in unit time interval. Its SI unit is Hertz.

If n = frequency, T = time period, then $nT = 1$

Simple Harmonic Motion : If a particle repeats its motion about a fixed point after a regular time interval in such a way that at any moment the acceleration of the particle is directly proportional to its displacement from the fixed point at that moment and is always directed towards the fixed point then the motion of the particle is called simple harmonic motion.

The fixed point is called mean point or equilibrium point.

Characteristics of SHM

When a particle executing SHM passes through the mean position :

1. No force acts on the particle.
2. Acceleration of the particle is zero.
3. Velocity is maximum.
4. Kinetic energy is maximum.
5. Potential energy is zero.

When a particle executing SHM is at the extreme end, then :

1. Acceleration of the particle is maximum.
2. Restoring force acting on particle is maximum.
3. Velocity of particle is zero.
4. Kinetic energy of particle is zero.
5. Potential energy is maximum.

Simple Pendulum : If a point mass is suspended from a fixed support with the help of a massless and inextensible string, the arrangement is called simple pendulum. The above is an ideal definition. Practically a simple pendulum is made by suspending a small ball (called bob) from a fixed support with the help of a light string.

If the bob of a simple pendulum is slightly displaced from its mean position and then released, it starts oscillating in simple harmonic motion. Time period of oscillation of a simple pendulum is given as

$$T = 2\pi \sqrt{\frac{l}{g}}$$

where l is the effective length of the pendulum and g is the acceleration due to gravity.

11. Wave

> A wave is a disturbance which propagates energy from one place to the other without the transport of matter.

Waves are broadly of two types :

1. Mechanical Wave
2. Non-mechanical wave

> **Mechanical Wave** : The waves which require material medium (solid, liquid or gas) for their propagation are called mechanical wave or elastic wave. Mechanical waves are of two types

1. **Longitudinal wave** : If the particles of the medium vibrate in the direction of propagation of wave, the wave is called longitudinal wave.

Waves on springs or sound waves in air are examples of longitudinal waves.

2. **Transverse Wave** : If the particles of the medium vibrate perpendicular to the direction of propagation of wave, the wave is called transverse wave.

Waves on strings under tension, waves on the surface of water are examples of transverse waves.

- > **Non-mechanical waves or electromagnetic waves** : The waves which do not require medium for their propagation i.e. which can propagate even through the vacuum are called non-mechanical wave.
- > Light, heat are the examples of non-mechanical wave. In fact all the electromagnetic waves are non-mechanical.
- > All the electromagnetic wave consists of photon.
- > The wavelength range of electromagnetic wave is 10^{-14} m to 10^4 m.

Properties of electromagnetic waves

1. They are neutral (uncharged).
2. They propagate as transverse wave.
3. They propagate with the velocity of light.
4. They contains energy and momentum.
5. Their concept was introduced by Maxwell.

Following waves are not electromagnetic

1. Cathode rays
2. Canal rays
3. α rays
4. β rays
5. Sound wave

6. Ultrasonic wave

Some Important Electromagnetic Waves

Electro-magnetic Waves	Discoverer	Wavelength range (in meter)	Frequency range
γ -Rays	Henry Becquerel	10^{-14} to 10^{-10}	10^{23} to 10^{16}
X-Rays	W. Rontgen	10^{-10} to 10^{-8}	10^{18} to 10^{16}
Ultra-violet rays	Ritter	10^{-8} to 10^{-7}	10^{16} to 10^{14}
Visible radiation	Newton	3.9×10^{-7} to 7.8×10^{-7}	10^{14} to 10^{12}
Infra-red rays	Hershel	7.8×10^{-7} to 7.8×10^{-3}	10^{12} to 10^{10}
Short radio waves or Hertzian Waves	Heinrich Hertz	10^{-3} to 1	10^{10} to 10^6
Long Radio Waves	Marconi	1 to 10^4	10^6 to 10^9

Note : Electromagnetic waves of wavelength range 10^{-3} m to 10^{-2} m are called microwaves.

Phase of vibration : Phase of vibration of a vibrating particle at any instant is the physical quantity which express the position as well as direction of motion of the particle at that instant with respect to its equilibrium (mean) position.

Amplitude : Amplitude is defined as the maximum displacement of the vibrating particle on either side from the equilibrium position.

Wavelength : Wavelength is the distance between any two nearest particle of the medium, vibrating in the same phase. It is denoted by the Greek letter **lambda** (λ).

In transverse wave distance between two consecutive crests or troughs and in longitudinal wave, distance between two consecutive compressions or rarefactions is equal to wavelength.

Relation between wavelength, frequency and velocity of wave

$$\text{Velocity of wave} = \text{frequency} \times \text{wavelength} \text{ or, } v = n\lambda$$

- A path difference of Δx corresponds to a phase difference $\Delta\phi$ where $\Delta\phi = \frac{2\pi}{\lambda} \cdot \Delta x$.

12. Sound Wave

- Sound waves are longitudinal mechanical waves.
- According to their frequency range, longitudinal mechanical waves are divided into the following categories :

1. Audible or Sound Waves : The longitudinal mechanical waves which lie in the frequency range 20 Hz to 20000 Hz are called audible or sound waves. These waves are sensitive to human ear. These are generated by the vibrating bodies such as tuning fork, vocal cords etc.

2. Infrasonic Waves : The longitudinal mechanical waves having frequencies less than 20 Hz are called Infrasonic. These waves are produced by sources of bigger size such as earth quakes, volcanic eruptions, ocean waves and by elephants and whales.

3. Ultrasonic Waves : The longitudinal mechanical waves having frequencies greater than 20000 Hz are called ultrasonic waves. Human ear can not detect these waves. But certain creatures like dog, cat., bat, mosquito can detect these waves. Bat not only detect but also produce ultrasonic.

Ultrasonic waves can be produced by Galton's whistle or Hartman's generator or by the high frequency vibrations of a quartz crystal under an alternating electric field (Piezo - electric effect) or by the vibrations of a ferromagnetic rod under an alternating magnetic field (Magnetostriction).

Applications of Ultrasonic Waves

- For sending signals.
- For measuring the depth of sea.
- For cleaning cloths, aeroplanes and machinery parts of clocks.
- For removing lamp-shoot from the chimney of factories.
- In sterilizing of a liquid.
- In Ultrasonography.

Speed of Sound :

- Speed of sound is different in different mediums. In a medium, the speed of sound basically depends upon elasticity and density of medium.
- Speed of sound is maximum in solids and minimum in gases.
- When sound enters from one medium to another medium, its speed and wavelength changes but frequency remains unchanged.
- In a medium, the speed of sound is independent of frequency.

Effect of pressure on speed of sound : The speed of sound is independent of pressure i.e. speed remains unchanged by the increase or decrease of pressure.

Effect of Temperature on speed of sound : The speed of sound increases with the increase of temperature of the medium. The speed of sound in air increases by 0.61 m/s when the temperature is increased by 1°C.

Effect of humidity on speed of sound : The speed of sound is more in humid air than in dry air because the density of humid air is less than the density of dry air.

Characteristics of Sound waves : Sound waves have the following three characteristics.

1. Intensity : Intensity of sound at any point in space is defined as amount of energy passing normally per unit area held around that point per unit time. SI Unit of Intensity is watt/m².

Intensity of sound at a point is,

- inversely proportional to the square of the distance of point from the source.
- directly proportional to square of amplitude of vibration, square of frequency and density of the medium.

Due to intensity, a sound appears loud or faint to the ear. Actually, the sensation of a sound perceived in ear is measured by another term called **loudness** which depends on intensity of sound and sensitiveness of the ear. Unit of loudness is **bel**. A practical unit of loudness is decibel (dB) which is equal to 1/10th of bel. Another unit of loudness is **phon**.

2. Pitch : Pitch is that characteristic of sound which distinguishes a sharp (or shrill) sound from a grave (dull or flat) sound. Pitch depends upon frequency. Higher the frequency, higher will be the pitch and shriller will be the sound. Lower the frequency, lower will be the pitch and grave will be the sound.

3. Quality : Quality is that characteristic of sound which enables us to distinguish between sounds produced by two sources having the same intensity and pitch. The quality depends upon number, frequency and relative intensities of overtones.

Echo : The sound waves received after being reflected from a high tower or mountains is called echo.

- To hear echo, the minimum distance between the observer and reflector should be 17 m (16.6 m).
- Persistence of ear (effect of sound on ear) is 1/10 sec.
- Due to refraction, sound is heard at longer distances in nights than in day.

Resonance : If the frequency of imposed periodic force is equal to the natural frequency of a body, the body oscillates with a very large amplitude. This phenomenon is called resonance.

Interference of sound : The modification or redistribution of energy at a point due to superposition of two (or, more) sound waves of same frequency is called interference of sound.

If two waves meet at a point in same phase, intensity of sound is maximum at that point. Such type of interference is called constructive interference. Similarly, if the two waves meet at a point in opposite phase, intensity of sound at that point is minimum. Such type of interference is called destructive interference.

Stationary wave : When two progressive waves of same type (ie both longitudinal or both transverse) having the same amplitude and same time period /

Speed of sound in different mediums	
Medium	Speed of sound (In m/s)
Carbon dioxide	260
Air (0°C)	332
Air (20°C)	343
Steam (at 100°C)	405
Helium	965
Alcohol	1213
Hydrogen	1269
Mercury	1450
Water (20°C)	1482
Sea water	1533
Copper	3560
Iron	5130
Glass	5640
Granite	6000
Aluminium	6420

frequency/wavelength travelling with same speed along the same straight line in opposite directions, superimpose, a new set of waves are formed which are called stationary or standing waves.

