

SAMPLE NOTES

(SSC CGL, CHSL, CPO, MTS, GD)

Gupta Empire

Chandragupta I

- Founder of Gupta Empire

Samudragupta

- Expanded Gupta Empire 10 times
- Gave Patronage to Buddhist Scholars like Vasubandhu and Asanga
- His court poet was Harishena
- Details About him in Allahabad Pillar Inscription

Chandragupta II

- He married his daughter Prabhavati Gupta to Vakataka King Rudrasena II
- Conquered Western India Shakas
- Ports: Broach, Sopara, Cambay and other sea ports
- Fa Hien visited India during his reign
 - i. Fa Hien came to India through land route but went back through sea route.
 - ii. According to him, Buddhism was flourishing in North-West India and Gangetic Valley had become the land of Brahmanism

Gupta Empire

Chandragupta II

- He had **Nine Gems** in his court:
 - i. Kalidasa - Poet
 - ii. Shapanaka - Astrologist
 - iii. Amarnatha - Wrote Amarkosh (Sanskrit Grammar)
 - iv. Dhanvantri - Doctor
 - v. Varuchii - Grammar Expert
 - vi. Varahamihira - Astrologist | Wrote Brihatsamhita, Brihadjataka and Panch Siddhantika
 - vii. Ghatakpara - Architect
 - viii. Shanku - Geologist
 - ix. Vetalabhadra - Expert in Black Magic and Tantric Science | Also known as Mega Brahmin | Wrote 16 stanza poem Niti Pradipa (Lamp of Conduct)

Kumargupta

- Founder of **Nalanda University**
- Threat of Hunas Invasion started during his time

Gupta Empire

Skandagupta

- Large scale Huna Invasion ultimately leading to weakening of Gupta Empire
- 2 Famous Huna Rulers - Toramana and Mihirakula

Kingdom after the Fall of Gupta Empire

1. Pushyabhutis of Thanesar
2. Maukharis of Kannauj
3. Maitrakas of Vallabhi
4. Late Guptas
5. Yashodharma of Malwa

Administration under Guptas

- Sabha : Council of Ministers
- Amatyas and Sachivas : Executive Officers
- Mahanandanayaka : Chief Justice
- Vinayasitishpataka : Morale and Social Discipline
- Dutakas : Espionage or Spies Network
- Sandhi Vighraha : Minister of Peace and War
- Ranabhandagarika : Look after day to day needs of the army

Marathas

Shivaji

- Born at Shivner (Father- Shahji Bhonsle, Mother- Jija Bai)
- Inherited **Jagir of Poona** from his father in 1637- setup an army and fought many battles with Bijapur
- Later fought Mughals from 1650s
- **Shaista Khan**, a relative of Aurangzeb, captured Poona but Shivaji reclaimed it
 - Shaista Khan had captured the Lal Mahal and made it his quarter during his stay at Poona in 1633 AD. During the battle Shivaji confronted Shaista Khan.
 - As Khan tried to escape from one of the windows, his thumb was severed by Shivaji-
 - This led to retreat of Shaista Khan to Burhanpur for safety and his transfer to Bengal for a difficult campaign against Ahoms.
- Aurangzeb sent **Raja Jai Sing** to subdue Shivaji, who besieged Purandar fort, finally compelled Shivaji to seek peace treaty.

Marathas

Shivaji

- **Treaty of Purandar, 1665**- Shivaji surrendered 23/35 forts to Mughals and pledged loyalty to Mughal empire
- The treaty couldn't last long as Aurangzeb humiliated Shivaji during his visit to Agra court.
- In 1674, Shivaji recaptured all his lost territories and crowned himself at Raigarh assuming the tittle '**Chhatrapati**'
- His son **Sambhaji** and **Raja ram** carried on harassing Mughals after the death of Shivaji in 1680- 27 years of struggle of Aurangzeb in Deccan
- **Shahu (1707-49)** became a figurehead and Peshwas gained prominence and all real authority during his time.
- King is assisted by a council of Ministers called '**Astapradhan**'

