

## GEOGRAPHY

⇒ India is a peninsula

### Neighbouring countries - Capitals

1. Bangladesh - Dhaka (Share major portion of India)

2. China - Beijing

3. Pakistan - Islamabad

4. Nepal - Katmandu

5. Myanmar - Naibeda

6. Bhutan - Timbu

7. Afghanistan - Kabul

⇒ 28 States & 7 union territories

⇒ Chattisgarh – Raipur (capital)

⇒ Jammu & Kashmir - Srinagar – summer capital

Jammu – winter capital

⇒ India's planned city – Chandigarh

⇒ NCT – National Capital territory – India – Delhi

⇒ Capital of Lakshadweep – Kavarathi

⇒ Smallest bird sanctuary – Pitty Island in Lakshadweep

⇒ Capital of Dadra Nagar Haveli – Silvassa

⇒ Tropic of Cancer

⇒ Passes through Gujarat, Rajasthan, Madhya Pradesh, Chattisgarh, Jhargand, West Bengal, Tripura, Mizoram

⇒ Divides India into two halves at 23°

### **Mountains**

⇒ Himalayas starts in pami knot.

⇒ Godwin Austin (K<sub>2</sub>) is India's largest peak & is located in Karakkoram (originated before Himalayas) range

⇒ Siyachin Glacier is in Karakkoram range

⇒ Ladakh & Sazkar are two ranges in Karakkoram range.

⇒ Himadri, Himachal & Shiwalik are 3 ranges in Himalayas (western part)

⇒ Eastern part of Himalayas – Purvachal

⇒ World's largest peak Mt. Everest is in Nepal

⇒ 2<sup>nd</sup> world's largest peak is Kanjanjanha

⇒ Purvachal contains the follows ranges:

i) Batkaibum

ii) Bariel

iii) Manipur hills

iv) Mizor hill

⇒ Gara, khasi, Jaintia are three hills in Meghalaya

⇒ Maysyndrum – India's highest rainfall region is in khasi hills.

⇒ Aravalli ranges extends from Gujarat to Rajasthan (Oldest mountain ranges in India)

⇒ Delhi is the extension part of Aravalli range.

⇒ Andaman & Nicobar is extension part of Himalayas

⇒ Vindhya & Satpura ranges.

⇒ Gir range is Saurashtra

⇒ Gir lion is our national animal before 1970

⇒ Rajmahal hill's extension – Gara, khasi, Jaintia

⇒ Western Ghats Maharashtra to oddisha

⇒ Eastern Ghats

⇒ Nilgiri hills is the place where western ghats & Eastern ghats meets.

⇒ Mahendragiri (in odissia) is the highest peak in Eastern ghats,.

⇒ Anaimudi is the highest peak in western ghats.

⇒ Thottabetta is the highest peak in T.N.

⇒ It is also in western ghat's

⇒ Cardamom (Vyf;fha;) hills

### **RIVERS**

#### **i) Brahmaputra**

⇒ Manasorover lake – Brahmaputra is originated

⇒ Di-Sanghito is the name given to Brahmaputra in China

⇒ Dihang is the name given to Brahmaputra in Arunachal Pradesh.

⇒ In Assam it is known as Brahmaputra

⇒ In Bangladesh it is known as Jamuna

⇒ Jamuna & Ganga joins in Bangladesh & it is Solely named as Padma

⇒ In delta region it is known as Macna.

⇒ Major Tributaries (JizahW)

a) Tista (b/w India & Bangladesh)

b) Subansri

c) Manas

d) Dhihang – Dibang

⇒ Largest riveran island in the world Majuli is in Assam

#### **ii) Indus**

⇒ Originates near to Manasorover (in India) lake & drains in Pakistan.

⇒ Major Tributaries

a) Jhelum b) Chenab c) Ravi d) Beas e)

Sutluj

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- ⇒ India's highest Gravity Dam Bhakra Nangal is in Sutluj
- ⇒ India's Longest canal is Indira Gandhi Sagar Canal is in Thar Desert.

### iii) Ganga

- ⇒ Alaknanda & Bhagirathi rivers meet at Haridwar, which is named as Ganga.
- ⇒ Originates in Himalayas
- ⇒ Gangotri, Yamunotri & Glaciers are in Uthtrahand
- ⇒ River Yamuna is originated from here.
- ⇒ Yamuna is the tributary river of Ganges & joins in Allahabad.
- ⇒ Haridwar, Ujjain, Allahabad, Nashik (happens Kumbamela in India)
- ⇒ Mahakumbamela occurs once in 144 years (12x12)
- ⇒ Tributaries
  - a) Ramganga b) Gomti c) Sarada d) Rati e) Ghaghara
  - e) Kosi - Sorrow of Bihar, originated in Nepal
- ⇒ Other river Yamuna, Sone
- ⇒ Tributaries of Yamuna: a) Chambal b) Betwa
- b) Kolleri
- ⇒ Farakka Dam – Hooghly river passes through Kolkata.
- ⇒ Damodar, Subarnarekha, Mahanadi, Brahmaputra are other rivers.

### Godavari

- ⇒ Nashik (in Maharashtra) – Godavari is originated
- ⇒ Rivers Krishna & Godavari joins & forms a delta known as Koller Lake
- ⇒ Vaiganga, Wardha, Penganga, Sabari, Manjira are the major tributaries of Godavari
- ⇒ Thungabhadra, Hogenakal, Sina are the major tributaries of Krishna.
- ⇒ India's largest tiger reserve is Nagarjuna Sagar reserve (in Andhra) in Nagarjuna Sagar lake (near Krishna river)

### Cauvery

- ⇒ Coorg district of Karnataka – Origin place

- ⇒ Kabini & Krishnaraja Sagar – 2 dams in Karnataka
- ⇒ Mettur dam in T.N.
- ⇒ Trichy, Tanjore, Tiruvarur, Nagapattinam – Cauvery Delta District in Tamil Nadu.
- ⇒ Subaravathi, Amaravathi, Arkavathi, Shishu, Noyyal, Bhavani are major tributaries of Cauvery.

