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# Geography

## Indian Geography

1. physical features of India (4 Qs) \*\*  
(a) political data  
(b) Himalayas  
(c) Great Northern plains  
(d) Great peninsular plateau
2. Climate of India (2 Qs)
3. Drainage system and Hydro projects (6 Q) \*\*  
Interview
4. Natural vegetation  
(a) Forest  
(b) Natural parks } (1 Q)  
(c) Biosphere  
(d) Biodiverities } (2 Q)  
(e) wetlands
5. Indian agriculture (2 Q)  
(a) soils
6. Transport system (1 or 2 Q)  
(a) Road ways  
(b) Railways  
(c) waterways  
(d) Airways
7. Minerals of India (1 or 2 Q)
8. Energy Resources (1 Q)  
(a) Thermal  
(b) Hydro (19% use)  
(c) Renewable  
(d) Nuclear

9. Industries

10. population & census (4 or 6 Q) \*\*

11.

World Geography (5 to 6 Q)

1. Universe and solar system (2-3 Q)

(a). planets

(b). sun

(c). Earth

(d). Moon

2. Earth Forces (2 to 3 Q)

(a) Endogenic → Mountains, plateaus, plains, Earthquake, Tsunami

(b). Exogenic → Rivers, lakes, deserts, waterfalls

3. World Minerals, canals, agriculture

4. Straits, Grass lands, continental Infrastructure. (1 Q may or may not)

5. Atmosphere and pressure.

APPSC

TPSC

LOCAL

1. physical features

2. Irrigation and drainage

3. Agriculture crops and soil distribution.

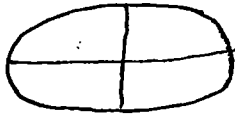
4. Minerals

5. Industries

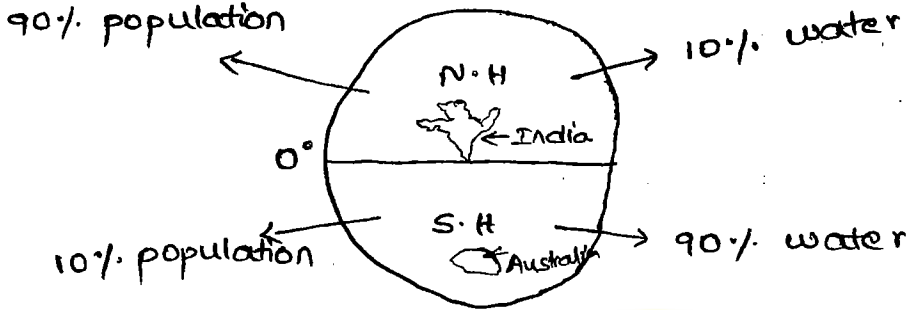
6. District

chapter - 1

Physical features of India (4M)

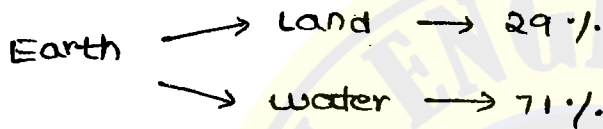


Acoid (or) Oblate spheroid (Earth sp. shape)

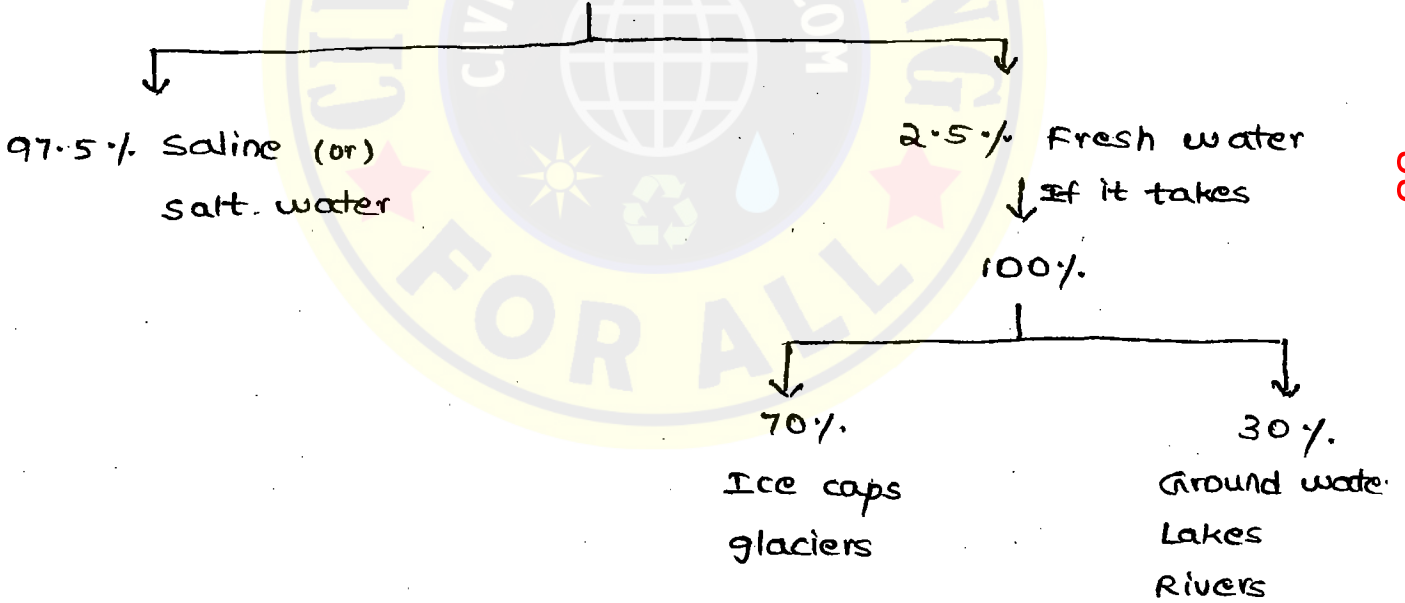


N.H = Northern hemisphere

S.H = Southern hemisphere



100% water



\* Australia celebrate christmas in summer.

\* According to Article 1 India is the union of states.

\* India's old name is "JAMBHUDWEEPA"

## Location of India :-

1. India is located in South Asia
2. World population India percentage in population 17.5%  
China percentage in population 19.4%
3. China is located in East Asia

"S.A.A.R.C" membership countries :- (1985 it is established)

M → Maldives

B → Bhutan

B → Bangladesh

S → Sri Lanka

P → Pakistan

I → India

N → Nepal

A → Afghanistan (Latest country to join in SAARC)

4. India is the largest country in "SAARC"

5. India lowest part touches in  $8^{\circ} 4'$  N.L (North Latitudes)

Upper part touches in  $37^{\circ} 6'$  N.L

Left side part touches in  $68^{\circ} 7'$  E.L (East Longitude)

Right side part touches in  $97^{\circ} 25'$  E.L

6. India is located  $8^{\circ} 4'$  N.L to  $37^{\circ} 6'$  N.L and

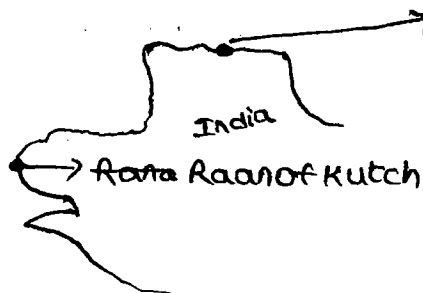
$68^{\circ} 7'$  E.L to  $97^{\circ} 25'$  E.L

7. North end point of India → Indira Col (near

Killick dhawan pas)

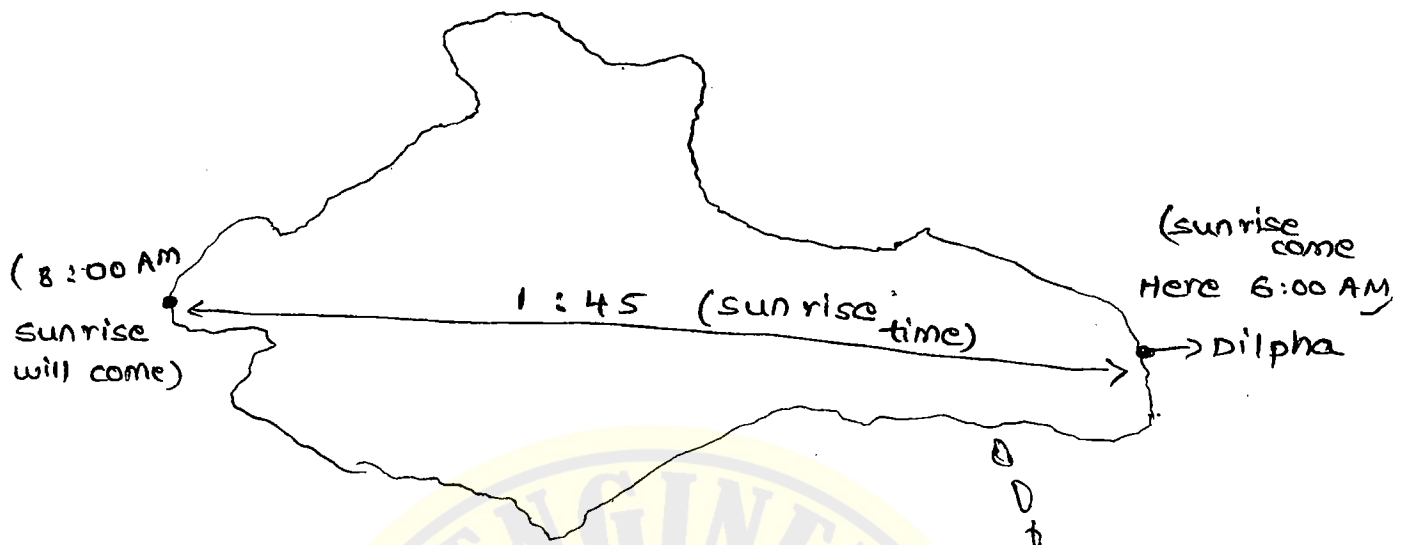
8. West end point

Raanof kutch



9. First sunrising state in India → Arunachal Pradesh

10. East end point Dilpha (Near purvanchal Hills) Pradesh



11. Due to Tsuenami 2004 in India, Indira point will adjust in  $6^{\circ} 45'$  to  $6^{\circ} 30'$

12. South End point Indira point

13. India's North to south distance 3214 Km

14. India's East to west distance 2983 Km

15. World largest <sup>in</sup> peninsular <sup>(landmass)</sup> country (1) Arabia (First)  
(2) India (second)

16. Mirror images Africa and South America

17. Indian territorial waters extended upto 12 Nautical miles

1 nautical mile = 1.857 km

18. Indian Ocean, India <sup>distance</sup> = 27 km (ruling)

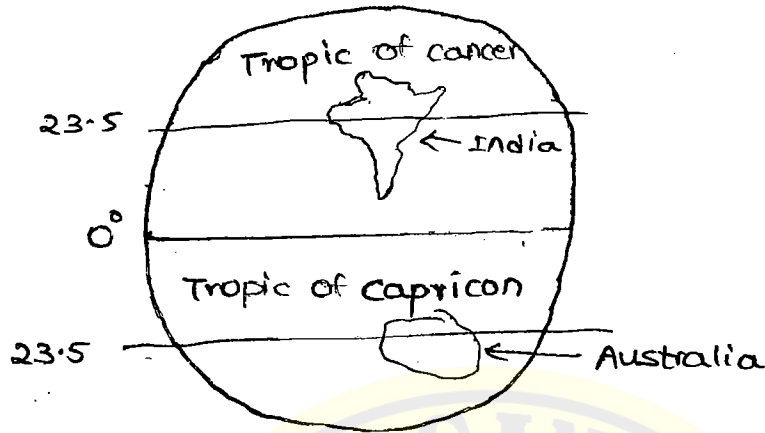
19. India has 29 states, 7 U.T's

5 states → Land locked state

- |                 |             |                          |
|-----------------|-------------|--------------------------|
| 1. M.P          | 3. Jarkhand | 5. Telangana (Hyderabad) |
| 2. Chattishgarh | 4. Maryana  |                          |

20. In A.P. Land locked state is Kadapa

21. In Telangana land locked state is Hyderabad



Tropic of cancer pass:-

1. Gujarat
2. Rajasthan
3. Madhya Pradesh
4. Chattishgarh
5. Jarkhand
6. West Bengal
7. Tripura
8. Mizoram

\*  $82.5^\circ$  Eastern Longitude

(Indian standard time based on this Longitude).

$82.5^\circ$  E.L passed in U.P, M.P, Chattishgarh, Odisha, A.P.

22. After 2006 Pondichery can be called as Puduchery

(Yanam, Karaikal, Mahe)

23. A puduchery is a Union territory which includes  
yanam, (Karaikal, Mahe)  
(Kerala)

24. India's boundary with other countries. (15,200 km)

a. Afghanistan → 80 km (smallest neighbouring country)

b. Pakistan → 2910 km

c. China → 3781 km

d. Nepal → 1750 km

e. Bhutan → 587 km

f. Myanmar → 1458 km

g. Bangladesh → 4096 km (Largest neighbouring country)

\* Afghanistan has a largest opium producer

P	A	K	I	STAN
PANJAB	Afghanistan	Kashmir	Sindh	Beluchistan

Those state people against for "Muslims"

"Rahmath Ali" designed a name "Pakistan".

\* South Korea also August 15 Independence day

Kargil war :- (India and Pakistan)  
(four times)

1948

1965

1971

1999

"V.P. Malik"

July 26

\* Rajasthan is the largest boundary with Pakistan.



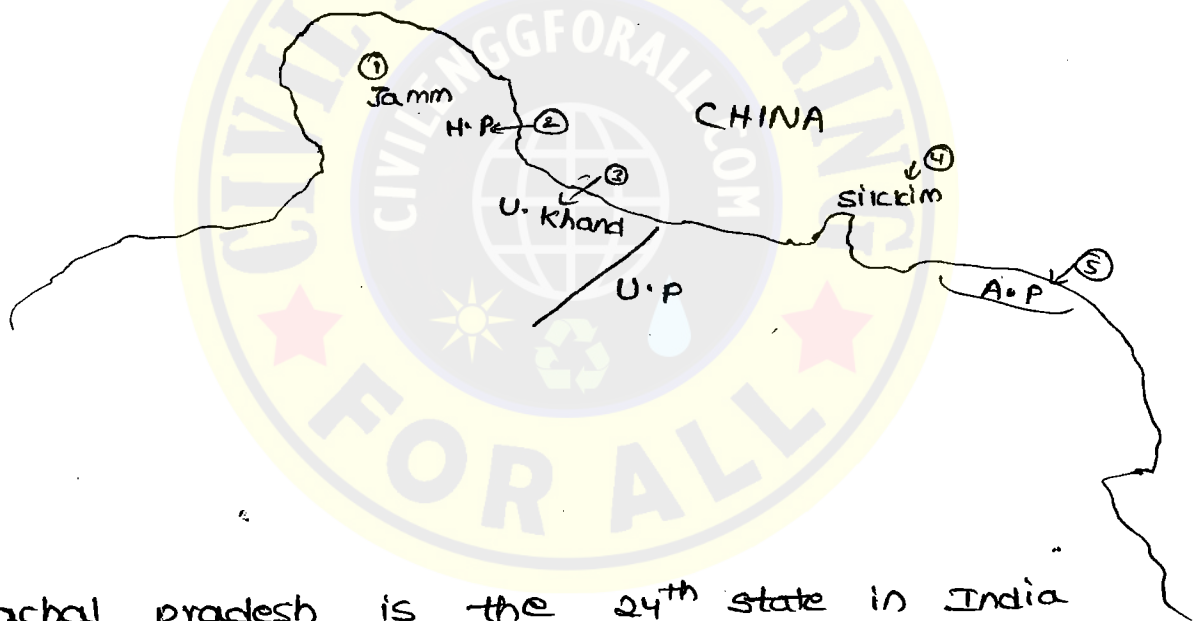
## Boundary lines :-

\* The boundary line in between India and Pakistan is "Raadcliff line"

\* Line of control } controversy line (Rejected)  
\* 24° parallel line }  
\* Sir creek line

\* "SAMJOUTHA EXPRESS (1976)" a train which runs in between India and Pakistan.

\* Delhi to Lahore bus services starts in 1999.



\* Arunachal pradesh is the 24<sup>th</sup> state in India

\* In 1975 "sikkim people" got a India citizenship in India.

\* Arunachal pradesh is the controversial state in between India and china.

\* 1954 PANCHASHEELA (or) Five principle agreement (India & china)  
a. Do not support enemies.

- \* First general election in India conducted 1952
- \* Without elections Jawaharlal Nehru got a P.M. in 1947
- \* 1947 - 1964 Jawaharlal Nehru P.M time.
- \* "V.K. Menon" defence minister in 1962
- \* First Five year plan 1951 - 56.

### Mc-Mohan line:-

1. Mc-Mohan line lies in between India and china.
2. Line of Actual control

### Nepal:-

1. Nepal, India boundary 1750 km
2. Till 2006 "HINDU" religion country (Nepal)
3. After 2006 Nepal is a secular country.

### Boundary states in Nepal:- (1750 km)

1. Uttarakhand
2. U.P
3. Bihar
4. Sikkim

\* Nepal, bhutan doesn't have any passport.

### Bhutan:-

- \* THUNDER BOLT
- \* Sikkim is the interlocked state in between Nepal, bhutan, W.B
- \* Present pakistan is a "West Pakistan".
- \* Indian landmass belongs to "GONDWANA" structure.

Mynamar (Burma):-

boundaries

- L →
- Arunachal Pradesh
  - Manipur
  - Mizoram
  - Nagaland

Bangladesh (East Pakistan):-

- 1. N.B (Longest neighbouring)
- 2. Assam
- 3. Meghalaya
- 4. Tripura
- 5. Mizoram

\* Oct - 2 is a Gandhi and L.B. Shastri Birthday

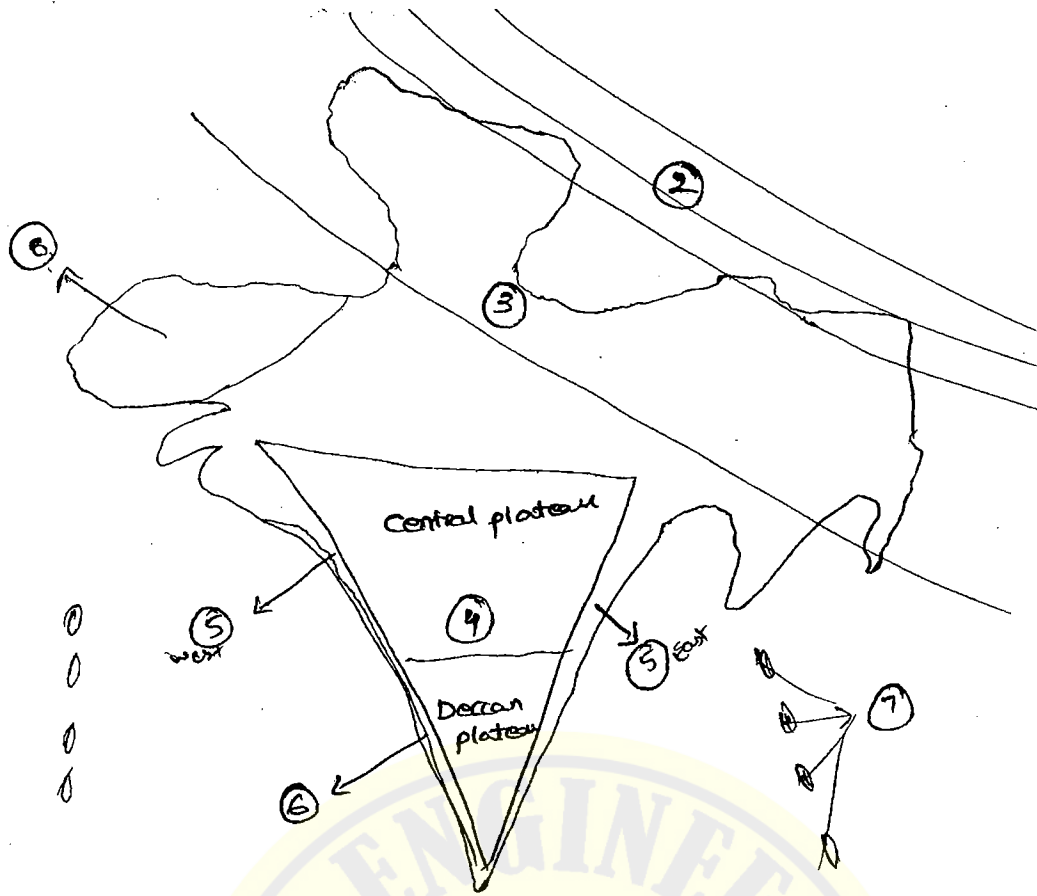
Oct - 2 is a non-violence day

\* IN 1971 Bangladesh will come in India map

\* Bangladesh National song composed by "Rabindranath Tagore"

INDIAN PHYSICAL (or) GEOGRAPHICAL FEATURES:- (4 Q)

- 1. Geological structure
- 2. Himalayas
- 3. Great Northern plains
- 4. Great peninsular plateau
- 5. Western Ghats / Eastern Ghats
- 6. Coastal plains
- 7. Islands
- 8. Desert



### ① Geological structure:-

- a. Archean Rock system (oldest geological structure in India)
- b. Purana ————— (Cuddappa, Darwar, Vindhya)
- c. Dravidian ————— (sedimentary rock system)
- d. Aryan ————— (Himalayas are formed by sedimentary rock system)

### Himalayas:-

1. Himalayas are formed by compressional forces (or) converging forces (or) pushing forces.



2. Himalayas are <sup>called</sup> the "New Fold Mountains", "highest fold mountains", "Loftiest mountains", "Rugged mountains" "steep slope" mountains.

3. Himalayas are formed in Oligocene period (Cenozoic Era) (yugam)

\* 4 yugs — 1 Mahayugam

14 Mahayugas — 1 Kalpakam

78 Kalpakam — 1 Maha Kalpakam

1 Maha kalpakam — 1 Brahma day

4. Based on the Geological time scale the earth will be divided into some parts.

a. Pre-cambrian Era → Earth born

b. Paleozoic Era → coal

c. Mesozoic Era → Dinosaurs

d. Cenozoic Era → Himalayas

e. Neozoic Era → Man

\* First living organisms on the earth "Blue Green Algae"  
(or) "Cyno bacteria".

5. Himalayas are extended from North-west potwar basin Pakistan to North-East Patkai Bora hills in Arunachal Pradesh.

6. Length of the Himalayas 2400 km.

7. Himalayas width is varies <sup>(200 km)</sup> East to <sup>(500 km)</sup> west

## Significance of Himalayas:-

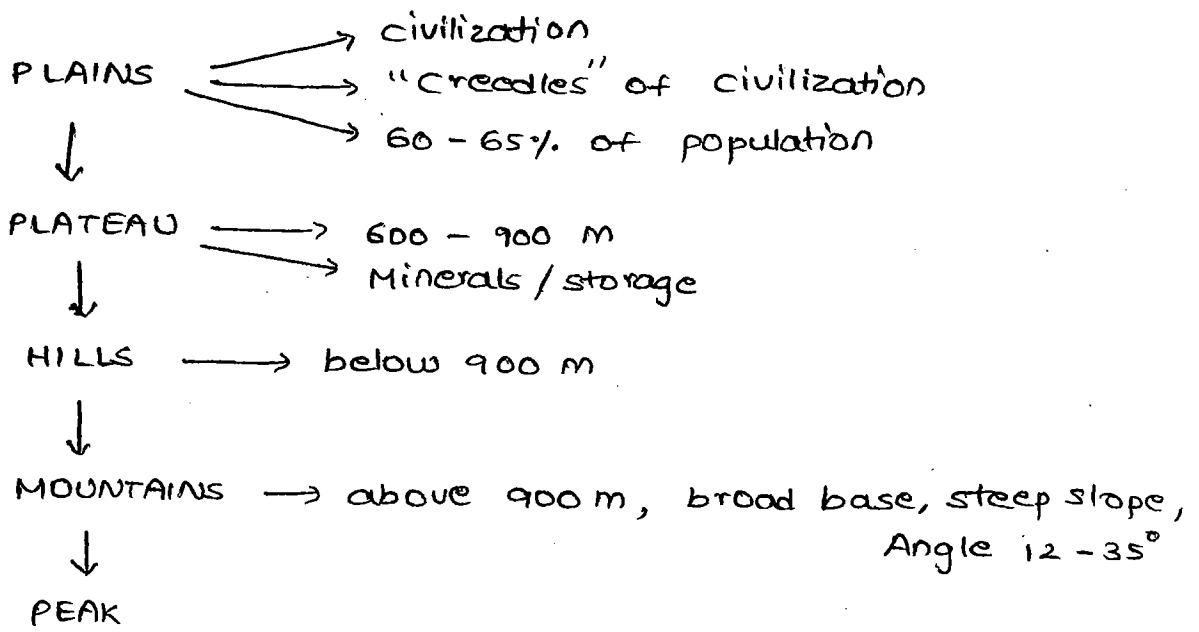
1. Indian climatical conditions are influenced by Himalayas
  2. Himalayas acts like a barriers to cold winds which they enter from central asia in winter season.
  3. Russia is the largest country in the world
  4. Russian land mass is 17 times greater than Indian land mass
  5. U.P population is greater than all countries in the world except four countries. names:
    - a. china
    - b. USA
    - c. Brazil
    - d. Indonesia.
- |              |                             |
|--------------|-----------------------------|
| 1. china     | } population wise countries |
| 2. India     |                             |
| 3. U.S.A     |                             |
| 4. Indonesia |                             |
| 5. Brazil    |                             |
| 6. Pakistan  |                             |
6. Commercially timber, medicinal plants, products are getting coming from Himalayas.
  7. Best eco system maintain by 'Himalayas'.

## Parallel division of Himalayas:-

1. Transe Himalayas (or) Tibet
2. Greater / Inner / Himadri
3. Middle / Himachal / Lesser
4. Siwalik / outer Himalayas.

### ① TRANSE HIMALAYAS (or) TIBET :-

- a. PAMIR PLATEAU
  - i) Tibet
  - ii) Highest plateau
  - iii) "Roof of the world".



### b. KARAKORAM RANGE :-

↑ which belongs to (P.O.K (Pak occupied Kashmir))

\*  $K_2$  (Or) Gaudwin Austin (8611 m)

\* Highest peak in India, second highest peak in world. ( $K_2$ )

\* SIACHIN, is the part of the KARAKORAM RANGE

\* SIACHIN is the highest battle field (~~2005~~)

\* <sup>First</sup> Man Mohan Singh visited highest battle field

\* second Narendra Modi visited highest battle field.

### c. LADAKH RANGE :-

\* Least temperature in India "DRASS SECTOR NEAR KHARGIL  $-40^{\circ}\text{C}$  .

### (2) GREATER HIMALAYAS :-

\* Highest range

\* 6000 mts

## WORLD HIGHEST MOUNTAINS :-

1. Mt. Everest (8848 mts) (world First highest mountain)  
In nepal mt. Everest called SAGARAMATHA  
In china Mt. Everest called CHOMULONGMA
2. TO climb Mt. Everest Nepal government permission is required.
3. ~~1st~~ Second highest mountain is K<sub>2</sub>
4. World third highest mountain Kanchan Junga (8598 m)  
↳ It is located in Sikkim (India)
5. world forth highest mountain is LHOTSE (8516 m)

INDIA

Namcha Barva	—	Arunachal Pradesh	
Nanga parba	—	Jammu Kashmir	— world 9 <sup>th</sup> highest peak
Nanda devi	—	Uttarakhand	

NEPAL

Gurlamandhata
Annapurna
Kamet
Doulagiri I

way

ZOZILA PASS	}	Jammu Kashmir
BURZILA PASS		

\* NATHULA PASS located in Sikkim

\* which is the nearest way to India to china is  
Nathula pass



\* In 1962 India china war the Nathula pass is closed.

\* In 2002 again Nathula pass is opened.

\* Nathula pass is also called "Silk Route".

\* Highest road is KULU - MANALI

SHIPKILA PASS } (KULU-MANALI)  
BARALACHLA PASS }

\* Aditya Mohan hoisted flag in "KHURDHUNG".