Marathas

Asthapradhan: Council of Ministers

Peshwa	Prime Minister
Majumdar	Accountant General
Sar-i-Nauabat	Military Commander
Waqianavis	Intelligence Officer
Surnavis	Correspondence
Sumanta/Dabir	Foreign Affairs
Nyayadisha	Chief Justice
Pandita Rao	Charities & Religious Affairs

Taxes

- Taxes were collected from Mughals and Deccan
- **Chauth**: 1/4th of the land revenue to Marathas - for not attacking them
- **Sardeshmukhi**- 1/10 levy on hereditary Maratha lands

Marathas

Peshwas

1. Balaji Vishwanath (1712-19)

- Made the position of Peshwa very powerful
- Got permission (Farman) from Mughal Badshah to collect Chauth and Sardeshmukhi from all Deccan empires

2. Baji Rao (1720-40)

- Brought Maratha power to its zenith by conquering Malwa, Rajputana, Delhi
- Pioneered the system of confederacy among the Maratha chiefs- each Maratha chief (Maratha Family) was assigned one territory which could be administered autonomously.
 - i. Gaekwad at Baroda
 - ii. Bhonsle at Nagpur
 - iii. Holkar at Indor
 - iv. Scindias at Gwalior
 - v. Peshwas at Poona

3. Balaji Baji Rao (1740-61)

- Elder son of Baji Rao from his Hindu wife Kashi Bai
- Fully controlled the empire after the death of Shahu/ Chhatrapati

Marathas

1752: Agreement with Mughals

- Right to collect Chauth from Agra and other states of north India
- On condition of responsibility of security of the empire, especially from invaders like Abdali in the north west- Maratha flag flew from Attock to Tanjore

3rd Battle of Panipat, 1761

- Ahmed shah Abdali + Rohillas + Awadh

vs.

Marathas

- Marathas defeated comprehensively dealing a huge blow to Maratha prestige and power in North
- Abdali sacked Delhi once again
- ~1 lakh Marathas were killed
- Most beneficial to non-combatants - East India Company, Jats and Sikhs

Marathas

Decline of Peshwa

- Later Peshwas had succession struggles
- Rising British power
- Lack of unity and infighting in the confederacy itself
- Guerrilla warfare did not succeed in open ground battles
 - Madhava Rao I - 1761-72
 - Narayan Rao - 1772-73
 - Madhav Rao II - 1773-95
 - Baji Rao II - 1795-1818
- After 3rd Anglo-Maratha Empire, Maratha empire was absorbed under the ambit of British India.

Charter Acts

Regulating Act, 1773

- Made the presidencies of Bombay and Madras as **subordinate** to the Presidency of Calcutta.
- Governor of Bengal --> **Governor General** of Fort William/Bengal (5-year tenure)
- Council of **4 members** to assist Gov Gen of Fort William/Bengal
 - Decisions in council to be taken via majority. In case of a tie, Governor's vote would act as tie breaker.
- Gov Gen --> **supreme over other Presidencies** in matters of peace and war
 - But, this soon proved to be problematic, as friction came between Governors.
 - Eg. During 1st Anglo-Maratha War, Gov Gen of Bengal vs. Gov of Bombay
- Establishment of an independent Supreme court at Calcutta (1 CJ, 3 judges)
 - Eliza Impay - **1st CJ of SC**
- **No private trade** or any Gift/Cash acceptance by any officer of the EIC (including Gov. General, Council members, SC members)

Charter Acts

Pitt's India Act, 1784

- Introduced by William Pitt the Junior - Prime Minister of Britain.
- Established a **system of dual government** - distinguished between the **commercial and political functions** of the Company.
- Formation of Board of control (6 members) appointed by Crown, who would be working alongside Court of Directors.
 - **Court of Directors** -to look after Commercial functions; representing the EIC.
 - **Board of control**- to look after Political affairs; representing the Crown.
- EIC's territories in India were designated officially as "**British Possessions in India**".
- Also, reduced the members in Gov. General's Council from 4 to 3.
- Authorised Court of Directors to make all recruitment in India, along with Commercial affairs.
- Supreme court made for only British subjects in India.
- Gov. gen. of Bengal **can't declare war** without permission from Parliament.