Diffraction of sound : Wavelength of sound is of the order of 1 m. If an obstacle of that range appears in the path of sound, sound deviates at the edge of obstacle and propagates forward. This phenomenon is called diffraction of sound.

Doppler's Effect : If there is a relative motion between source of sound and observer, the apparent frequency of sound heard by the observer is different from the actual frequency of sound emitted by the source. This phenomenon is called Doppler's effect.

When the distance between the source and observer decreases, the apparent frequency increases and vice-versa.

Mach Number : It is defined as the ratio of speed of source of sound to the speed of sound in the same medium under the same condition of temperature and pressure.

- > If Mach number > 1 , body is called supersonic.
- > If mach number > 5 , body is called hypersonic.
- > If mach number < 1 , the body (source) is said to be moving with subsonic speed.

Shock waves : A body moving with supersonic speed in air leaves behind it a conical region of disturbance which spreads continuously. Such a disturbance is called shock wave. This wave carries huge energy and may even make cracks in window panes or even damage a building.

Bow Waves : When a motor boat in a sea travels faster than sound, then waves just like shock-waves are produced on the surface of water. These waves are called bow waves.

13. Heat

Heat is that form of energy which flows from one body to other body due to difference in temperature between the bodies. The amount of heat contained in a body depends upon the mass of the body.

- > If W work is performed and heat produced is H then $\frac{W}{H} = J$ or, $W = JH$ where J is a constant called Mechanical Equivalent of Heat. Its value is 4.186 joule/calorie. It means if 4.186 joule of work is performed, 1 calorie of heat is consumed.

Units of Heat

C.G.S unit : calorie = It is the amount of heat required to raise the temperature of 1 g of pure water through 1°C .

International calorie : It is the amount of heat required to raise the temperature of 1 g of pure water from 14.5°C to 15.5°C .

F.P.S. unit : B.Th.U (British Thermal Unit) = It is the amount of heat required to raise the temp. of 1 pound of pure water through 1°F .

Relations between different units :

$$1 \text{ B.Th.U} = 252 \text{ calorie}$$

$$1 \text{ Therm} = 10^5 \text{ B.Th.U}$$

$$1 \text{ calorie} = 4.186 \text{ joule}$$

$$1 \text{ pound calorie} = 453.6 \text{ calorie.}$$

Temperature : Temperature is that physical cause which decides the direction of flow of heat from one body to other body. Heat energy always flows from body at higher temperature to body at lower temperature.

Measurement of Temperature

Thermometer : The device which measures the temperature of a body is called thermometer.

Scales of temperature measurement

To measure temperature two fixed points are taken on each thermometer. One of the fixed points is the freezing point of water or ice point as lower fixed point (LFP). The other fixed point is the boiling point of water or steam point as upper fixed print (UFP).

The temperatures of these fixed points, the no. of fundamental interval between the two fixed points on different temperature scales is shown by the table given below :

	Celsius	Fahrenheit	Reaumur	Kelvin	Rankine
UFP	100°C	212°F	80°R	373.15K	672°Ra
no. of fundamental interval	100	180	80	100	180
LFP	0°C	32°F	0°R	273.15K	492°Ra
Absolute zero	-273.15°C	-459.6°F	-218.4°R	0K	0°Ra

Relation between Temperature on different scales

$$\frac{C - 0}{100} = \frac{F - 32}{180} = \frac{R - 0}{80} = \frac{K - 273}{100} = \frac{Ra - 492}{180}$$

Conversion of temp difference from one scale to other scale.

$$\frac{\Delta C}{5} = \frac{\Delta F}{9} = \frac{\Delta R}{4} = \frac{\Delta K}{5} = \frac{\Delta Ra}{9}$$

- > Celsius was initially known as centigrade.
- > While expressing temperature on kelvin scale $^{\circ}$ (degree) is not used.
- > Freezing point (F.P.) of mercury is -39°C . Hence to measure temperature below this temperature, alcohol thermometer is used. F.P. of alcohol is -115°C .

Range of different thermometers

Mercury Thermometer : from -30°C to 350°C

Constant volume gas thermometer : from -200°C to 500°C (with H_2), below -200°C upto -268°C (with He) above 1000°C upto 1600°C (with N_2 gas and bulb of glazed porcelain)

Platinum resistance thermometer : from -200°C to 1200°C

Thermocouple thermometer : from -200°C to 1600°C

Total Radiation Pyrometer

When a body is at high temperature, it glows brightly and the radiation emitted by the body is directly proportional to the fourth power of absolute temperature of the body. Radiation pyrometer measures the temperature of a body by measuring the radiation emitted by the body.

This thermometer is not put in contact with the body. But it can not measure

temperature below 800°C because at low temperature emission of radiation is very small and can not be detected.

Specific Heat Capacity : Specific heat capacity of a material is the amount of heat required to raise the temperature of unit mass of substance through 1° . Its SI unit is Joule/kilogram kelvin ($\text{J}/\text{kg}\cdot\text{K}$)

> One calorie of heat is required to raise the temperature of 1 gram of water through 1°C . Hence specific heat capacity of water is 1 cal/gram $^{\circ}\text{C}$.

$$1 \text{ calorie/gm } ^{\circ}\text{C} = 4200 \text{ Joule/kg kelvin.}$$

Thermal Expansion

When a body is heated its length, surface area and volume increase. The increase in length, area and volume with the increase in temperature are measured in terms of coefficient of linear expansion or linear expansivity (α), coefficient of superficial expansion or superficial expansivity (β) and coefficient of cubical expansion or cubical expansivity (γ).

Relation between α , β and γ :

$$\alpha : \beta : \gamma = 1 : 2 : 3 \quad \text{or, } \beta = 2\alpha \text{ and } \gamma = 3\alpha$$

Anomalous expansion of water : Almost every liquid expands with the increase in temperature. But when temperature of water is increased from 0°C to 4°C , its volume decreases. If the temperature is increased above 4°C , its volume starts increasing. Clearly, density of water is maximum at 4°C .

Transmission of Heat : The transfer of heat from one place to other place is called transmission of heat. There are three modes of heat transfer - 1. conduction, 2. convection and 3. radiation.

Conduction : In this process, heat is transferred from one place to other place by the successive vibrations of the particles of the medium without bodily movement of the particles of the medium. In solids, heat transfer takes place by conduction.

Convection : In this process, heat is transferred by the actual movement of particles of the movement from one place to other place. Due to movement of particles, a current of particles set up which is called convection current.

In liquids and gases, heat transfer takes place by convection.

> Earth's atmosphere is heated by convection.

Radiation : In this method transfer of heat takes place with the speed of light without affecting the intervening medium.

Newton's law of cooling : The rate of loss of heat by a body is directly proportional to the difference in temperature between the body and the surrounding.

Kirchhoff's law : According to Kirchhoff's law, the ratio of emissive power to absorptive power is same for all surfaces at the same temperature and is equal to emissive power of black body at that temperature.

Kirchhoff's law signifies that good absorbers are good emitter.

If a shining metal ball with some black spot on its surface is heated to a high temperature and seen in dark, the shining ball becomes dull but the black spots shines brilliantly, because black spot absorbs radiation during heating and emit in dark.

Specific Heat Capacities of different materials ($\text{J}/\text{kg}\cdot\text{K}$)

Water	4200
Ice	2100
Iron	460
K. Oil	210
Mercury	140
Lead	130

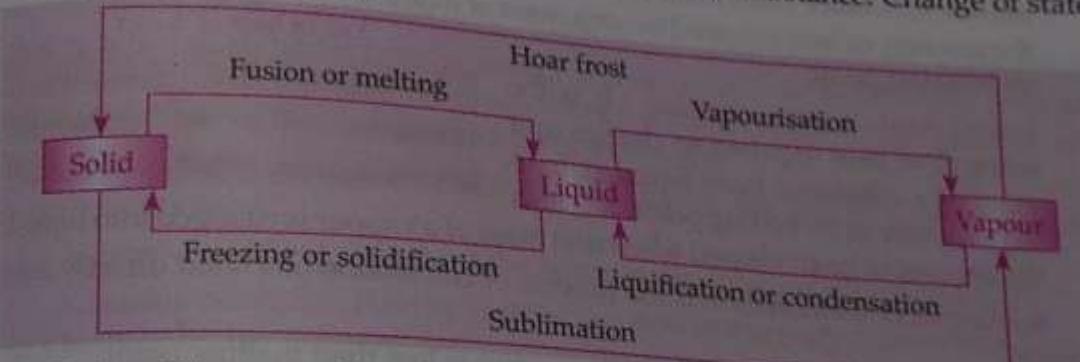
Stefan's law : The radiant energy emitted by a black body per unit area per unit time (i.e. emissive power) is directly proportional to the fourth power of its absolute temperature.

$$\text{i.e. } E \propto T^4$$

$$\text{or, } E = \sigma T^4$$

Change of State

Any material can remain in any of its three states (solid, liquid and gas). To change the substance from one state to other state is called change of state. For this either substance is heated or heat is extracted from the substance. Change of state takes place at a fixed temp.



Fusion : The process by which a substance is changed from solid state to liquid state is called fusion. Fusion takes place at a fixed temperature called melting point (M.P.)