### 3. MIDDLE HIMALAYAS:- (3500 - 4500 M)

\* All summer locations

Eg:- 1) GULMARG - J & K

2) DHARMASALA - H.P

3) SHIMLA - H.P

\* 4) DULHOUSIE - H.P

5) RANIKHET - Uttara Khand

\* 6) MUSSORIE - Uttara Khand

7) NAINETAL - Uttara Khand

8) DARJEEUNG - West Bengal

\* A president of India having two guest house

1) North India - Dulhousie

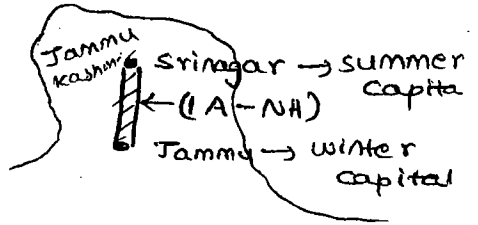
2) South India - Hyd, Bollaram, Telangana state.

\* In India IAS <sup>↓ L.B. sastry</sup> training centre is located Mussorie

In India IPS training centre Rajendra Nagar, Hyd

↓  
Sardar vallabhbai. patel

BANIHAL PASS :- <sup>way</sup>



- 1. It pass "NH-1A"
- 2. In India Jammu Kashmir is the only state having two capitals. In summer "Srinagar" In winter "Jammu".

\* Longest Railway tunnel in India is 11.6 km (BANIHAL) (Jammu and Kashmir). (June 26, 2013 it opens) (PM open)

- Pirpanjal range
- Bhouldhar range
- Kashmir valley
- shimla valley

4. SIWALKS

\* Foot Hills of Himalayas

- Arunachal pradesh {
  - DAFL HILLS
  - MISHMI HILLS
  - MIRI HILLS
  - PHATKHAI HILLS

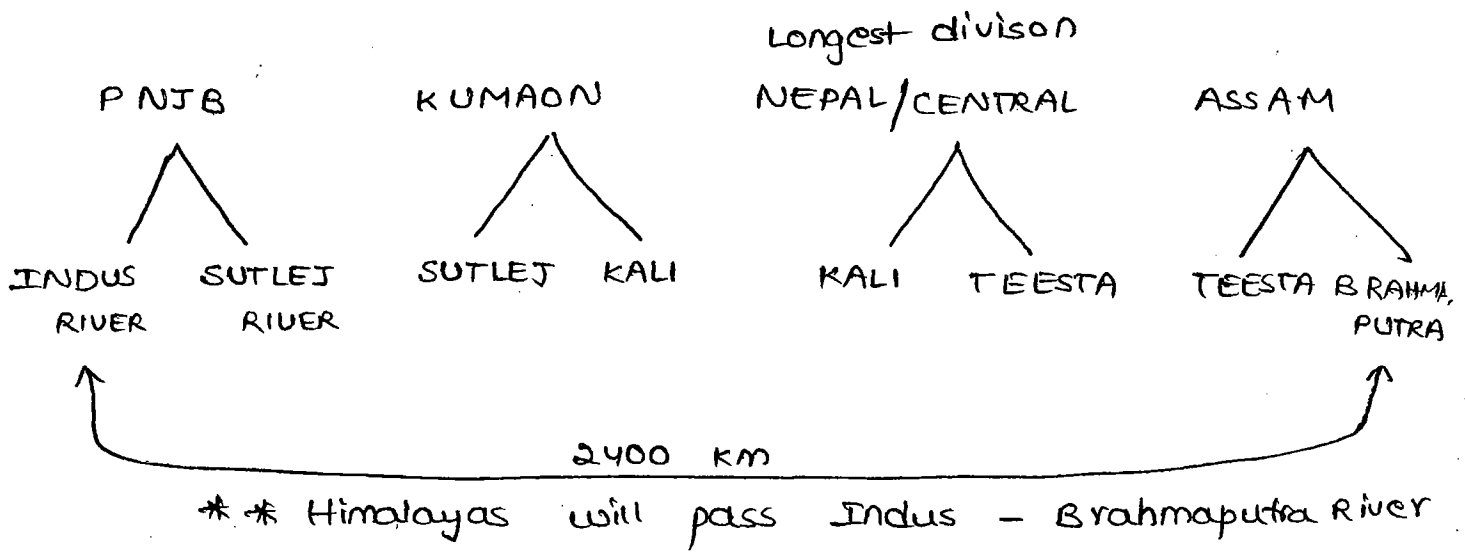
Assam — MIKIR HILLS

- Meghalaya {
  - GAHO HILLS
  - KHASI HILLS
  - JAINTIA HILLS

\* According to length Himalayas are divided into four divisions.

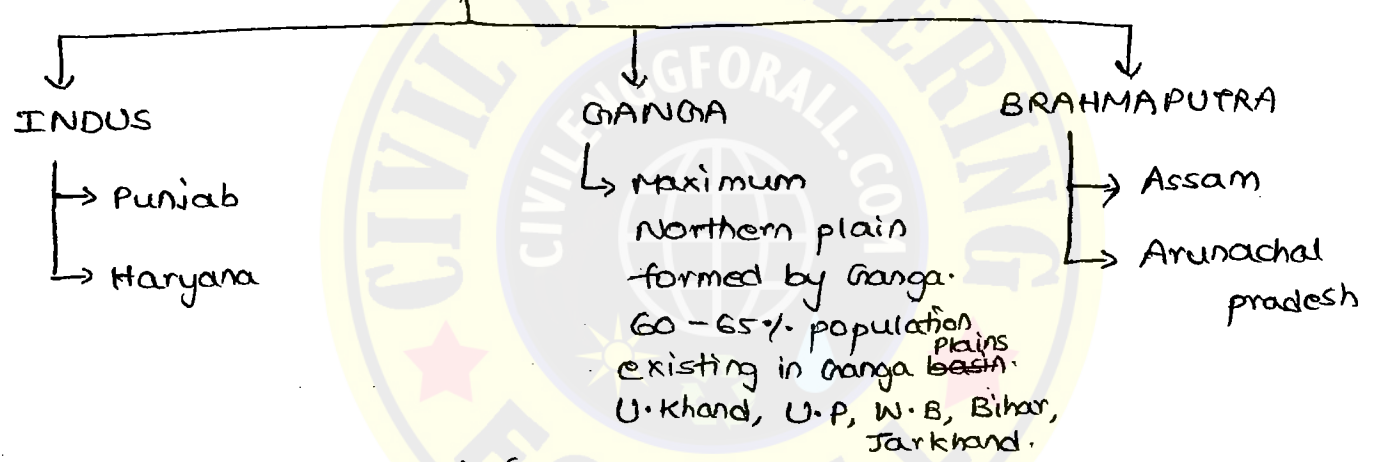
- 1. Punjab Himalayas
- 2. Kumaon Himalayas
- 3. Nepal / Central Himalayas
- 4. Assam Himalayas





\* Longest division is Nepal/central Himalayas

3. GREAT NORTHERN PLAINS:-



\* Indus river forms <sup>less</sup> plains in India, more in Pakistan

\* Ganga plains are formed by Alluvial soils (Most fertile soils).

\* Alluvial soils → KHADAR → New Alluvial soils → More productive  
 → BHANGAR → Old Alluvial soils.

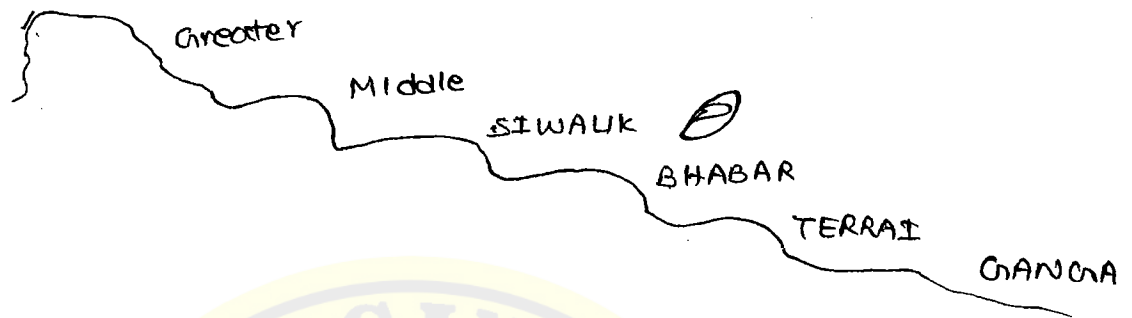
BHABAR :-

1. It is located south direction to the Siwaliks
2. It is formed gravels and pebbles.
3. Water percolates under the earth. Not suitable for irrigation and agriculture.

## TERRAI :-

1. It is located south direction to the BHABAR
2. It is formed Marsi and Red land.
3. It is composed by fine particles.
4. It is best suitable for agriculture and irrigation

IOCL  
ONGC  
SSC  
NHPC  
NHA I  
BRW

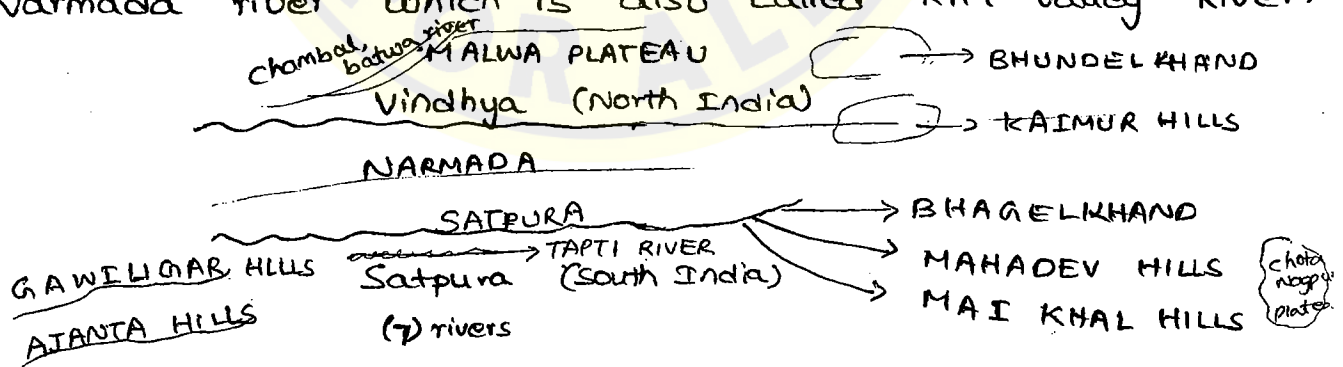


## ④ GREAT PENINSULAR PLATEAU :-

1. It is a largest landmass in India, it is composed by central Highland and Deccan plateau.

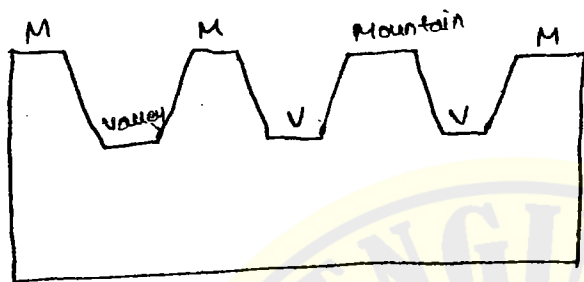
### central Highland :-

1. It is occupied in Madhya Pradesh, Rajasthan and south part of U.P.
2. Narmada river which is also called Rift valley River.



3. Vindhya and Satpura mountains are come under Block mountains
4. Vindhya & Satpura mountains are ~~caused~~ formed by Tension (or) diverging (or) pulling forces

5. Vindhya, Satpura mountains are located in Madhya Pradesh formed by "Tensional (or) Divergional (or) pulling forces"
6. Vindhya, Satpura mountains are come under "Block mountains"
7. A Narmada river which is born at "AMARKANTAK" in Vindhya range passes through rift valley in India [Largest rift valley river in India (Narmada)]



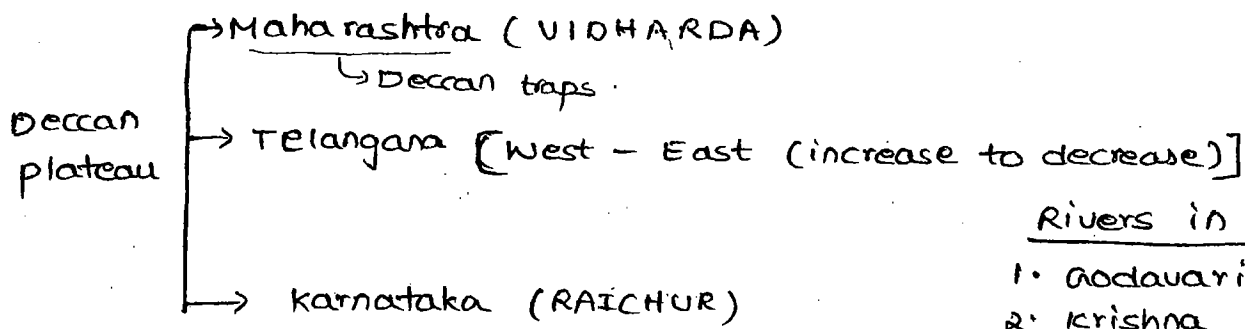
Rivers in Malwa plateau

1. Chambal
2. Betwa

8. Malwa plateau is located North direction to the Vindhya
9. Chambal, Betwa rivers (drain into) passing through "Malwa plateau"
10. BHUNDEL KHAND, KAIMUR HILLS are extension of Vindhya Range (Uttar Pradesh)
11. Bhagel Khand, Mahadev hills, Maikhal hills are located in Madhya Pradesh

Deccan plateau:-

1. It is located South direction to the "Satpura"
2. Gawiligar hills and Ajanta Hills are part of the Deccan plateau located North direction to the Deccan plateau
3. "Satpura Mountain" lies in b/w "Narmada" and "Tapti river"
4. Deccan plateau is formed by Oldest Igneous rocks  
Eg:- Basalt



Rivers in deccan plate

1. Godavari
2. Krishna
3. Cauvery

5. Deccan plateau which is called deccan trap in Maharashtra (Vidharda)

6. In Telangana by moving <sup>(Increase)</sup> west to <sup>(Decrease)</sup> east the plateau increasing to decreasing.

Aravalli Hills :- (Rajasthan)

1. It is located North west direction to the Great Peninsular plateau (G.P.P).
- \*2. Oldest (or) Relict (or) Residual mountains in the world (Aravalli Hills)
3. Highest peak in Aravalli is "Gurushigar" (1722 m) (Rajasthan)
4. Mt. Abu which is also located in Aravalli which is famous for "only Jainism". There is a Mahaveera temple.

Raj Mahal Hills :- (Jharkhand)

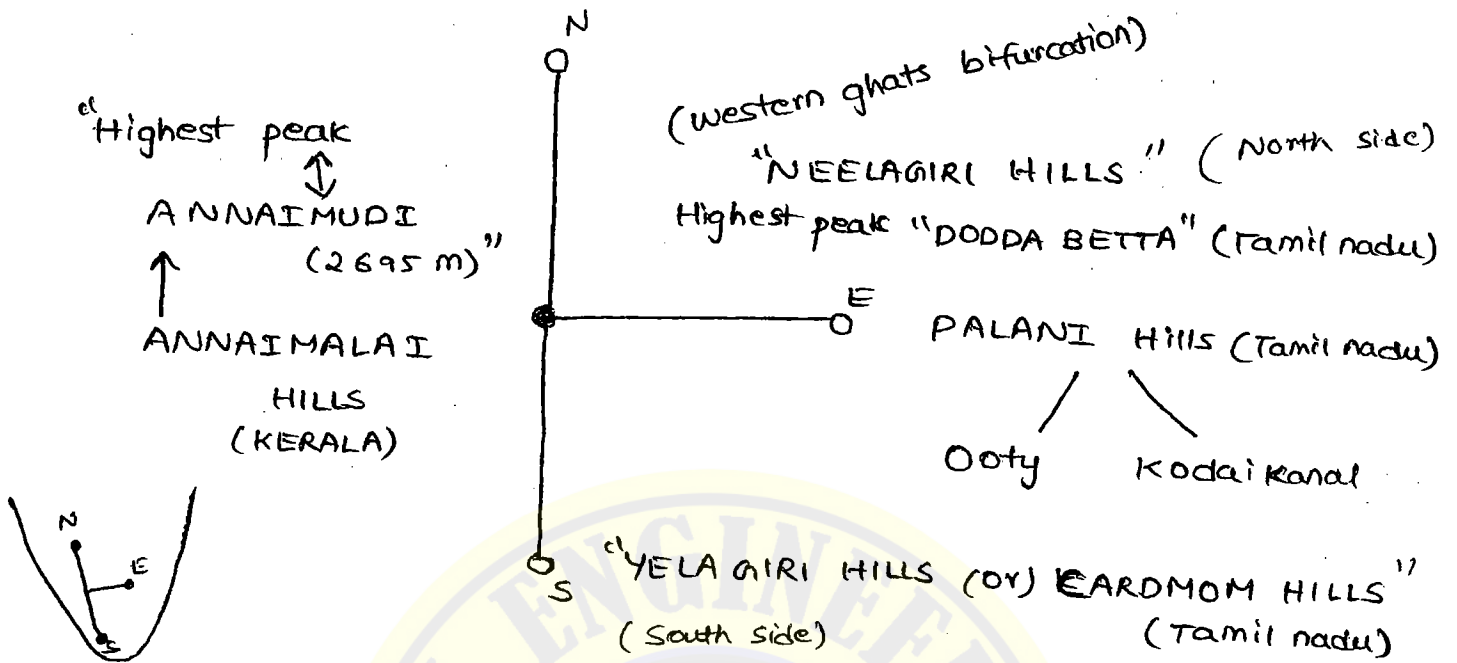
1. These are located North East direction to the Great Peninsular plateau.
2. "Persnath hills" is the highest peak in Raj Mahal hills.

Chota Nagpur plateau :-

1. It is located east direction to the Vindhya Satpura
2. This plateau is called "Roof of India".
3. Mineral garden of India.



9. THAL GHAT are interlinked b/w Mumbai and Nasik.
- \*10. PHAL GHAT are interlinked b/w Tamilnadu & Kerala.



11. ANAIMUDI Hills (Kerala) is the highest peak in South India.
12. Sabari Malai is a part of "ANAIMANAI".
13. "NEELAGIRI HILLS" which is also called "Blue Mountains".
- \*14. Western ghats and Eastern ghats are connected by "NEELAGIRI HILLS".
15. "DODDA BETTA" <sup>(2637 m)</sup> is the highest peak in Neelagiri Hills.
16. "Ooty and Kodai Kanal" are the part of the "PALANI HILLS".
17. Southern most hills in India "CARDOMOM HILLS" (or) "YEELAGIRI HILLS".



v. Imp

\* 18. Western ghats are famous for "Lion Tailed Macaque" <sup>Monkey</sup>

19. India is famous for peculiar animal "Lion Tailed Macaque".

20. "Silent valley Nation park" in Kerala famous for "Lion Tailed Macaque".

### EASTERN GHAT:-

1. Local names :-

a. Tamil Nadu - Stanley hills, Javadi hills, Shevory hills

b. Andhra Pradesh - Palakonda hills (Nellore)  
Erramalla hills (Kadapa)  
Nallamala hills (Kurnool, Mehaboob, Nalgonda)  
Seshadri hills (Chittoor)  
Mangalagiri (Vijayawada)

Annaram

Simhachalam

Nagarjuna Konda

c. Odisha - Ganjam hills  
Malaya hills  
(Mahendra giri) (1501 m)

\* Malaya <sup>hills</sup> Giri (Mahendra giri) which is the highest peak in Eastern ghats

\* "Longest eastern ghats Nallamala hills."

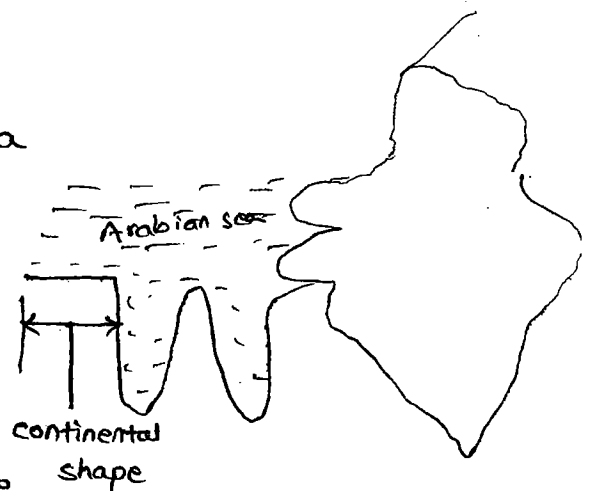
1. "Mt. Everest" — 8848 m
2. K<sub>2</sub> (or) Gaudwin Austin — 8611 m
3. Kanchenjunga — 8598 m
4. LOHTSE — 8516 m
5. Annaimudi — 2695 m (South India highest peak)
6. Dodda Betta — 2637 m (Nilgiri hills highest peak)
7. Mahendra giri — Eastern ghats
8. Gurushigar — Aravalli hills
9. Parsnath — Rajmahal
10. Duggarh — (centre India highest peak)
- ☛ (satpura)<sup>M.P</sup>

Coastal plains:- [west part 5 states] [downward movement]

1. In India total coastal length is 7516 m
2. West part of coastal area is "Downward movement" or "submerged"

Gujarat:-

1. Longest coastal area state in India (1058 km) which we called "sourastra"
- \*\* 2. "Wide continental shape" in India
3. Gujarat is the largest "Salt" producer.
- \* Hindu paper started in 1878
4. Central Salt marine research institute is located in 'Gandhi Nagar'.



## Maharashtra and Goa:-

1. "Konkan" coastal area
2. Till 1962 Goa is a U.T
3. 'Goa' is a least coastal area state (36 km)
4. 'HIV Test' is the mandatory test in 'Goa'
5. "Uniform civil code" is the only state 'Goa'.

## Karnataka:-

1. "CANARA" coastal area

## 2. Kerala:-

1. "MALBAR" coastal area
2. Largest marine producer in India (Kerala)

East part coastal area:- (4 states) (Upward movement  
(or)  
"Emergence" water)

## Tamilnadu:-

1. Upward and Emergence movement (East part)
2. Kolleru lake in Andhra Pradesh is a Fresh water lake
3. Kolleru lake once upon a time is a salt water lake.

## Tamilnadu:-

1. Third longest coastal area state (960 km)
2. Tamilnadu, "coramandal" coastal area

## Andhra Pradesh:-

1. "CIRCAR" coastal area
2. Second largest coastal area state in India (972 km<sup>m</sup>)

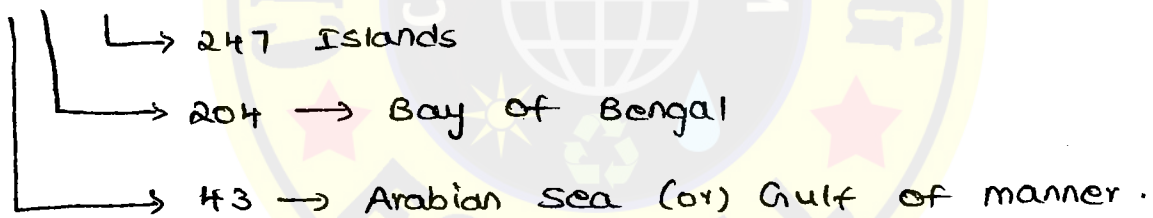
## Odissa:-

1. "UTKAL" coastal area
- \*2. "GARIHIMATHA" beach which is famous for "Olive ridly turtles"
3. Tortoise - Fresh water  
Turtles - salt water
4. Tortoise is the longest life span animal in the world.

## West Bengal:-

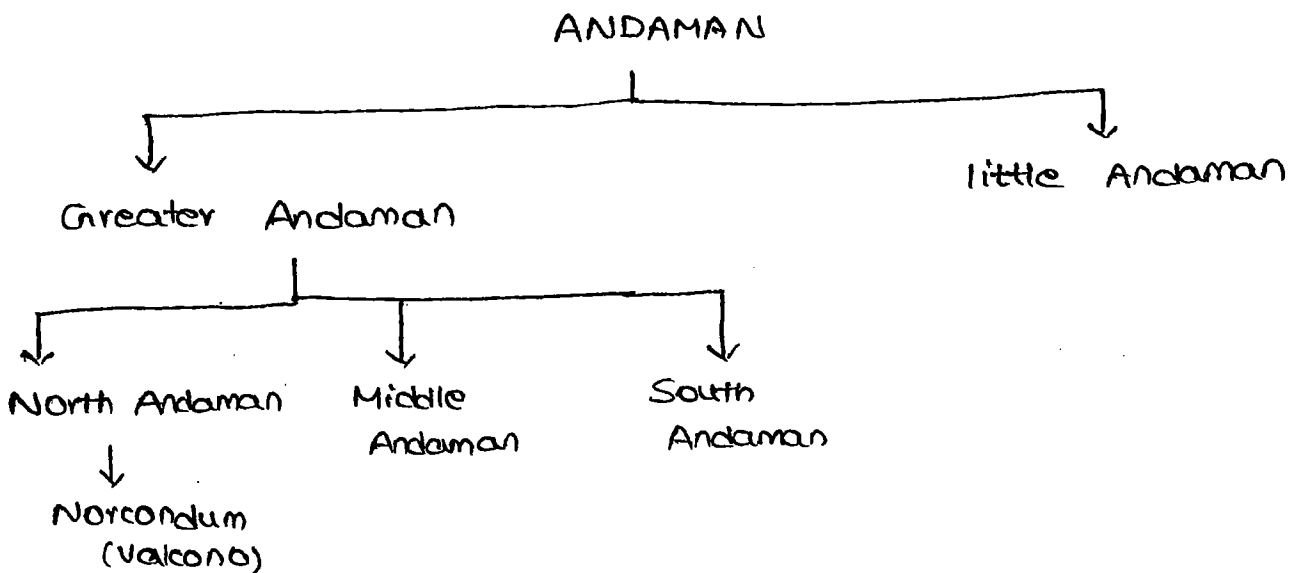
1. "JANGA" coastal area
2. '9' states coastal area length 6100 km

## ⑦ ISLANDS:-



## 1. Andaman Nicobar Islands:-

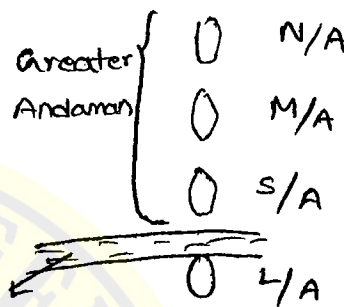
### Andaman:-



(Inactive)

1. "Norcondum volcano" which is located in North Andaman
2. "Barren" volcano which is located in Middle Andaman (active)
3. "Portblair" is located in South Andaman. (capital of Andaman)
4. Most population lived in "Portblair" (capital) South Andaman.

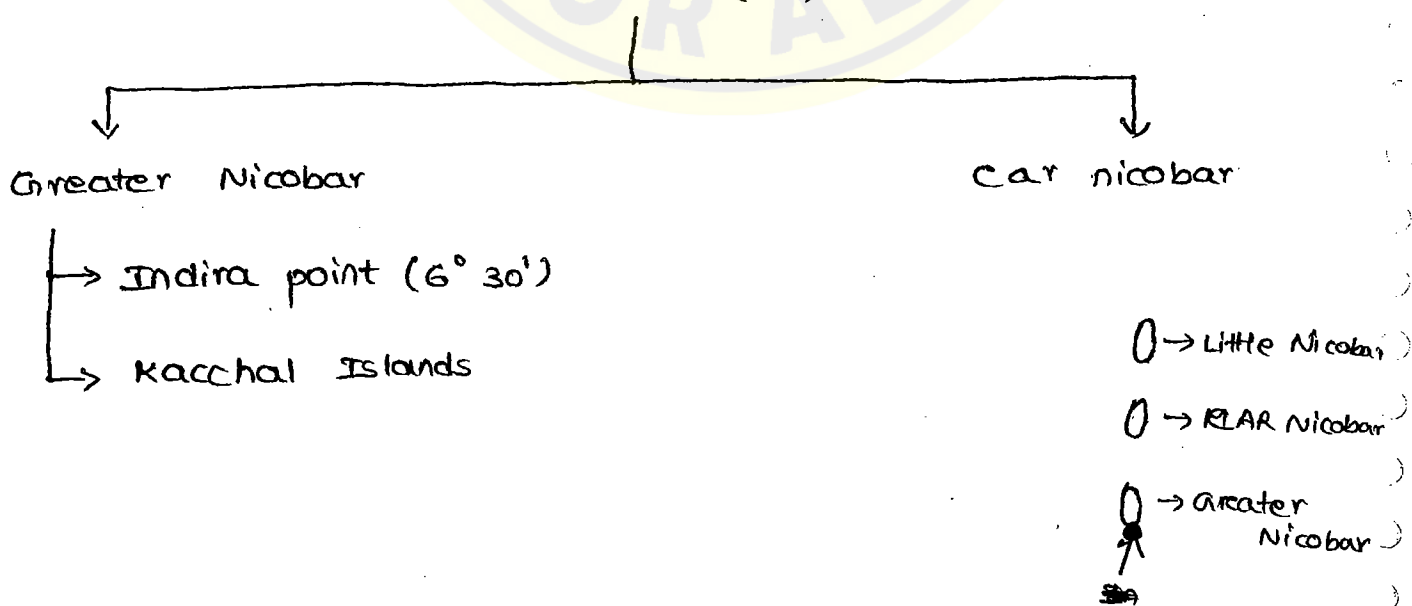
5. South Andaman and little Andaman separated by "DUNCAN PASS" waters



NICOBAR:- (19)

- 12 → human habited
- 7 → In habited

NICOBAR (19)



\* After 2006 Kacchal Islands hand over "Sri Lanka government" to India Government.