Charter Acts

Charter Act, 1786

- GG of Bengal was given **special power (veto)** to override his council

Charter Act, 1793

- This Act continued the company's rule over the British territories in India.
- It continued the company's trade monopoly in India for **another 20 years**.

Charter Act, 1813

- **Rs. 1 lakh annually** for promoting modern education in country
- **Christian missionaries** allowed to enter India and preach
- British subjects could settle in India
- Monopoly of EIC ended in India **except** for tea & trade with China (for 20 years)
 - EIC exported opium from India, and imported silk and gunpowder from China.
- Other British merchants and companies could now trade in India.

Charter Acts

Charter Act, 1833

- Complete end to monopoly of EIC (complete free trade policy)
- Centralized administration in India
- Governor General of Bengal --> Governor General of India
- It attempted to introduce a system of open competition for selection of civil servants.
 - Indians should not be debarred from holding any office.
 - However, this provision was dropped after opposition from Court of Directors.
 - Later in Charter Act of 1853, open competition actually started. Though exam were conducted in England only.
 - Earlier, Cornwallis laid foundation of Civil Services by making appointments on the basis of merit. Though, only English could become civil servants.
- Enlarged the Executive council by addition of 4th member (Law member) for legislative purposes.
- Appointment of first Law commission in India

Charter Acts

Charter Act, 1853

- The Act separated, for the first time, the **legislative and executive functions** of the Governor-General's Council.
- 4th member of governor general in council at par with other members as right to vote was conferred to him.
- Addition of 6 members to council known as '**Legislative Councillors**', out of which four members were appointed by the local (provincial) governments of Madras, Bombay, Bengal and Agra.
 - It introduced local representation in the Central Legislative Council.
 - Total number of members became -10
- New post of **Lt. Governor of Bengal** was created.
- Reduction in the number of Board of Directors from 24 to 18 (6 were nominated)
- Indian Civil Services became an **open competition**

Basic Structure

Emergence of Basic Structure Doctrine:

- **1st Amendment Act:** This act was formulated for implementation of Land Reforms but it curtailed Right to Property under Article 31
- **Shankari Prasad Case (1951):** 1st Amendment Act was challenged on ground of violation of Fundamental Right under Article 31. But Supreme Court ruled that the power of the Parliament to amend the Constitution under Article 368 also includes the power to amend Fundamental Rights.
- **Golaknath Case (1967):** Supreme Court reversed its earlier stand. Supreme Court ruled that the Fundamental Rights are given a 'transcendental and immutable' position and hence, the Parliament cannot abridge or take away any of these rights.
- Parliament then enacted **24th Amendment Act 1971**. It declared that the Parliament has the power to abridge or take away any of the Fundamental Rights under Article 368 and such an act will not be a law under the meaning of Article 13.

Basic Structure

Emergence of Basic Structure Doctrine:

- **Keshavananda Bharati Case (1973):** Supreme Court overruled its judgement in the Golak Nath case. It upheld the validity of the 24th Amendment Act (1971) and stated that Parliament is empowered to abridge or take away any of the Fundamental Rights.
- At the same time, it laid down a new doctrine of the 'basic structure' of the Constitution.
- It ruled that the constituent power of Parliament under Article 368 does not enable it to alter the 'basic structure' of the Constitution.
- This means that the Parliament cannot abridge or take away a Fundamental Right that forms a part of the 'basic structure' of the Constitution.