### Other Important rivers in Tamil Nadu

- ghyhw - Kanchipuram – Vellore, South Arcot – Cuddalore, North Arcot - Vellore
  - nghd;dhW – Krishnagiri – T.V. Malai – VPM - PDY
  - nts;shW – Nrh;tuhad; Fd;W – flY}h;
  - fhtph
  - itif – kJiu - ,uhNk];tuk;
  - itg;ghW – tpUJefh;> rptfhrp
  - jhkpugudp (tw;whj ejp) – jpUr;nre;J}h;
- ⇒ Stanley Reservoir is in Mettur Dam
  - ⇒ In T.N. Cauvery is originated from Okkanakal hills.
  - ⇒ Vande Matram was first sung in Congress session at 1896.
  - ⇒ Morning Song of India – National Anthem
  - ⇒ In 1911 King of Wales visited India
  - ⇒ In 1911, first national anthem was sung first

- ⇒ National Aquatic Animal – Ganges Dolphin. It is announced in 2008.
- ⇒ National Heritage Animal – Elephant
- ⇒ Acc to census 2001 our total forest area is 23.28%, but forest coverage area is 20% & the targeted forest area by the govt is 33%
- i) National Forest Policy – 1988
- ii) Social Forestry – 1976
- ⇒ In Arunachal Pradesh more than 90% of area were forests
- ⇒ Area-wise – M.P. is the place covered largely by forest
- ⇒ Lowest forest area – Haryana

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- i) Wild life protection Act – 1972
- ii) Environmental protection Act – 1986
- iii) Project Gir Lion – 1972
- iv) Project Tiger – 1973
- v) Project Crocodile – 1974
- vi) Rhino's conservation - 1987
- vii) Project elephant – 1902
- viii) Project snow leopard – 2002

- ⇒ In India there are 18 Biosphere
- ⇒ India's first national park is Corbett in Uthraghand.
- ⇒ India's Largest national park is dessert national park in Rajasthan
- ⇒ Kaibul Lamjao national park is in Lolttak lake in Manipur. It is the world's only fwating national park
- ⇒ Indias first Tiger reserve is Bandipur Tiger reserve in Karnataka
- ⇒ India's largest Tiger reserve is Nagarjuna Sahar reserve, Srisailam
- ⇒ India's fist Biosphere reserve is Gulf of Mannar

### List of Biospher reserves:

- i) Great Nicobar (India's Southern most part)
- ii) Gulf of Mannar
- iii) Agasthiya malai
- iv) Nilgiri
- v) Pachmarhi (in M.P)
- vi) Achanakumara Amarkantak (in Chattisgarh)
- vii) Simlipal (in oddisha)
- viii) Sunderbans – Sunderban's delta is world's largest delta (it is formed by Ganga & Brahmaputra)  
Sundari trees are found  
It is in W.B.
- ix) Manas (Assam)
- x) Nokrek (Meghalaya)
- xi) Dihan – Dibang (Arunachal pradesh)
- xii) Didru Saikawa (Arunachal Pradesh)
- xiii) Kanjanjanha (Sikkim)
- xiv) Manda devi (Uthragand)
- xv) Rann of Kachch (Gujarat)

- xvi) Seshachalam (Andhra Pradesh)
- ⇒ Velvadar is a national park in Gujarat (Saurashtra region). It is famous for black buck.
- ⇒ Largest no. of national park.  
1. Madhya Pradesh 2. Andaman & Nicobar islands.

### Reserves in Tamil Nadu

- ⇒ Pulikat lake is a bird Sanctuary
- ⇒ Guindy national park
- ⇒ Vedanthankal bird sanctuary
- ⇒ Nilgiri biosphere reserves
- ⇒ Mudumalai wild life sanctuary
- ⇒ Point calimere bird sanctuary
- ⇒ Vettangudi bird sanctuary
- ⇒ Gulf of mannar biosphere reserves
- ⇒ Marine national park (both in T.N & Gujarat)

### Geology + Minerals:

Fe Ore & Mn → Dharwar System  
Cu, Pb & Zn → Aravalli Series of Dharwars  
Major metallic minerals → Dharwar & Cuddapah  
Limestone, Dolomite, Gypsum,  
CaSO<sub>4</sub> → Cuddapah & Vindhyan  
Coal → Gondwana system  
Petroleum → Tertiary rocks

### Coal:

Carbon % : Anthracite > Bituminous > Lignite > Peat

Indian Coal: Bituminous & Non-cooking grade  
Coal → Gondwana (200 My) → 97% reserves,  
Tertiary (55 My) → 3% reserves

### Gondwana Coal:

- 1. Damodar Valley → Jharkhand + West Bengal
- 2. Mahanadi Valley → Chattisgarh + Orissa
- 3. Wardha – Godavari Valley → MP, Maha & AP
- 4. Son valley → MP, Chattisgarh & UP

## GEOGRAPHY

State	Coal Fields
1. Jharkhand	Jharia → Largest coal field, Giridh, Bokaro, Karanpura, Daltenganj, Ramgarh, Hutar, Auranga
2. Chhattisgarh	Chirimiri – Kurasia, Bistrampur, Jhilmili, Sonhat, Lakhanpur, Sendurgarh. Har-do-Arand, Korba, Mand-Raigarh, Johilla
3. Orissa	Talcher, Rampur – Himgir, Jharsuguda
4. Madhya Pradesh	Singrauli, Sohajpur, Umaria, Pench-Kanhan, Pathkera, Rewa
5. Maharashtra	Chanda-Wardha, Kamptee, Bander, Umred
6. Andhra Pradesh	Singareni, Kothagudam, Tandur
7. West Bengal	Raniganj → First coalmine in India, Darjeeling [Dalingkot coalfield]
8. Uttar Pradesh	Part of Singrauli coalfield

### Tertiary Coal:

- Assam - Makum, Nazira, Mikir Hills, Dilli- Jeypore.
- Meghalaya - Darangiri, Cherapunji, Laitryngew, Mawlong, Langrin
- Arunachal Pradesh - Namchik - Namphuk
- Jammu Kashmir - Kalakot

### Lignite:

- Tamil Nadu - Neyveli → Jayamkondacholapuram
- Gujarat - Umarsar → Kuchchh Dt.
- Jammu Kashmir - Nichahom → Baramulla Dt.
- Rajasthan - Palana → Bikaner Dt.
- Kerala - Varkala

### Coal Reserves

- Jharkhand
- Orissa
- Chhattisgarh
- West Bengal
- Madhya Pradesh

Jharia (JK) → Largest Coal Field  
Raniganj (WB) → Oldest Coal Field

### Petroleum / Mineral Oil:

First oil field discovered → Makum (Assam)  
First oil drilled → Digboi (Assam)

### 1. North-East Region:

Assam - Digboi, Moran-Hugrijan, Naharkatiya, Rudrasagar, Galeki.  
Arunachal Pradesh → Nigru (TirapDt) / Ningru  
Nagaland → Borholla

### 2. Gujarat Region:

Ankleshwar, Kalol, Nawajam, Kosamba, Kathana, Barkol, Mehsana, Sanand, Lunej (Khambhar)

3. Rajasthan : Saraswathi & Rajeswari (BarmerDt) Jaisalmer Dt.

4. West Coast off-shore oil fields:

- Mumbai High
- Bassein
- Aliabot Is → Gulf of Khambat

### 5. East Coast off-shore oilfields:

- Krishna – Godavari basin → Rawa field.
- Kaveri basin.

6. Tamil Nadu: Narimanam, Kovilappal  
ONGC: Oil and Natural Gas Commission (1956)

### Oil Pipelines:

- Naharkatiya – Nunmati – Barauni – Haldia pipeline
- Mumbai High – Mumbai – Ankleshwar – Koyali pipeline.
- Salaya – Koyali – Mathura pipeline.