\* Andaman and Nicobar group separates 10° channel

Significance :- (Andaman & Nicobar Islands)

1. Largest "Coral Reef Island" in India
2. World "Great barrier" "Australia"
3. Largest forest area Union territory (A & N Island)
4. Largest "Teak (timber)" producer (A, N Islands)
5. Oldest tribe "Negritoids" existing in A & N Islands  
(or)  
People, civilization

\*\*\*  
6. Onges, Jarawas belongs to "Negritoids".

LAKSHADWEEPS :- (35 Islands)

1. Old name "Lacca dives".
2. Second largest "Coral reef Island" in India.
3. 95% Muslim population
4. Peoples main occupation "coconut" cultivation
5. Highest muslim population U.T (Lakshadweep)
6. Highest literacy Union Territory
7. Highest literacy in India "Jain women"
8. Highest Least literacy in India "Muslim women".
9. Total Islands in Lakshadweep is 35

(Northern most Island) N O → AMNI Island

O → CANNANURE Island

O → SUHELI Island

S O → MINCOY Island  
(Southern most Island)

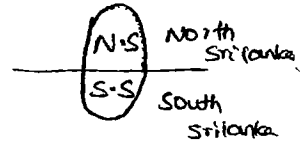
"Kavaratti" is capital  
Lakshadweep

10. 8° channel separates "Maldives from Lakshadweep" b/w India.

### 7) Islands in b/w India and Sri Lanka:-

1. Palk bay
2. Palk strait
3. Gulf of Manner
4. Pamban Island
5. Crocodile Island
6. Rameshwaram
7. Adam "Bridge"
8. Rama setu project

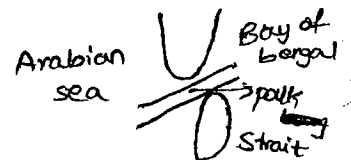
Sri Lanka Independence '1948'



- \* 1641 A.D 'Madras' St. George fort
- \* T. U. L. F — Tamil United Liberation force (1954)
- \* (Prabakaran) chief L. T. T. E — Liberation of Tamil (1976)  
↓ (born in North Sri Lanka)
- \* May 21<sup>st</sup>, 1991 first Manava human associated Bomb.
- \* May 21<sup>st</sup> 1991 Anti terrorism day
- \* L. T. T. E bank successfully run till 2006.

### 1. Palk bay:-

1. Deepest waters in b/w India Sri Lanka located south direction to the Tamil Nadu state.



### Palk strait:-

A narrow strip of water which interlinks two large water bodies and separate two large land masses

1. India, Sri Lanka separated by Palk strait
2. Arabian sea, Bay of Bengal connected by Palk strait

### 3. Gulf of manner:-

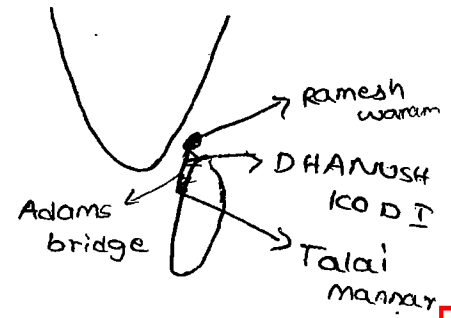
1. Rock Island in India

### 4. Rameshwaram:-

1. It belongs to Tamilnadu

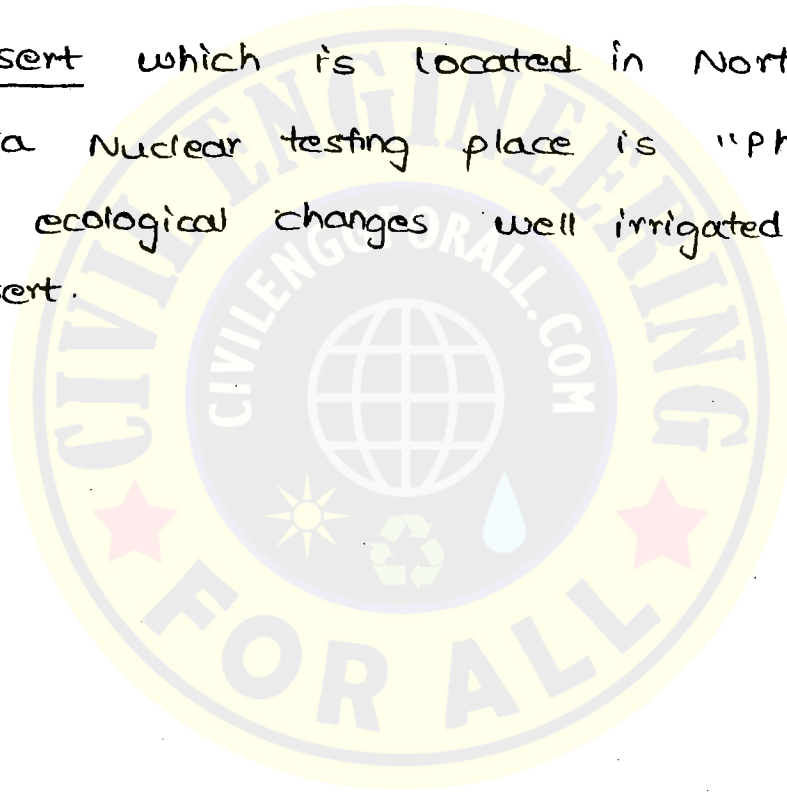
### 5. Adams Bridge:-

Adams Bridge which interlinks in b/w Dhanushkodi and Talaimannar



### 8. Desert:-

1. Thar desert which is located in North west provinces
2. In India Nuclear testing place is "Phokron".
3. Due to ecological changes well irrigated area turns to Thar desert.





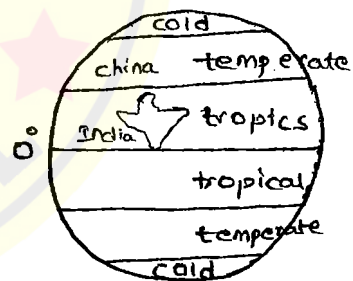
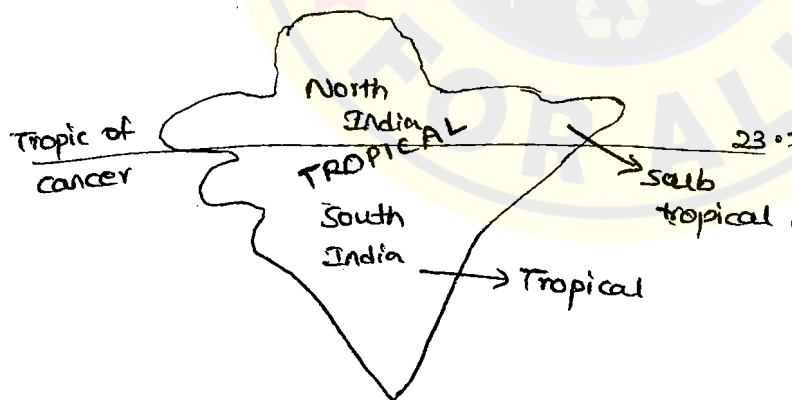
# CHAPTER - 2

## CLIMATE OF INDIA

98.4° F } Body  
36.9° C } temp

Climate	Weather
<p>1. A sum of atmospheric conditions for <u>Long period</u> for <u>Large area</u>.</p> <p>Ex:- 30 years, India</p>	<p>1. A sum of atmospheric conditions for <u>short period</u> for <u>small area</u>.</p> <p>EX:- 14 yrs, City</p>

1. Daily temperature weather by is measured by 'Sixer's max/min thermometer.
2. Sixer's max/min thermometer shape is 'U-shaped
3. Indian climatical conditions are influenced by Himalayas
4. Indian climate is called tropical monsoon climate
5. Tropical monsoon climate = Tropical + Sub tropical



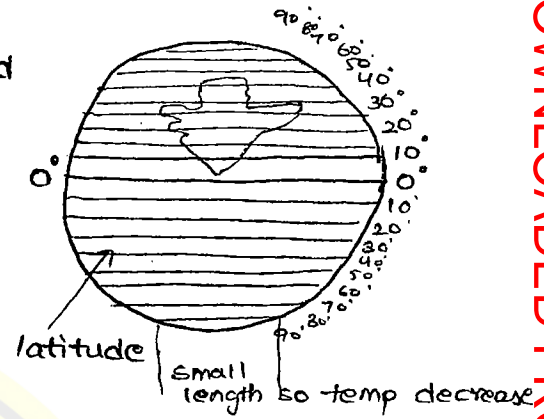
5. Indian climatical conditions are influenced by following factors

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Latitude</li> <li>b. Altitude</li> <li>c. Distance from the sea</li> <li>d. Western disturbances</li> </ul> | <ul style="list-style-type: none"> <li>e. Jet streams</li> <li>f. Monsoons</li> <li>g. EL-NiNO</li> <li>h. La-NiNO</li> </ul> |
|---|---|
- \*\*\*

→ [Gun short QSA] 'AEE'

## 1. Latitude :-

1. An imaginary lines which are drawn parallel to the earth are called Latitudes.
2. Main purpose of the Latitude is Temperature, next Location.
3. While moving <sup>from</sup> Equator to North and South Latitudes length and the temperature would be decrease, and latitude value would be increase
4. In India by moving from south to North temperature would be decrease



Eg:- Which of the following cities received least temp.

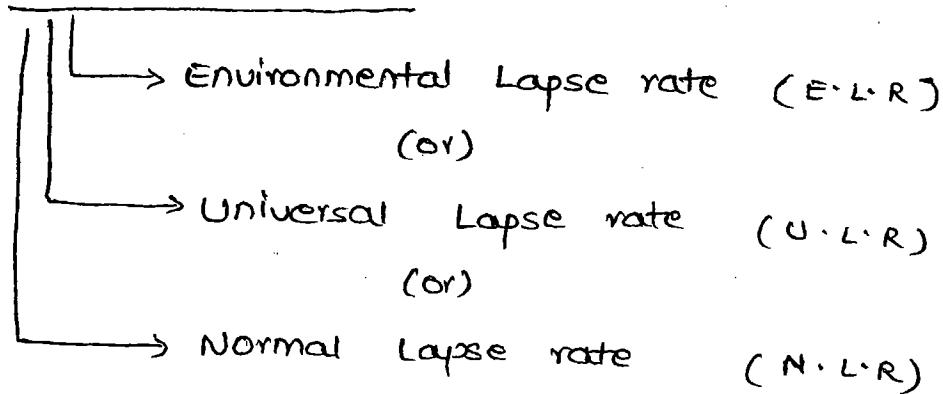
- a) Kanyakumari
- b) Chennai
- c) Hyderabad
- d) Ujjain ✓

Eg:- Which of the following cities received highest temp?

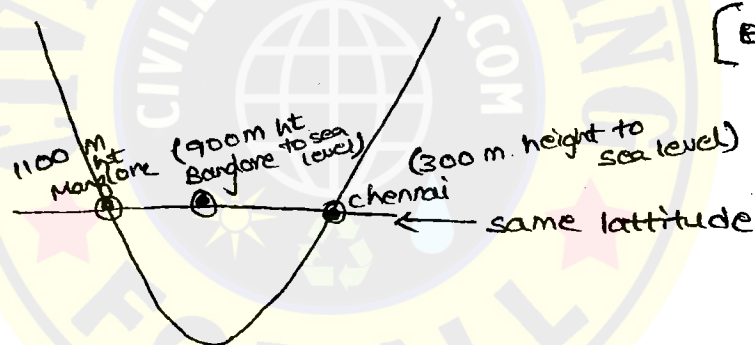
- a) Thiruvananthapuram
- b) Kozikhode
- c) Cochin
- d) Nagarcoil ✓

## 2. Altitude :- (height)

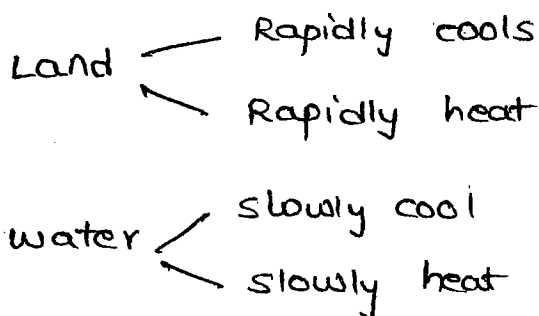
$$\begin{array}{l} 165 \text{ mts} = 1^\circ\text{C} \\ 1 \text{ km} = 6.4^\circ\text{C} \end{array} \left. \vphantom{\begin{array}{l} 165 \text{ mts} = 1^\circ\text{C} \\ 1 \text{ km} = 6.4^\circ\text{C} \end{array}} \right\} \begin{array}{l} \text{every} \\ \text{falls in height} \end{array}$$



1. Chennai, Bangalore, Mangalore cities are in same latitude. by climatical conditions are vary because of different Altitude.



## 3. Distance from the sea :-



- \* Those cities which are located nearest coastal areas they maintain "uniform climatical conditions".

\* Those cities far away from the coastal areas they maintain "continental climatical conditions" (or) "Extreme climatical conditions".

Eg:- Delhi and Hyderabad [ summer — more hot  
winter — more cool ]

#### 4. Western disturbances:- (W.D)

- \* Disturbance (or) Monsoon (or) pressure (or) trade (or) current (or) wind.
- \* Mediterranean sea is the only sea which interlinks the three continents (Africa, Europe, Asia)
- \* Western disturbances are originated at Mediterranean sea
- \* They <sup>(W.D)</sup> enter into Indian landmass through North west direction during the winter season.
- \* They give rainfall in "punjab, Haryana, U.P states"
- \* W.D are best suitable for "wheat crop cultivation" in North India

#### 5. Jet streams:-

An upper air circulation in the troposphere is called Jet streams.

Types of Jet streams:-

Westerly Jet streams = Tibet

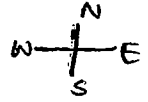
Easterly Jet streams = peninsular plateau.

- \* <sup>(W.Jetstream)</sup> They produced disturbances in Tibet region North India
- \* Easterly Jet streams ~~they~~ produced disturbances in peninsular plateau

## 6. MONSOONS:-

A word Monsoon is derived from "Arabic word" "Mousem", "Mousem" means season.

### Types of seasons:-



1. pre-monsoon season (15 Mar - 15 June)
2. South west monsoon season (15 June - 15 Sep)
3. North East monsoon season (15 Sep - 15 Dec)
4. Post monsoon season (15 Dec - 15 Mar)

\* In India monsoon season period is 6 months

#### a. Pre-Monsoon season:- (Mar-June)

1. This season is called Hot-summer

Temp = High

Humidity = High

2. In Deccan Interior places (Hyd, Sholapur, Raichur, Vidharba) due to high temperature and sun's vertical rays "conventional currents" are produced afternoon. Which they leads to leaks. "conventional rainfall or sun's follow rainfall"

3. Equitorial recieves "conventional rainfall" or "sun's follow rainfall"

4. Karnataka — <sup>→ coffee crops</sup> Cherry Blossoms
- South India — Mango showers
- West Bengal — Kalabaisakis
- U.P — Andhis

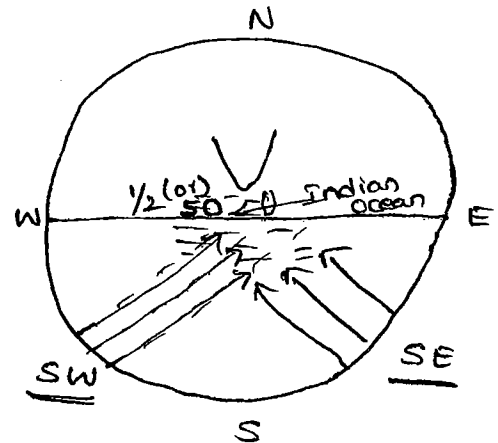
[alternate name to  
conventional rainfall]  
(or)  
pre monsoon season

\*\*\*

## b. South west Monsoon season:-

\* Indian ocean is also called " $\frac{1}{2}$  an ocean" (or)  $50^\circ$  ocean

\* South East trade winds after crossing the equator deflected (change) into a South west monsoons



\* Indian landmass receives max rainfall due to south west monsoons.

\* South west monsoons are originated every year in the month of June 1<sup>st</sup> week from Indian Ocean.

\* South west monsoons first they strike "Malabar coast Kerala".

\* South west monsoons are bifurcated into two branches

1. Bay of Bengal sea branch
2. Arabian sea branch

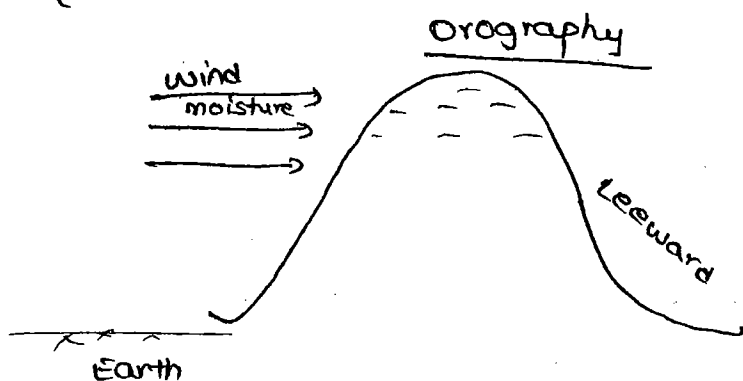
### Bay of Bengal sea branch:-

1. Katchal Islands, Andaman Nicobar Islands, North Eastern states and sikkim receive more rainfall due to Bay of Bengal sea branch.
2. Bay of Bengal sea branch due to Arakariyoma, Peguyoma mountains in Myanmar. they are deflected into north eastern states.

3. Me Due to Bay of Bengal sea branch MASHYANRAM (1187)<sup>cm</sup> and Chirapunji (1141 cm) located in Meghalaya receiving highest rainfall in India.

### Arabian Sea branch:-

1. Indian landmass receives highest rainfall due to this branch
2. Due to Arabian sea branch Kerala, Karnataka, Telangana state, Andhra Pradesh, Maharashtra, Goa, Madhya Pradesh, Gujarat, Rajasthan, Punjab, Haryana, Jammu Kashmir receive rainfall.
3. "Chikmagalur" highest rainfall receive in "South India".
4. South A.P (Nellore, Chittoor), Tamilnadu, Kohima, Shillong, Aravalli Hills do not receive much rainfall due to "south west monsoon season" because all these places are located "leeward position" to the "south west monsoon".
5. Indian landmass receives more rainfall due to Orography system of rainfall.  
Orography = study of mountains.
6. Jaisalmir (western Rajasthan) receives least rainfall in India (below 50cm)



\* Indonesia is the largest muslim population country in the world

7. Highest temperature recorded place in India (Baramar) <sup>56°C</sup>  
(West Rajasthan)

8. Least temperature recorded place in India (Ladakh (-40°C))  
(Karghil)

### C. North - East Monsoons:-

1. These are called "Reversal monsoons" (or) "Retreating monsoons"
2. During the winter season high pressure is developed in North India due to low temperature.
3. These pressure flows in the form of North east monsoon from North to south.
4. N-E monsoons are every year started in the month of mid september.
5. South A.P, Tamilnadu receives more rainfall due to N-E monsoon.
6. N-E monsoon create disturbance in Arabian sea and Bay of Bengal sea.
7. 75% cyclones in India are generated in Bay of Bengal sea.
8. <sup>Large</sup> cyclone state Odisha(1), A.P(2), Tamilnadu(3), W.B(4)

### ⑦ EL-Niño & LA-Niño:-

1. Both words are spanish words
2. 

Boy	←	<u>EL</u> -Niño	} christ child
girl	←	<u>LA</u> -Niño	



## EL-Niño:-

1. It means a warm current which is produced at Peru coastal area (South America) in Pacific Ocean
2. Due to this warm current Indian trade winds are become very weak. Then the trade winds carry less moisture and they drop less moisture on Indian land mass which leads to droughts in India

## La-Niño:-

1. It means cold current produced at Peru coastal area
2. Due to cold winds Indian trade winds are more current and they pick up more moisture and also they drop more rainfall which leads to floods in India

## Distribution of Rainfall in India:-

### 1. High rainfall areas:- (above 200 cm)

- \* West part of Western Ghats
- \* Andaman Nicobar Islands
- \* North eastern <sup>(7 states)</sup> states and Sikkim  
(7 states) (01) (7 sister)

### 2. Medium rainfall areas:- (100-200 cm)

West Bengal, Odisha, A.P., Madhya Pradesh, Chattisgarh, North telangana, U.P., Bihar, Jharkhand, East part of Kerala, Tamilnadu, Karnataka.

### 3. Low rainfall areas:- (50-100 cm)

East part of Western Ghats <sup>(01)</sup> are East part of Sahyadri are (Vidharba, Sholapur, Raichur), South telangana, North telangana south part of Gujarat, East part of Rajasthan Punjab, Haryana

4. In adequate Rainfall (very low rainfall) :- (below 50 cms)

West part of Rajasthan, Runoff Kutch (North Gujarat),  
West part of Punjab, Haryana

### CHAPTER - 3

## INDIAN DRAINAGE SYSTEM (6-10 Q)

1. According to Origin (birth place) Indian rivers system is divided into two types
- Himalayan rivers (or) perennial rivers (or) permanent rivers
  - In <sup>peninsular</sup> ~~permanent~~ rivers (or) Monsoon rivers (or) Deccan rivers

Himalayan Rivers	Deccan Rivers
1. Indus	1. Godavari      5. Penna
2. Ganga	2. Krishna      6. Nagavai
3. Brahmaputra	3. Kaveri      7. Tapti
	4. Mahanadi      8. Sabarmathi etc.

2. Difference between Himalayan rivers and peninsular rivers:

Himalayan Rivers	Peninsular rivers
1. Young Rivers	1. Old Rivers
2. More volume of water	2. Less volume of water
3. Velocity is more	3. Velocity is less
4. constructions of dams are very difficult	4. Best suitable for construction of dams
5. "River <sup>(direction)</sup> course" oftenly changes	5. "River course" (or) channel does not change.

3. According to flow of direction Indian river system is divided into two types

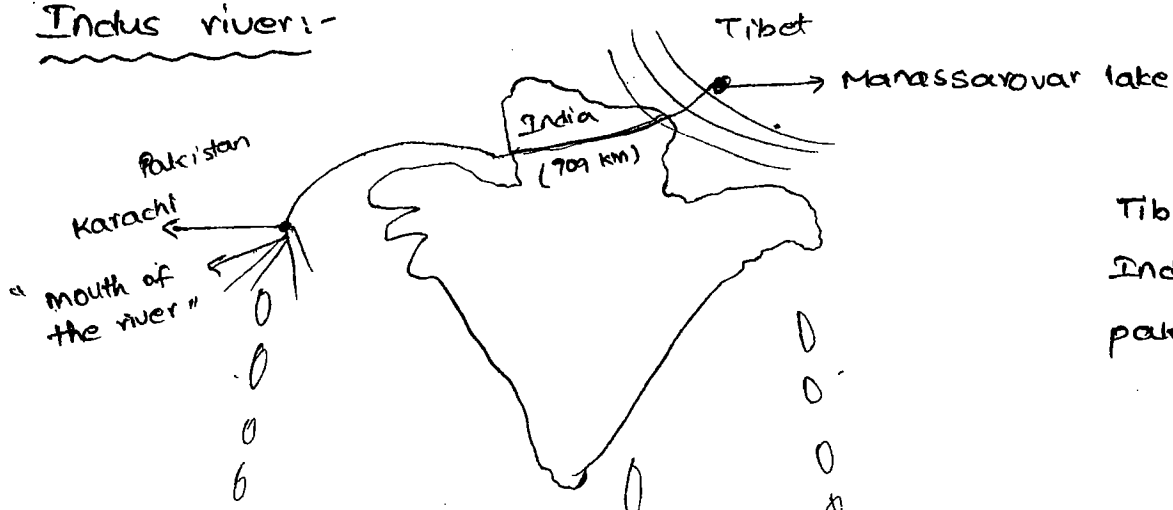
- a. East flowing rivers
- b. West flowing rivers

West flowing rivers	East flowing rivers
1. Indus	1. Ganga
2. Narmada	2. Godavari
3. Tapi	3. Krishna
4. Sabarmathi	4. Kaveri
5. Luni	5. Mahanadi
6. Mahi	6. Penna
7. Pamba	7. Nagavati
8. Periyar	8. Brahmaputra
9. Mandovi (controversy for Goa & Karnataka)	9. Damodar
	10. Kosi
	11. Suvarna Rekha

Rift valley rivers:-

1. Damodar
2. Narmada
3. Tapi (or) Tapti

Indus river:-



River flow

- Tibet → 2%
- India → 5%
- Pakistan → 93%

1. Indus river is born in Manassarovar lake, tibet in trans
2. Total River length 2880 km.
3. It crosses [hindu kush hills, khybhar (Afganishtan)], [bholan, zaskar, ladakh (Jammu kashmir)]
4. Jammu Jammu kashmir it flows 709 km.
5. Maximum flow in pakistan at karachi it merges into Arabian sea.

### \* Indus tributaries:-

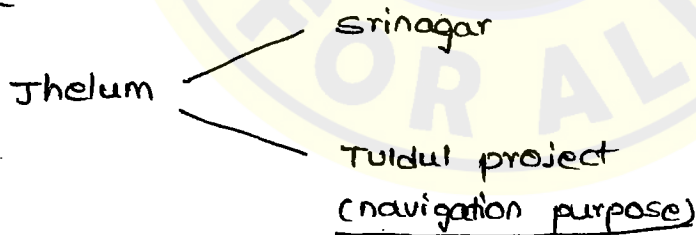
#### Right hand tributaries:-

1. shyoke
2. shigar
3. Gilgit
4. Kabul
5. kurram (shahajan name also)

#### Left side tributaries

- |          |            |   |           |              |
|----------|------------|---|-----------|--------------|
| J & K    | 1. Jhelum  | → | Vitasta   | } Vedic name |
|          | 2. Cheenab | → | Askini    |              |
| Himachal | 3. Ravi    | → | parushini |              |
|          | 4. Beas    | → | Vipas     |              |
| Tibet    | 5. Sutlej  | → | saturdhi  |              |

#### Jhelum:-

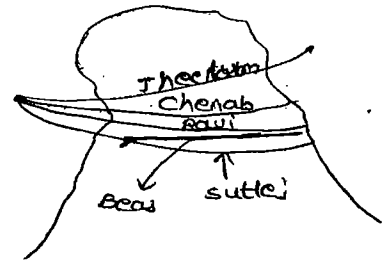


\* BishenGanga is the tributary of Jhelum (Contraversy in b/w India and pak)

#### Cheenab:-

1. It is form by chandra+ bhaga
2. Baglihar project, sabaal project, Dulhasti project.

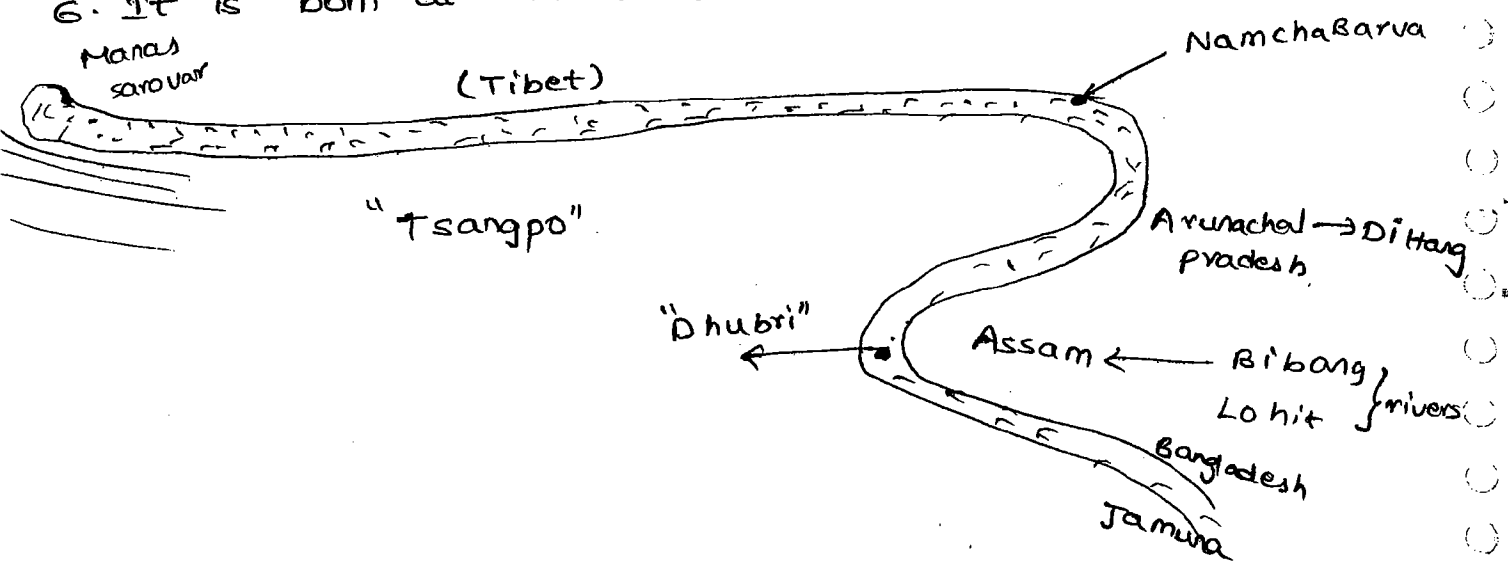
## Beas:-



1. Only Indian tributary does not cross the Indian boundary
2. Largest irrigation canal in the world "Indira Gandhi canal (Rajasthan)" which receives a water from "Beas and Sutlej"
3. Sutlej is the longest tributary of Indus.
4. Punjab is called "Land of the Five rivers". Highly irrigated state in India.