Elements of Basic Structure of the Constitution

- Supremacy of the Constitution
- Sovereign, democratic and republican nature of the Indian polity
- Secular character of the Constitution
- Separation of powers between the legislature, the executive and the judiciary
- Federal character of the Constitution

Basic Structure

- Unity and integrity of the nation
- Welfare state (socio-economic justice)
- Judicial review
- Freedom and dignity of the individual
- Parliamentary system
- Rule of law
- Harmony and balance between Fundamental Rights and Directive Principles
- Principle of equality
- Free and fair elections
- Independence of Judiciary
- Limited power of Parliament to amend the Constitution
- Effective access to justice
- Principles (or essence) underlying fundamental rights.
- Powers of the Supreme Court under Articles 32, 136, 141 and 142
- Powers of the High Courts under Articles 226 and 227

National Income

National Income

- National Income provides a comprehensive measure of the economic activities of a nation. It denotes the country's purchasing power. The growth of an economy is measured by the rate at which its real national income grows over time.
- National Income means 'The total money value of all final goods and services produced in a country during a particular period of time' Basic concepts of national income

Measuring Of National Income

- The following are some of the concepts used in measuring national income
 - Gross Domestic Product (GDP)
 - Net Domestic Product (NDP)
 - Gross National Product (GNP)
 - Net National Product (NNP)
 - NNP at factor cost
 - Personal Income
 - Disposable Income
 - Per capita Income
 - Real Income
 - GDP deflator

National Income

Gross Domestic Product (GDP)

- Gross Domestic Product (GDP) is the value of the all final goods and services produced within the boundary of a nation during a year period
- For India, the financial year is from 1st April to 31st March.
- India's GDP is 3rd largest in the world in terms of purchasing power parity (PPP)

Net Domestic Product (NDP)

- Net Domestic Product (NDP) is the GDP calculated after adjusting the weight of the value of 'depreciation'. $NDP = GDP - Depreciation$.
- NDP of an economy has to be always lower than its GDP for the same year.

National Income

Gross National Product (GNP)

- GNP is the total measure of the flow of final goods and services at market value resulting from current production in a country during a year, including net income from abroad
- The normal formula is:
$$\text{GNP} = \text{GDP} + \text{Income from Abroad (Income from abroad = Trade balance + Interest on External Loans + Private Remittance)}$$
 - Private remittance = Inflows and outflows on account of private transfer
 - Trade balance = Net outcome at the year end of the total import and export.
 - Interest on external loans = Balance of the inflow of interest payment - Outflow of interest payment
- $\text{GNP} = \text{GDP} + (-\text{Income from Abroad})$
- GNP at market prices means the gross value of final goods and services produced annually in a country plus net factor income from abroad

National Income

Net National Product (NNP)

- Net National Product (NNP) of an economy is the GNP after deducting the loss due to 'depreciation'.

$$\text{NNP} = \text{GNP} - \text{Depreciation}$$

Or

$$\text{NNP} = \text{GDP} + \text{Income from Abroad} - \text{Depreciation}$$

- This is the purest form of the income of a nation.

NNP at Factor cost

- NNP refers to the market value of output. Whereas NNP at factor cost is the total of income payment made to factors of production. Thus from the money value of NNP at market price, we deduct the amount of indirect taxes and add subsidies to arrive at the net national income at factor cost.

$$\text{NNP at factor cost} = \text{NNP at Market prices} - \text{Indirect taxes} + \text{Subsidies}$$

National Income

Personal Income

- Personal income is the total income received by the individuals of a country from all sources before payment of direct taxes in a year

$$\text{Personal Income} = \text{National Income} - (\text{Social Security Contribution and undistributed corporate profits}) + \text{Transfer payments}$$

Disposable Income

- Disposable Income is also known as Disposable personal income
- It is the individual's income after the payment of income tax

$$\text{Disposable Income} = \text{Personal income} - \text{Direct Tax}$$

Per Capita Income

- The average income of a person of a country in a particular year is called Per Capita Income. Per capita income is obtained by dividing national income by population

$$\text{Per Capita income} = \text{National Income} / \text{Population}$$

National Income

Real Income

- Nominal income is national income expressed in terms of a **general price level** of a particular year in other words, real income is the buying power of nominal income.
- Real income is the income of individuals or nations after adjusting for inflation