### Oil Production

- Mumbai High
- Gujarat
- Assam
- TN

### Natural Gas:

GAIL: Gas Authority of India Limited (1984)

- Gujarat Nanda → Khambat basin Andada
- Tamil Nadu → Adiyakkamangalam
- Assam → Khovaghat
- Andhra Pradesh → Lingla
- Rajasthan Tanot → Jaisalmer basin
- Offshore Fields : KG Basin – Ravva Field Kaveri offshore, Mumbai High, Bassein Field, Kachchh Offshore.

### Gas Production

- Mumbai High
- Gujarat
- Andhra Pradesh
- Assam

### Gas Pipelines:

- Hazira – Bijaipur – Jagdishpur (HBJ) pipeline:
  - World's longest underground pipeline.
  - India's longest pipeline → 1750 km
 Hazira → Bijaipur → Jagdishpur
  - Supplies gas to 3 power houses.
    - Kawas → Gujarat
    - Anta → Rajasthan
    - Auraiya → UP

## GEOGRAPHY

- Supplies gas to 6 Fertilizer plants:
  1. Bijaipur → MP
  2. SawaiMadhopur → Rajasthan
  3. Jagdishpur → UP
  4. Shahjahanpur → UP
  5. Aonla → UP
  6. PiyalaBabrara → UP

### 2. Jamnagar – Loni LPG Pipeline

- Longest LPG pipeline in the world → 1269 km long.
- Connects Jamnagar (Gujarat) to Loni(UP)

#### Power

#### HEP :

HEP Potential → 84, 000 MW @ 60% Load factor

#### HEP Potential:

1. Brahmaputra → 42%
2. Indus → 24%
3. Ganga → 13%
4. East Flowing Rivers → 11%
5. West Flowing Rivers → 7%
6. Central Indian Basins → 3%

#### Electricity Installed Capacity: (2002-03)

Hydro	Thermal	Gas
AP	Maharashtra	Maharashtra
Karnataka	Gujarat	Gujarat
Maharashtra	West Bengal	AP
Punjab	Uttar Pradesh	TN
TN	TN	

#### Total Installed Capacity: (2002-03)

1. Maharashtra → 13, 180 MW
2. AP → 7, 616 MW
3. Gujarat → 7, 323 MW
4. TN → 7, 146 MW
5. Karnataka → 5, 197 MW

#### Total Electricity Generated

1. Maharashtra
2. Gujarat
3. AP
4. TN
5. UP

NHPC, NTPC → 1975

#### Wind Energy:

##### 1. TN:

- Muppandal – Perungudi
- Kaiyattar

##### 2. Maharashtra → Satara

##### 3. Gujarat:

- Lamba → Largest in Asia
- Mandvi

#### 4. Orissa:

- Puri

#### Bio-energy

Okhla → Delhi

#### Geothermal energy:

- Manikaran → KulluDt, HP
- Tattapani → Chattisgarh

#### Tidal energy

Gulf of Khambat

Gulf of Kachchh

Sunderbans

#### Potential

→ 7000 MW

→ 1000 MW

→ 100 MW

#### Wave Energy:

- Vizhinjam → Kerala
- Andaman & Nicobar Is

#### Nuclear Energy:

Atomic Energy Commission (AEC) → 1948

Atomic Energy Institute, Trombay → 1954

Bhabha Atomic Research centre (BARC) → 1967

#### 6 Nuclear Power Stations:

1. TN → Kalpakkam
2. Karnataka → Kaiga
3. Maharashtra → Tarapur
4. Gujarat → Kakrapara
5. Rajasthan → Rawatbhata
6. UP → Narora

#### Minerals

- i) Metals      ii) Non-Metals

##### i) Metals

##### Ferrous

Limestone

Iron ore

Manganese      Silver

Chromite

Pyrites      Lead

Nickel      Bauxite

Cobalt      Tin

Tungsten

##### Non-Ferrous

Gold

Nitrate

Copper

Mica

Magnesium

##### ii) Non -

Dolomite

Potash

Gypsum

#### Iron Ore: [MHLS]

##### Ores:

1. Magnetite → 72% pure Iron
2. Haematite → 60 – 70% pure Iron
3. Limonite → 40 – 60% pure Iron
4. Siderite → 40 – 50% pure Iron

#### Reserves:

1. Jharkhand
2. Orissa
3. Karnataka

#### Production

1. Karnataka
2. Orissa
3. Chhattisgarh



## GEOGRAPHY

### 1. Karnataka

- Bellary district → Bellary, Hospet, Sandur
- ChikmagalurDt → Baba Budan Hills → Kummangudi, Kudremukh
- ShimogaDt
- Chitradurg Dt.
- TumkurDt

### 2. Orissa:

- Mayurbhanj → Gurumahisini, Sulaiat, Badampahar
- Kendujhar → Kiriburu, Meghahataburu
- Sundergarh → Bonai

### 3. Chhattisgarh:

- DurgDt → Dalli, Rajhara
- Dantewada → Bailadila (BastarDt)

### 4. Jharkhand:

- Purbi → Naomundi mines
- PaschmisinghbhumDt → Gua

### 5. Goa:

- Sanquelim
- Sanguem
- Quepem
- Satari
- Ponda
- Bicholim
- Purbi & Paschmi SingbhumDt → Naomundi & Gua

### 6. Maharashtra:

- Ratnagiri Dt.
- ChandrapurDt
- BhandaraDt

### Orissa:

Barabil-Koira Valley → India's richest haematite ore deposits.

### 7. Andhra Pradesh:

- KarimnagarDt
- Warangal Dt
- Kurnool Dt
- Cuddapah Dt.
- AnantpurDt

### 8. Tamil Nadu:

- Salem → Tirthamalai hills
- Nilgiris → Madapalli, Killimalai

### Manganese:

- Gondite & Kodurite series of Dharwar system

### 1. Orissa:

- Sundergarh Dt.
- KendujargarhDt
- GangpurDt
- KoraputDt

- KalahandiDt
- BolangirDt (Balangir)

### 2. Madhya Pradesh:

- Balaghat – Chhindwara – NimarMandla
- JhabuaDt

### 3. Maharashtra:

- Nagpur – Bhandara Dt.
- Ratnagiri

### 4. Karnataka

- Dharwad, North Kanara Dt.
- Belgaum
- Shimoga – Chitradrug – Bellary – TumkurDt
- ChikmagalurDt