## Brahmaputra river:- (2900 km)

1. son of Brahma (Only male river in India)
2. All rivers are female rivers, Brahmaputra is the only male river in India.
3. "Dihang" is the Brahmaputra another name in "Arunachal Pradesh".
4. Longest Indian sub-continent river.
5. In Bangladesh Brahmaputra river is called 'Jamuna'
6. It is born at Manas sarovar:



Brahmaputra Tributary:-

1. Manas
2. Barkar
3. Sikang
4. Teesta
5. Sabansiri
6. Dhansiri

\* "Yarlung river" is the another name to Brahmaputra in China

\* Brahmaputra river is the controversy river in b/w Ind & China

\* In India (Arunachal Pradesh, Assam) length of Brahmaputra is 800 km

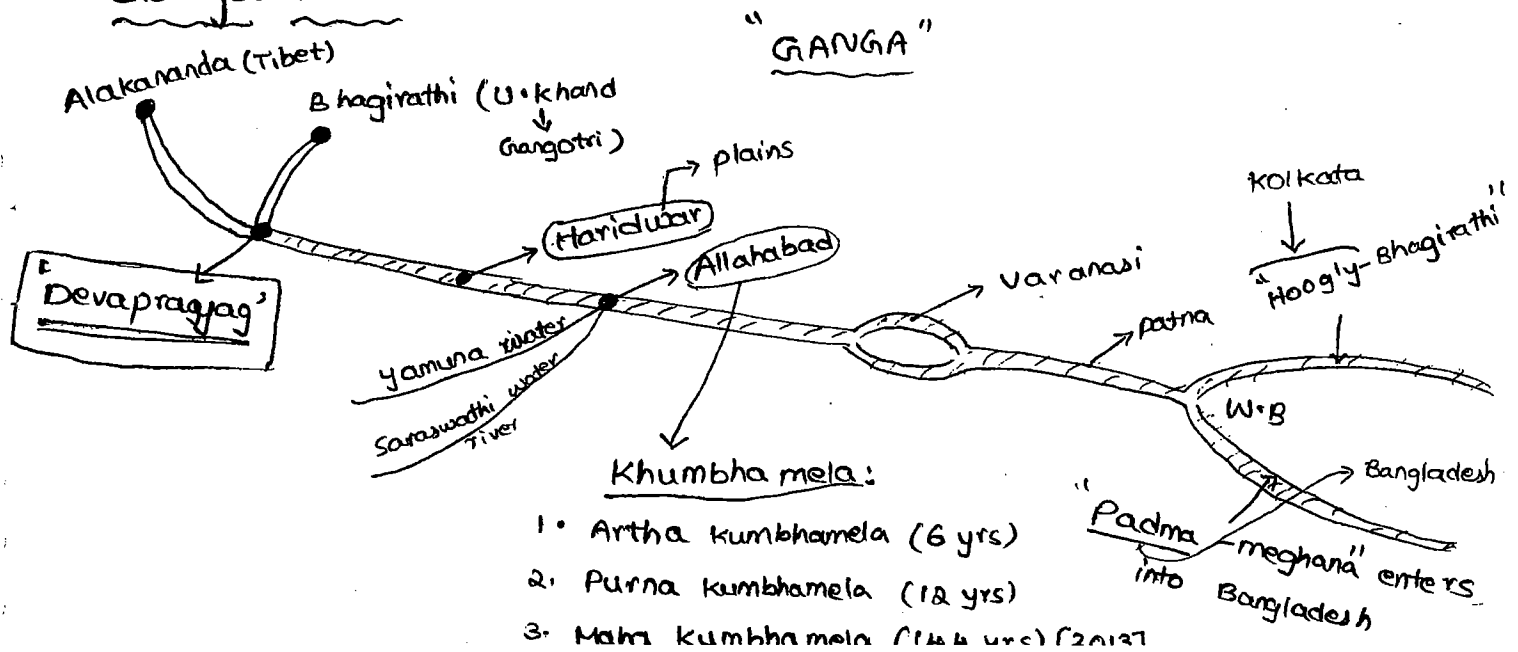
\* Largest river Island river in the world "Majouli" (Assam)

\* "Archipelago" is the group of Island (3000 island of Indonesia).

\* Largest group of Island Indonesia.

\* Largest Island Greenland

Ganga River:-



Points to be remember:-

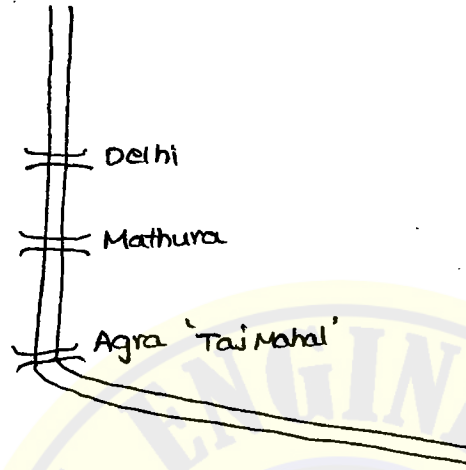
1. Largest, longest river in India
2. 26.5% land area occupied by "Ganga River" in India.
3. Approx. 50 crores population existing at Ganga basin
4. Ganga action plan initiated by government of India in 1986 (to remove pollution to save Ganga)
5. Modi government "Namami" Ganga action plan initiated in 2014, June, with 2067 crores budget. This action plan was chaired by Uma Bharathi.
6. Ganga Authority chairman Prime Minister
7. Namami Ganga chairman Uma Bharathi
8. Ganga river was recognised by Indian government as a national river in 2009.
9. National aquatic animals 'Dolphin'.
10. National animal "Royal Bengal Tiger".
11. "Germany" will come to take an action for cleaning a Ganga River.

Ganga Tributaries:-

1. Yamuna
2. Ghagra
3. Gandak
4. Gomathi
5. Damodar
6. Kosi
7. Rihand

## Yamuna:-

1. Largest, Longest tributary of Ganga.
2. It is born at Yamunotri in Uttarakhand (Garwal district)
3. Length ~~1360 km~~ 1376 km.
4. Ustad - E - sa Persian civil engg. for selecting a location of Tajmahal at Yamuna river



## Yamuna Tributaries:-

1. Chambal
2. Betwa
3. Ken

\* First rivers interlink in India (Betwa, Ken) in 2006.

## Ghagra (Nepal):-

- \*) A Ghagra which is having two tributaries
- a. Sarda (U.P) [second longest, largest canal in India]
  - b. Sarju [(Ayodhya) (U.P)]

## Gomathi (Lucknow):-

## Damodar :-

1. It is born in Chotanagpur plateau.
2. It is called "Sorrow of Bengal"



## Kosi river :-

1. It is born in Nepal flows through Bihar state.
2. It is called "sorrow of Bihar".
3. Many people affected for floods before constructing this project. so it is called "sorrow of Bihar".

## Deccan Rivers (or) Peninsular Rivers :-

### Godavari :-

1. It is also called "Vridhha Ganga".
2. Indian Rain
3. It is also called "south Indian Ganga".
3. Largest river system in south India.
5. second largest river system in India.
6. It is born in "North Sahyadri" near "Nasika Trayam"<sup>bakam</sup>
7. Total length 1465 km

Godavari born starts	Godavari tributaries
Maharashtra	Maharashtra
Telangana	Telangana
Andhra Pradesh	Andhra Pradesh?
	Chattisgarh
	Madhya Pradesh
	Karnataka
	Odisha

## Babli Project (Maharashtra):-

→ controversy between Maharashtra, Telangana, Andhra Pradesh.

## Polavaram Project (plains):-

→ Godavari starts plains at polavaram project.

→ 1978 Indira Gandhi Budget → 3000 crores

→ C.C.A - Command cultivable area.

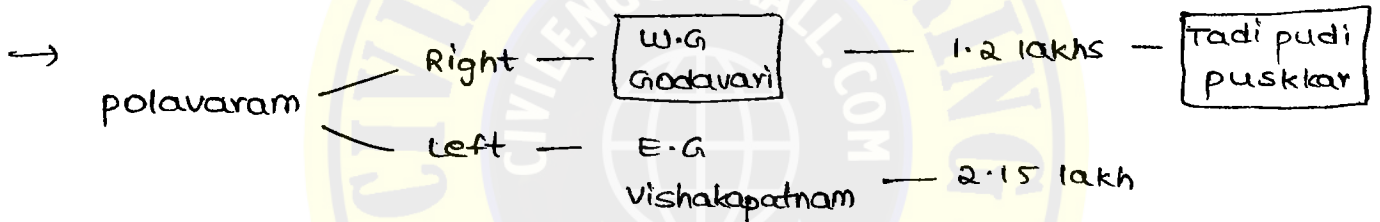
→ It belongs to 4 states. A.P, T.S, Odisha, Chattisgarh.

→ For constructing any project "National Environmental Appellate"

Authority (N.E.A.A) It works under M.O.E.F.

→ M.O.E.F - Ministry of Environment and Forest.

→ Due to polavaram project "Malkam giri district" (Odisha) affected.



→ Due to polavaram seven mandals are added in Andhra Pradesh.

## Dhavaleswar project / Barrage:-

→ Sir Arther cutton in 1852 near Rajamundry.

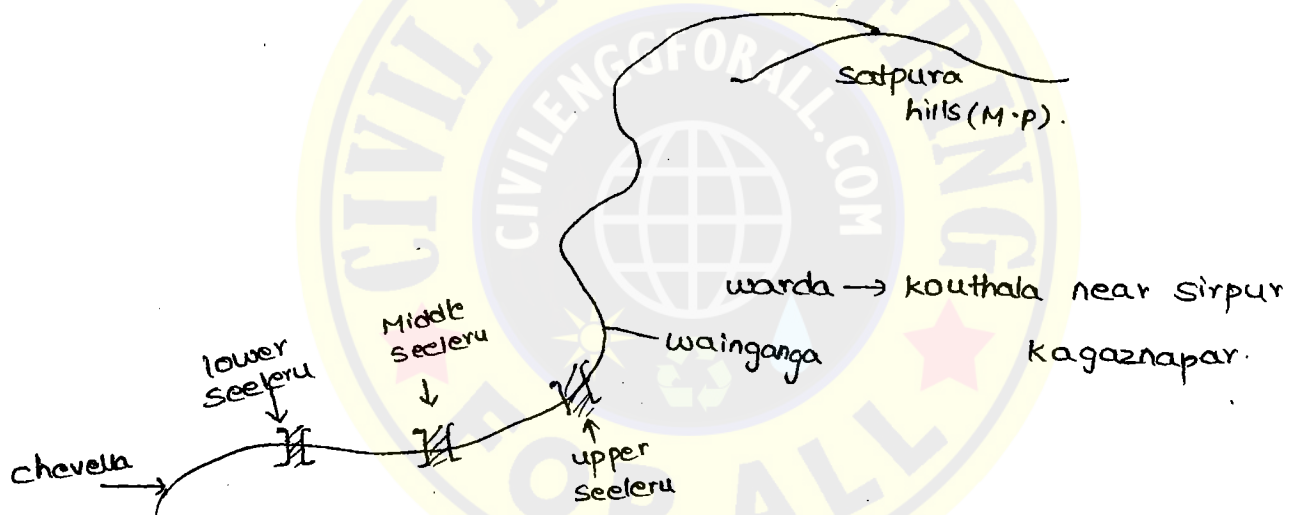
Godavari Branches:-

1. Gouthami
2. Vashista
3. Vainateya
4. Tulya
5. Bharadwaz

## Godavari tributaries:-

1. Pranahita
2. Manjeera
3. Sabari
4. Seeleru
5. Pravara
6. Indravathi
7. Kinnera sari
8. Kadem
9. Maneru.

## Pranahita:-



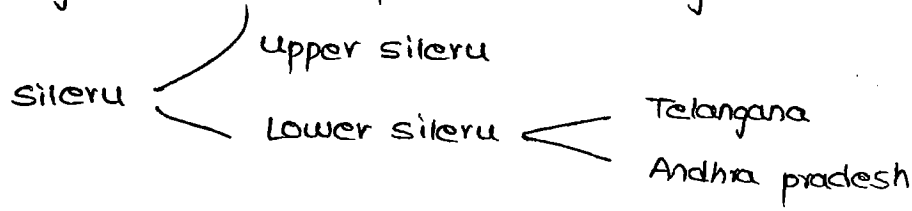
- Pranahita Chevela Asia's longest lift irrigation project
- 19 lifts are there.
- Colorado project is world longest lift irrigation project
- Dr. B.R. Ambedkar Swaha Sravanthi name new to Pranahita Chevela project.

## Manjeera:-

- It is largest and longest tributary of Godavari (724 km)
- It is born at Balaghat range mountains in Maharashtra.
- 3 states Maharashtra, Karnataka, Telangana. Nijamsagar and Singore (Medak) project on Manjeera river.

## Sabari (Maharashtra, Telangana):-

→ Highest rainfall place in Telangana (Adilabad)



## Pravara (Maharashtra):-

Indravathi — Born at Chattisgarh, Telangana

Kinnerani — Khamman (Telangana)

Kadem — Funthala waterfalls

Maneru — Karimnagar

Godavari water are going to utilized by all states only 52% or 48% water is wasting into Bay of Bengal.

## \* \* Krishna River:-

→ Third largest drainage in India.

→ Second largest drainage in South India

→ Krishna river flows through four states Maharashtra, Karnataka, Telangana and Andhra Pradesh.

→ Krishna river connecting in to Bay of Bengal near Hamsaladevi (Vijayawada).

→ Bachavat (1973) Committee

78 years flow taken out of 100 yrs

Maharashtra — 585 T.M.C.

Karnataka — 724 T.M.C

Surplus water → Andhra — 811 T.M.C

→ In 2005 Y.S.R.R. started Jalayagnam E. cost → 1.87 crores

→ Brijesh Kumar (2009) 47 yrs out of 78 years (2012)

Almatty Dam:- (Krishna River) (519.6 m):-

permission gave to increase dam height upto "524.256 m"

projects under Krishna:-

- Priyadarshini Zoorala
  - Jawahar Sagar (or) Nettam Padu
  - Rajiv Lift Irrigation (Kalwakurthy) Pulichintala
  - Krishna River enter into Telangana.
- } Mahaboobnagar

Krishna Tributaries:-

1. Tunga Bhadra
  2. Koyana (M.H)
  3. Ghata Prabha
  4. Malaprabha
  5. Moosie
  6. Munneru
- } Karnataka

Tunga Bhadra:-

- Born at Varaha hills at Karnataka
- It flows through Telangana state and Andhra Pradesh
- Tunga Bhadra dam constructed at "Hospet" in Karnataka
- It is the largest and longest tributary of Krishna
- Mantralayam located at bank of Tunga Bhadra
- Hagary is tributary of Tungabhadra.

Moosie :-

- Born at Anantagiri hills near Vikarabad (Ranga Reddy)
- It merges into Krishna near Vadapalli (Nalgonda)
- Osmar Sagar project has been constructed on this river near Hyd. (Gandi pet)

### Munneru:-

- Born at pathacheruvu pakalacheruvu (warangal)
- Flows through warangal and krishna district.
- Jagalah pet place for merging into krishna.
- Rani Rudrama sagar project is to be constructed on this river.

### Kaveri River (857 km):-

- It is only slightly perennial in peninsular river (6-9 months)
- It is born at Brahmmagiri hills (karnataka)
- It merges kaveri patnam into Bay of Bengal.
- First hydro power station in Asia built on this river at Siva samudram in Karnataka (1902).

### Mettur project:-

A mettur dam constructed in kaveri controversy b/w (Tamilnadu, kerala, karnataka).

- "Hogenikal water falls" are located on this river in karnataka
- Land of water-falls is karnataka.

### Kaveri tributaries:-

1. Hemavathi
2. Bhavani
3. Lokpavani
4. Kabani
5. Laxman Tirtha

→ Sri ranga pathnam located at Bank of river kaveri

Nagavali River:-

→ "Langulya River" in Odisha

→ Born at Raigarh Hills (Odisha)

Odisha - Andhra pradesh  $\left\{ \begin{array}{l} \text{Tributaries vedavati} \\ \text{Jamb Jamzavathi} \end{array} \right.$

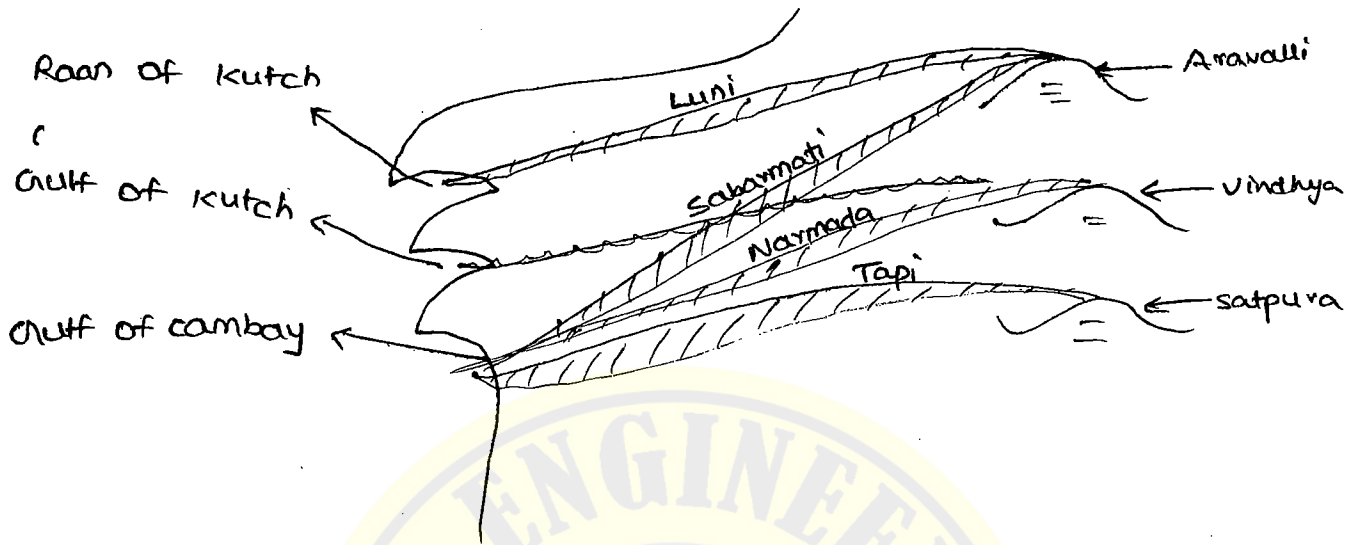
→ Asia's Rubber Dam on river Jamzavati (Vijayanagaram)



## West flowing Rivers:-

### Narmada:- (vindhya range)

1. It is the largest west flowing river in India



2. Narmada is born at Amarkantak in vindhya Range. Its water flows through M.P and Gujarat state. Total route length is 1312 km.
3. Famous water falls "Marble or Dhurwandhar water falls" are located at "Jabalpur" (Madhya Pradesh).
4. Narmada water discharges into Arabian sea at "gulf of cambay" (or) "Gulf of Khambat"
5. "TAWA" is the important tributary of Narmada

### ⑥ Tapi River:-

1. second largest west flowing river in India born at "Multai" Hills (Satpura range)
2. Famous city Surat (diamonds) (diamond city)
3. pink city Jaipur
4. Orange city Nagpur
5. Its water merges into Gulf of Cambay
6. TAWA is the important tributary of Tapi river



## Sabarmathi:-

1. Third largest west flowing river born at Aravalli (Rajasthan).
2. River mouth "Gulf of Cambay"

## Luni:-

1. Born at Aravalli (Rajasthan)
2. Flows through Rajasthan "Thar desert"
3. water merges into Arabian sea "Raan of Kutch"
4. It is called "Inland river"
5. Luni is the only river flows through Desert.

## Mahanadi:-

1. It is born in "Sihawa hills" Chattisgarh.
2. Length 800 km
3. Longest dam "Hirakud dam" (4.8 km)
4. "Hirakud dam" is located in Sambal pur
5. "Cattle Island" is located in middle of the Hirakud dam. "Nomadic" people living there.

## Penna River:- (Penakini):-

1. It is born in "Nandi durga hills" Karnataka
2. Mahabaleshwar → Krishna river  
Varaha → Tunga bhadra  
Brahmagiri → Kaveri  
Raigarh → Nagavali  
Nandi durga → penna  
Sihawa → Mahanadi  
Multai → Tapi  
Amarkantak → Narmada

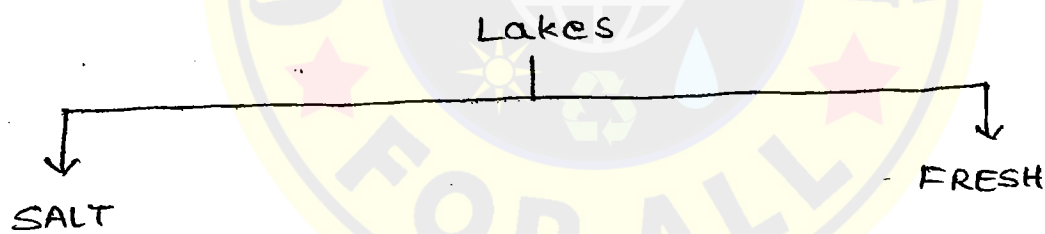
3. penna enters into A.P at "Hindupur (Anantapur dist)".
4. It merges into Bay of Bengal "Utukur" at Nellore district.
5. "somasila project" has been constructed in "Nellore dist".

### Tributaries :-

1. Jaya mangla
2. Chitavathi
3. chiyeru
4. papagni

- 5.
6. "Telugu Ganga and somasila project" sent water to chennai

### LAKES IN INDIA :-



- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. sambar lake (largest salt water lake in India) (Rajasthan)</li> <li>2. Pulicat lake (Ap &amp; Tamil N)</li> <li>3. Chilka lake</li> </ol> | <ol style="list-style-type: none"> <li>1. Wular lake</li> </ol> |
|---|---|

\* city of lakes "Udaipur (Rajasthan)"

\* "satish dawar space center (or) SHAR" is located in "pulicat lake" not "Nellore"

→ <sup>INS</sup> Chilka lake is the longest and deepest lake in India.

→ <sup>(J&K)</sup> Wular lake is the largest fresh water lake in India.

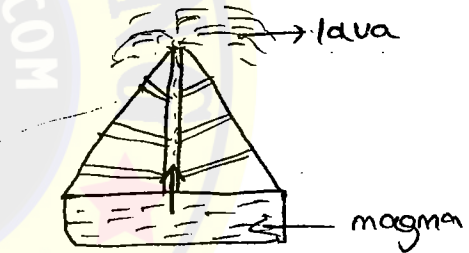
→ "Dhal lake" and "Pongkong lake" (Jammu Kashmir)

Loktak lake (Manipur):-

1. Largest north eastern state lake.
2. Asthamudi lake (Kerala)
3. "Kolleru lake" (Krishna dist, West Godavari (A.P)) Largest deltaic lake in India.

LONAR LAKE:-

1. It is only crater lake in India



Hydro power projects:-

1. Irrigation
2. Electricity
- ✓ 3. Flood control (main purpose to construct a project)
4. Navigation

C.C.A (command cultivable Area):-

- 10,000 Hectres → major
- 2000 - 10,000 → Medium
- Below 2000 → Minor

## More Hydro power stations:-

1. China → "Tri Gorges" (22,500 M.W)
2. U.S.A
3. Russia
4. India (4710)

\* World highest power station (hydro producer) "China"  
"Tri - Gorges" (22,500 M.W)

\* "Itaipu" hydro power station capacity "14000 M.W (Brazil)"

## Top five Hydro power stations in India:-

1. Tehri dam:- (260.5 m)

→ It is the largest hydro power producer in India. (2400 M.W)

→ It is located in "Uttarakhand"

\*\* → Highest dam in India "Tehri dam (260.5 m)"

→ Highest gravity dam in India "Bhakra Nangal dam (225 m)"

→ Tehri dam → (Bhagirathi and Belangana)

→ "Nainadevi temple" is located near Tehri dam.

2. "Koyana project:- (1960 M.W)

→ River Koyana in Maharashtra.

→ second largest hydro producer (1960 M.W) in India.

3. "Srisaillam project:- (1670 M.W)

→ River Krishna, Kurnool (A.P).

→ Third largest hydro producer (1670) in India.

→ "South India" first largest hydro producer

4. Natpha - Jakri project :- (1500 M.W)

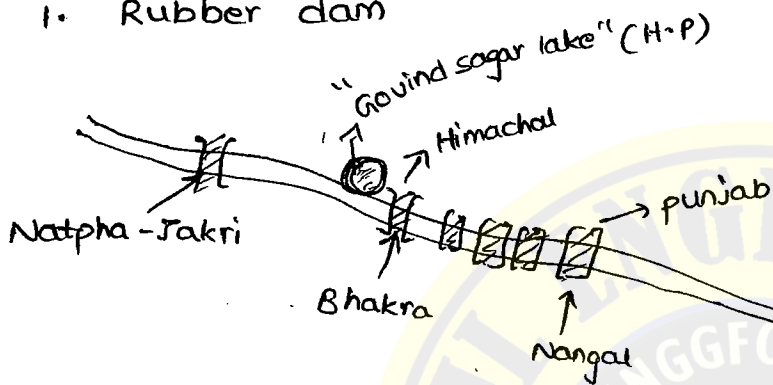
→ River Sutlej Himachal Pradesh

5. Sardar Sarovar <sup>(S.S.P)</sup> project :- (1450 M.W)

→ River Narmada Gujarat

Bhakra Nangal project :-

1. Rubber dam



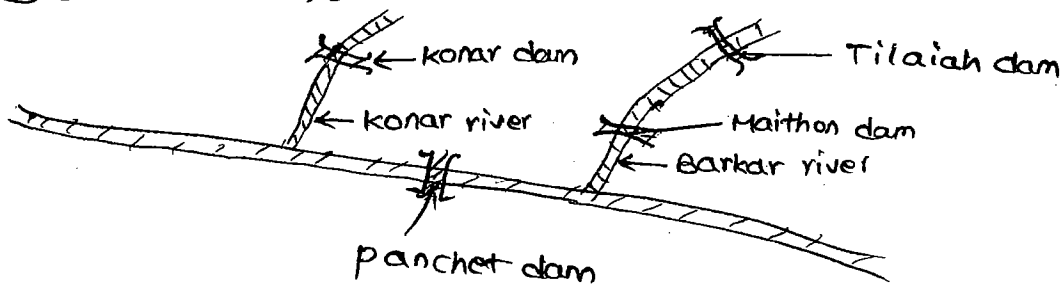
2. First multi purpose project in India

3. Highest "Gravity dam" in India

4. "Govind Sagar Lake" has been constructed <sup>man made</sup> in Himachal Pradesh.