Freezing : The process by which a substance is changed from liquid state to solid state is called freezing. Freezing takes at a fixed temperature called freezing point (F.P.) For a substance M.P. = F.P.

- > M.P. of a substance changes with the change in pressure. Melting point of substances which contracts in the process of fusion (as ice) decreases with the increase in pressure. Melting point of substances which expands in the process of fusion (as wax) increases with the increase in pressure.
- > With the addition of impurity (as salt in ice), melting point of a substance decreases.

Vapourisation : The process by which a substance is changed from liquid state to vapour state is called vapourisation.

Vapourisation takes place by two methods : 1. Evaporation & 2. Boiling or Ebullition

Evaporation : The process of vapourisation which takes place only from the exposed surface of liquid and that at all temperatures is called evaporation.

Evaporation causes cooling. This is why water in a earthed pot gets cooled in summer.

Boiling : The process of vapourisation which takes place at a fixed temperature and from whole part of liquid is called boiling.

The temperature at which boiling takes place is called boiling point.

Condensation : The process by which a substance is changed from vapour state to liquid state is called condensation.

- > Boiling point of a liquid increases with the increase in pressure.
- > Boiling point of a liquid increases with the addition of impurity.

Latent heat or heat of transformation

The amount of heat required to change the state of unit mass of substance at constant temperature is called latent heat.

If Q heat is required to change the state of a substance of mass m at constant temperature and L is the latent heat, then $Q = mL$.

S.I. unit of latent heat is Joule/kilogram.

Any material has two types of latent heat.

1. **Latent heat of fusion**: It is the amount of heat energy required to convert unit mass a substance from solid state to liquid state at its melting point. It is also the amount of heat released by unit mass of liquid when changed into solid at its freezing point.

2. **Latent heat of vapourisation**: It is the amount of heat required to change unit mass of a substance from liquid state to vapour state at its boiling point. It is also the amount of heat released when unit mass of a vapour is changed into liquid.

Sublimation: Sublimation is the process of conversion of a solid directly into vapour.

- > Sublimation takes place when boiling point is less than melting point.
- > Sublimation is shown by camphor or ice in vacuum.

Hoar Frost: Hoar frost is just the reverse process of sublimation i.e. it is the process of direct conversion of vapour into solid.

- > Steam produces more severe burn than water at same temperature because internal energy of steam is more than that of water at same temperature.

Relative Humidity: Relative humidity is defined as the ratio of amount of water vapour present in a given volume of atmosphere to the amount of water vapour required to saturate the same volume at same temperature.

The ratio is multiplied by 100 to express the relative humidity in percentage.

- > Relative humidity is measured by Hygrometer.
- > Relative humidity increases with the increase of temperature.

Air conditioning: For healthy and favourable atmosphere of human being, the conditions are as follows :

1. **Temperature**: from 23°C to 25°C .
2. **Relative humidity**: from 60% to 65%.
3. **Speed of air**: from 0.75 meter/minute to 2.5 meter/minute.

Thermodynamics

First law of thermodynamics: Heat energy given to a system is used in the following two ways :

1. In increasing the temperature and hence internal energy of the system.
2. In doing work by the system.

If ΔQ = heat energy given to the system

ΔU = Increase in the internal energy of the system.

ΔW = work done by the system

Then, $\Delta Q = \Delta U + \Delta W$ is the mathematical statement of first law of thermodynamics.

First law of thermodynamics is equivalent to principle of conservation of energy.

Isothermal Process: If the changes are taking place in a system in such a way that temperature of the system remains constant throughout the change, then the process is said to be isothermal.

Adiabatic Process: If the changes are taking place in a system in such a way that there is no exchange of heat energy between the system and the surrounding, then the process is said to be an adiabatic process.

If carbon dioxide is suddenly expanded, it is changed into dry ice. This is an example of adiabatic process.

Second Law of Thermodynamics: The first law of thermodynamics guarantees that in a thermodynamic process, energy will be conserved. But this law does not tell whether a given process in which energy is conserved will take place or not. The second law of thermodynamics gives the answer.

Through this law can be stated in many forms, the following two forms are worth mentioning :

Kelvin's statement: Whole of the heat can never be converted into work.

Clausius statement: Heat by itself can not flow from a body at lower temperature to a body at higher temperature.

Heat Engine: Heat engine is a device which converts heat energy into mechanical work continuously through a cyclic process. Every heat engine basically consists of the three parts : 1. source (a hot body) 2. sink (a cold body) and 3. a working substance.

Heat engine may be divided into two types :

1. **Internal Combustion Engine**: In this engine, heat is produced in the engine itself. Example : Otto engine or petrol engine (efficiency = 52%), Diesel engine (efficiency = 64%)

2. **External Combustion Engine**: In this engine heat is produced outside the engine. Steam engine is an example of external combustion engine. (efficiency = 20%)

Refrigerator or Heat Pump: A refrigerator is an apparatus which transfers heat energy from cold to a hot body at the expence of energy supplied by an external agent. The working substance here is called refrigerant.

In actual refrigerator, vapours of freon (CCl_2F_2) acts as refrigerant.

14. Light

Light is a form of energy which is propagated as electromagnetic waves. In the spectrum of electromagnetic waves it lies between ultra-violet and infra-red region and has wavelength between 3900 \AA° to 7800 \AA° .

- > Electromagnetic waves are transverse, hence light is transverse wave.
- > Wave nature of light explains rectilinear propagation, reflection, refraction, interference, diffraction and polarisation of light.
- > The phenomena like photoelectric effect, compton effect are not explained on the basis of wave nature of light. These phenomena are explained on the basis of quantum theory of light as proposed by Einstein.

- In quantum theory, light is regarded as a packet or bundle of energy called photon. Photon is associated with it an energy E where $E = h\nu$.
- Clearly light behaves as wave and particle both. Thus light has dual nature.
- Speed of light was first measured by Roemer. (1678 AD).
- Speed of light is maximum in vacuum and air (3×10^8 m/s)

Refractive index : R.I. of a medium is defined as the ratio of speed of light in vacuum to the speed of light in the medium.

$$\mu = \frac{c}{v} = \frac{\text{Speed of light in vacuum}}{\text{Speed of light in the medium}}$$

- Speed of light is different in different media. Velocity of light is large in a medium which has small refractive index.

Speed of light in different mediums

Medium	Speed of light (m/s)	Medium	Speed of light (m/s)
Vacuum	3×10^8	Glass	2×10^8
Water	2.25×10^8	Terpentine oil	2.04×10^8
Rock salt	1.96×10^8	Nylon	1.96×10^8

- Light takes 8 minute 19 second (499 second) to reach from sun to earth.
- The light reflected from moon takes 1.28 second to reach earth.

Luminous bodies : Those object which emit light by themselves are called luminous bodies.

e.g.-sun, stars, electric bulb etc.

Non-luminous bodies : Those objects which do not emit light by themselves but are visible by the light falling on them emitted by self luminous bodies are called non-luminous bodies.

A material can be classified as :

- Transparent**: The substances which allow most of the incident light to pass through them are called transparent. e.g. glass, water.
- Translucent**: The substances which allow a part of incident light to pass through them are called translucent bodies e.g. oiled paper.
- Opaque**: The substances which do not allow the incident light to pass through them are called opaque bodies. e.g., mirror, metal, wood etc.

Shadow: shadow is the dark region on a screen when an opaque object is placed in the path of light. It is due to rectilinear propagation of light.

In case of point source, the shadow has shapely defined outline.

In case of extended source of light, the shadow has two distinct regions-

Umbra : The region in which no light reaches. (region of complete darkness)
Penumbra : The region in which partial light reaches.
 i.e. colour of body (star)

Reflection of light : Light moving in one medium when falls at the surface of another medium, part of light returns back to the same medium. This phenomenon of returning back of light in the first medium at the interface of two media is known as reflection of light.

Laws of reflection

- The incident ray, reflected ray and normal to the reflecting surface at the incident point all lie in the same plane.
- The angle of reflection is equal to the angle of incidence.

Reflection from plane mirror

- The image is virtual, laterally inverted.
- The size of image is equal to that of object.
- The distance of image from the mirror is equal to distance of object from the mirror.
- If an object moves towards (or away from) a plane mirror with speed v , the image moves towards (or away) with a speed $2v$ relative to the object.
- If a plane mirror is rotated by an angle θ , keeping the incident ray fixed, the reflected ray is rotated by an angle 2θ .
- To see his full image in a plane mirror, a person requires a mirror of at least half of his height.
- If two plane mirrors are inclined to each other at an angle θ the number of images (n) of a point object formed are determined as follows :

(a) If $\frac{360}{\theta}$ is even integer, then $n = \frac{360}{\theta} - 1$

(b) If $\frac{360}{\theta}$ is odd integer,

then $n = \frac{360}{\theta} - 1$ if the object is symmetrically placed. and

$n = \frac{360}{\theta}$ if the object is not symmetrically placed.

(c) If $\frac{360}{\theta}$ is a fraction then n is equal to integral part.

Reflection from spherical mirror

Spherical mirrors are of two types 1. Concave mirror and 2. Convex mirror

Position & nature of image formed by a spherical mirror

Position of object	Position of image	Size of image in Nature of image comparison to Object
Concave mirror		
At infinity	At Focus	Highly diminished
Between infinity and centre of curvature	Between focus and centre of curvature	Diminished
At centre of curvature	At centre of curvature	Of same size
Between focus and centre of curvature	Between centre and infinity of curvature	Enlarged
At focus	At infinity	Highly enlarged
Between focus and pole	Behind the mirror	Enlarged
Convex mirror		
At infinity	At Focus	Highly diminished
Infront of mirror	Between pole and focus	Diminished

Note: Image formed by a convex mirror is always virtual, erect and diminished.