### 5. Andhra Pradesh:

- VijayanagaramDt
- AdilabadDt

### 6. Rajasthan:

- BanswaraDt
- UdaipurDt

### Chromite:

#### 1. Orissa:

- Cuttack Dt – Sukinda
- KendujharDt
- DharkanalDt

2. TN → Salem

3. Andhra → Kammam

4. Maharashtra → ChandrapurDt

5. Karnataka → Hassan Dt

### Copper:

1. Jharkhand → SingbhumDt, HazaribaghDt

2. Madhya Pradesh:

- BalaghatDt → Malanjkhanda cu mines

### 3. Rajasthan:

- AlwarDt → Kho-Dariba
- JhunjhunaDt → Khetri-Singhana
- Udaipur Dt → Delwara-Kirovli
- BhilwaraDt

4. TN → South ArcotDt

### Bauxite: (Al)

- Associated with laterite rocks.
- Ore of Aluminium

### 1. Orissa: (Largest Produces)

- Kalahandi Dt.
- SambalpurDt
- BolangirDt (Balangir)

## GEOGRAPHY

- KoraputDt→Damanjodi→Panchpatmali Mines
- SundergarhDt

### 2. Jharkhand:

- GumlaDt
- LohardagaDt
- PalamurDt

### 3. Gujarat

- Bhavnagar Dt
- Jamnagar Dt
- JunagadhDt
- KachchDt
- AmreliDt

### 4. MP:

- Shahdol, Mandla, Satna, Balaghat Dt.
- Jabalpur →Katni

### 5. Maharashtra:

- Kolaba, Thane, Ratnagiri
- Satara, Pune, Kolhapur

### 6. Chhattisgarh:

- Durg + BilaspurDt→Maikala Hill
- Amarkantak Pl →Surguja, Raigarh, Bilaspur

### 7. Tamil Nadu:

- Salem Dt.
- NilgiriDt

Galena (pbs) → Lead ore  
Sphalerite (Zns) → Zinc Ore

### Zinc & Lead:

Galena: Ore of lead (cubic sulphide)

### Zinc deposits:

1. Udaipur Dt, Rajasthan →Zawar [99% of Zn in India]
2. UdhampurDt, JK
3. South ArcotDt, TN

### Lead deposits:

1. Rajasthan → Udaipur (Zawar, Debari), Dungarpur, Banswara, Alwar.

### Gold

occurs→ Quartz veins in Dharwarschists (Lode deposit)

→ Placer deposits → River sands

### 3 Gold Fields:

1. Kolar Gold Field →Kolar Dt.
2. Hutti Gold Field →Raichur Dt. Karnataka
3. Ramagiri Gold Field →AnantpurDt→ Andhra Pradesh

### Jharkhand:

- Placer deposits → Subarnarekha river

- Sonanadi→Singbhum Dt.

### Silver:

### Ores:

1. Argentite
2. Stephanite
3. Pyrargyrite
4. Prousite

Found mixed with Cu, Au, Zn &Pb

Al – Aluminium

Au – Gold

Ag – Silver

Pb – Lead

Zn – Zinc

Sn – Tin

Mn – Manganese

Fe- Iron

### Production:

1. Rajasthan →Zawar (Udaipur Dt)
- Zawar (Udaipur) → Zinc (Zn), Lead (Pb), Silver (Ag)

### Mica:

3 Types → Muscovite, Phlogopite, Biotite

### 1. AP

- Nellore Dt.

### 2. Rajasthan

- Jaipur - Bhilwara - Ajmer - Udaipur
- Tonk - Sikar
- Dungarpur

3. Jharkhand →Hazaribagh, Kodarma

4. Bihar → Gaya, Hunger

5. TN → CBE, MDU, TRY

6. Kerala →Allepey

7. WB →Puralia, Bankura

Purana→Cuddapah, Vindhyan

### Limestone:

- Cuddapah&Vindhyan, cretaceous formations.

➤ CaCo<sub>3</sub>→ Limestone

➤ Dolomite → Limestone with > 10% Mg

1. MP →Satna, Jabalpur, Katni, Rewa, Damoh, Mandsaur, Morena

2. Chhattisgarh → Raipur, Mahasamund, Durg, Bilaspur, Jangir

3. AP →Cuddapah, Nalgonda, Adilabad, Karimnagar, Guntur

4. Rajasthan →Chittaurgash, Ajmer, Siroli, Udaipur, Kota.

5. Gujarat →Junagadh, Amreli, Jamnagar

6. TN →Trichy

7. Karnataka → Gulbarga

8. Maharashtra →Chandrapur

## GEOGRAPHY

### Dolomite:

1. Orissa → Sundergarh
2. MP → Jhabua, Balaghat, Jabodpur
3. Chhattisgarh → Bilaspur, Jangir, Durg
4. AP → Khammam
5. Jharkhand → Palaman
6. Gujarat → Vadodara
7. UP → Mirzapur
8. Maha → Nagpur

### Phosphate:

1. Rajasthan → Udaipur
2. Uttarkhand → Dehradun
3. MP → Jhabua, Chhatarpur
4. UP → Lalitpur

### Apatite:

1. AP → VizajDt
2. WB → PuruliaDt

### Magnesite:

- TN → Leading producer
- Salem Dt.

### Diamonds:

1. Panna → MP
2. Golconda, Wajrakarurkimberlite (Anantpur) → AP

### Atomic Minerals:

#### Uranium:

- Singhbhum, Hazaribagh → Jharkhand
- Gaya → Bihar
- Sahranpur → UP
- Singhbhum → Jaduguda → Baghjanta Mines
- Meghalaya → Domiasat
- Udaipur cumines → Rajasthan

#### Thorium:

Th Ores → Monazite sands, Ilmenite sands

#### Monazite sands:

1. Kerala → Palghat, Kollam Dt.
2. AP → Vizag
3. Orissa → Mahanadi delta

**Beryllium oxide:** Moderator in Nuclear reactor

#### Salt:

1. Gujarat coast
2. Rajasthan → Sambhar lake
3. TN coast
4. Maharashtra coast
5. HP → Mandi produces Rock salt

#### Uranium

1. Jharkhand → Banduguranj Project (SinghbhumDt), Muhaldih

2. Andhra → Lambarpur → Pedagatta Project (NalcondaDt) → Puliventula Project/ TumlaPalli Project (CudappahDt)

### Cotton Textile Industry

KawasjiDhaber: First cotton textile mill in Mumbai in 1854

### Cotton Industry

1. Organised sector (Mills)
  2. Decentralised sector → i) Power looms - 59% cloth  
ii) Handlooms - 19% cloth
- 1782 Mills → Public sector 192 mills, Co-op sector 151 mills,  
Private sector 1439 mills

### Important centres

1. Mumbai
2. Coimbatore
3. Ahmedabad
4. Kanpur

Tamil Nadu: Largest no. of mills (439 mills)

Leading cotton textile producing states:

1. Maharashtra
2. Gujarat
3. Tamil Nadu

### Sugar Industry:

- India → Largest producer of sugarcane & canesugar.
- 8% of world sugar production.
- sugar industry → seasonal industry
- sugar factories → 506
- weight losing crop: sugar to sugarcane → 9 to 12%

### Leading sugar producers:

1. Maharashtra → 33%
2. UP
3. Tamil Nadu

### UP Factories:

**1. Ganga-Yamuna doab:** Sahranpur, Muzaffarnagar, Meerut, Ghaziabad, Baghat & Bulandshahr.

**2. Tarai Region:** Lakhimpur, Basti, Gonda, Deoria, Gorakhpur, Bhaich, sitapur, Faizabad.

### Maharashtra Factories:

Pune, Kolhapur, Sangli, Ahmednagar, Solapur, Manmad.