5. Due to Bhakra Nangal (Chandigarh, Haryana, Delhi, Punjab, Himachal Pradesh) is beneficiary.

Damodar valley project :- (Jharkhand & W.B)

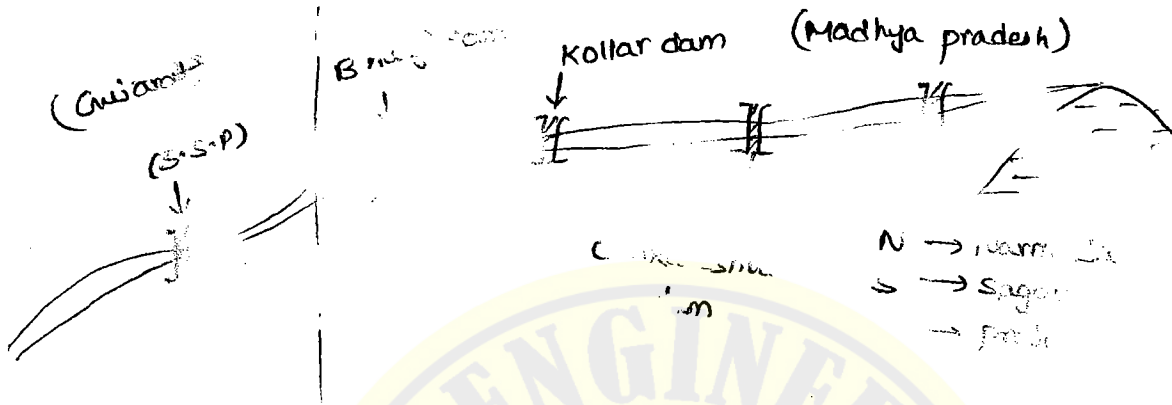


1. First flood control project in India.

(Jharkhand).

2. "Bokaro" steel plant getting water facility from "Kolar dam". It is "largest public sector" steel plant in India.

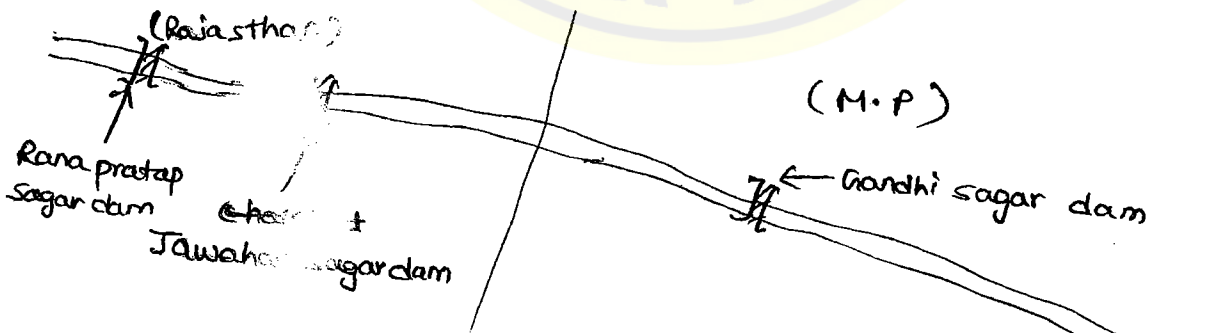
Narmada valley project:- (Narmada Sagar Project) (N.S.P.)  
(N.S.P.)



1. Omkarewar (M.P) is the only project for hydro project as well as hindu pilgrim.

2. "Number of dams" is constructed in Narmada river.

Chambal valley



→ "Chambal Sanctuary" occupied Madhya Pradesh and Rajasthan

## Nagarjuna Sagar Dam:-

1. Nagarjuna Sagar <sup>dam</sup> was inaugurated on Dec-10, 1955 on the basis of "Khosla committee".
2. Right canal (Nagarjuna Sagar) is the mostly irrigated canal "1.113 Million hectre".
3. Left canal (Nagarjuna Sagar) is <sup>irrigated</sup> "0.32 Million hectre".
4. "August 4<sup>th</sup> 1967" Nagarjuna Sagar project is completed.
5. It is located in Krishna River (Nalgonda - Guntur).
6. Longest rock built dam in India.

✶

## Mulla periyar dam:- (controversy dam) b/w (Tamilnadu & Kerala)

1. This is located in "Idukki dist." periyar river (Kerala).
2. It is the oldest dam in India (1895).
3. 999 years contract (or) lease.

## Vishnugarh Tapovanam project:-

1. River Bhagirathi (U. Khand)

## Jayakwadi project:-

1. River Godavari (Maharashtra)

## ✶ Saravathi project:-

1. River Saravathi (Karnataka)
2. Highest waterfalls in India (Jog or Jaisoppa) located at Saravathi river (Karnataka). (Land of waterfall)

## Ukhai and kakrapar project:-

1. Tapti river Gujarat.

## Kunda project:-

1. River kunda Tamilnadu

## Maachkhand project:-

1. A.P, odissa joint venture
2. Maachkhand river or project is the first hydro power project.

## Balimela: project:-

1. River Balimela Odissa state

## Farakka project:-

1. River Ganga, west Bengal (Navigation purpose)

Thulgul project → Navigation

## Mata tilla Multi purpose project:-

1. M.P, U.P, Rajasthan
2. Located in M.P

## Rihand project:-

1. River Rihand, Uttar pradesh
2. "Govind vallabah panth" sagar lake has been formed

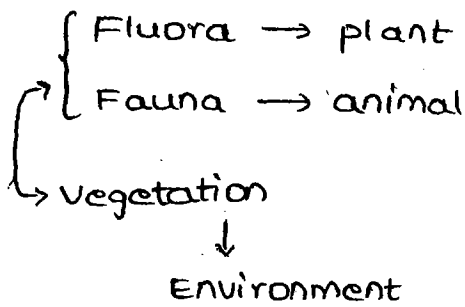
## Kosi project:-

1. River kosi, Bihar
2. Indo Nepal joint venture.



## CHAPTER - 4

### NATURAL VEGETATION (2-4 Q)

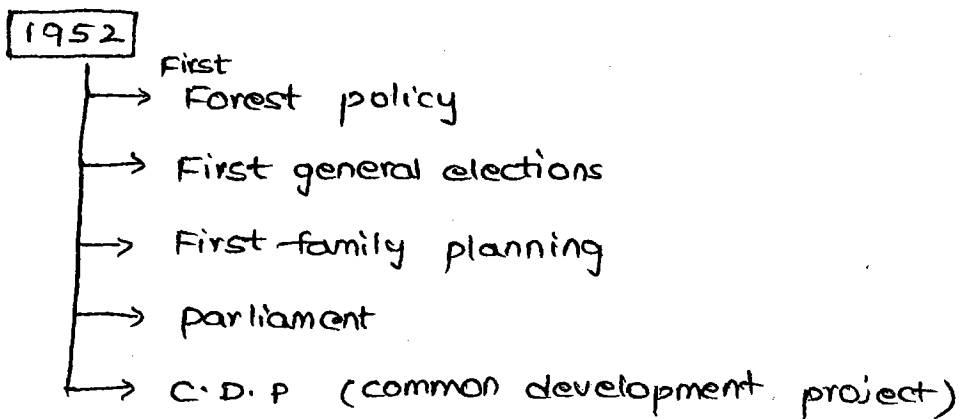


I.U.C.N - International union for conservation Nature

1. Forest (1Q)
  2. Wild life sanctuaries (1Q)
  3. National parks (1Q)
  4. Biosphere (1Q)
  5. Biodiversities
  6. Wet lands
- (1-2Q)

#### 1). Forest :-

1. First forest policy in India introduced in 1894 by British policy
2. After getting Independence, we introduced "National forest policy" in 1952

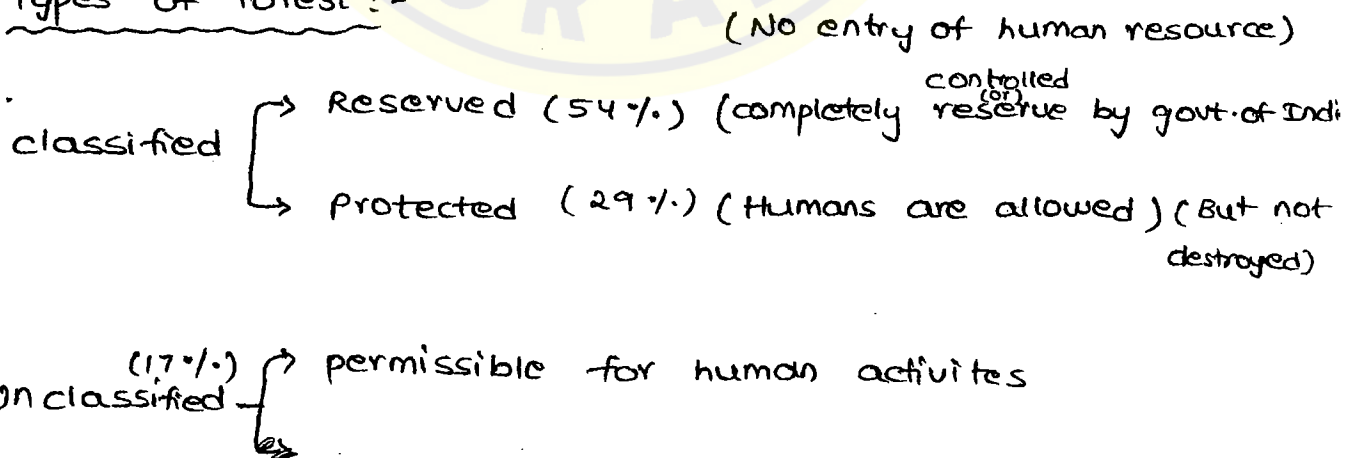


3. According to first forest policy in India forest area should be covered "33.03%".
4. At present in India forest area 2013 reports "23.81%".
5. Madhya Pradesh is the largest forest area state.
6. Goa is the <sup>first</sup> smallest forest area state.
7. Haryana<sup>punjab</sup> is the second smallest forest area state.
8. In Mizoram tribal people is located more.
9. Largest forest area Union territory Andaman Nicobar Islands (80.64%)
10. Smallest forest area Union territory Delhi

### Forest distribution factors:-

1. Rock system
2. Soil type
3. Rainfall
4. Temperature

### Types of forest:-



1. According to rainfall of Indian forest divided into five types
  - a. Tropical ever green forest
  - b. Tropical Deciduous forest

- c. Desert / Thorny / scrub forest
- d. Mangroove / Littoral / Tidal forest
- e. Montane

→ Forest Research Institute Dehradun (U.Khand)

→ petroleum Research Institute Dehradun (U.Khand)

### 1. Tropical Ever green forest:-

1. These are occupied above 200 cm rainfall receiving areas.
2. This type of forest are occupied more at equitorial zone
3. In India this type of forest are occupied very less
4. In these forest plants do not accup drop their leaves even in "summer".
5. These are occupied in west part of western ghats, Andaman Nicobar Islands, North eastern states, sikkim
6. Sikkim is not a part of North eastern states (7).  
It is called calculated 7 (sisters) + 1 (sikkim)
7. It is called Thick forest, Dense forest, Huge body animals
8. Hard wood plants:-
  - a. Iron, Rose, Ebony, Mahagony wood.
9. It cannot be destroy by Human activities
10. North east occupied ever green forest

## 2. Tropical deciduous forest:-

1. Large part of India, this type of forest are occupied (or) covered
2. plants drop their leaves in summer.
3. According to rainfall again this forest is divided into two types.
  - a. Tropical wet deciduous forest. (100-200 cm)
  - b. Tropical dry deciduous forest. (75-100 cm rainfall)

### Tropical wet deciduous forest:-

1. It is a thick (or) dense forest
2. It is available in Odisha, Chattisgarh, W.B, M.P, Karnataka, A.P, Jharkhand, Bihar, Tamilnadu.

### Commercial plants:-

#### \*1. Red sandal

- It is located in Andhra Pradesh (Chittoor, Kadapa, Kurnool)
- Sandal wood Karnataka

#### 2. Saal tree:-

- Large part of India, this type of plants are well grown. It is mostly used in Indian Railways (sleeper class).

#### 3. Lac (or) Lacca:-

- World largest lac (or) lacca producer "India (Jharkhand)"

#### 4. Tendu leaves:-

- It is used in Beedi industries

### \*\* Tropical dry deciduous forest :- (75-100 cm)

1. Large part of India, these type of forest are occupied more.
2. Due to human activities this type of forest are degraded or destroyed.
3. These are more occupied in Andhra Pradesh (Anantapur)
4. Karnataka (Raichur) is the semi <sup>arabia</sup> ~~arid~~ area.
5. Sholapur, Vidharba is also semi arabia area.
6. Jharkhand, Bihar, Gujarat, Maharashtra, Punjab, Haryana and U.P are mostly in Tropical dry deciduous forest.

### 3. Desert (or) Thorny Forest :-

1. These are occupied below 75 cm rainfall receiving areas.
2. West Rajasthan, West Punjab, West Haryana, North Gujarat,
3. All xerophytic plants are well grown.
4. North west contain Desert (or) Thorny forest.
- \*\* 5. Acacia, Babul, Chactous are xerophytic plants
6. 'Epiphytes', a plant which grows another plants.
7. 'Hydrophytes', a plant which grows in water.
8. 'Salophytes', a plant grows on saline water.

### 4. Mangroove (or) Littoral (or) Tidal forest :-

1. These are formed by rivers at coastal areas
2. "Estuaries"
3. Best "Ecosystem"
4. Famous for medicinal plants. In W.B, Sundari plant which is used for Heart Alkaloid.

5. Government, Mangroove forest Act 1987.

6. In W.B, "Sundarban" Mangroove forest is <sup>largest</sup> <sup>(or)</sup> <sup>more</sup> in "W.B"

7. In Odisha → Simlipal  
↓  
Maga adivalu

8. In A.P → coringa

9. In Tamilnadu → pichavaram

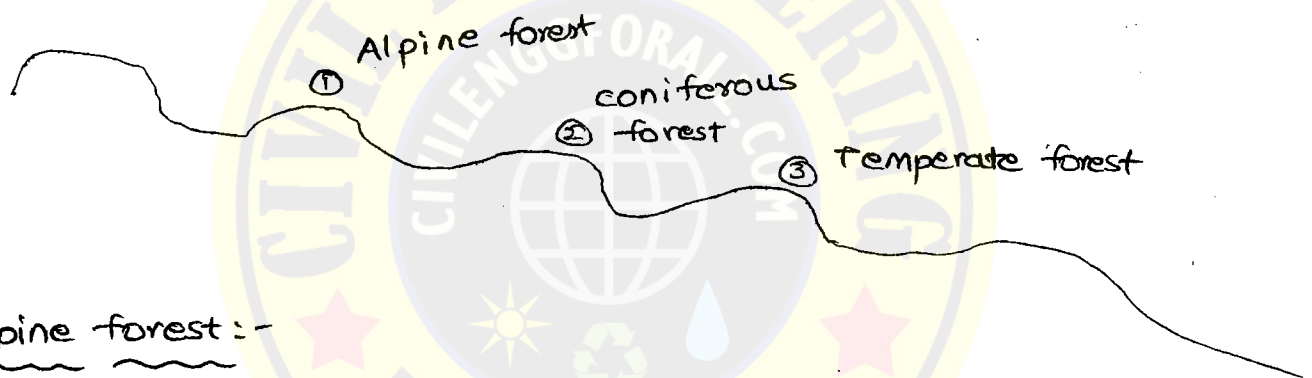
10. In Kerala → Ashtamudi

11. In Karnataka → Kondapur

12. Maharashtra → Ratnagiri

13. Gujrat → Gulf of kutch.

### 5. Montane Forest:-



### \*Alpine forest:-

1. Above 3000 m from the sea level.
2. It is covered always with snow.
3. It is suitable for <sup>wood</sup> soft ~~table~~ and medical plants
4. It is the highest located forest in India (3000m from sea level)
5. 

Jennifer	} Used in Newsprint industry and making of match box sticks.
Birch	
spruce	
Oak	
6. It is the part of Himalayas.

## Coniferous forest :-

1. Above 2000 m height.
2. Oak, deodhar, chest nut, wall nut, \*willow
3. <sup>star</sup>Cricketer <sup>cricket</sup>bats are made by "willow plant" (Jammukashmir)
4. Tundra forest are more occupied in Russia.
5. Russia is the largest country in the world.

## Temperate forest :-

1. Above 1000 m height.
2. Teak, banian, Arjun, Neem
3. "Timber garden of India" Andaman Nicobar Island
4. "Teak" is largely produced by Andaman Nicobar Island

## 2) National parks and wild life sanctuaries :-

National parks	Wild life sanctuaries
1. 102	1. 515
2. Limited Area	2. UN-limited Area
3. G.O.I	3. G.O.I + N.G.O's + TRIDALS.

Indian Board of wild life (1954) (Chennai) - "I.B.W.L" → P.M.

Animal welfare Board of India (2001) → P.M

People ethical treatment of animal - "P.E.T.A" (Blue cross)

↓ chairman A.P,  
Telangana  
Amala.

## Animal act 1972:-

- First animal act.
- project Tiger (1973).
- "Tiger reserves" in India "45"
- project crocodile, 1975.
- Environmental act, 1978.
- project elephant, 1992.
- Revised environmental act, 2002.
- Joint forest Management act, ~~2000~~ 2006
- Green Tribunal act, 2010

## ③ State sanctury:-

### Telangana State:-

- |      |   |  |                                       |
|------|---|--|---------------------------------------|
| Part | { | 1. Mrugavani National park                       | } Black buck<br>(or)<br>Krishna Tinka |
|      |   | 2. Mahavir Harina Vanastali National park        |                                       |
|      |   | 3. K.B.R. National park (Kasu Brahmananda Reddy) |                                       |

### A.P. state:-

1. Rajiv Gandhi Tiger valley Sanctury
2. Largest Tiger reserve in India, Srisaillam (Nallamala forest)
3. Sri Venkateshwara National park, Tirupathi
4. Tirumala vedic school is the first vedic school in Asia.
5. Nelapattu bird sanctuary, Nellore.



## Tamilnadu:-

1. Guindy National park, Chennai (Tamilnadu)
2. "Only Snake national park" in India, Chennai
3. "Madumalai National park" boundary with states  
(Tamilnadu, Karnataka, Kerala)
4. → It is famous for Tigers
5. Vedanthangal Bird Sanctuary

## Karnataka:-

1. Bandipur National park, famous for Tigers
2. Banner Ghatta National park, Bangalore. It is famous for Butterfly.  
caterpillar → Transformation → Butterfly
3. Kudremukh National park, famous for Tiger
4. Nagar Hole National park, famous for Tigers

## Kerala:-

1. Silent valley, famous for "Lion Tailed Macaque"
2. Periyar National park, famous for Tigers
3. Eravikulam National park, Neelagiri Thar

## \* Eastern India:-

1. Mizoram → Dampah National park
  2. Arunachal Pradesh → Nam-Dapha National park
  3. Nagaland → Saramathi National park → peak
  4. Meghalaya → Nokrek National park.
- Highest peak
- famous for Tigers

## Assam :-

- \* 1. Khazi Ranga National park
- 2. United Nations Educational scientific cultural organization (U.N.E.S.C.O) paris
- \* 3. Khazi Ranga is recognised by "UNESCO" (1905).
- 4. "Khazi Ranga National park" is famous for "Rhinocers"
- 5. Manas National park famous for Tigers
- 6. Nameri National park } famous for Tigers
- 7. Orang National park }

## North and North west India :-

### Jammu Kashmir :-

→ ornithologist (study of birds)

- 1. "Salim Ali" National park, famous for Birds
- 2. Dachigam National park famous for Kashmir pigs
- 3. "Kistwar National park" famous for Kashmir Leopard.

### \* Rajasthan :-

- \* 1. "Kaldeo (or) Ghana Bird (or) Bharat pur National park
- 2. "Kaldeo" it was recognised by UNESCO. It is a wetland (Rajasthan)
- 3. Sariska National park
- 4. Ranathom Bore National park } famous for Tigers)

### \* Gujarat :-

- 1. Gir National park (Junagarh), it is famous for "Asiatic Lion". Sachin Tendulkar visited recently here.

2. "Gulf of marine National park", famous for "Wild Ass"

### Uttara khand:-

1. "Jim Carbett" National park, First national park in India. Famous for Tigers.

### Uttar Pradesh:-

1. Chandra Prabha National park, } famous for Tigers
2. Dudwa national park

### Central India:-

#### Madhya Pradesh:-

1. Panna National park (Biosphere reserve)
  2. Kanha National park
  3. Shivapuri National park
  4. Bandavgarh National park
- } famous for Tigers.

#### Chattisgarh:-

1. Indravathi National park } famous for Tigers.
2. Sanjay National park

#### Maharashtra:-

1. Borivilli and Tadoba National park, famous for Tigers

#### Odisha:-

1. Bhitarkanika National park, famous for "Salt crocodile".
2. Nandan Kanan National park, famous for "White Safari Tigers".

3. Simlipal National park famous for Tigers.

West Bengal :-

1. Sundarban National park (Home for Tigers), famous for "Royal Bengal Tiger")

↓  
Our national animal

2. Buxa National park.

④ Biosphere Reserves :- (18 Biosphere Reserves in India)

\* \* \* 1. "Biosphere Reserves" is the best way to protect "Nature"

2. Largest Biosphere Reserve country "Brazil"

Biosphere Reserves in India :-

1. Nelagiri (Tamilnadu) :-

→ First Biosphere Reserve in India.

→ It is recognised by "UNESCO"

2. Gulf of Mannar (Tamilnadu) :-

→ Second Biosphere reserve in India recognised by "UNESCO"

3. Vembanad Biosphere reserve (Kerala) :-

4. Simlipal Biosphere reserve (Odisha)

5. Seshachalam Biosphere reserve (A.P) (recently notified)

6. "Sundarban (W.B) Biosphere reserve" (recognised by UNESCO)

7. Nokrek Biosphere Reserve (Meghalaya)

8. Dibang - Dihang Biosphere Reserve (Arunachal Pradesh)

9. Khairi Banga and Manas Biosphere Reserve (Assam)

10. Kanchenjunga (Sikkim state) Biosphere Reserve.

11. Nandadevi (Uttarakhand) Biosphere Reserve.

\*\*12. Panchmarhi (M.P.) Biosphere Reserve.

13. "Great Nicobar" is the Biosphere Reserve.

### ⑤ Biodiversity :-

1. North Eastern Himalayas :- → More species
2. Western Ghats → King cobra
3. Indo Burma Boarder.

### ⑥ Wet Lands :-

1. Rivers
2. Lakes
3. Coastal
4. Creeks

### Wetland :-

\* It is a water body, water table land, Marshy land, Swampy land. It is a ecosystem and Animal system.

→ Transitional land in between traditional water body and aquatic animal.

→ In 1971, Feb-2 Ramsar convention held to protect wetlands in Iran, this day is also called "World wetland day"

→ Indian Ramsar convention is executed on "Feb-2, 1982"

→ As on day govt. of India notified "115 wetlands" in India. Out of "26" recognised by govt. of India (Inter wetland authority of India was set up 1986)

→ In Andhra pradesh, Kolleru is a wetland.

→ Chilka lake (Odisha) is a wetland

→ Vembanad (Kerala) is a wetland

→ Kaledao is a wetland

→ Harikey (H.P) is a wetland

→ Bhakra Nangal (H.P) is a wetland

→ Bhoj (M.P) is a wetland

→ Raan of Kutch (Gujarat) is a wetland

→ Ratnagiri (Maharashtra) is a wetland

(Greek word)

Montreux :- (1985-86) (to stop the environmental degradation).

It is an extension of Ramsar convention. (1985-86)

It is a character of environment <sup>changes</sup> due to technological developments

## CHAPTER - 5

### INDIAN AGRICULTURE

Agriculture:-

52% → India

"13.7" % → G.D.P

1. primary sector:-

- a. Agriculture
- b. Forest
- c. Fisheries
- d. Animal Husbandry
- e. Mining

2. Secondary sector:-

- a. Industries
- b. Gases
- c. Electricity
- d. construction

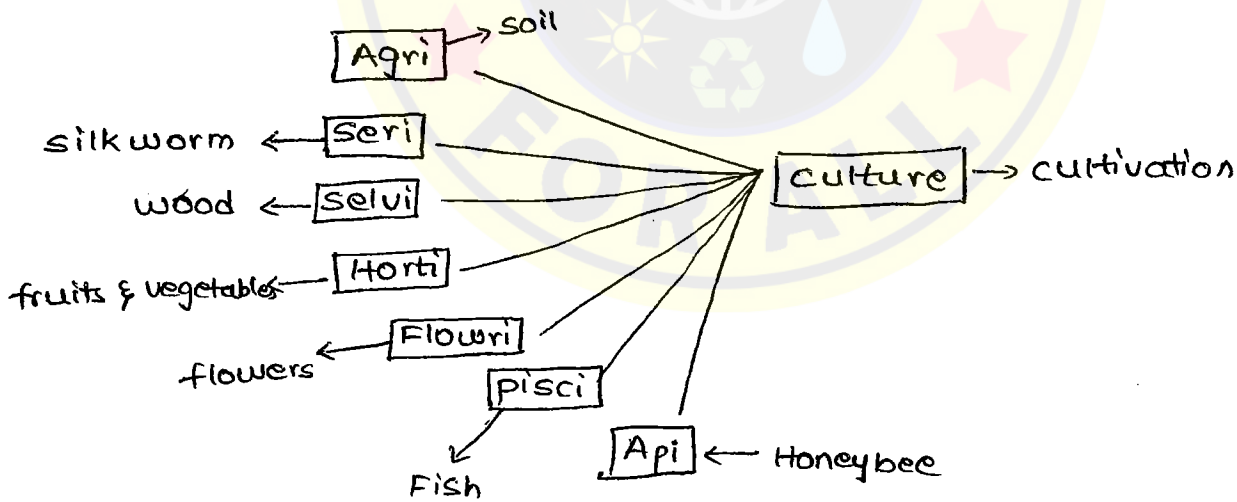
3. Tertiary sector:- (or) Service sector:-

- a. Software
- b. Post and Telegraph
- c. Railways
- d. Communication
- e. Banking
- f. Insurance

1. Indian agriculture is a "intensive agriculture"

"Agriculture"

Intensive Developing	Extensive Developed
1. India, Pakistan, Sri Lanka, Bangladesh 2. Labour force is more 3. Technology is less 4. Yielding is less 5. Land holding is less (0.61 hec)	1. U.S.A, Australia, U.K 2. Labour force is less 3. Technology is more 4. Yielding is more 5. Land holding is more. In Australia the average land holding farmer is (2000 hec)



2. According to seasons Indians crops are divided into two types

a. Kharif season (June (sowing) - Oct (harvesting)) [65% food grains]



## Kharif season crops:-

1. Rice
2. Cotton
3. Maize
4. Soyabeans
5. Groundnuts
6. Tobacco
7. Sugarcane
8. Millets.

## b. Rabi season (Nov - April) [ 35% food grains are produced ] :-

1. Wheat
  2. Barley
  3. pulses
  4. Linseeds
- } winter crops

## c. Zaid crops:- (April - May - June)

1. Fruits
2. Vegetables

## Types of Agriculture methods:-

1. sedentary or settled Agriculture
2. shifting cultivation
3. Subsistence agriculture
4. Mixed cropping
5. Mixed Farming
6. crop rotation
7. Terrace cultivation

## Sedentary or settled Agriculture:-

1. In world and India this type of agriculture method has been practising.
2. Land is used continuously without break or gap.
3. Highest foodgrains in the world producing this method.