Uses of Concave mirror :

- As a shaving glass.
- As a reflector for the head lights of a vehicle, search light.
- In ophthalmoscope to examine eye, ear, nose by doctors.
- In solar cookers.

Uses of Convex mirror :

- As a rear view mirror in vehicle because it provides the maximum rear field of view and image formed is always erect.
- In sodium reflector lamp.

Refraction of light : When a ray of light propagating in a medium enters the other medium, it deviates from its path. This phenomenon of change in the direction of propagation of light at the boundary when it passes from one medium to other medium is called refraction of light.

When a ray of light enters from rarer medium to denser medium (as from water to glass) it deviates towards the normal drawn on the boundary of two media at the incident point. Similarly in passing from denser to rarer medium, a ray deviates away from the normal. If light is incident normally on the boundary i.e. parallel to normal, it enters the second medium undeviated.

Laws of refraction

- Incident ray, refracted ray and normal drawn at incident point always lie in the same plane.
- Snell's law :** For a given colour of light, the ratio of sine of angle of incidence to the sine of angle of refraction is a constant,

$$\text{i.e. } \frac{\sin i}{\sin r} = \mu_2 \text{ (constant)}$$

This constant μ_2 is called refractive index of second medium with respect to the first medium.

- Absolute refractive index of a medium is defined as the ratio of speed of light in free space (vacuum) to that in the given medium.

$$\text{i.e. absolute refractive index } (\mu) = \frac{\text{Speed of light in vacuum}}{\text{Speed of light in the medium}}$$

- The refractive index of a medium is different for different colours. The refractive index of a medium decreases with the increase in wavelength of light. Hence refractive index of a medium is maximum for violet colour of light and minimum for red colour of light.

- The refractive index of a medium decreases with the increase in temperature. But this variation is very small.

- When a ray of light enters from one medium to other medium, its frequency and phase do not change but wavelength and velocity change.

Some illustrations of Refraction

- Bending of a linear object when it is partially dipped in a liquid inclined to the surface of the liquid.
- Twinkling of stars.

3. Oval shape of sun in the morning and evening.

4. An object in a denser medium when seen from a rarer medium appears to be at a smaller distance.

This is way (a) A fish in a pond when viewed from air appears to be at a smaller depth than its actual depth (b) A coin at the base of a vessel filled with water appears raised.

Critical angle : In case of propagation of light from denser to rarer medium through a plane boundary, critical angle is the angle of incidence for which angle of refraction is 90° .

Total Internal Reflection : If light is propagating from denser medium towards the rarer medium and angle of incidence is more than critical angle, then the light incident on the boundary is reflected back in the denser medium, obeying the laws of reflection. This phenomenon is called total internal reflection as total light energy is reflected, no part is absorbed or transmitted.

- For total internal reflection,
 - Light must be propagating from denser to rarer medium.
 - Angle of incidence must exceed the critical angle.

Illustrations of total internal reflection

- Sparkling of diamond
- Mirage and looming.
- Shining of air bubble in water.
- Increase in duration of sun's visibility—The sun becomes visible even before sun rise and remains visible even after sunset due to total internal reflection of light.
- Shining of a smoked ball or a metal ball on which lamp soot is deposited when dipped in water.

- Optical Fibre :** Optical fibre consists of thousands of strands of a very fine quality glass or quartz (of refractive index 1.7), each strand coated with a layer of material of lower refractive index (1.5). In it, light is propagated along the axis of fibre through multiple total internal reflection, even though the fibre is curved, without loss of energy.

Applications :

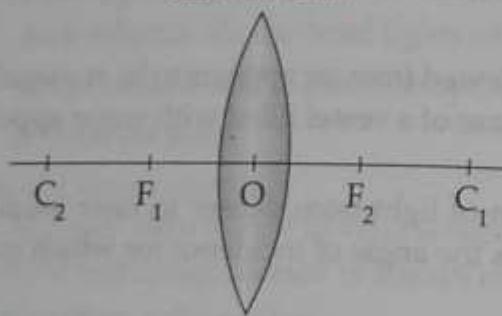
- For transmitting optical signals and the two dimensional pictures.
- For transmitting electrical signals by first converting them to light.
- For visualising the internal sites of the body by doctors in endoscopy.

Refraction of Light Through Lens

- Lens is a section of transparent refractive material of two surfaces of definite geometrical shape of which one surface must be spherical. Lens is generally of two types :
 - Convex lens
 - Concave lens.
- When a lens is thicker at the middle than at the edges, it is called a convex lens or a converging lens. When the lens is thicker at the edges than in the middle, it is called as concave lens or diverging lens.

- Some terms regarding a lens.

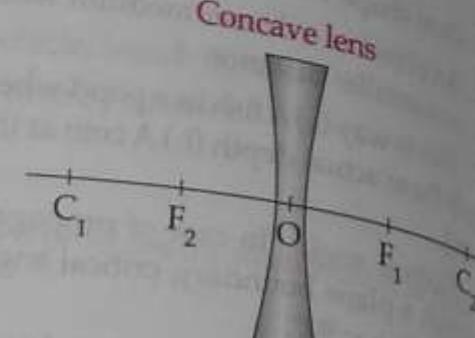
Convex Lens



O – optical Centre

$C_1 C_2$ – Principal axis

Concave lens



F_1 – First Focus

F_2 – Second Focus

Power of a lens

Power of a lens is its capacity to deviate a ray. It is measured as the reciprocal of the focal length in meters, i.e. $P = \frac{1}{f}$

SI Unit of power is dioptre (D).

- Power of a convex lens is positive and that of a concave lens is negative.
- If two lenses are placed in contact, then the power of combination is equal to the sum of powers of individual lenses.

Change in the power of a lens : If a lens is dipped in a liquid, its focal length and power both change. This change depends upon the refractive indices of lens and the liquid. If a lens of refractive index μ is dipped in a liquid of refractive index μ' , then the following three situations are possible

- $\mu > \mu'$ i.e. lens is dipped in a liquid of smaller refractive index like a lens of glass ($\mu = 1.5$) is dipped in water ($\mu' = 1.33$), then the focal length of the lens increases and the power of the lens decreases.
- $\mu = \mu'$ i.e. lens is dipped in a liquid of equal refractive index then the focal length of the lens becomes infinite i.e. its power becomes zero. The lens and the liquid behave as a single medium.
- $\mu < \mu'$ i.e. lens is dipped in a liquid of higher refractive index the focal length increases i.e. power decreases as well as the nature of the lens also changes i.e. convex lens behaves as concave lens and vice-versa. For example, an air bubble trapped in water or glass appears as convex but behaves as concave lens. Similarly a convex lens of glass ($\mu = 1.5$) when dipped in carbon disulphide ($\mu' = 1.68$), it behaves as a concave lens.

Formation of images by lenses

Position of object	Position of image	Size of image	Nature of image
At infinity	At Focus	Highly diminished	Real, inverted
Beyond $2F$	Between F and $2F$	Diminished	Real, inverted
At $2F$	At $2F$	Of same size	Real, inverted
Between F and $2F$	Beyond $2F$	Enlarged	Real, inverted
At F	At infinity	Highly enlarged	Real, inverted
Between optical centre and F	The same side as in the object	Enlarged	Virtual and erect

Concave Lens

At infinity	At focus	Highly diminished	Virtual and erect
Between lens infinity	and Between lens and F on the same side	diminished	Virtual and erect

Dispersion of Light: When a ray of white light (or a composite light) is passed through a prism, it gets splitted into its constituent colours. This phenomenon is called dispersion of light. The coloured pattern obtained on a screen after dispersion of light is called spectrum.

- The dispersion of light is due to different deviation suffered by different colours of light. The deviation is maximum for violet colour and minimum for red colour of light. The different colours appeared in the spectrum are on the following order, violet, indigo, blue, green, yellow, orange and red. (VIBGYOR)
- The dispersion of light is due to different velocities of light of different colours in a medium. As a result, the refractive index of a medium is different for different colours of light.

The velocity of light in a medium is maximum for that colour for which refractive index is minimum. Clearly, the velocity of violet colour of light is minimum in a medium and retroactive index of that medium is maximum for violet colour. Similarly, the velocity of light in a medium is maximum for red colour and refractive index of that medium is minimum for red colour.

Rainbow : Rainbow is the coloured display in the form of an arc of a circle hanging in the sky observed during or after a little drizzle appearing on the opposite side of sun. Rainbow is formed due to dispersion and refraction of sun light by the suspended water droplets.

Rainbow is of two types :

- Primary rainbow
- Secondary rainbow

Primary rainbow is formed due to two refractions and one total internal reflection of light falling on the raindrops. In the primary rainbow, the red colour is on the convex side and violet on the concave side. Primary rainbow has an angular width of 2° at an average angle of elevation of 41° .