### TN:

CBE, Vellore, Tiruvannamalai, Villupuram & Trichy.

### Petrochemicals Industry:

**Mumbai:** Hub of Petrochemicals



## GEOGRAPHY

### Cracker Units:

Auraiya → UP  
Jamnagar, Gandhar, Hazira → Gujarat  
Nagothane, Ratnagiri → Maharashtra  
Haldia → WB  
vizaj → AP

### Organisations

1. IPCL → Indian Petrochemical Corp Ltd.
2. PCL → Petrofils Co-op Ltd.
3. CIPET → Central Inst of Plastics Engg & Tech

PCL Units (Gujarat) → Vadodara, Naldhari

### Plastic Materials Prodn:

Mumbai, Barauni, Mettur, Pimpri & Rishra

### Nylon + Polyester Yarns:

Kota, Pimpri, Mumbai, Modinagar, Pune, Ujjain, Nagpur & Udhna.

### Acrylic staple fibre:

Kota, Vadodhara

### Transport & Communication

#### Road Transport:

- Total road length → 33.1 lakh km
- Nagpur plan → 1943
- 20 year road plan → 1961

#### Roads

National Highways (NH) → Central Govt.  
Stage Highways (SH)  
Major District Roads → State Govt.  
Rural roads

NHAI: National Highways Authority of India → 1995

NHDP: National Highways Dvt project by NHAI

#### 1. Golden Quadrilateral:

- 4/6 lanes
- 5846 km long

#### 2. N-S & E-W corridors:

N-S corridor: 4076 Km long  
Srinagar (JK) -----  
Kaniyakumari (TN)

E-W corridor: 3640 Km long  
Porbandar (Gujarat) -----  
Sikhar (Assam)

s.no.	Roads	Length(Km)	% of total road length
1	NH	65,769	2
2	SH	1,28,000	4

3	Major District Roads	4,70,000	14
4	Rural Roads	26,50,000	80
	Total	33,13,769	100

#### NH:

Only 2% of total road length but carry 40% of the road traffic.

**Other Roads** → Border Roads, International Highways.

**BRO:** Border Road Organisation (1960)

- Constructed road connecting Chandigarh with Manali (HP) & Leh (JK)

#### Road Density:

- Length of roads / 100 Km<sup>2</sup> → Road Density
- Highest → Kerala → 387.24 km
- Lowest → JK → 10.48 km
- National Average → 75.42 km

#### National Highways:

**NH1** → Delhi – Ambala – Ludhiana – Jalandhar – Amritsar

**NH2** → Delhi – Agra – Kanpur – Allahabad – Varanasi – Mohana – Aurangabad – Bashi – Dhanbad – Bardhaman – Kolkata.

**NH3** → Agra – Gwalior – Shivpuri – Biaoara – Indore – Dhule – Nashik – Thane – Mumbai

**NH4** → Thane – Panvel – Pune – Satara – Kolhapur – Belgaum – Hubli – Chitradurg – Tumkur – Bangalore – Krishnagiri – Vellore – Chennai

**NH5** → Chennai – Nellore – Ongole – Guntur – Vijaywada – Eluru – Vizaj – Srikakulam – Chhatrapur – Bhubaneshwar – Cuttack – Baleshwar – Baharajora (Jharkhand)

**NH6** → Kolkata – Baharagora – Sambalpur – Raipur – Nagpur – Amravati – Jalgaon – Dhule

**NH7** → Kaniyakumari – Tirunelveli – MDU – Dindigul – Karur – Salem – Krishnagiri – Bangalore – Anantpur – Kurnool – Hyderabad – Nizamabad – Adilabad – Nagpur – Jabalpur – Katni – Mangawan – Varanasi

**NH8** → Delhi – Jaipur – Ajmer – Beawar – Udaipur – Ahmedabad – Vadodara – Surat – Mumbai

**NH9** → Pune – Solapur – Hyderabad – Vijayawada – Machulipatnam

**NH10** → Delhi – Rohtak – Hisar – Fazilka

**NH15** → Pathankot – Amritsar – Bathinda – Ganga nagar – Bikaner – Pokhran – Jaisalmer – Barmer – Radhanpur

**NH17** → Panvel – Ratnagiri – Panaji – Mangalore – Kannur – Kozhikode – Thrissur.

**NH47** → Kaniyakumari – Trivandrum – Kollam – Kochi – Ernakulam – Thrissur – Palakkad – CBE – Salem

**NH45** → Chennai – Villupuram – Trichy – Dindigul

## GEOGRAPHY

**NH48** → Bangalore – Hassan – Mangalore

**NH49** → Kochi – Ernakulam – Madurai – Ramnad

### North - South Corridor:

Srinagar – Jammu – Pathankot – Jalandhar – Ludhiana – Aunbala – Delhi – Agra – Gwalior – Jhansi – Sagar – Narshimpur – Nagpur – Adilabad – Nizamabad – Hyderabad – Kurnool – Anantpur – Bangalore – Krishnagiri – Salem – Dindigul – Madurai – Kanyakumari

### East-West Corridor:

Porbandar – Rajkot – Radhanpur – Sirohi – Udaipur – Chittaurgarh – Shivpuri – Jhansi – Kanpur – Lucknow – Faizabad – Gorakhpur – Muzzaffarpur – Purnia – Siliguri – Bongaigaon – Guwahati – Silchar.

N-S & E-W meet @ Jhansi

### N-S & GQ share:

1. Agra – Delhi route
2. Krishnagiri – Bangalore route

### Longest NH:

NH7 → 2, 369 km (Kanyakumari → Varanasi)

NH6 → 1, 949 km (Dhule - Kolkata)

### Shortest NH:

NH 47 A → Ernakulam → Wellington Is (Kochi)

### Descending order:

NH7 > NH6 > NH5 > NH15 > NH2 > NH8 >

NH17 > NH 4 > NH3

### Rail Transport:-

1853 : First train from Mumbai to Thane for 34 km.