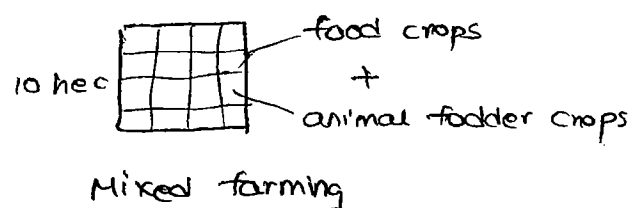
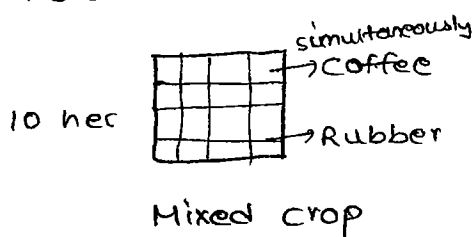
## Shifting cultivation:-

1. The land is used 3-4 years continuously and the fertility is loss (or) drop and they shifted to another land. this type of cultivation is used tribal people in India.
  2. Jhoom cultivation → W.B., Assam, North Eastern states.
  3. Onam → Kerala.
  4. Podu → Telangana, A.P.
  5. Biwar → Madhya Pradesh
  6. Ladang → Malasia
- } Different names for shifting cultivation

## Subsistence agriculture:-

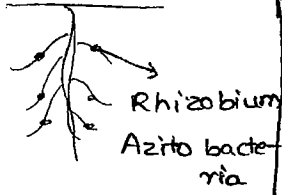
1. It is a oldest agriculture method (B.C. 7000)
2. Family members with traditional tools cultivated themselves consumed food grains themselves not for commercial purpose.

## Mixed cropping and Mixed farming:-



The same land which is suitable for food crops and animal fodder crops is known as mixed farming.

## Crop Rotation:-

Major	Minor	Major
4 months Rice	"Legumes"  It absorbs $N_2$ and formed Nitrates →	Rice

## Terrace cultivation:-

1. Through this cultivation plantation crops are cultivated at slope areas.

### plantation crops:-

1. coffee
2. Rubber
3. coconut
4. cashew nut

## Recent issues regarding agriculture:-

### 1. "Prime Minister. Sinchayee Yojana"

Narendra Modi introduced  
→ To provide irrigation facilities to Rainfed areas

### 2. Kisan T.V.:-

\* A special channels <sup>for only</sup> ~~by~~ farmers introduced by  
Doordarshan

3. Soil health cards provided to every farmers and mobile soil testing centres. established by 100 crores Rupees (100 sets mobile testing centre).

4. National Harty cultural universities is going to setup in Telangana state and Haryana.

5. National agricultural research institutes will be going to setup in Assam and Rajasthan.

Crop origin	country / place
1. cashew nut 2. potato 3. pine apple 4. Rubber 5. Coca	South America
1. Rice, Tea, Soyabean	china
1. coffee,	Ethopia (Abbyssinia)
1. Maize, yam, 2. sweet potato	North America and Mexico
<u>Important crops:-</u>	

1. Rice crop:-

→ It is a tropical crop

→ World / India largest cultivated crop

→ World largest rice eaters

1. China (Golden rice) → [carbohydrates, Vit-A, zinc]

2. India

→ Within the India

W.B → producer

U.P → Area

Punjab → yielding (productivity)

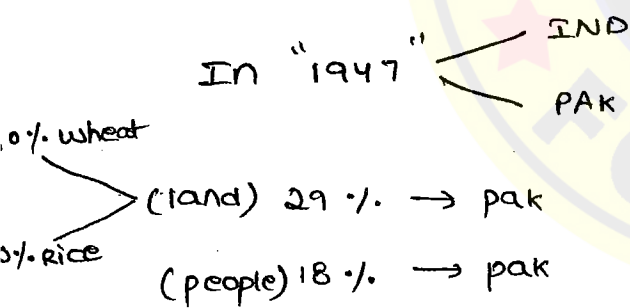
→ Temperature — (24° - 32°c)

→ Rainfall — (100 - 150 cm)

→ It requires "standing water" (or) "stagnant water".

### Varieties of Rice:-

1. IR - 7 (Indian Rice - IR)
2. IR - 8
3. IR - 32
4. IR - 37
5. Basmathi
6. Sri



\* "Basmathi Rice stall" is open in neighbouring country "China"

\* Basmathi Rice is largely produced in "U. khand"

SRI — System of Rice intensification.

\* International Crop Research Institute Semi arid Tropics (I.C.R.I.S.A.T) → 1972 (Medak dist) (Only one in Asia)

\* SRI Rice was cultivated in low rainfall areas also.

\* <sup>(Tamil Nadu)</sup> Tanjore, <sup>(Odisha)</sup> Mahanadi delta, <sup>(M.P)</sup> Narmada valley, [Karnataka-basin (delta) "Rice bowl of India"] are famous for rice cultivation in India.

\* International Rice research institute is located at "Manila (Philippines)"

\* The only one person who acted as a chairman of International Rice research institute "M.S. Swaminathan"

\* International - Rice research institute "Odisha (Katak)"

\* Directorate of Rice research institute Hyderabad

Wheat and Barley :-

1. It is a winter crop
2. Temperature 10-15°C.
3. Rainfall (50-75cm)
4. It can be cultivated at low temperature and low rainfall.
5. U.P is the largest producer
6. "Ganga - Suttlej" belt is famous for "wheat cultivation"

Millets :-

1. Raagi, Jowar, Bajra, Maize. It is a highly nutritional food.
2. India is the largest "Millets producer" in the world
3. Karnataka state is the largest "Raagi producer"
4. Maharashtra is the largely producer Jowar. It is a rainfed crop
5. Bajra is largely produced in Rajasthan. It is a rainfed crop.

## European crops :-

1. Tea — L-theanine
  2. coffee — caffeine
  3. Tobacco — Nicotine
  4. chillies
  5. pine apples
- (Alkaloid)

15<sup>th</sup> A.D ~~1498~~

"1498" Vasco-de-Gama

## Tea :-

1. World largest tea producer India (Assam)
2. Tea crop is cultivated at "tropical and sub-tropical area"
3. "High elevation"
  - a. Barrack valley
  - b. Brahmaputra valley
  - c. Surma valley

} Assam
4. W.B → Darjeeling
5. Kerala → Munnar
6. Tamilnadu → Nilgiri hills
7. Tripura →
8. Tea crop does not require standing water

## Leaves :-

Black tea → china

white tea

Red tea

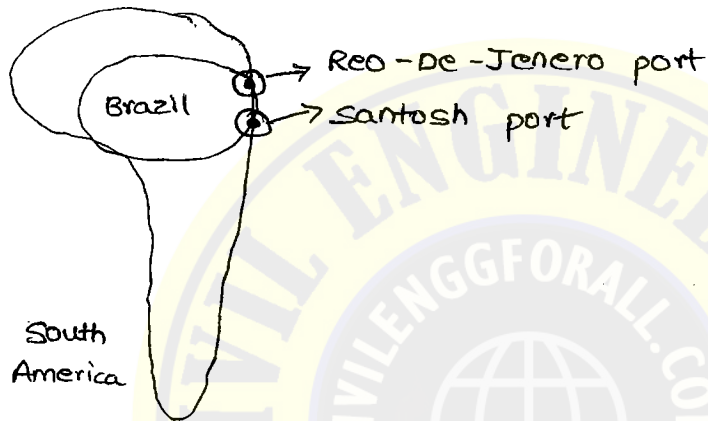
"Green tea" having a rich "anti-oxins" it is fight <sup>against</sup> ~~for~~ "cancer"

## "Tea-board"

1. It is located in Kolkata. But Assam people fight for transfer the tea-board Kolkata to "Gowhathi (Assam)".
2. Tea Research institute in "Jorhat (Assam)" located.

## Coffee :-

1. Brazil is the largest producer



2. Rio-De-Jenero, Santos these two ports are largest coffee exporting ports.
3. In India, "Chickmanglore (Karnataka)" exactly place "Baba Budan" "coffee land of India".
4. In India, first coffee cultivated in "Baba Budan", which is located in "Chickmanglore (Karnataka)". (53% coffee produced)
5. Kerala <sup>(Vaynad)</sup> (28% coffee produced). second highest coffee producer in India
6. Yercaud (Tamilnadu) (11% coffee producer) third highest coffee producer in India.



7. West margins of Western ghats
8. Araku valley and west margins of <sup>ea</sup> western ghats are famous for coffee cultivation.
9. Coffee is cultivated at high elevations.
10. Coffee is a shadow crop
11. Sunrise are harmful to coffee crop
- \*12. Coffee board was setup in Bangalore.
- \*13. Coffee Research Institute is located at "Chickmanglore"

→ Neelagiri Hills are famous for coffee and tea.

→ Surma valley is famous for only tea.

→ India is produced best varieties of coffee.

1. Arabica
2. Robusta

### Tobacco:-

1. China is the largest producer in the world
2. In India, A.P. is the <sup>first</sup> largest producer in India  
Gujarat is the second largest producer in India
3. It is a longest mature crop (7-8 months)
4. It is a "Soil Exhaustive crop"
5. <sup>(Andhra Pradesh)</sup> A.P. is producing best quality of Virginia tobacco.
6. This products are ~~producing~~ exporting "Kakinada port".
7. Central tobacco Research institute is located at "Rajamundry (East Godavari) Andhra Pradesh"
8. Tobacco board is setup at "Guntur"

## Chillies :-

1. Guntur, <sup>(1<sup>st</sup>)</sup> Tamilnadu <sup>(2<sup>nd</sup>)</sup>

## Pine apple :-

1. North eastern state Meghalaya

## Oil seed crops :-

1. Sun flower
  - Largest producer China / Ukrain
  - Karnataka <sup>(1<sup>st</sup>)</sup> [India] only
2. Groundnut
  - India is the largest producer in the world
  - In A.P (Anantapur) first, second Gujarat
3. Coconut
4. Soya beans
5. Linseeds
6. Castor

→ "Golden groundnut" introduced by India.

## → Coconut :-

1. It is a "fruit" (Real fruit)
2. In India (Kerala) is the largest producer (85-90%)
3. "Phillippines" company parachute has come to India

## → Soya beans :-

1. Origin is China.
2. U.S.A is the largest producer in world
3. In India (M.P) is the largest producer
4. Richest plant food crop [vitamins, proteins, carbohydrates, minerals].
5. Highest "infant death" in world after 5 years "India"  
(children after 5 years less malnutrition caused death)

## Lin seeds:-

1. India (M.P) is the largest producer in world.

## Castor (Amudam):-

1. In A.P, Rajasthan is the largest producer

## Fibre crops:-

1. Cotton

2. Jute

3. Silk

## → cotton:-

1. China is the world largest producer.
2. India (Gujarat) is the largest producer in India
3. "Maharashtra" is the "largest area" cultivator
4. cotton coming from "Bud"  
"Bud" can be divided into ~~B~~ three sizes
  - a. small staple
  - b. Medium staple
  - c. Large staple → largest producer A U.S.A
5. Mumbai, Amhedabad is famous for cotton.
6. A mumbai is called "cotton police of India".
7. "Manchester of India" is called Amhedabad.
8. A city Manchester (U.K) is famous for <sup>cotton</sup> textile
9. A city "Coimbatore (South Indian Manchester)" is famous for cotton textile in India.

\* "Mumbai" is famous for Textiles

\* "Mumbai of shore" is famous for petroleum

Jute:-

1. India (W.B) is the world largest producer  
↓  
"Hoogly belt"

Ganga - Suttel → Rice

Mahanadi delta → wheat

Hoogly belt → Jute

2. Bangladesh is the highest Jute crop exporter
3. "Jute crop" is also called "Golden Fibre"

Silk:- (pattu) :-

1. Japan is the world largest producer
2. In India (Karnataka) is the largest producer

Raagi  
Coffee  
Maize  
Silk  
Sunflower } No. 1 producer in India (Karnataka)

3. It silk from Muth of the cocoon.
4. Tasar, Mulberry, Ery, Mulga are types of silk.
5. Mulberry is the best type of silk.
6. Mulberry well grows in Jammu - Kashmir.
7. Artificial silk is called "Rayon"

## Sugar cane :-

1. It is a longest mature crop and "soil Exhaustive" crop
2. "Brazil" is the world largest producer.
3. In "India" <sup>largest</sup> area cultivator in world. (first in area cultivator)
4. "Ethanol" is used as a fuel in space rockets
5. Tanuku (west Godavari) is produced "ethanol" in India

## products of sugar:-

1. Ethanol → <sup>used for</sup> Space fuel rockets
2. Bagasse
3. Gur
4. Sugar
5. Molasis → Making of Alcohol
6. Second largest <sup>sugar</sup> producer in India
7. Third largest sugar producer china
8. Fourth largest sugar producer Mexico
9. "Sustainable" sugar cultivation
  - a. High Glucose content
  - b. yielding
  - c. low cost
  - d. Low labour.
10. National sugar cane research institute is located at "lucknow (U.P)"
11. Bihar, U.P, Tamilnadu, A.P producing more than 75% sugar production in India.

12. Asia's largest sugar mill was setup "Bojan (Nizamabad)"  
It will come under Telangana govt.

Spices :- (good smell)

1. Indonesia (3000 islands) (Archipelago)
  - spicy garden of world
  - Largest muslim populated country

2. Kerala :-

- spice garden of Kerala
- Cardmom (Queen of the spices)
- Black pepper (king of the spices)

Onions :-

1. China is the <sup>first</sup> world largest producer
2. India is the second world largest producer
3. In India, Maharashtra (Thane, pune) famous for onions.

Fruits and vegetables :-

1. India is the first world largest producer
2. Mango, spota is the largely producer in India
3. Mango is called "pride fruit of India".
4. Mango is the "National fruit" in India.
5. Mango, U.P is the largest producer.

Vegetables :-

1. World largest producer India

## Agricultural Revolutions:-

### Green Revolution:-

1. The word Green Revolution is introduced by American scientist "William Gaudy".
2. Green Revolution technology <sup>(1943)</sup> is introduced by "Norman Borlaug".
3. "Norman - Borlaug" award is given for "Agricultural field".
4. C. Subramanyam (1966-67) is a food agriculture Minister.
5. "C. Subramanyam and M.S. Swaminathan" both are imposed "Green Revolution" in India.

Green Revolution:- To produce high yielding variety of seeds within short period.

6. First Green Revolution imposed on wheat crop in Punjab state (1966-67) → financial year
7. (1966-67) → 50 million tonnes food grains  
(2012-13) → 250 million tonnes food grains } 5-times increase because of green revolution
8. Highest food inflation in world Zimbabwe
9. In united Andhra Pradesh Green Revolution was imposed on rice crop in West Godavari.
- \* 10. Green revolution did not effect on oil seeds, and pulses.

11. "Green Revolution" is more success on "potato"

### Second Green Revolution:-

1. National commission on farmers appointed by Government of India under the chairmanship of M.S. Swaminathan. He suggested second green Revolution in India.
2. With the help of corporate sector we should produce more food grains in 11<sup>th</sup> five year plan (2007-2012).
3. First In 11<sup>th</sup> five year plan first priority was given to the "Second Green Revolution".
4. In 2013, July 5<sup>th</sup> U.P.A. (congress) govt. brought National food security act
5. The first state in India followed Second Green Revolution Bihar

### ④ White Revolution:- (or) Operation flood:-

1. "Vargheese kurian" started white revolution Milk revolution in India.
2. India is the first world largest milk producer.  
In 2005 → America is first  
~~After~~ In 2006 → India is first till the rank is going <sup>on</sup>
3. World largest cattle populated country India.
4. Vargheese kurian started on 1970 - I phase  
1978 - II phase  
1996 - III phase

5. 29 Breeds :-

Jersey

Tea cup breeds { In India:- 30-40 lit.  
Gir — Guj, Rajasthan  
Sindh — Guj, Haryana, Punjab  
Sahiwal — Haryana, Punjab, H.P  
paksinh — Gujaraath



6. Many villages found in Uttar Pradesh
7. Largest Milk production in U.P
8. National dairy research institute is located at Karnal (~~Himachal Pradesh~~) (Haryana)
9. National dairy development board (N.D.D.B) is located at "Anand (Gujarat)".
10. A.M.U.L. — Anand Milk Union limited
11. After Kalpana Chawla died, "Karnal" name is changed to "Kalpana Chawla".

### Blue Revolution:-

1. To increase marine and products.  
Socio-economic development.
2. Inland fish (fresh water fish) is largely produced China  
~~after~~ first, India second
3. In India (W.B, Bihar) is largely produced Inland fish
4. Marine fish (salt water fish) → 1<sup>st</sup> China  
→ 2<sup>nd</sup> Japan  
→ 3<sup>rd</sup> India (Kerala)

### Silver Revolution:-

1. poultry and products  
↓  
eggs.
2. Largely produced "Andhra Pradesh (Andlavalleru)"

3. Nation Egg coordinate Council (N.E.C.C.) is located in Delhi

4. ~~N.E.C.C.~~ silver revolution father 'B.V.N. Rao'

Red Revolutions:-

1. Meat and Tomatoes comes under red revolution.

Golden Revolution:-

To increase fruit productions especially Apples.

Gray Revolution:-

To produce self sufficient "fertilizers" in India to started Gray revolution.

1<sup>st</sup> → china

2<sup>nd</sup> → India.

Yellow Revolution:-

Oil seeds

pink revolution:-

To increase "prawns". "prawns" are largely produced in Andhra pradesh.

Red Ribbon → Hiv  
↓  
disease

pink Ribbon → Cancer.

## Black Revolution:-

→ petroleum and crude oil.

## Dist Distribution of Irrigation:-

In India 46% land → Net sown area

14% land → Non-agricultural

5% land → waste land

Well irrigation → 53%

canal irrigation → 25%

Tank irrigation → 7%

### well irrigation:-

Area → U.P  
Haryana  
punjab  
Bihar  
A.P

% → punjab  
Haryana  
U.P

### Canal irrigation:-

Area → U.P

% → Gujarat

### Tank irrigation:-

Area → Telangana  
Tamilnadu

## Soils in India:-

1. It is a thin layer.
2. It is called "skin of Earth".
3. Due to "Rock weathering" soils are formed
4. Study of soil "pedogenesis".
5. Formation of soil "pedology".
6. According Indian Council of Agriculture Research (I.C.A.R) is located in Delhi. Indian soils are divided into eight groups. 4 major, 4 minor.

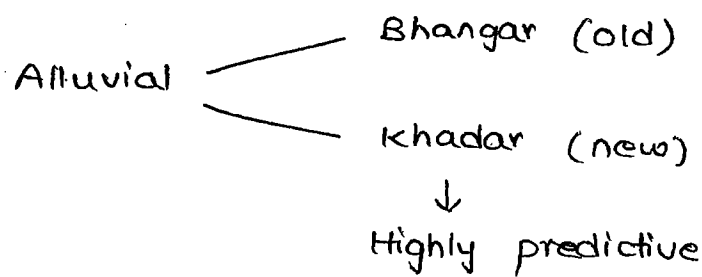
Major	Minor
1. Alluvial	5. Desert / Arid soils
2. Black	6. Forest soils
3. Red	7. saline / alkaline
4. Laterite	8. peaty organic

## Alluvial soils:-

1. Large part of area in India occupied by these type of soils.
2. These are formed by deposition of river sediments
3. Most fertile soils in the world.

## Types:-

1. Delta alluvial soils → Most productive crops
2. Rivering alluvial soils
3. Coastal alluvial soils



→ Alluvial soils are brown in color.

### Location of Alluvial soils:-

1. Ganga-Sutlej belt.
2. Mahanadi delta (More alluvial soils)
3. K G basin
4. Kaveri river delta

### 5. Alluvial

- Alluvial soils are largely found in U.P
- Humus (organic matter), Nitrogen are defecite elements ~~are~~ <sup>in</sup> alluvial soils.
- Indian farmers are largely used "Nitrogen based fertilizers (Urea)". "Urea" is the first man made chemical.
- Alluvial soils are best suitable for cultivation of "Rice crop"

### Black soils:-

1. Due to presence of Titaniferous (Magnesium, Alluminium, Iron) these soils appears like a black color.
2. These soils are called "Chernozem soils" (or) "Regur soils" (or) "Lava soils".

3. These soils are formed due to solidification of volcanic lava.
4. High "retentive" capacity soils.  
(moisture)
5. It is are best suitable for "cotton and sugarcane" cultivation.
6. These are more occupied in "Deccan plateau"
  - 1<sup>st</sup> Maharashtra } Black soils (or) Regur soils
  - 2<sup>nd</sup> Gujarat }
  - 3<sup>rd</sup> west part of M.P. }
  - 4<sup>th</sup> North part of Tamilnadu
  - 5<sup>th</sup> Telangana state
  - 6<sup>th</sup> Karnataka

### Red Soils:-

1. Due to presence of ferric oxides it appears like a Red color.
2. It is best suitable for Millets, pulses, oil seeds, Rice.
3. In Telangana large part of areas <sup>Red soils are</sup> occupied
4. In India
 

1 <sup>st</sup> Karnataka	}	Red soils highly available.
2 <sup>nd</sup> Telangana		
3 <sup>rd</sup> Jharkhand		
4 <sup>th</sup> Bihar		

## Latterite

### Alluvial soils:-

1. Due to presence of Iron Oxides and other nutrients, they appears like a black color.
2. "Leaching" is formed at "Latterite soils"
3. In Latterite soils, food crops should not cultivate.
4. Western ghat slopes  
Eastern ghat slopes  
Neelagiri hills - T.N  
Darjeeling - W.B.

} High leaching and Latterite soils are found.

~~See~~

### Minor soils:-

#### 1. Desert / Arid soil:-

1. Low-vegetation
2. Low organic matter (Humus)
3. Low fertile soils
4. Rainfed crop (Baira)

#### 2. saline / Alkaline soil:-

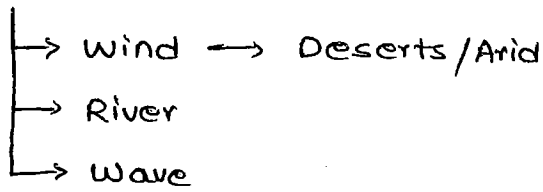
1. Accumulation of more salts lead to infertile soil.
2. Not fit for agriculture
3. It appears in white color.
4. Odisha, W.B, U.P, A.P, Tamilnadu, Bihar. This soils are available here.

#### 3. Peaty Organic:-

1. More organic
2. More acidic. It kills the plants.

## Soil problems in India:-

### 1. Soil Erosion:-



Sheet erosion → Rajasthan

Silt erosion →

Gully erosion

→ wave erosion is mostly in "Kerala"

### 2. Lack of crop rotation:-

3. Usage of more inorganic fertilizers
4. Deforestation
5. Animal Grazing
6. Construction of dams
- 7.

### Soil conservation methods:-

- \*\* 1. Mulching
- \*\* 2. contour ploughing
3. Proper usage of chemical fertilizers
4. Afforestation



TRANSPORT & COMMUNICATION

Transport :-

1. Waterways
2. Railways
3. Roadways
4. Airways

Waterways :-

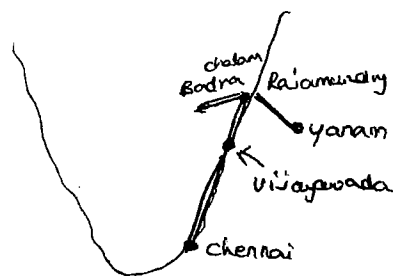
1. Inland waterway Authority of India (I.W.A.I) is established on "1986".
2. This is called Inland waterways.

National waterways (N/w) :-

1. N/w - I (Allahabad - Bhagirathi - Hoogly) Haldia. This N/w - I is called "Ganga" National <sup>water</sup> way. Longest N/w in India 1620 km.
2. N/w - II (Sadia - Dhubri)  
→ N/w - II is also called Brahmaputra National waterway
3. N/w - III (Kerala (Kollam - Kottapuram) - Udyogamandal - Champak <sup>angal</sup>)  
→ N/w - III is also called western canal waterway

\* 4. Buckingham N/w :- (310 km)

1. Vijayawada to Chennai
2. Vijayawada to Rajamundry
3. Rajamundry to Yanam
4. Rajamundry to Badrachalam



### 5. N/w - V :-

1. This is also called Brahmani National water way
2. Talcher - Dhamra (Orisha)

### 6. N/w - VI :-

1. Lakhimpur (Assam) - Bangan (Arunachal Pradesh)
2. It is also called "Barrack N/w"
3. It is on Barrack river.

### Major Sea ports in India:-

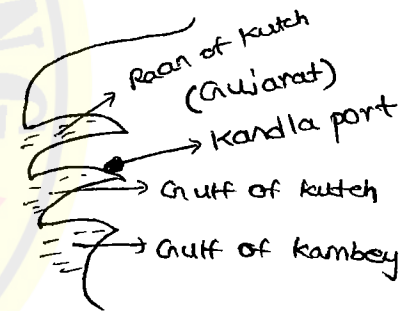
1. In India there are 13 major sea ports
2. In India there are 185 minor sea ports

### West coast Sea ports:-

#### 1. Gujarat :- (Kandla port)

1. "Kandla port" which is located in Gulf of Kutch.

2. Free trade zone port in India
3. Tidal port in India.



#### 2. Maharashtra (Mumbai Port):-

1. Largest port and Natural port in India.
2. Busiest port in India.
3. Jawahar Nehru Nava Seva (~~M.A.J.A.~~ J.L.N.P) port which is in "Mumbai".
4. (J.L.N.P) port is a Modern technological port in India.
5. In Maharashtra there are two major ports (Mumbai port, J.L.N.P)

### 3. Goa (Marma Gaou) :-

1. Iron ore has been exporting from these port to Western countries.

### 4. Karnataka (Manglore port) :-

1. First "sponge Iron plant" was setup in "Palvancha (Telangana) Khammam dist." in 1982.

### 5. Kerala (Cochin port) :-

1. A Cochin port also natural port in India.
2. Cochin port is also called "Arabian Queen".

### East Coast Sea ports :-

#### 1. Tamilnadu :-

1. In Tamilnadu there are three major sea ports.
  - a. Ennore port
  - b. Tuticorn port (Bulk fertilizers are importing)
  - c. Chennai port (Largest artificial port in India)

→ Chennai name is coming from Vijayanagara's <sup>dynasty</sup> ~~king~~ last king Damodara's father's name "Chennappa" → Chennai.

#### 2. Andhra Pradesh :- (Vishakapatnam port) :-

1. This port is also called "Dolphinnose" port.
2. Deepest port in India.
3. Iron ore is exporting from this port to "Japan".
4. Natural port.

### 3. Odisha (Paradeep port) :-

1. Iron ore is exporting from this port to Japan.

### 4. West Bengal :-

1. There are two major sea ports

\* a. Kolkata sea port (key to Eastern India)

\* b. Haldia sea port



In India only "river based port" <sup>located at</sup> "Hoogly river".

### Under construction port :-

1. Krishnapatnam port (Nellore) :-

→ First Green field sea port in India.

Vanpica → Voda revu Nizamapatnam Industrial corridor.

2. Dagara Japatnam (Nellore).

3. Changavaram (Vishakapatnam) :-

→ Asia's biggest sea port

### Road Network :-

1. First largest Road Network country U.S.A

2. Second largest Road Network country India

3. Highest Road density in world India (0.67)

4. Second highest road density USA (0.65)

5. In 1943 "Nagpur plan" first road map for Indian roads  
development

6. Central public works department (C.P.W.D) was formed according to "1956 parliament act"

7. C.P.W.D comes under "Ministry of Road and transport".
8. National Highways are controlled by "C.P.W.D".
9. National Highway authority of India was setup in "1988".
10. National Highway development programme (N.H.D.P) was started in India "1999".

### Types of Roads in India:-

1. National Highways → 2% [40% transported goods & services]
2. State Highways
3. District Roads
4. Local or panchayat or Rural roads.

### National Highways:-

1. Historical father of National Highways in India "Ashoka".
2. Modern father of National Highways in India "Sher-sha-suri".  
He established a road from "Sonargaon (Dhaka)" to "Peshawar (Pakistan)". This road is also called "Grand <sup>Trunk</sup> Road" (NH-2).
3. Indian currency father "Sher-sha-suri".
4. "Sher-sha-suri" introduced a coin "Dham" (1837) at present "Dham" changed to "Rupee".
5. P. Udai Kumar (Mumbai - IIT student) designed a Rupee symbol (₹).
6. Longest National Highway network states in India.
  - a. U.P (6770 km)
  - b. M.P
  - c. Rajasthan

7. District road network is more occupied in "Maharashtra" State
8. Largest "road" network (all roads) <sup>state</sup> in India ("Maharashtra")
9. Urban population more in Maharashtra.
10. Highest Road density ~~to~~ state in India ("Kerala").
11. Longest Fly Over bridge in India "Kanpur (U.P)" [22 km]
12. Longest River road bridge "Mahatma Gandhi Setu bridge" at "Bihar (sasaram)" in Ganga river [5.5 km]
13. Longest Road River road bridge cum Rail bridge "Rajamundry" in Godavari river (2.7 km)
14. Longest Sea Road bridge "(Bandra - worli) Maharashtra" [23 km]
15. Longest road tunnel "(chenani - nashirath) Jammu - Kashmir"  
(Or) "J.L. Nehru road tunnel".