GDP deflator

- The **GDP deflator** is an index of price changes of goods and services included in GDP. It is a price index which is calculated by dividing the nominal GDP in a given year by the real GDP for the same year and multiplying it by 100.

$$\text{GDP deflator} = \text{Nominal GDP} / \text{Real GDP} \times 100$$

Gross value added

- **Gross value added (GVA)** is the measure of the value of goods and services produced in an area, industry or sector of an economy.

$$\text{GVA} = \text{GDP} + \text{subsidies} - (\text{direct, sales}) \text{ taxes}$$

National Income

Cost and Price of National Income

Cost

- **Factor cost:** The actual incurred on goods and services that are produced by the firms and industries in an economy is known as factor cost. i.e., cost of capital, interest on loans, raw materials, labour, rent, power, etc
- **Market cost:** 'Market cost' is derived after adding the indirect taxes to the factor cost of the product, it means the cost at which the goods reach the market
- India officially used to calculate its national income at factor cost. Since January 2015, the CSO has switched over to calculating national income at market cost. The market price is calculated by adding the product taxes to the factor cost

Price

- Income can be derived at two prices, constant and current. The difference in the constant and current prices is only that of the impact of inflation

$$\text{Current prices} = \text{Constant prices} + \text{Inflation}$$

National Income

Purchasing Power Parity

- A concept related to purchasing power is Purchasing Price Parity (PPP). PPP is an economic theory that estimates the amount that needs to be adjusted to the price of an item
- PPP can be used to compare countries income levels and other relevant economic data concerning the cost of living, or possible rates of inflation and deflation
- India is the third-largest economy in terms of Purchasing Price Parity (PPP)

Light

Reflection of Light (Law of Reflection)

- The angle of incidence is equal to the angle of reflection
- The incident ray, the normal to the mirror at the point of incidence and the reflected ray, all lie in the same plane.

Spherical Mirrors & their Uses

Uses of concave mirrors

- Concave mirrors are commonly used in torches, search-lights and vehicles headlights to get powerful parallel beams of light.
- They are often used as shaving mirrors to see a larger image of the face.
- The dentists use concave mirrors to see large images of the teeth of patients.
- Large concave mirrors are used to concentrate sunlight to produce heat in solar furnaces.

Light

Uses of convex mirrors

- Convex mirrors are commonly used as rear-view (wing) mirrors in vehicles, enabling the driver to see traffic behind him/her to facilitate safe driving. They always give an erect, though diminished, image. Also, they have a wider field of view as they are curved outwards. Thus, convex mirrors enable the driver to view much larger area than would be possible with a plane mirror.

Refraction of Light

- when a thick glass slab is placed over some printed matter, the letters appear raised when viewed through the glass slab the bottom of a tank or a pond containing water appears to be raised seen a pencil partly immersed in water in a glass tumbler. It appears to be displaced at the interface of air and water A lemon kept in water in a glass tumbler appears to be bigger than its actual size, when viewed from the sides.

Light

The following are the laws of refraction of light

- The incident ray, the refracted ray and the normal to the interface of two transparent media at the point of incidence, all lie in the same plane.
- The ratio of sine of angle of incidence to the sine of angle of refraction is a constant, for the light of a given colour and for the given pair of media. This law is also known as Snell's law of refraction. If i is the angle of incidence and r is the angle of refraction, then,
$$\frac{\sin i}{\sin r} = \text{constant}$$
- The one with the larger refractive index is optically denser medium than the other. The other medium of lower refractive index is optically rarer. The speed of light is higher in a rarer medium than a denser medium
- The light from the Sun constitutes parallel rays of light. These rays were converged by the lens at the sharp bright spot formed on the paper. In fact, the bright spot you got on the paper is a real image of the Sun. The concentration of the sunlight at a point generated heat. This caused the paper to burn.