Length : 63, 221 km

### Ganges

i) Broad gauge → 1.676 m, 46,807 km, 74.14%

ii) Metre gauge → 1.000 m, 13, 290 km, 21.02%

iii) Narrow gauge → 0.762 – 0.610 m, 3, 124 km, 4.94%

Indian railway route → 41% electrified

### Konkan Railway (1998):

- Connects Mangalore, Karnataka with roha, Maharashtra
- 760 km long

### Freight: (H → L)

1. coal
2. cement
3. food grains
4. Raw material for steel plants

### 16 Railway zones:

1. Central- Mumbai CST

2. North central – Allahabad

3. East central – Hajipur

4. South central – Secunderabad

5. West central – Jabalpur

6. South East Central – Bilaspur

7. Northern – New Delhi

8. Eastern – Kolkata

9. Southern – Chennai

10. Western – Mumbai church gate

11. North Eastern – Gorakhpur

12. North East Frontier – Maligaon (Guwahati)

13. South Eastern – Kolkata

14. South Western – Hubli

15. East Coast – Bhubaneshwar

16. North western – Jaipur

### Rail Factories:

1. Chittaranjan Locomotive works → Chittaranjan, WB

2. Diesel Locomotive works → Varanasi, UP

3. Integral coach Factory → Perambur, Chennai

4. Rail Coach Factory → Kapurthala, Punjab/ Lalganj, UP

5. Wheel and Axle Factory → Bangalore, Karnataka

6. Diesel component works → Patiala, Punjab

### Water Transport:

i) Inland waterways.

ii) Oceanic waterways

### Inland waterways:

Navigable waterways → 14, 500 km (1%)

Rivers: Navigable → 3700 km

Used → 2000 km

Canals : Navigable → 4300 km

Navigable by Mech vessels → 900 km

Inland Waterways Authority → 1986

### National Waterways of India:

**NW1** → Allahabad – Haldia → 1620 km

**NW2** → Sadiya – Dhubri → 891 km

**NW3** → Kottapuram – Kollam → 205 km

along with Udyogmandal and champakar canals

### Oceanic Waterways:

coastline → 7, 517 km

Ports → 12 Major ports (6 on each coast), 185

Minor ports (state Govt)

### Foreign Trade:

- 70% by value } ocean routes
- 95% by volume }

Capacity of Indian ports (cargo) → 500 million tonnes.

### Major Ports:

## GEOGRAPHY

West Coast	East Coast
1. Kandla	7. Tuticorin
2. Mumbai (Natural harbour, Chennai [oldest but Biggest Port])	8. artificial
3. Nhavasheva (Jawaharlal Nehru) → Largest container port & Modern Port	9. Ennore
4. Marmagao (Natural harbour @ zuari estuary)	10. Vizag locked & protected port)
5. New Mangalore	11. Paradwip
6. Kochi → Natural harbour, Queen of Arabian sea	12. Kolkata - Haldia (Tidal ports)

### Air Transport:

**1911:** 10 km travel b/w Allahabad & Naini

**1953:** Air transport was nationalised & 2 corp set up Air India, Indian (Indian Airlines)

**1992:** Open sky policy for cargo.

**Airports** → 12 International Airports, 112 Domestic Airports.

### International Airports:

1. New Delhi	2. Mumbai	3. Chennai	4. Kolkata
5. Bangalore	6. Hyderabad	7. Kochi	8. Trivandrum
9. Amritsar	10. Ahmedabad	11. Guwahati	
	12. Panaji (Goa)	13. Srinagar (JK)	

### Pawan Hans Ltd:

- Helicopter service operating in hilly areas & tourism in North – Eastern sector.
- Heli service to petroleum sector & tourism

### Rural Settlements

#### 4 types:

1. Clustered, Agglomerated/Nucleated settlements
2. Semi-clustered/ Fragmented settlements
3. Hamleted settlements
4. Dispersed settlements / Isolated settlements

#### 1. Clustered settlements:

- Highly productive alluvial plains, valleys of shivaliks & in NE states.
- Security reasons → Bundelkhand region, Nagaland.
- Maximum utilisation of available resources → Rajasthan

#### 2. Semi-clustered settlements:

- Due to agglomerated tendency in a restricted area of dispersed settlement or consolidated territorial base.

- Also due to segregation / fragmentation of large compact village.
- Ex: Gujarat Plains

#### 3. Hamleted settlements:

- Fragmented into several units physically separated from each other bearing a common name → para, palli, nagla, dhani
- Motivated by social & ethnic factors.
- Ex.: Middle & lower Ganga plain, Chhattisgarh, lower valleys of Himalayas.

#### 4. Dispersed settlements:

- Isolated huts/hamlets of few huts in remote jungles or on small hills with farms or pastures on slopes.
- Due to fragmented nature of land resource base.
- Ex.: Meghalaya, Uttarkhand, HP

### Patterns:

Most common Pattern → Rectangular / Square

#### 1. Linear/String:

- Along road, river, canal
- Ex.: Coastal Kerala, Dun Valley (Doiwala, Lachiwala, Kanwarwala)

#### 2. Radial:

- Roads coverage @ a nodal position

#### 3. Star shaped:

- Inter-road space filled up in radial pattern.

#### 4. Spider web:

- Inter-connecting roads b/w the radial roads filled up.

#### 5. Checkerboard / Rectangular:

- Junction / crossing of 2 important highways.
- Ex. Northern plains of India.

#### 6. Triangular / Arrowhead:

- B/w 2 rivers @ their junction / confluence of 2 roads.

#### 7. Fanshaped:

- At fan head / delta head
- Ex: MP → Asland, Garahakota  
TN → Kanyakumari

#### 8. Circular pattern:

- Around lake / hill

#### 9. Semi-circular:

- Encircle partly
- Ex: UP → Bhimbal
- Rajasthan → siwan

### Towns

**Census Towns:** (All criteria should be satisfied)

- i) Minimum population of 5000 persons.
- ii) Atleast 75% male working population in non-agri pursuits.
- iii) Atleast poplu density of 400 persons / Km<sup>2</sup>

## GEOGRAPHY

### Statutory Towns:

- Places which have municipal / corporation / cantonment board / notified town area committee.

**city** : poph > 1 lakh

**Town** : poph < 1 lakh

### Power Projects

Rosa → UP

ParoHydel → Arunachal Pradesh

Sasan UMPP → MP

Darliparli → Orissa

Udangudi → TN

Nathpa – JhakriHydel → HP

Birbhum Coal Project → WB

### ALCO:

NALCO – Koraput (Orissa)

BALCO – Korba, Ratnagiri (Maha)

HINDALCO – Renukoot (UP)

INDAL – Muri (Jhar), Alupuram (Kerala), Belur (Kar), Hirakud (Orissa)

⇒ India is a peninsula

### Neighbouring countries - Capitals

1. Bangladesh - Dhaka (Share major portion of India)

2. China - Beijing

3. Pakistan - Islamabad

4. Nepal - Katmandu

5. Myanmar - Naibeda

6. Bhutan - Timbu

7. Afghanistan - Kabul

⇒ 28 States & 7 union territories

⇒ Chattisgarh – Raipur (capital)

⇒ Jammu & Kashmir - Srinagar – summer capital

Jammu – winter capital

⇒ India's planned city – Chandigarh

⇒ NCT – National Capital territory – India – Delhi

⇒ Capital of Lakshadweep – Kavarathi

⇒ Smallest bird sanctuary – Pitty Island in Lakshadweep

⇒ Capital of Dadra Nagar Haveli – Silvassa

⇒ Tropic of Cancer

⇒ Passes through Gujarat, Rajasthan, Madhya Pradesh, Chattisgarh, Jhargand, West Bengal, Tripura, Mizoram

⇒ Divides India into two halves at 23°

### Mountains

⇒ Himalayas starts in pamiir knot.