### Prime Minister Gram Sadak Yojana (P.M.G.S.Y):-

1. To interlink all villages with main Roads.

### Major National Highway (1 to 9):-

N/H 1 :- Delhi to Amritsar

NH - 1A → Jalandhar to Uri  
 / \  
 Jammu Srinagar

NH - 2 → Delhi to Kolkata

→ It is also called Grand trunk road.

NH-3 → Agra to Mumbai

NH-4 → Mumbai (Thane (or) Dhule) to Chennai

→ It is changed a new name NH-69

NH-5 → Chennai to Kolkata

→ It is passing long distance to the coastal area

→ NH-5 is changed as a NH-16.

→ In AP longest National Highway is NH-5 (or) NH-16

NH-6 → Mumbai to Kolkata

→ This highway passes across the India or middle of India.

NH-7 → Varanasi to Kanyakumari (2369 km)

→ Longest national highway in India.

→ NH-7 changed his name to NH-44

NH-8 → Mumbai to Delhi via Ahmedabad.

NH-9 → Pune to Machilipatnam

→ NH-9 changed his name to NH-65

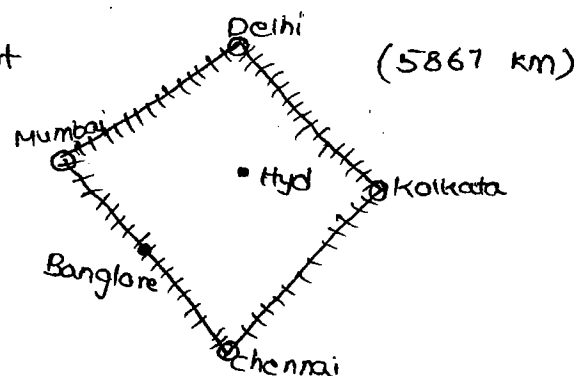
NH-15 → Kandla to Pathankot (Rajasthan)

→ It is the only NH-15 passes in desert

Golden Quadrilateral programme:-

1. Hyderabad is the only city is not connected in Golden quadrilateral programme

2. Total Golden quadrilateral length is 5867 km



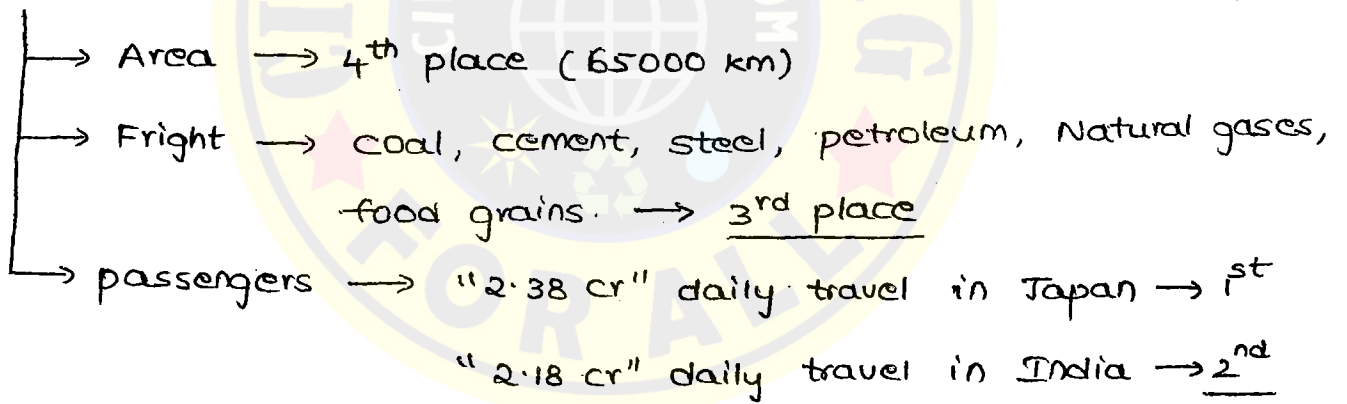
6316 km E-W sadia to porbandar

N-S Jammu to kanyakumari

### Railway Networks in India:-

1. First Railway network in India Mumbai to Thane (34 km) in 1853 April-16.
2. In south India Royyapuram to Arcott (Tamilnadu) in 1856.
3. In Andhra pradesh puttur to Renigunta in 1862.
4. Total length 65000 km on March - 31, 2014.
5. Father of <sup>Indian</sup> Railway network is Dulhousie
6. In world, Indian railways in fourth position. (route length wise) (65000 km)

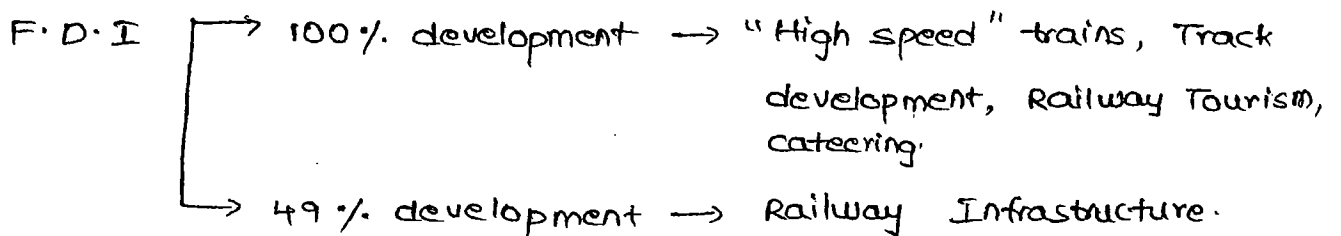
### Railway Network :-



→ world largest population city Tokyo (4 crores)

→ Fastest train in the world "Maglev" (450 km/hr) in Japan.

### Foreign Direct Investment (F.D.I) :-





China → High speed Trains

Japan → Bullet trains

→ First monorail city in India Mumbai

→ Monorail will introduced on Feb-2, 2014 (Waldia to Chembur) Mumbai.

Important trains in India:-

1. Demu
2. Memu
3. M.M.T.S
4. Duranto
5. Janasatabdhi
6. Satabdi

Demu:-

- Diesel Electrical Multiple unit.
- Rural and subarban areas it uses.

Memu:-

- Mainline Electrical Multiple unit
- It uses in urban areas.

M.M.T.S:-

- Multi Model Transport service

Satabdi:-

- It is the fastest train in India (140 km/hr)

Duranto:-

Train names:-

1. Moscow  $\xrightarrow{\text{to}}$  Vladivostok (Trans-Siberian Railway)

→ It is the <sup>world</sup> longest journey train (9257 km) (7-9 days travel)

2. Vivek Express:-

→ It is the India's longest journey train (4286 km) (82 hrs)

→ (Assam) Dibrugarh - Kanya Kumari (T.N.)

→ It is introduced on the occasion of Vivekananda 150<sup>th</sup> birthday.

→ In world it is occupy 9<sup>th</sup> place (Journey wise)

3. Himasagar (or) Jammu Tawi Express:-

→ It is the second largest journey train in India.

→ Jammu Tawi to Kanyakumari

4. Mahaparinirvan Express:-

→ To interlink all buddhist centres in India

5. Palace on wheels:-

→ First luxury train in India introduced in Rajasthan

→ After some days this express is cancelled at present this express is not on the service.

→ At present Buddha luxury express is running.

6. Life line Express:-

→ First hospital on wheels.

7. Red Ribbon Express:-

→ Indian Railways, Rajiv Gandhi Foundation, National Aids Control Organisation, UNICEF.

- It contain only 8 coaches
- Aids awareness programm train
- In India 83 lakh people visited this train.

### 8. Mathru Bhoomi Express:-

- First women Railway Minister Mamatha Banerjee.
- First women special train in India. It is established on 2009.

### Railway Gauges:-

1. Broad Gauge → 1.676 m → 70% using this gauge
2. Meter Gauge → 1 m
3. Narrow Gauge → 0.762 m
4. Special Narrow Gauge → 0.610 m

### Indias Rail Network in world Heritage list:- (UNESCO)

1. Kalka - Shimla Railway (Himachal Pradesh)
2. Darjeeling Railway network (W.B)
3. Neelagiri Railway network (T.N)
4. Chatrapathi Shivaji Terminal (Mumbai)

→ At present Railway Minister D.V. Sadananda Gouda.

→ 2014-15 <sup>Railway</sup> budjet Minister D.V. Sadananda Gouda brought Arunachal Pradesh to Meghalaya (2000 km) into main railway network.

→ Chapra (Bihar) → Lalu Prasad Yadav

→ Raic Bareilly (U.P) → Sonia Gandhi

→ Dhankhun (W.B)

} Railway factories introduced here

→ Which strain is introduced in Railway Network  
Vaishno temple.

→ Vaishno temple is interlinked with railway in J & K  
b/w Jammu to Kathra.

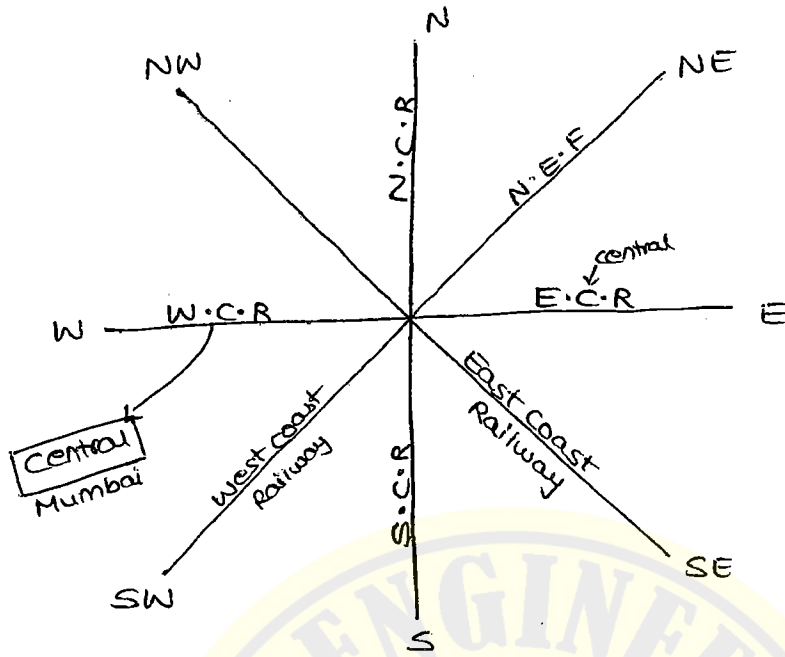
Railway Locomotives:-

1. Chittaranjan (W.B)  
→ It is famous for Railway Electrical Engines.
2. Diesel locomotives engines was manufactured in Varanasi.
3. Railway Integral coach factory Perambur (Tamilnadu)
4. Rajiv Gandhi died in Sri perambatur (Tamilnadu) on  
May 21, 1991. This day is also called Anti-Terrorism day.
5. Rail coach Factory (R.C.F) Kapurthala (punjab)
6. Railway diesel and component works Patiyala (punjab)
7. National cricket Academy → Banglore
8. National Hockey Academy → patiyala
9. World Cricket Academy → Dubai
10. Railway wheels and Axle plant → yalahanka near  
Banglore (karnataka).
11. Railway standards & Design Research Organisation Lucknow

Metro Railways:-

- Father of Metro Railways "E. Sridharan" (Delhi)
- In hyd Railway N.V.S. Reddy.
- First metro rail was introduced in India Kolkata  
1984.

→ At present in India 17 railway zones are there.



Southern Railway:-

1. First Railway zone in India (1951).
2. Chennai is Headquarter.

Northern Railway (Delhi):-

1. Largest Railway Network zone in India.

Western Railway (Mumbai):-

1. Mumbai is the Headquarter.

Eastern Railway:-

1. Kolkata is the Headquarter.

North western Railway:-

1. Jaipur (Rajasthan) is the Headquarter

SW - Railway:-

1. Bangalore is the Headquarter.

South Eastern Railway :-

1. Kolkata

North Eastern Railway :-

1. Gorakhpur (U.P)

2. Longest railway platform in Kharakpur.

North East Frontier Railway :-

→ Maligaon, Gowhathi, Assam

North Central Railway :-

→ Allahabad (U.P)

East Central Railway :-

→ Hazipur (Bihar)

West Central Railway :-

→ Jabalpur (M.P)

South Central Railway :-

→ Secunderabad

Central Railway Network :-

→ Mumbai (Maharashtra)

East Coast Railway :-

→ Bhubaneswar (Odisha)

South East Central Railway :-

→ Bilaspur (Chhattisgarh)

Kolkata Metro Railway :-

→ Kolkata.

## Airways:-

1. In 1911, Nainital to Allahabad, first Airline for Military.
2. First pilot in India J.R.D. Tata
3. First passenger flight in India 1932 Oct-8 Mumbai to Karachi.
4. First industrialist receive Bharatratna in India J.R.D. Tata.
5. Oct-8 is Air force day
6. Jan-15 is Army day
7. Dec-4 is Navy day
- \*8. Civil Aviation was nationalised <sup>in</sup> by 1953 in India.
9. R.B.I was nationalised as a govt. of India 1949
10. 1956 → L.I.C. was nationalised.
11. 1969 → 14 Banks
12. 1980 → 6 banks
13. 1973 → General Insurance Corporation (G.I.C).
14. DA F.D.I in Civil Aviation hiked from 26% to 49%.

## Black Box:-

1. Flight Data Recorder (F.D.R) (or) Cockpit voice Recorder (C.V.R) is also called Black Box.
2. Black Box in Orange color. Actually this box is made for black diodes but top of the box is Orange color.
3. Black Box is attached tail part of the aeroplane (or) Helicopter.
4. Black Box stores information upto 30 days even if its burns.
5. At present in India 19 international airports.

1. Delhi International Airport (or) Palem International Airport.  
Now we are called Indira Gandhi International Airport.  
→ Busiest International Airport in India.
2. Mumbai International Airport :-  
→ Old name Santacruz (or) Sahara International Airport  
→ At present Chhatrapati Shivaji
3. Kolkata International Airport :-  
→ Old name Dum Dum  
→ At present Subash Chandra Bose
4. Hyderabad International Airport :-  
→ First Green field International Airport  
→ At present Rajiv Gandhi International Airport.  
→ Longest Runway International Airport in India.  
→ "A 380" is carry more passengers.  
→ G.M.R - 76% investment  
→ A.A.I - 11% investment  
→ A.P - 13% investment } Airport
5. Chennai International Airport :-  
→ Meenam Bakam International Airport  
→ At present "Anna Durai" International Airport.
6. Nagpur International Airport :-  
→ Dr. B.R. Ambedkar International Airport.
7. Bangalore International Airport :-  
→ Devanahalli International Airport  
→ Green field International Airport.



## Communications :-

1. First Telegraph service Kolkata to Diamond Harbour (1851)
2. First S.T.O Lucknow to Kanpur in 1960
3. First I.S.T.O Mumbai to London in 1969
4. First mobile V.S.N.L. in Delhi (1994)
5. They mobile introduced all over the country (1995)
6. Mobile density 79.8%.

## Radio :-

1. First radio program in Mumbai 1927.
2. All India Radio 1936
3. Akasha Vani 1957

## Television :-

1. First T.V. program in Delhi 1959
2. In A.P. First T.V. program in 1976 (Hyd)
3. Colour T.V in 1982
4. First Asian games telecast in 1985.

## Postal system :-

1. Largest post offices <sup>country</sup> in the world, India
2. Second America, in post offices.
3. Department of postal system held in 1854.
4. In 1972 postal Index Number (P.I.N). Total zones in P.I.N is '9'. '9' → Army offices. '5' → Telangana, A.P, Karnataka
5. "Project Arrow" speed Network in postal Department.
- 6.

## CHAPTER-8

### ENERGY RESOURCES

1. Thermal → coal → 59%.  
gas → 8%. } 67%.
2. Hydro → 18%.
3. Renewable → 12%.
4. Nuclear → 2.86%.

Thermal:- States → 42% production  
central → 29% production  
private → 29% production

Thermal:-

1. India's Install capacity 2.18 M.W
2. N.T.P.C. starts in 1975.
3. Holding companies {
  - T.R.A.I.
  - C.I.L
  - S.A.I.L
  - G.A.I.L
  - N.T.P.C.
  - I.R.D.A
4. Under N.T.P.C. 15 super-thermal power stations are working.
5. In 1990 → S.T.P.W greater than 1000 M.W
6. In 2008 → Ultra Mega Power project (Minimum 4000 M.W)
7. Recently four U.M.P.P (4000 MW.)
  - a. Sasan → M.P → Reliance (started)
  - b. Mundra → Gujarat → Tata (to be started)
  - c. Krishnapatnam → A.P → Reliance (to be started)
  - d. Titaiah → Jarkhand → Reliance (to be started)

Important Thermal power stations in India:-

1. In India there are '111' power stations

Uttarpradesh:-

- \* 1. Dhadri thermal power station
- 2. Tundla
- \* 3. Obra
- 4. Unchahar thermal power station

Rajasthan:-

- 1. "Antha" Gas based thermal power station

Gujarat:-

- 1. Ahmadabad thermal power station
- 2. Dhuwaran thermal power station

Maharashtra:-

- \* 1. Chandrapur
- 2. Nasik
- 3. parli
- \* 4. Koradi

Jharkhand:-

- \* 1. Chandrapura thermal power station

Karnataka:-

- \* 1. kalinadi hydro power station

Andhra pradesh:-

- 1. Vijjeshwaram

→ First Gas based thermal power station in India (Rajamundry)  
vijjeshwaram

2. Narla Tatarao Thermal power station.

→ This is changed to Vijayawada thermal power station.

3. Simhadri thermal power station

4. Nellore thermal power station

↓  
Mica is famous

Tamilnadu:-

1. Mettur
2. Ennore
3. Chennai

Kerala:-

1. Koyyapuram thermal power station.

Chattisgarh:-

1. Korba

Madhya Pradesh:-

1. Singrauli thermal

West Bengal:-

1. Murshidabad
2. Titagarh

Bihar:-

1. Kahal Gaon thermal power station

Assam:-

1. Gowhathi
2. Namrup

Delhi:-

1. Indraprastha  
↓  
Old name of Delhi



## Odisha:-

1. Talcher

## Telangana:-

1. Ramagundam
2. Kothagudam

→ Important pollutants from Thermal power stations

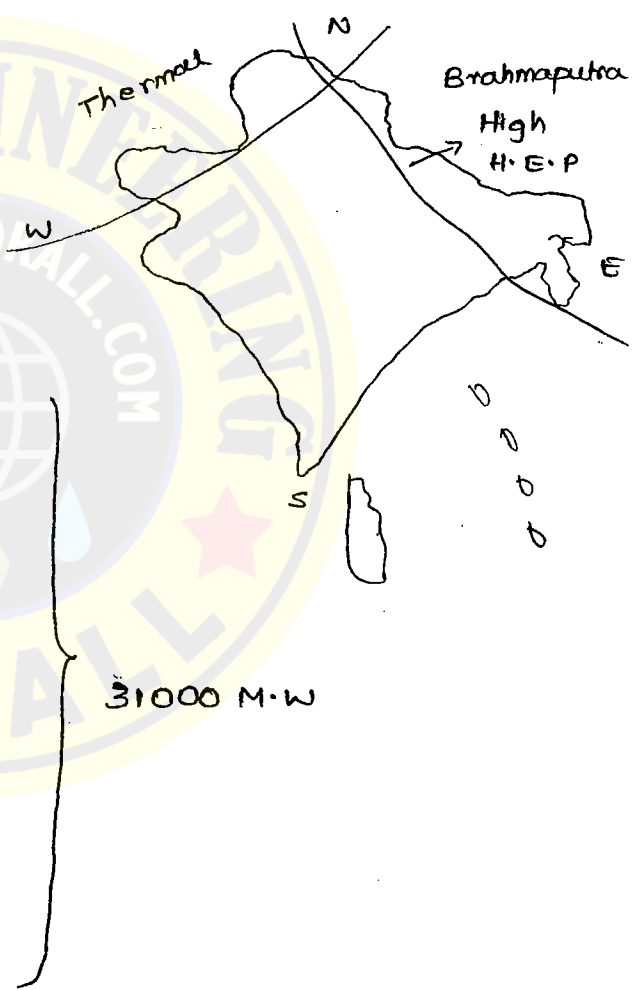
ex.  $CO_2$ ,  $NO_2$ ,  $SO_2$ , Fly ash.

Hydro Electric power:- (18%)

1. Brahmaputra River producing more Hydro Electric power.

Renewable:- (17%) → (31000 M.W)

1. solar
2. Tidal
3. wave
4. Geothermal
- \* 5. wind → (21000 M.W)
6. Biomass
7. Ocean thermal Energy conversion
8. Hydrogen



→ wind is the major source of energy out of all these.

Solar power:-

1. Solar power is costly
2. Solar photo voltaic cells (S.P.V.C) are going to convert Direct sun rays into Direct current.

- U.S.A. is the largest solar power country in the world
- California, Nevada is the largest solar power stations.
- In India, first solar power plant was established at Kalyanpur (U.P).

6. In Gujarat  $\left\{ \begin{array}{l} \text{Bhui} \\ \text{Mandvi} \end{array} \right.$

7. In Bhuj there is one pond, that pond is the largest solar pond.

8. Mandvi is the Asia's largest solar power plant.

9. In Andhra Pradesh, Ananthapur is developed for solar power

10. In India, Choglaigar (J&K) is the first solar village in India.

11. First solar city in India, Anand Sahib (Punjab).

12. Last Saturday of the end of March is Earth hour (8:30 - 9:30 PM). To stop one hour non-essential lights.

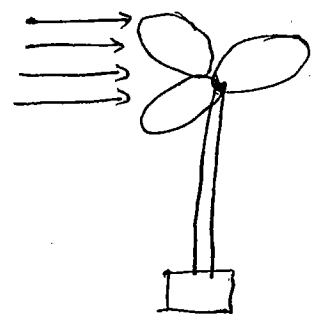
13. ~~Mar~~ March - 27, 2007 Sydney (Australia) started first Earth hour. (to save the power)

14. In 2014, last Saturday comes on March - 28.

15. Biggest solar based cooker installed recently at Shiridi (Maharashtra). Second Tirupathi (A.P).

Wind:-

- Low expensive power.
- Friendly Eco-power.
- Fourth largest wind power produced India in world.



4. Tamilnadu produced more wind power (7100 M.w)
5. In Tamilnadu (Kayatha) produced more wind power
6. Kayatha, Muppandal (Tamilnadu) (7100 M.w)
7. Madurai - Nagarcoil wind cluster.
8. Gujarat (Mandouli) is famous for wind power
9. IN A.P (Anantapur, Tirumala) is famous for wind power
10. Karnataka (Jogimetta) famous for wind power.
11. South India is first in produced wind power in India.

#### Tidal:-

1. Russia is the world first to produce tidal power
2. In India, Gujarat (Gulf of Katch) is famous for tidal power.  
 ↓  
 major (India)
3. Sudarban (W.B) and Andaman Nicobar Islands is famous for Tidal energy.
4. Tidal power destroy coastal Habitat (vegetation).

#### Wave power:-

1. Vilinzam (or) Viliyam near Thiruvananthapuram (Kerala) is the only wave plant in India.

#### Biomass Energy:-

1. Biomass consists of 60% methane and 40% CO<sub>2</sub>.
2. U.P & Gujarat is encourage Biomass energy

#### Geo thermal:-

1. In Jammu Kashmir (Phugavally) <sup>Ladakh,</sup> is famous for Geo thermal
2. Himachal Pradesh (Manikaran),
3. Chattisgarh (Baster).

## Ocean thermal energy conservation<sup>sion</sup>:-

1. With American support, we setup O.T.E.C. plant established on Tuticorin (Tamilnadu).
2. U.S.A is first.

## Hydrogen power:-

1. Hydrogen is the largest element in the universe
2. France, Germany, India etc created<sup>ing</sup> a one aeroplane without using any petrol or diesel it runs. It based on Hydrogen and oxygen.

## Nuclear Energy (2.86%):- (4780 M.W)

1. In India 4780 M.W Nuclear Energy produced.
2. Raw material  $\rightarrow$  Uranium.
3. In world reserves, Uranium reserves is only 1% in India.
4. 10<sup>(9+1 Australia)</sup> countries produced Uranium to India, then India Nuclear Energy is 2.86%. (4780 M.W).
5. Australia having highest Uranium Reserves.
6. Mithivirdhi, (Gujarat), Haripur (W.B), Jaitpur (Maharashtra) kouvada (Andhra Pradesh), Kudankulam (Tamilnadu) those are Nuclear power stations.
7. Kudankulam (Tamilnadu)<sup>(960 M.W)</sup> started. (Nuclear power station, remaining 4 are not started).
8. The largest Nuclear company in France (Areva).
9. In Maharashtra,  $\nabla$  Tarapur Atomic power station (T.A.P.S)  
 $\rightarrow$  First Nuclear power station in India (T.A.P.S)  
 $\rightarrow$  Canada is the largest Uranium producer in the world.



10. Rawat Bhata Atomic power station (R.A.P.S) (Rajasthan)

11. In Gujarat, Kakrapar Atomic power station (K.A.P.S)

\* 12. In U.P., Narora Atomic power station (N.A.P.S)

→ Agro based power station.

→ power supplied to Agriculture sector only. (N.A.P.S).

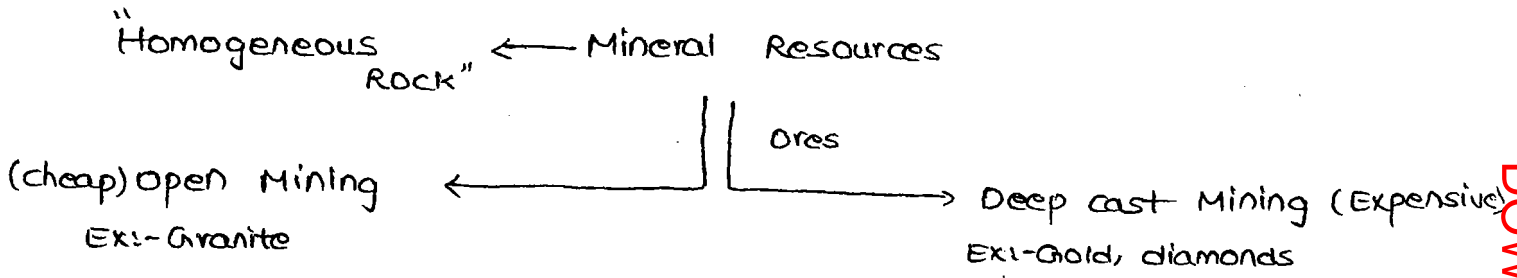
13. In Karnataka, Kaiga Atomic power project (K.A.P.P)

14. Indira Gandhi Atomic power station, near Kalpakam  
(I.G.A.P.S)

Tamilnadu.

# CHAPTER - 7

## MINERAL RESOURCES OF INDIA



→ Mineral is a Homogeneous Rock. Obtained from Ores.