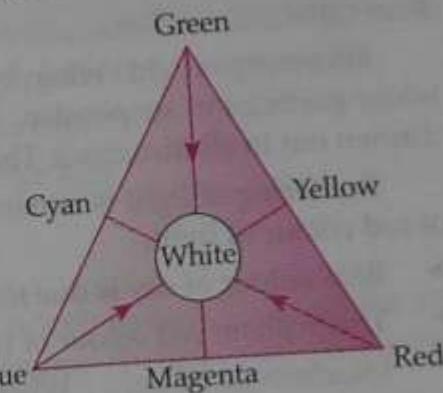
Secondary rainbow is formed due to two refractions and two internal reflections of light falling on rain drops. The order of colour on the secondary rainbow is in the reverse order and has an angular width of 3.5° at an average elevation of 52.75° . Secondary rainbow is less intense than primary rainbow.

Theory of Colours : Colour is the sensation perceived by the cones in the eye due to light.

Primary Colours : The spectral colours blue, green and red are called primary colours because all the colours can be produced by mixing these in proper proportion.

$$\text{Blue} + \text{Red} + \text{Green} = \text{White}$$

Secondary Colours : The colour produced by mixing any two primary colours is called a secondary colour. There are three secondary colours yellow, magenta and cyan as



Green + Red = Yellow

Red + Blue = Magenta

Blue + Green = Cyan

When the three secondary colours are mixed, white colour is produced
Yellow + Magenta + Cyan = White

Complementary Colours: Any two colours when added produce white light, are said to be complementary colours. Clearly a secondary colour and the remaining primary colour are complementary colours. Red and cyan, blue and yellow and green and magenta are complementary of each other.

- > The different colours and their mixtures are shown by the colour triangle.
- > In coloured television, the three primary colours are used.

Colour of bodies: The colour of a body is the colour of light which it reflects or transmits. An object is white, if it reflects all the components of white light and it is black if it absorbs all the light incident over it. This is why a red rose appears red when viewed in white or red light but appears black when viewed in blue or green light.

- > How a body will appear in light of different colour can be understood by the following table

Name of object	In white light	In red light	In green light	In yellow light	In blue light
White paper	White	Red	Green	Yellow	Blue
Red paper	Red	Red	Black	Black	Black
Green paper	Green	Black	Green	Black	Black
Yellow paper	Yellow	Black	Black	Yellow	Black
Blue paper	Blue	Black	Black	Black	Blue

Scattering of light: When light waves fall on small bodies such as dust particles, water particles in suspension, suspended particles in colloidal solution, they are thrown out in all directions. This phenomenon is called scattering of light.

Scattering of light is maximum in case of violet colour and minimum in case of red colour of light.

- > Blue colour of sky is due to scattering of light.
- > The brilliant red colour of rising and setting sun is due to scattering of light.

Interference of light: When two light waves of exactly the same frequency and a constant phase difference travel in same direction and superimpose then the resultant intensity in the region of superposition is different from the sum of intensity of individual waves. This modification in the intensity of light in the region of superposition is called interference of light. Interference is of two types

1. Constructive interference
2. Destructive interference

Constructive interference: At some points, where the two waves meet is same phase, resultant intensity is maximum. Such interference is called constructive interference.

Destructive interference: At some points, where the two waves meet in opposite phase, resultant intensity is minimum. Such interference is called destructive interference.

Diffraction of light: When light waves fall on a small sized obstacle or a small aperture whose dimension is comparable to the wavelength of light, then there

is a departure from the rectilinear propagation and light energy flavours out into the region of geometrical shadow. The spreading of light energy beyond the limit prescribed by rectilinear propagation of light is called diffraction of light. In other words, diffraction is the process by which a beam of light or other systems of wave is spread out as a result of passing through a narrow opening or across an edge.

Polarisation of light: Polarisation is the only phenomenon which proves that light is a transverse wave. Light is an electromagnetic wave in which electric and magnetic field vectors vibrate perpendicular to each other and also perpendicular to the direction of propagation. In ordinary light, the vibrations of electric field vector are in every plane perpendicular to the direction of propagation of wave. Polarisation is the phenomenon of restricting the vibrations of a light in a particular direction in a plane perpendicular to the direction of propagation of wave.

- > The visible effect of light is only due to electric field vector.

Human Eye

- > Least distance of distinct vision is 25 cm.

Defects of human eye and the remedies :

1. **Myopia or short sightedness**: A person suffering from myopia can see the near objects clearly while far objects are not clear.

Causes : 1. Elongation of eye ball along the axis.
2. Shortening of focal length of eye lens.
3. Over stretching of ciliary muscles beyond the elastic limit.

Remedy : Diverging lens is used.

2. **Hyperopia or hypermetropia or longsightedness** : A person suffering from hypermetropia can see the distant objects clearly but not the near objects.

Causes : 1. Shortening of eye ball along the axis.
2. Increase in the focal length of eye lens.
3. Stiffening of ciliary muscles.

Remedy : A converging lens is used.

3. **Presbyopia** : This defect is generally found in elderly person. Due to stiffening of ciliary muscles, eye loses much of its accommodating power. As a result distinct as well as nearby objects can not be seen.

For its remedy two separate lens or a bifocal lens is used.

4. **Astigmatism** : This defect arises due to difference in the radius of curvature of cornea in the different planes. As a result rays from an object in one plane are brought to focus by eye in another plane. For its remedy cylindrical lens is used.

> There are two kinds of vision cells in the retina. They are called rods and cones on account of their peculiar shape. Rods decides the intensity of light whereas cones distinguish colour of light.

Simple microscope: This is simply a convex lens of small focal length. The object to be enlarged is placed within the focus of lens.

Magnifying power of a simple microscope is given as

$$M = 1 + \frac{D}{f} \quad \text{where } D = 25 \text{ cm}, f = \text{focal length of lens.}$$

Compound microscope: It consists of two convex lenses coaxially fitted in a hollow tube. The lens facing the object is called objective and the lens towards the eye is called eye piece.

- > The aperture of objective is smaller than that of eye piece.
- > Both the lenses are of smaller focal lengths. This increases the magnifying power of instrument.

Telescope

Telescopes are used to view distant objects which are not visible to naked eye. Telescope can be divided as astronomical telescope, terrestrial telescope and Galilean telescope.

- > Astronomical telescope consists of two convex lenses placed coaxially in a hollow tube. The lens facing the object is called objective and the lens towards the eye is called eye piece.
- > The objective has large aperture so that the rays from the object can be easily collected.
- > The focal length of objective is larger than that of eye piece.

Movie (Film) or Slide Projector:

It projects magnified image of an object on a screen. The object (inverted) is placed between F and 2F of a projection lens (a convex lens) so that its real, inverted, magnified image is formed between 2F and infinity on the other side i.e. the image is erect.

15. Static Electricity

When two bodies are rubbed together, they acquire the property of attracting light objects like small bits of paper, dust particles etc. The bodies which acquire this property are said to be electrified or charged with electricity.

Charge: Charge is the basic property associated with matter due to which it produces and experiences electrical and magnetic effects.

- > Benjamin Franklin named the two types of charges as positive and negative.
- > Similar charges repel each other and opposite charges attract each other.
- > Charging of bodies takes place due to transfer of electrons from one body to other body.
- > A list of materials has been given below. The list is such that any of the material in the list will be positively charged when rubbed with any other material coming later in the list. The other material will naturally be negatively charged.

1. Fur	2. Flannel	3. Shellac	4. Sealing Wax
5. Glass	6. Paper	7. Silk	8. Human body
9. Wood	10. Metals	11. India Rubber	12. Resin
13. Amber	14. Sulphur	15. Ebonite	16. Gutta Percha

- Surface density of charge:** Surface density of charge is defined as the amount of charge per unit area on the surface of conductor.
- > The surface density of charge at a point on the surface of conductor depends upon the shape of conductor and presence of other conductors or insulators near the given conductor.

- > The surface density of charge at any part of the conductor is inversely proportional to the radius of curvature of the surface of that part.
- > This is why surface density of charge is maximum at the pointed parts of the conductor.

Conductor: Conductors are those materials which allow electricity (charge) to pass through themselves. Good conductor have loosely bound electrons.

Examples : (a) Metals like silver, iron, copper (b) Earth (especially the moist part) acts like a huge conductor.

- > Silver is the best conductor.

Insulator or Dielectric: Insulators are those materials which do not allow electricity to flow through themselves.

Examples : Wood, paper, mica, glass, ebonite.

Coulomb's law: According to Coulomb's law, the force of attraction or repulsion between two point charges at rest is directly proportional to the product of the magnitudes of the charges and inversely proportional to the square of the distance between them. This force acts on the line joining the two charges.

Electric Field: Region in space around a charge or charged body where the charge has its electrical effect is called electric field of the charge.

Electric Field Intensity: Electric field intensity at a point in an electric field is the force experienced by a unit positive charge placed at that point.

Electric Field of hollow conductor

Electric field intensity inside a charged hollow conductor is zero. Charge given to such a conductor (or conductor of any shape) remains on its surface only.

This explains why a hollow conductor acts as an electrostatic shield. It is for this reason that it is safer to sit in a car or bus during lightning.

Electric Potential: Electric potential at a point in an electric field is the work done in bringing a unit positive charge from infinity to that point.

SI unit of electric potential is volt. It is a scalar quantity.

Potential Difference: Work done in bringing a unit positive charge from one point to other point is the potential difference between the two points. Its SI unit is volt and is a scalar quantity.

Electric Capacity: Electric capacity of a conductor is defined as the charge required to increase the potential of the conductor by unity. If potential of a conductor is increased by V when a charge Q is given to it, capacity of the conductor is $\frac{Q}{V}$. Its SI unit is farad. (F)

Electrochemical Cell: Electrochemical cell is a device which converts chemical energy into electrical energy.