⇒ Godwin Austin (K<sub>2</sub>) is India's largest peak & is located in Karakkoram (originated before Himalayas) range

⇒ Siyachin Glacier is in Karakkoram range

⇒ Ladakh & Sazkar are two ranges in Karakkoram range.

⇒ Himadri, Himachal & Shiwalik are 3 ranges in Himalayas (western part)

⇒ Eastern part of Himalayas – Purvachal

⇒ World's largest peak Mt. Everest is in Nepal

⇒ 2<sup>nd</sup> world's largest peak is Kanjanjanha

⇒ Purvachal contains the following ranges:

v) Batkaibum

vi) Bariel

vii) Manipur hills

viii) Mizor hill

⇒ Gara, khasi, Jaintia are three hills in Meghalaya

⇒ Maysyndrum – India's highest rainfall region is in khasi hills.

⇒ Aravalli ranges extends from Gujarat to Rajasthan (Oldest mountain ranges in India)

⇒ Delhi is the extension part of Aravalli range.

⇒ Andaman & Nicobar is extension part of Himalayas

⇒ Vindhya & Satpura ranges.

⇒ Gir range is Saurashtra

⇒ Gir lion is our national animal before 1970

⇒ Rajmahal hill's extension – Gara, khasi, Jaintia

⇒ Western Ghats Maharashtra to Odisha

⇒ Eastern Ghats

⇒ Nilgiri hills is the place where western ghats & Eastern ghats meet.

⇒ Mahendragiri (in Odisha) is the highest peak in Eastern ghats.

⇒ Anaimudi is the highest peak in western ghats.

⇒ Thottabetta is the highest peak in T.N.

⇒ It is also in western ghat's

⇒ Cardamom (Vyf; fha;) hills

### RIVERS

#### i) Brahmaputra

⇒ Manasrover lake – Brahmaputra is originated

⇒ Di-Sanghito is the name given to Brahmaputra in China



## GEOGRAPHY

- ⇒ Dihang is the name given to Brahmaputra in Arunachal Pradesh.
- ⇒ In Assam it is known as Brahmaputra
- ⇒ In Bangladesh it is known as Jamuna
- ⇒ Jamuna & Ganga joins in Bangladesh & it is solely named as Padma
- ⇒ In delta region it is known as Macna.
- ⇒ Major Tributaries (JizahW)
  - f) Tista (b/w India & Bangladesh)
  - g) Subansri
  - h) Manas
  - i) Dhihang – Dibang
- ⇒ Largest riveran island in the world Majuli is in Assam

### ii) Indus

- ⇒ Originates near to Manasorover (in India) lake & drains in Pakistan.
- ⇒ Major Tributaries
  - b) Jhelum b) Chenab c) Ravi d) Beas e) Sutluj
- ⇒ India's highest Gravity Dam Bhakranangal is in Sutluj
- ⇒ India's Longest canal is Indira Gandhi Sagar Canal is in Thar Desert.

### iii) Ganga

- ⇒ Alaknanda & Bakiratharivers meet at Haridwar, which is named as Ganga.
- ⇒ Originates in Himalayas
- ⇒ Gangotri, Yamunotri & Glaciers are in Uthraghand
- ⇒ River Yamuna is originated from here.
- ⇒ Yamuna is the tributary river of Ganga & joins in Allahabad.
- ⇒ Haridwar, Ujjain, Allahabad, Nashik (happens Kumbamela in India)
- ⇒ Mahakumbamela occurs once in 144 years (12x12)
- ⇒ Tributaries
  - c) Ramganga b) Gomti c) Sarda d) Rati e) Ghaggara
  - j) Kosi - Sorrow of Bihar, originated in Nepal
- ⇒ Other river Yamuna, Sone
- ⇒ Tributaries of Yamuna: a) Chambal b) Betwa
- d) Kell

- ⇒ Farakka Dam – Hooblyriver passes through kolkuttai.
- ⇒ Damadar, Subarnarekha, Mahanadi, Brahmani are other rivers.

### Godavari

- ⇒ Nashik (in Maharashtra) – Godavari is originated
- ⇒ Rivers Krishna & Godavari joins & forms a delta known as Koller Lake
- ⇒ Vaiganga, Warda, Penganga, Sabari, Manjra are the major tributaries of Godavari
- ⇒ Thungabathra, Hagari, Sina are the major tributaries of Krishna.
- ⇒ India's largest tiger reserve is NagarjunaSagar reserve (in Andhra) in NagarjunaSagar lake (near Krishna river)

### Cauvery

- ⇒ Coorg district of Karnataka – Origin place
- ⇒ Kabini & Krishnarajasagar – 2 dams in Karnataka
- ⇒ Mettur dam in T.N.
- ⇒ Trichy, Tanjore, Tiruvarur, Nagapattinam – Cauvery Delta District in Tamil Nadu.
- ⇒ Subaravathi, Amaravathi, Arkkavathi, Shisha, Noyyal, Bhavani are major tributaries of Cauvery.

### Other Important rivers in Tamil Nadu

- viii. ghyhW - Kanchipuram – Vellore, South Arcot – Cuddalore, North Arcot - Vellore
- ix. nghd;dhW–Krishnagiri – T.V. Malai – VPM - PDY
- x. nts;shW–Nrh;tuhad; Fd;W–fLY}h;
- xi. fhtphp
- xii. itif–kJiu - ,uhNk];tuk;
- xiii. itg;ghW–tpUJefh;>rptfhrp
- xiv. jhkpugudp (tw;whjejp) –jpUr;nre;J}h;
- ⇒ Stanleyreservoir is in Mettur dam
- ⇒ In T.N. Cauvery is originated from Okkanakal hills.
- ⇒ Vandematram was first sung in congress session at 1896.
- ⇒ Morning song of India – National Anthem
- ⇒ In 1911 King of Wales visited India
- ⇒ In 1911, first national anthem was sung first
- ⇒ National Aquatic animal – Gangetic Dolphin. It is announced in 2008.
- ⇒ National Heritage animal – Elephant