Light

Refraction of Light Through a Prism Dispersion of white Light By A Glass Prism

- The prism has probably split the incident white light into a band of colours. The sequence of colours **VIBGYOR**.
- The **splitting of light** into its component colours is called dispersion.
- Different colours of light bend through different angles with respect to the **incident ray**, as they pass through a prism. The red light bends the least while the violet the most. Thus the rays of each **colour emerge along different paths** and thus become distinct. It is the band of distinct colours that we see in a spectrum.
- A rainbow is a natural spectrum appearing in the **sky after a rain shower**. It is caused by dispersion of sunlight by tiny water droplets, present in the atmosphere. A **rainbow is always formed in a direction opposite** to that of the Sun. The water droplets act like small prisms.
- They **refract and disperse** the incident sunlight, then reflect it internally, and finally refract it again when it comes out of the raindrop.

Light

- Due to the dispersion of light and internal reflection, different colours reach the observer's eye.

Atmospheric Refraction

- The air just above the fire becomes hotter than the air further up. The hotter air is lighter (less dense) than the cooler air above it, and has a refractive index slightly less than that of the cooler air. Since the physical conditions of the refracting medium (air) are not stationary, the apparent position of the object, as seen through the hot air, fluctuate. This wavering is thus an effect of atmospheric refraction (refraction of light by the earth's atmosphere) .

Light

Twinkling of stars

- The twinkling of a star is due to **atmospheric refraction of starlight**.
- The starlight, on entering the earth's atmosphere, undergoes refraction continuously before it reaches the earth.
- The **atmospheric refraction** occurs in a medium of gradually changing refractive index. Since the atmosphere bends starlight towards the normal, the apparent position of the star is slightly different from its actual position. As the path of rays of light coming from the star goes on varying slightly, the starlight entering the eye flickers - the star sometimes appears brighter, and at some other time, fainter, which is the twinkling effect.

Advance sunrise and delayed sunset

- The Sun is visible to us about **2 minutes** before the actual sunrise, and about 2 minutes after the actual sunset because of atmospheric refraction. The time difference between actual sunset and the apparent sunset is about 2 minutes.

Light

Scattering of Light

- The blue colour of the sky, colour of water in deep sea, the reddening of the sun at sunrise and the sunset.

Why is the colour of the clear Sky Blue?

- The red light has a wavelength about 1.8 times greater than blue light.
- Thus, when sunlight passes through the atmosphere, the fine particles in air scatter the blue colour (shorter wavelengths) more strongly than red.
- The scattered blue light enters our eyes. If the earth had no atmosphere, there would not have been any scattering. Then, the sky would have looked dark. The sky appears dark to passengers flying at very high altitudes, as scattering is not prominent at such heights.

Light

Total Internal Reflection

- **mirage - Desert** e.g. Hotter air is less dense, and has smaller refractive index than the cooler air. On hot summer days, the air near the ground becomes **hotter than** the air at higher levels noticed that while moving in a bus or a car during a hot summer day, a distant patch of road, especially on a highway, appears to be wet. This is also due to mirage.
- **Diamonds - Their brilliance** is mainly due to the total internal reflection of light inside them.
- **Optical fibres too make use** of the phenomenon of total internal reflection.
- Light undergoes repeated total internal reflections along the length of the fibre there is no appreciable loss in the intensity of the light signal.

Light

Tyndall Effect

- The earth's atmosphere is a heterogeneous mixture of minute particles like smoke, tiny water droplets, suspended particles of dust and molecules of air.
- When a beam of light strikes such fine particles, the path of the beam becomes visible. When a fine beam of sunlight enters a smoke-filled room through a small hole. Tyndall effect can also be observed when sunlight passes through a canopy of a dense forest.
- The colour of the scattered light depends on the size of the scattering particles.
- Very fine particles scatter mainly blue light while particles of larger size scatter light of longer wavelengths.