Cells are basically of two types : 1. Primary cell 2. Secondary cell.

Primary Cell: In primary cell electrical energy is obtained from the irreversible chemical reaction taking inside the cell. After complete discharge, primary cell becomes unserviceable.

Examples : Voltaic Cell, Leclanche Cell, Daniel Cell, Dry Cell etc.

Secondary Cell: A secondary cell is that which has to be charged at first from an external electric source and then can be used to draw current. Such cells are rechargeable.

- Production of electricity by chemical reaction was first discovered by Alessandro de volta (voltaic cell is named after him) in 1794. In voltaic cell zinc rod is used as cathode and copper rod is used as anode. These rods are placed in sulphuric acid kept in a glass vessel.
- In a Leclanche cell, carbon rod acts as anode and zinc rod acts as cathode. These rods are placed in ammonium chloride kept in a glass vessel.
- The emf of Leclanche cell is 1.5 volt.
- Leclanche cell is used for intermittent works. i.e. works in which continuous electrical energy is not required like electric bell.
- In a dry cell, mixture of MnO_2 , NH_4Cl and carbon is kept in a zinc vessel. A carbon rod is placed in the mixture which acts as anode. The zinc vessel itself acts as cathode. The emf of dry cell is 1.5 volt.

16. Current Electricity

Electric Current: Electric current is defined as the rate of flow of charge or charge flowing per unit time interval. Its direction is the direction of flow of positive charge. Its SI unit is ampere (A). It is a scalar quantity.

- A current of one ampere flowing through a conductor means 6.25×10^{18} electrons are entering at one end or leaving the other end of the conductor in one second.

Resistance: The opposition offered by a conductor to the flow of current through it is called resistance. It arises due to collisions of drifting electrons with the core ions. Its SI unit is ohm.

Ohm's law: If physical conditions like temperature, intensity of light etc. remains unchanged then electric current flowing through a conductor is directly proportional to the potential difference across its ends. If V is the potential difference across the ends of a conductor and I is the current through it, then according to Ohm's law $V \propto I$ or, $V = RI$

where R is a constant called resistance of conductor.

Ohmic Resistance: The resistances of such conductors which obey ohm's law are called ohmic resistance. For example resistance of manganin wire.

Non ohmic resistance: The resistances of such materials which do not obey ohm's law are called non ohmic resistance.

Example: Resistance of diode valve, resistance of triode valve.

Conductance: Reciprocal of resistance of a conductor is called its conductance i.e. conductance = $\frac{1}{Resistance}$

It is denoted by G and $(G = \frac{1}{R})$

Its SI unit is ohm^{-1} (also called mho or siemen.)

- The resistance of a conductor is directly proportional to its length and inversely proportional to its cross sectional area. i.e. if l and A are respectively length

and cross sectional area of a conductor and R is its resistance then $R \propto \frac{l}{A}$ or, $R = \rho \frac{l}{A}$ where ρ is a constant of material of conductor called specific resistance or resistivity. Its SI unit is ohm meter.

Specific conductance or conductivity: The reciprocal of resistivity of a conductor is called its conductivity (s). Its SI unit is $mho\ m^{-1}$ or siemen / meter (sm^{-1})

Combination of Resistance: Various resistances can be combined to form a network mainly in two ways : 1. Series combination 2. Parallel combination.

- In series combination, the equivalent resistance is equal to the sum of the resistances of individual conductors. ($R = R_1 + R_2 + \dots + R_n$)
- In parallel combination, the reciprocal of equivalent resistance is equal to the sum of the reciprocal of individual resistances.

$$\left(\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \dots + \frac{1}{R_n} \right)$$

Electric Power: The rate at which electrical energy is consumed in a circuit is called electric power. Its SI unit is watt.

Kilowatt hour: It is the unit of energy and is equal to the energy consumed in the circuit at the rate of 1 kilowatt (1000 J/s) for 1 hour.

$$1 \text{ kilowatt hour} = 3.6 \times 10^6 \text{ joule}$$

1 kWh is also called board of trade unit.

Ammeter: Ammeter is a device used to measure electric current in a circuit. It is connected in series in the circuit.

- The resistance of an ideal ammeter is zero.

Voltmeter: Voltmeter is a device used to measure the potential difference between two points in a circuit. It is connected in parallel to the circuit.

- The resistance of an ideal voltmeter is infinite.

Electric fuse: Electric fuse is a protective device used in series with an electric appliance to save it from being damaged due to high current. In general, it is a small conducting wire of alloy of copper, tin and lead having low melting point.

- Pure fuse is made up of tin.

Galvanometer: Galvanometer is a device used to detect and measure small electric current in a circuit. It can measure current up to 10^{-6} A.

Shunt: Shunt is a wire of very small resistance.

- A galvanometer can be converted into an ammeter by connecting a shunt parallel to it.
- A galvanometer can be converted into a voltmeter by connecting a very high resistance in its series.

Electromagnetic induction: Whenever there is change of magnetic flux linked with a circuit, an emf is induced in the circuit. This phenomenon is called electro magnetic Induction. The emf so developed is called induced emf and the current so generated (if circuit is closed) is called induced current.

Direction of induced current is determined with the help of Fleming's right hand rule or Lenz law.

Transformer: Transformer is a device which converts low voltage A.C. into high voltage A.C. and high voltage A.C. into low voltage A.C. It is based on electromagnetic induction and can be used only in case of alternating current.

A.C. Dynamo (or generator): It is a device used to convert mechanical energy into electrical energy. It works on the principle of electro-magnetic induction.

Electric motor: It is a device which converts electrical energy into mechanical energy.

Microphone: It converts sound energy into electrical energy and works on the principle of electromagnetic induction. In other words, microphone is an instrument for changing sound waves into electrical energy which may then be amplified, transmitted or recorded.

> The current generated in the power stations are alternating current having voltage 22000 volt or more. In grid substations, with the help of transformer, their voltage is increased up to 132000 volt to minimise loss of energy in long distance transmission.

17. Magnetism

- > Magnetism is the property displayed by magnets and produced by the movement of electric charges, which results in objects being attracted or pushed away.
- > Magnet is a piece of iron or other materials that can attract iron containing objects and that points north and south when suspended.
- > A magnet is characterised by following two properties :
 1. **Attractive property** : A magnet attracts magnetic substances like iron, cobalt, nickel and some of their alloys like magnetite (Fe_3O_4)
 2. **Directive property** : When a magnet is freely suspended, it aligns itself in the geographical north south direction.
- > A magnet may be 1. Natural 2. Artificial
- > Natural magnet is oxide of iron. But due to irregular shape, weak magnetism and high brittleness, natural magnets find no use in the laboratory.
- > The magnets made by artificial methods are called artificial magnets or man made magnets. They may be of different types like bar magnet, horse shoe magnet, Robinson's ball ended magnet, magnetic needle, electromagnet etc.
- > The two points near the two ends of a magnet where the attracting capacity is maximum are called magnetic poles. When a magnet is freely suspended, its one pole always directs towards the north. This pole is called north pole. The other pole is called south pole.
- > The imaginary line joining the two poles of a magnet is called magnetic axis of the magnet.
- > Similar poles repel each other and dissimilar poles attract each other.
- > When a magnetic substance is placed near a magnet, it gets magnetised due to induction.

Magnetic Field: Region in space around a magnet where the magnet has its magnetic effect is called magnetic field of the magnet.

Intensity of magnetic field or magnetic flux density: Magnetic flux density of a point in a magnetic field is the force experienced by a north pole of unit strength placed at that point. Its SI unit is newton/ampere-meter or weber/meter² or tesla (T).

Magnetic lines of force: The magnetic lines of force are imaginary curves which represent a magnetic field graphically. The tangent drawn at any point on the magnetic lines of force gives the direction of magnetic field at that point.

Properties of magnetic lines of force:

1. Magnetic lines of force are closed curves. Outside the magnet they are from north to south pole and inside the magnet they are from south to north pole.
2. Two lines of force never intersect each other.
3. If the lines of force are crowded, the field is strong.
4. If the lines of force are parallel and equidistant, the field is uniform.

Magnetic Substance: On the basis of magnetic behaviour, substances can be divided into three categories.

1. **Diamagnetic substance**: Diamagnetic substances are such substances which when placed in a magnetic field, acquire feeble magnetism opposite to the direction of magnetic field.

Examples : Bismuth, Zinc, Copper, Silver, Gold, Diamond, Water, Mercury, Water etc.

2. **Paramagnetic Substance**: Paramagnetic substances are such substances which when placed in a magnetic field acquire a feeble magnetism in the direction of the field.

Examples : Aluminum, Platinum, Manganese, Sodium, Oxygen etc.

3. **Ferromagnetic substance** : Ferromagnetic substances are those substances which when placed in a magnetic field, are strongly magnetised in the direction of field.

Examples : Iron, Cobalt, Nickel etc.

Domain: Atoms of ferromagnetic substance have a permanent dipole moment i.e. they behave like a very small magnet. The atoms form a large no. of effective regions called domain in which 10^{18} to 10^{21} atoms have their dipole moment aligned in the same direction. The magnetism in ferromagnetic substance, when placed in a magnetic field, is developed due to these domain by 1. the displacements of boundaries of the domains 2. the rotation of the domains.

Curie Temperature: As temperature increases, the magnetic property of ferromagnetic substance decreases and above a certain temperature the substance changes into paramagnetic substance. This temperature is called Curie temperature.