## GEOGRAPHY

- ⇒ Acc to census 2001 our total forest area is 23.28%, but forest coverage area is 20% & the targeted forest area by the govt is 33%
- iii) National forest policy – 1988
- iv) Social forestry – 1976
- ⇒ In Arunachal Pradesh more than 90% of area were forests
- ⇒ Areawise – M.P. is the place covered largely by forest
- ⇒ Lowest forest area – Haryana
- ix) Wild life protection Act – 1972
- x) Environmental protection Act – 1986
- xi) Project Gir Lion – 1972
- xii) Project Tiger – 1973
- xiii) Project Crocodile – 1974
- xiv) Rhino's conservation - 1987
- xv) Project elephant – 1902
- xvi) Project snow leopard – 2002

- ⇒ In India there are 18 Biosphere
- ⇒ India's first national park is Corbett in Uthraghand.
- ⇒ India's Largest national park is dessert national park in Rajasthan
- ⇒ KaibulLamjao national park is in Lolttaklake in Manipur. It is the world's only fwating national park
- ⇒ Indias first Tiger reserve is Bandipur Tiger reserve in Karnataka
- ⇒ India's largest Tiger reserve is NagarjunaSahar reserve, Srisailam
- ⇒ India's fist Biosphere reserve is Gulf of Mannar
- ⇒ **List of Biospher reserves:**

- xvii) Great Nicobar (India's Southern most part)
- xviii) Gulf of Mannar
- xix) Agasthiyamalai
- xx) Nilgiri
- xxi) Pachmarhi (in M.P)
- xxii) AchanakumaraAmarkantak (in Chattisgarh)
- xxiii) Simlipal (in oddisha)
- xxiv) Sunderbans – Sunderban's delta is world's largest delta (it is formed by Ganga & Brahmaputra)  
Sundari trees are found  
It is in W.B.
- xxv) Manas (Assam)
- xxvi) Nokrek (Meghalaya)
- xxvii) Dihan – Dibang (Arunachal pradesh)

- xxviii) DidruSaikawa (Arunachal Pradesh)
- xxix) Kanjanjanha (Sikkim)
- xxx) Mandadevi (Uthragand)
- xxxi) Rann of Kachch (Gujarat)
- xxxii) Seshachalam (Andhra Pradesh)
- ⇒ Velvadar is a national park in Gujarat (Saurashtra region). It is famous for black buck.
- ⇒ Largest no. of national park.  
2. Madhya Pradesh 2. Andaman & Nicobar islands.

### Reserves in Tamil Nadu

- ⇒ Pulikat lake is a bird Sanctuary
- ⇒ Guindy national park
- ⇒ Vedanthankal bird sanctuary
- ⇒ Nilgiri biosphere reserves
- ⇒ Mudumalai wild life sanctuary
- ⇒ Point calimere bird sanctuary
- ⇒ Vettangudi bird sanctuary
- ⇒ Gulf of mannar biosphere reserves
- ⇒ Marine national park (both in T.N & Gujarat)

### Transport

- ⇒ Cheapest mode of transport is shipping
- ⇒ NHAI (found in 1995)
- ⇒ BRO – Border Road Orgn (1960)
- ⇒ Total NH – 220
- ⇒ Major NH:
  - ❖ NH1 – Delhi to Amristar
  - ❖ NH2 – Delhi to Kolkatta
  - ❖ NH3 – Agra to Mumbai
  - ❖ NH4 - Mumbai to Chennai
  - ❖ NH5 –Chennai to Kolcutta (3<sup>rd</sup> longest)
  - ❖ NH6 – Kolcutta to Mumbai (2<sup>nd</sup> longest)
  - ❖ NH7 – India's longest NH (2369 km)  
Kanyakumari to Varanasi
  - ❖ NH8 – Delhi to Mumbai (Via Rajasthan, Gujarat)  
(Jaipur, Ahmadabad)
  - ❖ NH15 – Amristar to Radhanpur (in Gujarat)  
Passes through desert
  - ❖ NH17 – Panvel (Maharashtra) to Ernakulam  
Through Western Coast
  - ❖ NH45 – Chennai to Dindugal
  - ❖ NH47 – Salem to Kanyakumari (via Kerala)
  - ❖ NH7A – Tirunelveli to Tuticorin
  - ❖ NH39 – connects India & Myanmar  
Border that connects India & Myanmar is morieniu.

## GEOGRAPHY

- ❖ NH31A – Connects China via Sikkim
- ⇒ Golden Quadrilateral Highway – NH2 – NH4 – NH5- NH 8  
Length – 5846 km
- ⇒ North – south corridor highway – Srinagar to Kanyakumari  
It connects NH7+NH1+NHIA +NH4 – (Jalandhar to Srinagar) Length – 4076 km
- ⇒ East – west corridor highway – Borbandhar to silchar (Assam) length – 3640km
- ⇒ NH28 – 5<sup>th</sup> longest NH
- ⇒ Greatest Road density – Kerala
- ⇒ Lowest road density – J & K
- ⇒ Shortest highway – NH47A (Ernakulam to wellington Highway cochin)

- ⇒ Central – Mumbai
- ⇒ North Central – Allahabad (U.P)
- ⇒ East Central – Hajipur (Bihar)
- ⇒ S.E. Central – Bilaspur (Chattisgarh)
- ⇒ West Central – Jabalpur (M.P.)
- ⇒ South Central – Secundarabad
- ⇒ East Coast railway – Bhubaneshwar
- ⇒ Kongan railway (west coast) – Navy Mumbai (Belapur)
- ⇒ Maximum route length – Northern railway
- ⇒ Southern railway – part of Andhra, T.N. , pdy, kerala

### WATER TRANSPORT

- ⇒ Inland waterway authority was established in 1986. Its H.Q. is in Noida (V.P.)
- ⇒ National waterway (NW)
- NW1 – Allahabad to Haldia (Ganga river) – 1620 km
- NW2 – Sadiya to Dubri (Brahmaputr) Assam – 891 km
- NW3 – Thotthapuram to Kollam (Kerala) – 205 km
- NW4 – Kakkinada to Marakkanam (T.N)
- Bakkingham Canal
- NW5 – Talcher to Dhumra  
In Brahmani river (in odhisha)  
Talcherriver is famous for Lignite

### Major Harbours

- i) Kandla (Gujarat) ii) Mumbai iii) Goa iv) Mangalore v) Cochin vi) Tuticorin vii) Chennai viii) Ennore ix) Visakapattinam x) Paradwip (odissa) xi) Kolcutta

- ⇒ India's longest wast line – Gujarat
- ⇒ 2<sup>nd</sup> longest coast line – Andhra Pradesh

### Railway

- ⇒ First railway line 1853 – Mumbai to Thane
- ⇒ In T.N. Chennai to Arakkonam
- 17 Railway zones
- ⇒ Northern – Delhi, Southern – Chennai, Western – Mumbai, Eastern – Kolcutta
- ⇒ N.E. – Gorakpur (Bihar)
- ⇒ N.E. (Frontier) – Maligan (Gauhati)
- ⇒ N.W. – Jaipur
- ⇒ SE – Kolcutta
- ⇒ SW – Hubli (Karnataka)