- > Permanent magnets are made of steel, cobalt steel, ticonal, alcomax and alnico.
- > Electromagnets, cores of transformers, telephone diaphragms, armatures of dynamos and motors are made of soft iron, mu-metal and stalloy.

Terrestrial Magnetism: Our earth behaves as a powerful magnet whose south pole is near the geographical north pole and whose north pole is near the geographical south pole. The magnetic field of earth at a place is described in the terms of following three elements.

1. **Declination**: The acute angle between magnetic meridian and geographical

- meridian at a place is called the angle of declination at that place.
- Dip or Inclination :** Dip is the angle which the resultant earth's magnetic field at a place makes with the horizontal. At poles and equator, dip is 90° and 0° respectively.
 - Horizontal component of earth's magnetic field :** At a place it is defined as the component of earth's magnetic field along the horizontal in the magnetic meridian.

Its value is different at different places. (approximately 0.4 gauss to 0.4×10^{-4} tesla).

Magnetic Maps : Magnetic maps are the geographical maps on which the values of three magnetic elements of earth are represented. On the magnetic maps following lines are important :

Isogonic lines : The lines joining the places of same declination are called isogonic lines.

Agonic line : The line joining the places of zero declination are called agonic lines.

Isoclinic lines : The lines joining the places of same dip are called isoclinic lines.

Aclinic line : The line joining the places of zero dip is called aclinic line or magnetic equator.

Isodynamic lines : The lines joining the places of same value of horizontal component of earth's magnetic field are called isodynamic lines.

18. Atomic & Nuclear Physics

Atomic Physics

- Atom is the smallest part of matter which takes part in chemical reactions. Atoms of the same element are similar in mass, size and characteristics. Atom consists of three fundamental particles electron, proton and neutron. All the protons and neutrons are present in the central core of atom called nucleus. Electrons revolve around the nucleus.
- In an atom, electrons and protons are equal in number and have equal and opposite charge. Hence atom is neutral.

Properties of Fundamental Particles

Particle	Mass (Kg)	Charge (Coulomb)	Discoverer
Proton	1.672×10^{-27}	$+1.6 \times 10^{-19}$	Rutherford
Neutron	1.675×10^{-27}	0	Chadwick
Electron	9.108×10^{-31}	-1.6×10^{-19}	J.J. Thomson

Note : Proton was discovered by Gosselin and named by Rutherford.

Till today, several subatomic particles have been discovered. Some important of them are as follows.

Particle	Mass (Kg)	Charge	Discoverer	Antiparticle of
Positron	9.108×10^{-31}	$+1.6 \times 10^{-19}$	Anderson	electron
Neutrino	0	0	Pauli	
Pi-meson	274 times the mass of electron	Positive and negative both	Yukawa	unstable
Photon	0	Velocity equal to that of light		

Cathode Rays : If the gas pressure in a discharge tube is 10^{-2} to 10^{-3} mm of Hg and a potential difference of 10^4 volt is applied between the electrode, then a beam of electrons emerges from the cathode which is called cathode rays. Hence cathode rays are beam of high energy electrons. Cathode is an electrode with a negative charge.

Properties of cathode rays :

- Cathode rays are invisible and travel in straight line.
- These rays carry negative charge and travel from cathode to anode.
- These rays emerge perpendicular to the cathode surface and are not affected by the position of anode.
- Cathode rays travel with very high velocity (1/10th the velocity of light).
- These rays are deflected by electric and magnetic fields.
- These rays can ionise gases.
- These rays heat the material on which they fall.
- They can produce chemical change and thus affect a photographic plate.
- These rays can penetrate through thin metal foils.
- The source of emf used in the production of cathode rays is induction coil.
- When they strike a target of heavy metals such as tungsten, they produce x-rays.
- The nature of cathode rays is independent of nature of cathode and the gas in the discharge tube.

Positive or Canal rays :

If perforated cathode is used in a discharge tube, it is observed that a new type of rays are produced from anode moving towards the cathode and passed through the holes of cathode. These rays are positively charged and are called positive rays or canal rays or anode rays. These rays were discovered by Goldstein.

Properties of Canal rays :

- The positive rays consists of positively charged particles.
- These rays travel in straight line.
- These rays can exert pressure and thus possess kinetic energy.
- These rays are deflected by electric and magnetic fields.
- These rays are capable of producing physical and chemical changes.
- These rays can produce ionisation in gases.

Radioactivity

- Radioactivity is the sending out of harmful radiation or particles, caused when atomic nuclei breakup spontaneously.
- Radioactivity was discovered by Henry Becquerel, Madame Curie and Pierre Curie for which they jointly win Nobel prize.
- The nucleus having protons 83 or more are unstable. They emit α , β and γ particles and become stable. The elements of such nucleus are called radioactive elements and the phenomenon of emission of α , β and γ particles is called radioactivity.
- γ rays are emitted after the emission of α and β rays.
- Robert Pierre and his wife Madame Curie discovered a new radioactive element radium.
- The rays emitted by radioactivity were first recognised by Rutherford.
- The end product of all natural radioactive element after emission of radioactive rays is lead.

Difference between stable and unstable nucleus

S. No.	Stable nucleus	Unstable nucleus
1.	Low atomic number	High atomic number
2.	Low mass number	High mass number
3.	Nucleus of small size	Nucleus of bigger size
4.	$\frac{n}{p} = 1$	$\frac{n}{p} > 1$

Properties of α , β and γ particles

Properties	α	β	γ
Origin	Nucleus	Nucleus	Nucleus
Nature	Positively charged	Negatively charged	Neutral
Composition	He^4	e^0	Photon
Mass	$6.4 \times 10^{-27} \text{ kg}$	$9.1 \times 10^{-31} \text{ kg}$	zero
Charge	$+2e$	$-e$	zero
Chemical effect	Affects photo graphic plate	Affects photo graphic plate	Affects photo graphic plate
Effect of electric and magnetic field	Deflected	Deflected	No effect
Penetrating power	Minimum	In between the other two	Maximum
Ionising power	Maximum	In between the other two	Minimum
Velocity	Between $1.4 \times 10^7 \text{ m/s}$ to $2.2 \times 10^7 \text{ m/s}$	1% to 99% of velocity of light	$3 \times 10^8 \text{ m/s}$

- > With the emission an α -particle, atomic number is decreased by 2 and mass number is decreased by 4.
- > With the emission of a β -particle atomic number is increased by one and mass number does not change.
- > The effect on the mass number and atomic number with the emission of α , β and γ rays is decided by **Group-displacement law or Soddy-Fajan Law**.
- > Radioactivity is detected by G.M. Counter.
- > The time in which half nuclei of the element is decayed is called **half life** of the radioactive substance.
- > **Cloud chamber** : Cloud chamber is used to detect the presence and kinetic energy of radioactive particles. It was discovered by C.R.T. Wilson.
- > Radioactive carbon-14 is used to measure the age of fossils and plants. (Carbon dating) In this method age is decided by measuring the ratio of ^{12}C and ^{14}C .

Nuclear Fission and Fusion

- > A nucleus is represented as ${}^A_Z X$ where Z is the number of proton (called atomic number), A is sum of number of protons (Z) and number of neutrons (N) and is called mass number
 \therefore Number of neutrons $N = A - Z$
For example, ${}_{92}^{238}\text{U}$ has 92 protons, $238 - 92 = 146$ neutrons and 238 nucleons (protons + neutrons).

Nuclear Fission : The nuclear reaction in which a heavy nucleus splits into two nuclei of nearly equal mass is nuclear fission. The energy released in the nuclear fission is called nuclear energy.

> Nuclear fission was first demonstrated by Strassmann and O. Hahn. They found that when ${}^{235}\text{U}$ nucleus is excited by the capture of a neutron, it splits into two nuclei ${}^{142}\text{Ba}$ & ${}^{92}\text{K}$.

Chain Reaction : When uranium atom is bombarded with slow neutrons, fission takes place. With the fission of each uranium nucleus, on the average 3 neutrons and large energy is released. These neutrons cause further fission. Clearly a chain of fission of uranium nucleus starts which continues till whole of uranium is exhausted. This is called chain reaction.

Chain reaction is of the following two types 1. Uncontrolled chain reaction
2. Controlled chain reaction.

Uncontrolled Chain Reaction : In each fission reaction, three more neutrons are produced. These three neutrons may cause the fission of three other ${}^{235}\text{U}$ nuclei producing 9 neutrons and so on. As a result the number of neutron goes on increasing till the whole of fissionable material is consumed. This chain reaction is called uncontrolled or explosive chain reaction. This reaction proceeds very quickly and a huge amount of energy is liberated in a short time.

Atom bomb : Atom bomb is based on nuclear fission. ${}^{235}\text{U}$ and ${}^{239}\text{Pu}$ are used as fissionable material. This bomb was first used by USA against Japan in second world war (6th August, 1945 at Hiroshima & 9th August, 1945 at Nagashaki).

Controlled Chain Reaction : A fission chain reaction which proceeds slowly without any explosion and in which the energy released can be controlled is known as controlled reaction. Actually in this situation only one of the neutrons produced in each fission is able to cause further fission. In controlled chain reaction, the rate of reaction remains constant.

Nuclear Reactor or Atomic Pile : Nuclear reactor is an arrangement in which controlled nuclear fission reaction takes place.

- > First nuclear reactor was established in Chicago, University under the supervision of Prof. Fermi.
- > There are several components of nuclear reactor which are as follows:
 1. **Fissionable Fuel** : ${}^{235}\text{U}$ or ${}^{239}\text{Pu}$ is used.
 2. **Moderator** : Moderator decreases the energy of neutrons so that they can be further used for fission reaction. Heavy water and graphite are used as moderator.
 3. **Control rod** : Rods of cadmium or boron are used to absorb the excess neutrons produced in fission of uranium nucleus so that the chain reaction continues to be controlled.
 4. **Coolant** : A large amount of heat is produced during fission. Coolant absorbs that heat and prevents excessive rise in the temperature. The coolant may be water, heavy water (D_2O – deuterium (${}_1^2\text{H}$) is an isotope of hydrogen), or a gas like He or CO_2 .

Uses of nuclear reactor

1. To produce electrical energy from the energy released during fission.
2. To produce different isotopes which can be used in medical, physical and agriculture science.

Fast Breeder Reactor : A nuclear reactor which can produce more fissionable fuel than it consumes is called a fast breeder reactor.

Nuclear Fusion : When two or more light nuclei combined together to form a heavier nucleus, tremendous energy is released. This phenomenon is called nuclear fusion. A typical example of nuclear fission is ${}_1^H + {}_1^H \rightarrow {}_2^He + {}_0^1n + 17.6 \text{ MeV}$

- > The energy released by sun and other stars is by nuclear fusion.
- > For the nuclear fusion, a temperature of the order of 10^8 K is required.

Hydrogen bomb : Hydrogen bomb was made by American scientists in 1952. This is based on nuclear fusion.

Mass Energy Relation : In 1905 Einstein established a relation between mass and energy on the basis of special theory of relativity. According to this relation, mass can be converted into energy and vice versa, according to the relation $E = mc^2$ where c is the velocity of light and E is the energy equivalent of mass m .

- > Albert Einstein was an American scientist. He was born in Germany. He was given Nobel Prize of Physics in 1921.
- > Sun is continuously emitting energy. Earth is continuously receiving 4×10^{26} joule of energy per second from sun. As a result mass of sun is decreasing at the rate of approximately $4 \times 10^9 \text{ kg}$ per second. But mass of sun is so large that it is estimated that the sun will continuously supply energy for next 10^9 years.

19. Electronics

Electronics : Electronics is the branch of physics and technology concerned with the behaviour and movement of electrons.

Electron Emission :

In metals, the electrons from the outermost orbit of atom become free at room temp. However these free electrons can not leave the surface of metals. For the free electrons to leave the metal surface, external energy is required. Electron emission can be achieved by the following methods.

1. **Thermionic Emission** : by heating the metal.
2. **Photo-electric emission** : By illuminating the metal surface with light (electromagnetic waves like ultraviolet rays) of suitable frequency. The electrons so emitted are called photo electrons.
3. **Secondary emission** : It is the electron emission when highly energetic electron beam is incident on a metal surface. The electrons so emitted are called secondary electrons.
4. **Field or cold emission** : This is the process of electron emission by applying a strong electric field across the metal surface.

Diode Valve : Designed by J. A. Fleming in 1904, diode valve consists of two electrodes placed inside an evacuated glass envelope. One electrode is called cathode which is made up of tungsten on which there is a thin layer of barium oxide. When heated, cathode emits electrons. These electrons flow towards the other electrode called anode or plate, which is at positive potential. As a result an electric current is established in the circuit.

- > The electrons emitted from the cathode are collected in the evacuated space around it. This collection of electrons is called **space charge** which is obviously negative.
- > Diode valve acts as a rectifier. **Rectifier** is a device which converts alternating voltage (current) into direct voltage (current).

Triode Valve : Designed by Lee de Forest in 1907, triode valve is a modified form of usual diode. It consists of a usual anode - cathode pair and one more electrode called control grid.

- > Triode valve can be used as amplifier, oscillator, transmitter and detector.

Semi-conductor : Semi conductor are those materials whose electrical conductivity, at room temperature, lies in between that of insulator and conductor. Germanium and Silicon are two important semiconductor. In a crystal lattice of semi-conductor, some of the electrons become free from bond formation. At the sites of these electrons a deficiency of electron exists which acts as a virtual positive charge. These virtual positive charges are called holes. Semi-conductors are used in electronics industry.

Semi-conductors are of two types :

1. **Intrinsic Semi-Conductor** : A semi conductor in an extremely pure form is known as intrinsic semi conductor. At absolute zero, an intrinsic semi conductor is a perfect insulator. (conductivity = zero).
2. **Extrinsic Semi-Conductor** : If a measured and small amount of chemical impurity is added to intrinsic semi-conductor, it is called extrinsic semi-conductor or doped semi conductor. As a result of doping, there is large increase in its conductivity.

- > Extrinsic semi conductor are of two types :

(a) **N type semi conductor** : An extrinsic semi conductor in which electrons are majority charge carrier is called N type semi conductor. Such a semi conductor is made by doping a pure semi conductor with pentavalent impurity like Arsenic, Antimony & Phosphorus.

(b) **P type semi conductor** : An extrinsic semi conductor in which holes are the majority charge carrier is called a P type semi conductor. Such a semi conductor is made by doping a pure semi conductor with trivalent impurity like Gallium, Indium, Boron and Aluminium.

Doping : Adding of chemical impurity to a pure semi conductor is called doping. The amount and type of impurity is closely controlled.

Donor : Pentavalent impurities are called donor.

Acceptor : Trivalent impurities are called acceptor.

- > The electrical conductivity of a semi conductor increases with the increase in temperature.

Rectifier : Rectifier is a device which converts alternating current into direct current.

Nanotechnology : Study of science of small is called nanotechnology.

20. Scientific Instruments

Instrument	Use
Altimeter	Measures altitudes (used in aircraft)
Ammeter	Measures strength of electric current
Anemometer	Measures force and velocity of wind and directions
Audiometer	Measures intensity of sound
Barograph	Continuous recording of atmospheric pressure
Barometer	Measures atmospheric pressure
Binoculars	To view distant objects
Bolometer	To measure heat radiation
Callipers	Measure inner and outer diameters of bodies
Calorimeter	Measures quantities of heat
Cardiogram (ECG)	Traces movements of the heart; recorded on a Cardiograph
Cathetometer	Determines heights, measurement of levels, etc., in scientific experiments
Chronometer	Determines longitude of a vessel at sea.
Colorimeter	Compares intensity of colours
Commutator	To change/reverse the direction of electric current; Also used to convert AC into DC
Cryometer	A type of thermometer used to measure very low temperatures, usually close to 0°C
Cyclotron	A charged particle accelerator which can accelerate charged particles to high energies
Dilatometer	Measures changes in volume of substances
Dynamo	Converts mechanical energy into electrical energy
Dynamometer	Measures electrical power
Electro encephalogram (EEG)	Measures and records electrical activity of brain
Electrometer	Measures very small but potential difference in electric currents
Electroscope	Detects presence of an electric charge
Electromicroscope	To obtain a magnifying view of very small objects Capable of magnifying up to 20,000 times
Endoscope	To examine internal parts of the body
Fathometer	Measures depth of the ocean
Fluxmeter	Measures magnetic flux
Galvanometer	Measures electric current
Hydrometer	Measures the relative density of liquids
Hygrometer	Measures level of humidity
Hydrophone	Measures sound under water
Hygroscope	Shows the changes in atmospheric humidity
Hypsometer	To determine boiling point of liquids

Instrument	Use
Kymograph	Graphically records physiological movement. (e.g., blood pressure / heartbeat)
Lactometer	Measures the relative density of milk to determine purity
Machmeter	Determines the speed of an aircraft in terms of the speed of sound
Magnetometer	Compares magnetic moments of magnets and fields
Manometer	Measures the pressure of gases
Micrometer	Measures distances / angles
Microphone	Converts sound waves into electrical vibrations
Microscope	To obtain a magnified view of small objects
Nephelometer	Measures the scattering of light by particles suspended in a liquid
Ohmmeter	To measure electrical resistance in ohms
Ondometer	Measures the frequency of electromagnetic waves, especially in the radio-frequency band
Periscope	To view objects above sea level (used in submarines)
Photometer	Compares the luminous intensity of the source of light
Polygraph	Instrument that simultaneously records changes in physiological processes such as heartbeat, blood-pressure and respiration; used as a lie detector
Pyknometer	Determines the density and coefficient of expansion of liquids
Pyrheliometer	Measures components of solar radiation
Pyrometer	Measures very high temperature
Quadrant	Measures altitudes and angles in navigation and astronomy
Radar	To detect the direction and range of an approaching aeroplane by means of radiowaves, (Radio, Angle, Detection and Range)
Radio micrometer	Measures heat radiation
Refractometer	Measures refractive indices
Salinometer	Determines salinity of solutions
Sextant	Used by navigators to find the latitude of a place by measuring the elevation above the horizon of the sun or another star; also used to measure the height of very distant objects
Spectroscope	To observe or record spectra
Spectrometer	Spectroscopic equipped with calibrated scale to measure the position of spectral lines (Measurement of refractive indices)
Spherometer	Measures curvature of spherical objects
Sphygmometer	Measures blood pressure
Stereoscope	To view two-dimensional pictures
Stethoscope	Used by doctors to hear and analyze heart and lung sounds
Stroboscope	To view rapidly moving objects
Tachometer	To determine speed, especially the rotational speed of a shaft (used in aeroplanes and motor-boats)