→ At present in India, more than 4000 mines are there

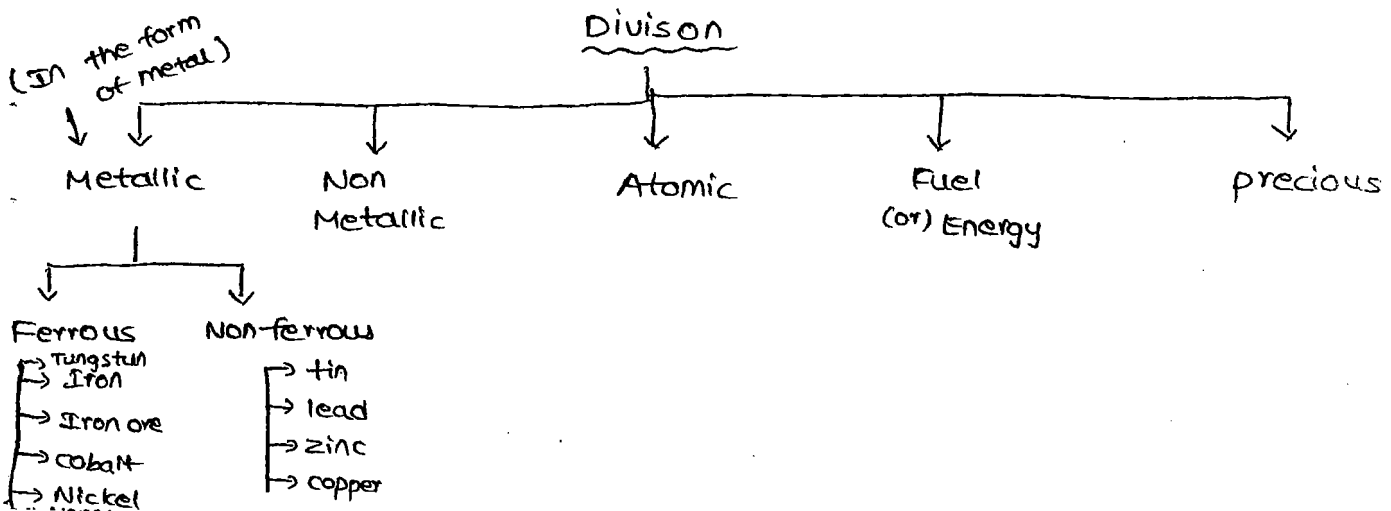
→ Chotanagpur plateau is the "Rhur" (Germany) of India.  
↓  
famous for Minerals

→ In India Jharkhand is the largest mineral wealth state in India.

Division of Minerals:-

1. Geological Survey of India → Kolkata
2. National Geographical Research Institute → Hyderabad
3. National Geographical Coal India Limited →
4. Survey of India → Hyderabad. → Topographical

\*\* → For printing a Map, take a permission on Survey of India (Topographical).



### Non metallic :-

→ Not in the form of metal

1. Lime stone
2. Sand stone
3. Dolomite
4. Gypsum
5. Granite

### Atomic :-

1. Uranium
2. Thorium
3. Monazite
4. Iluminite

### Fuel (or) Energy :-

1. coal
2. Natural gas
3. Petroleum

### precious :-

1. Silver
2. Diamonds
3. Gold
4. platinum

### Iron Ore :-

1. China is the largest producer in world (30% Export)

### Types of Iron Ore :-

1. Magnetite
2. Haematite
3. Leonite
4. siderite



2. Haematite is more in India.

3. Magnetite is more in china

4. India 4<sup>th</sup> place in world

5. china — 1<sup>st</sup>

U.S.A. — 2<sup>nd</sup>

Australia — 3<sup>rd</sup>

India — 4<sup>th</sup>

Brazil — 5<sup>th</sup>

6. In India, karnataka produce more Iron ore in India  
Jharkhand, more Iron Reserves in India.

7. Distribution of Iron ore in India:-

Jharkhand:-

1. Singhbhum

2. Hazaribhagh

All of these famous for  
Iron Ore.

Karnataka:-

1. Bellary

\* 2. Kudremukh

\* 3. Kemmangundi

4. Hassan

Odisha:-

1. Talcher

2. Mayurbhanj

3. Keonjhar

Telangana:-

1. Khammam

2. Adilabad

Chattisgarh :-

1. Durg (Dallihara)



Bhilai steel → Raza

2. Bastar

Maharashtra :-

1. Satara

2. Ratnagiri

Manganese :-

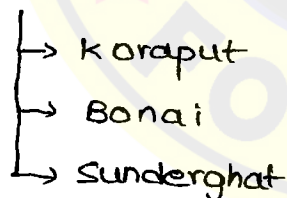
1. To make 1 ton of Iron (or) steel to use 10 kg of manganese

2. To making Bleaching powder, pesticides manganese is used.

3. South Africa produced more in world

4. Zimbabwe, 2<sup>nd</sup> Manganese Reserves is more in world.

5. In India, Odisha produce more Manganese



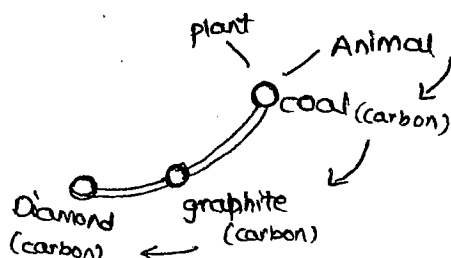
6. In A.P, (Srikakulam, Vijayanagaram) Manganese is more.

7. In Karnataka, (Shimoga, Coorg, Chickmanglore)

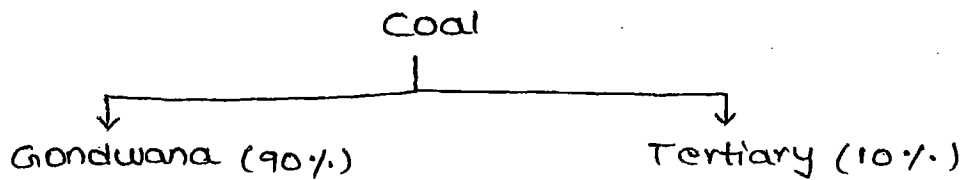
8. In M.P, (Bhalghat, Chindwara).

Coal :-

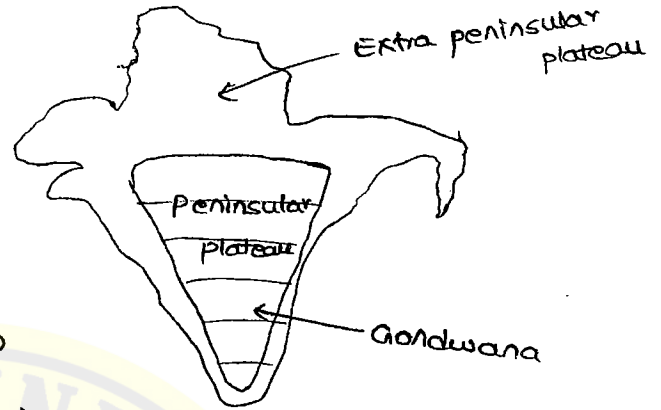
1. It form in "carboniferous" paleozoic era



## Geological Formation



1. Gondwana coal are available at peninsular plateau.



Types of coal:-

1. Anthrasite - 80% above carbon
2. Bituminous - (60-80% of carbon)
3. Lignite - (40-60%) of carbon
4. peat - below 40%.

- Best quality of coal is Anthrasite
- cheap quality of coal is peat
- Brown coal is Lignite
- Tamilnadu is the largest producer of Lignite
- Jharkhand (Jharia) <sup>first</sup> produce largest coal producer in India
- "Jharia Mine" is the <sup>first</sup> largest coal mine in India.
- In W.B (Raniganj) coal mine is the second largest mine in India.
- China is the world largest coal producer
- Telangana, [singareni, kothagudem, Adilabad]
- In telangana, "Illandu" (1871) first coal producer in South India.
- In South India largest coal producer is Telangana

<sup>2M</sup>  
\*\* Petroleum:- (fossil fuel)

1. petroleum units is Barrels                      water units = gallons

1 Barrels = 156 lit

2. In India daily 32 lakh Barrel petroleum is used. we produce only 9 lakh Barrel. we import 23 Lakh Barrel. of petrol.

\*\* 3. Bulk Import Of India is petroleum.

4. petra → Rock → Mineral

oleum → oil → oil

5. petroleum is available in Onshore (25%) and Offshore (75%)

Onshore petroleum:-

1. ONGC is established on 1956.

2. Oldest Oil well in India Digboi

3. First oil well in India Makum (Assam). But it closed in 6 months, present not working.

4. Assam is a Onshore producer

5. ONGC place one pipe on <sup>beach</sup> ~~sea~~. In that pipe first available

1. Natural gas - 300-400 kg/m<sup>3</sup>

2. petroleum - 600-700 kg/m<sup>3</sup>

3. water - 1000 kg/m<sup>3</sup>



6. Oil well names in Rajasthan

M → Mangala

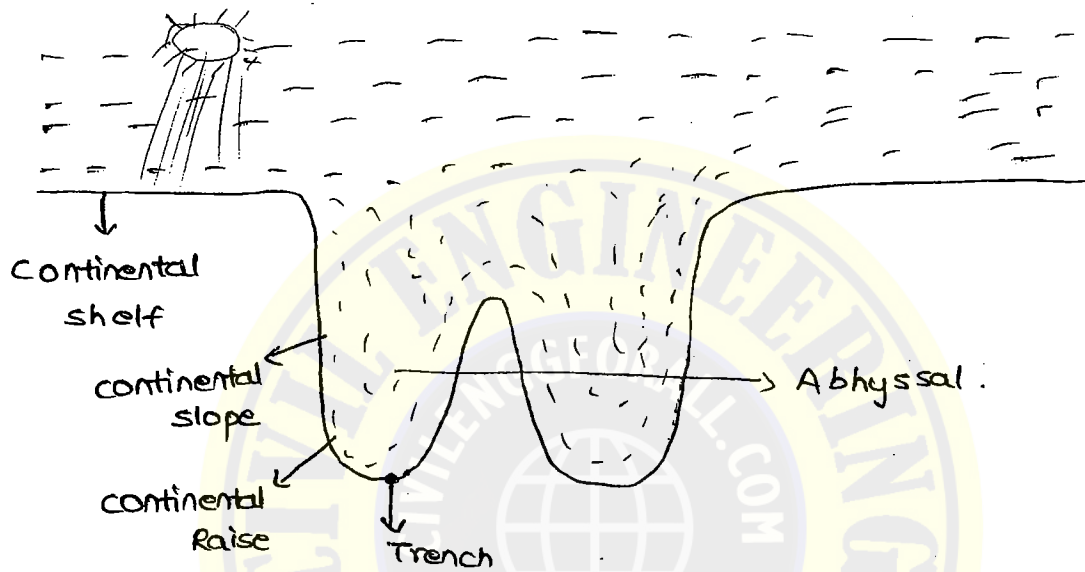
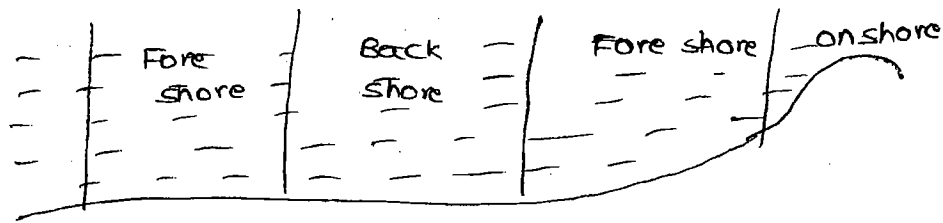
A → Aishwarya

R → Ragini

S → Saraswati

7. Onshore, petroleum is available at sedimentary rocks.

### Offshore petroleum:-



### Continental shelf:-

1. 90% marine population is available in this part.
2. Sunrise easily penetrate into this part.
3. Depth of the ocean measured by Fathom. (unit)  
1 Fathom = 6 feet.

\*

### Continental slope:-

1. Few minerals are available like Andesite, Rhyolite

### Continental Raise:-

1. petroleum and Natural gas is available at continental Raise (Offshore).



## Trench :-

1. Mariyan Trench (11033 m) is the deepest part in South Pacific Ocean (Phillippines)
2. James Cameron (individual person) went to Mariyan Trench.

## Abhyssal :-

1. It is a dark area
2. COD FISH liver which consists of more Vitamin-A.
3. It lives in dark area where sunrise does not exist.

## Distribution of Offshore :-

1. "Sagar samrat" 1975, a drilling ship is used for petroleum
2. In Gujarat, Ankleshwar, Khalol, Lunej, Aliabhat } west part Offshore oil fields
3. In Maharashtra, Mumbai high, Kalaba }
4. D6 Block (Reliance) } (Andhra Pradesh)  
Ravva } East part Offshore oil fields.  
Nariman }

5. Gujarat petroleum corporation Limited is the

## Petroleum Refineries in India :-

1. Koyali Oil Refinery (Gujarat) :-

→ Largest public sector oil Refinery in India

2. Jam nagar (Gujarat) :-

→ Largest Oil refinery in Asia. But it is under Reliance. It is private sector.

3. U.P (Mathura) :-

→ second largest public sector oil refinery in India.

4. Bina Oil refinery - M.P

Bhatinda - Punjab

panipat - Haryana

Tatipaka - Andhra pradesh

5. Digboi

Numalgiri

Nahar - khatiya

} Assam  
Oil refinery.

\*\* 6. Manglore (karnataka) Oil refinery is a joint venture  
(Out of 22 only 1 public private refinery joint venture)

Natural Gas :-

1. Natural gas consists of 80% Methane, 10% Ethane, 10% different Hydro carbons.

2. World largest producer Russia.

3. In India, Gujarat is the largest producer.

4. T.A.P.I. is a gas pipeline

T → Turkuministan

A → Afghanistan

P → Pakistan

I → India

5. In India H.B.T. gas pipe line. It is a longest pipeline in India. It is a 1750 km.

H → Hazera (Gujarat)

B → Bijapur (M.P)

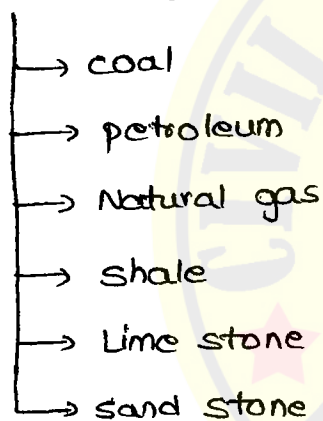
T → Jagadishwar (U.P)

6. L.P.G → Liquid petroleum Gas. It consists of Butane and propane. It is a 14.2 kg. (Domestic cylinder).

\* Shale Gas :- (Natural gas) :-

1. Shale gas available in sedimentary rock.

Sedimentary Rock (75% occupy on earth)



2. Shale gas first introduced America in 2000. ~~Total~~

1% production in 2000 (out of 100%).

20% production in 2014 (out of 100%).

3. A shale gas is available at shale sedimentary Rock.

4. In India plenty of shale deposits are there.

→ A.P, Telangana, Jharkhand, Bihar.

Silver  
zinc  
Lead  
Tin  
Asbestos  
Gypsum

} largest producer in India  
"Rajasthan"

Bauxite:-

1. It is a Ore of Alluminium
2. Odisha is a largest producer in India.

Odisha {  
→ Mayurbhanj  
→ Bhubaneswar  
→ Koraput } famous for Bauxite

3. A.P, (Vishakapatnam, E.G) is famous for Bauxite Reserves
4. In Jharkhand, (Ranchi, Palamou) famous for Bauxite Reserves.
5. In M.P (Amarkantak, Chhindwara) famous for Bauxite Reserves.

Mica:-

1. World largest producer India.
2. First Jharkhand, Second A.P (Nellore, Gudur, Kavali)

Barytes:-

1. A.P is the largest producer in India.  
↓  
Mangampeta (Kadapa).

Limestone:-

1. M.P is the largest producer in India.

→ Barytes and Limestone is used in cement industry.

Graphite  
Nickel  
Tungsten  
Dolomite  
Bauxite  
Manganese

"Odisha" is the largest producer in India.

Uranium:-

1. It is available in the form of  $U^{238}$  (Natural Uranium).
2. It has fissile (explosive) material (0.7%). This 0.7% of explosive materials is "Enriched (fitter)" and form  $U^{235}$ .
3.  $U^{235}$  is used in Atomic Bomb, Nuclear Reactor.
4. Canada is the world first largest producer in world. Kazakhstan is the second largest producer in world.
5. Australia is the first largest Uranium Reserves in world.
6. Uranium agreement is done with 10 countries (9+1<sup>Australia</sup>)
7. So far India concluded Uranium agreement with 10 countries. Last country is Australia
8. In India Uranium Reserves are only 1%.
9. In India, <sup>India</sup> Jharkhand is the leading producer  
↓  
"Jhaduguda mines"
10. Jhaduguda mines (Jharkhand) Largest uranium mines in India

11. Uranium Corporation of India Limited (U.C.I.L)

12. Department of Atomic Energy (D.A.E).

\* Andhra Pradesh :-

→ Asia's largest Uranium belt ((Thummala palle (pulivendla) to kurnool))

Telangana :-

→ In telangana (Nalgonda) having a uranium Reserves.

13. In Rajasthan (Udaipur, <sup>city of lakes</sup> zavar mines) famous for Uranium

14. In U.P (shaharanpur) is famous for Uranium.

Thorium :-

1. It is also one Atomic mineral

2. World 30% Thorium Reserves in India. World largest producer India, second Srilanka.

3. In India, kerala is the largest producer

4. Monozite is also called Thorium.

Gold :-

1. South Africa is the world largest producer

2. China is used first place } using  
India in second place }

3. Gold Reserves in India {  
karnataka → kolar  
                  → Hassan  
                  → Hulti  
kerala  
Andhra Pradesh → Ramagiri (Anandapur)  
Bihar

## Diamonds :-

1. South Africa is the world largest producer

2. In India A.P → Vairakur (Anantapur)

M.P → Panna mines

Bihar

# \*\*\* CHAPTER - 10

## POPULATION

→ Study of population is called "Demography".

Factors of Demography:-

1. Irrigation
2. Soil
3. Fertile
4. plain
5. plateaus
6. Socio - economics
  - a. literature
  - b. poverty

→ B.N. Guha divided Indian population into 6 types:-

1. Negritoids
2. Meditarreans
3. Astriloids
4. Mongoloids
5. Aryans
6. Western Brachy siphills

Negritoids :-

1. Negritoids in India are Oldest race (population)
2. Negros in Africa
3. Andaman Nicobar Islands 

{	Onges Jarawas Shom phens Seintiens	}	"Oldest" people in India.
---	---	---	------------------------------



## Meditarrians :-

→ <sup>First</sup> Largest population (or) race in India.

→ In India there are two types

### True Meditarrians

1. Haryana
  2. Punjab
  3. Chandigarh
- } These people are True Meditarrians

### paleo Meditarrians

1. Dravidian states
  - a. Telangana
  - b. Andhra pradesh
  - c. Karnataka
  - d. Tamilnadu
  - e. Kerala.

→ In India <sup>classical</sup> (or) <sup>Oldest</sup> language is "Tamil"

### Classical languages :-

1. First classical language Tamil. (2004)
2. Second classical language Sanskrit (2005)
3. <sup>Third</sup> ~~Telugu~~ classical language Telugu, ~~kanada~~ } (2008).
4. Fourth classical language Kanada

→ "Telugu" is the Italian of the East

5. Fifth classical language Malayalam (2013)
6. Sixth classical language Odiya (2014, Feb-22). This is the latest classical language is to be added.

### Australoids:-

1. Australoids started first Agriculture in India (7000 B.C).
2. They are in central India (M.P, Chattisgarh)

### Mongoloids:-

1. Last race (people) come to India.
2. Presently they are existing in North Eastern states.  
→ Assam, Meghalaya, Mizoram

### Aryans:-

1. Second largest population in India.
2. They are existing in North and North west part of India.

### Historical background of population:-

1. Indus civilization (or) Harappa civilization (BC 2700)  
→ First civilization in India.  
→ It is a Urban civilization  
→ Harappa (30,000 people) and Mohenjhadaro (40,000 people)  
→ Our civilization is different to world.

Urban → Rural.

Other countries, Rural → Urban.

2. Vedic civilization :- (Aryans).

→ Rig veda (caste population)

1. Brahmanas
2. Kshatriyas
3. Vishyas
4. Sudras

### 3. Mauryas Civilization :-

- Arthashastra book written by Kautilya and Chanakya
- This book teaches socio-economic conditions

### 4. Cholas Civilization :- (Inscription) :-

- "Uttaramerur" (Tamilnadu) - Historical father of social govt.
- It deals village population, election system, village administration, panchayat, Municipal.

### 5. Delhi Sultan Civilization :-

- Alla-ud-din - Khilji
- Roaster system introduced Alla-ud-din - Khilji
- "Siri fort" built by Alla-ud-din - Khilji

### 6. Mughals Civilization :-

- Famous king Akbar.
- "Akbar - Namah" written by "Abul Fazal". It tells Religion population.

### 7. 1872 - Lord Mayo :- (First census population taken)

- The only viceroy "Lord Mayo" died in India
- The only social reformer died in <sup>outside</sup> India Ram Mohan Roy
- The only PM Udied in outside India L.B. Sastri

### 8. 1881 - Lord Rippon :-

- Father of local self government.
- First Industries act (1881) brought by Lord Rippon.

→ 1872 (1)	1911 (5)	1951 (9)	1991 (13)	} census population
1881 (2)	1921 (6)	1961 (10)	2001 (14)	
1891 (3)	1931 (7)	1971 (11)	2011 (15)	
1901 (4)	1941 (8)	1981 (12)	2021 (16)	

→ After getting Independence seven times taken census population in India.

Stages of population:-

1. 1872 - 1921 ——— [D/R - More Negative population growth rate  
B/R - less]
2. 1921 - 1951 ——— [Great dividing year (1921). The population still go on increasing]
3. 1951 - 1981 ——— [Rapid growth of population]
4. 1981 - 2014 ——— [population increasing, but population growth rate decreasing]

→ Alexander Flemming is a God to invent penicillin. It is a wonder drug (1927).

→ 1952, First family planning country in the world, India.

scenario present in Indian population:-

1.97% growth rate → 2001 → 102.87 crores

1.64% growth rate → 2011 → 121.01 crores

→ Mokshagundam Vishwerao <sup>first posted</sup> ~~born~~ in Khadakvasala (Pune, MH)

→ Mokshagundam Vishwerao's brain kept on Brain centre (Mysore)

2011:-

→ population census comes under "centrelist"

→ census comes under Ministry of Home and Affairs.

→ census comes in Article-246.

→ In 2011, 15<sup>th</sup> population census conducted on that time Home secreteriate R.K. Pillai. Head "Dr. Chandramouli"

→ Data:-

1. In India having 640 districts in 2011. they conducted census.

- Tahsils - 5924
  - cities - 7936
  - villages - 6.41 lakh
- } population census conducted

→ population census conducted on 16 languages.

→ Official languages are 22.

Slogan :- [2011 population census]

Our future Our census

Mascot :-

A Lady Enumerator.

Logo :-

"R.P. Rath" is a govt. employee on census department given a logo.



→ Housing List is introduced recently in population census

2011 population :-

→ Total population in India 121.01 crores (or) 1.21 billions

121 crores

- (Male) 62.37 cr (51.54 %)
- (female) 58.64 cr (48.46 %)

→ women population is nearer 50% in India.

Local bodies

- panchayat 243(D)
- Municipalities 243(T)

} 33.33% reservation for women

→ 33.33% to 50% reservation increases in first Bihar, M.P

→ IN 2013, united Andhra pradesh also increases 33.33% to 50%.

	Decadal (10 yrs)	Annual (every year)
2001 → 102.87 cr →	23.54%	1.97%
2011 → 121.01 cr →	17.64%	1.64%

population increases growth rate decreases.

China:-

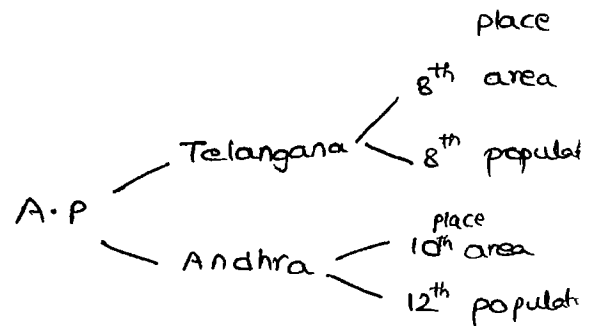
- In 1976 china gives a slogan "One or None"
- China population growth rate is 0.4%.
- India crosses chinese population till 2045.

Country	Growth Rate (%)
China	19.4%
India	17.5%
U.S.A	4.5%
Indonesia	3.4%
Brazil	2.8%
Pakistan	2.7%
Bangladesh	2.4%
Nigeria	2.3%
Russia	2.0%
Japan	1.9%

world wide population %.

In India population:-

- U.P — 16.49% (19.95 cr)
- M.H — 9
- Bihar
- W.B
- ~~A.P (2011)~~ but today is not in that rank.
- M.P
- Tamilnadu



## In India Area wise:-

1. Rajasthan
2. M.P
3. Maharashtra
4. U.P (In 2011, 4<sup>th</sup> place is A.P but in 2014 bifurcation U.P ~~will~~ come to this place)

## World Area wise:-

1. Russia
2. Canada
3. China
4. U.S.A
5. Brazil
6. Australia
7. India (2.4%)
- \* 8. Argentina.

<u>Area</u>	<u>population</u>	} Smallest country in world.
1. Vatican city (1000 person)	1. vatican city	
2. Monaco	2. Tuvalu	
3. Nauru	3. Nauru	

→ Smallest railway line in world (vatican city 0.5 km)

## India:-

<u>Area</u>	<u>population</u>	} smallest state in India.
1. Goa	1. sikkim	
2. Sikkim	2. Mizoram	

Population growth rate:-

1. Meghalaya (27.82%) → Highest population growth rate <sup>state</sup>
2. Dadra Nagar Haveli (U/T) (55.5%) → Highest population growth rate.

Least population growth rate:-

- Nagaland (-0.47%) in 2011 (~~High~~ Least population growth rate)
- In India only one state which goes "Negative growth rate population".
- In 2001 Highest growth rate "Nagaland"
- Least population <sup>growth rate</sup> U/T Andaman Nicobar Islands.
- Highest population U/T Delhi
- \*\* → Least population U/T Lakshadweep.

child population (0-6 yrs):-

2001 → 15.90% population in India

2011 → 13.12% population in India

- In ~~sa~~ world, India (25-30%) infant death.
- Largest child population states in India (U.P, Bihar).
- In Indian population census highest growth rate year is "1971"

\* 1971 → 2.24%

1981 → 2.22%

2001 → 1.97%

2011 → 1.64%



→ In India,

1951 → 36.1 crores

2001 → 102.87 crores

2011 → 121.01 crores

Metropolitan cities (above 10 lakhs people) :-

1. Greater Mumbai

2. National Capital Territory of Delhi (NCT of Delhi)

3. Kolkata

4. Chennai

5. Bangalore

2001 → 35 cities } Above  
2011 → 53 cities } 10 lakhs  
people.

6. Hyderabad

7. Ahmedabad

8. Pune

→ Highest Metropolitan City in India U.P (6 cities).

India :-

(cities)  
Urban population

(villages)  
Rural population

2001 → 28% ↓

72% ↓

2011 → 31.16% ↓

68.84% ↓

Urban :-

Municipalities, Municipal Corporation, Nagar Palika, Cantonment board, Township

Qualification :-

→ Conversion of Rural to Urban.

1. 5000<sup>above</sup> population

2. 400 person / km<sup>2</sup> (density)

3. 75% Male population involved in Non-agricultural activities

First % wise Urbanization:-

- Highest Urbanization state in India, Goa (62.7%)
  - Second Highest Urbanization state in India, Mizoram (51%)
  - Third Tamilnadu. In South India Tamilnadu is highest Urbanization state.
- population wise Urbanization:-

1. Maharashtra → 50.8 millions
2. U.P

Highest Rural population:-

1. % wise Himachal Pradesh
2. population wise U.P.

SEX RATIO:-

Every 1000 male = ? female

China — 926

Pak — 943

Bangladesh — 978

Russia — 1167

India — 940

→ world highest sex ratio country Russia

In India sex ratio:-

1901 — 972

1991 — 927

2001 — 933

2011 — 940

India:-

population → Increases

Old population → Increased

P.G.R → Decreased

Male-female gap → Decreased (good sign)

Female population → Increased

Child population → Decreased

Adult sex ratio → Increased

child sex ratio → Decreased

Highest sex ratio in India:-

Kerala — 1084

Tamilnadu — 995

U/Andhra Pradesh — 992

\*\* Chattisgarh — 991

Least sex ratio states in India:-

1. Haryana — 877

2. J & K — 883

3. Punjab — 893

Highest U/T sex ratio in India:-

1. pudhechery — 1038

2.

Least U/T sex ratio in India:-

1. Daman & Diu — 618.

Highest Districts sex ratio in India:-

1. Almora (Uttara khand) — 1176

2. Yanam (pudhechery) — 1142

Child sex ratio:- (0-6 yrs)

2001 → 927

2011 → 914

- Meghalaya (Tribal state) is the highest child sex ratio 971
- Haryana is the least child sex ratio 830
- second punjab is the least child sex ratio 846.
- Japan is having <sup>highest</sup> Old sex ratio.

Literacy in India:-

India	UNO
1. 7 years above	1. 14 years
2. National languages should speak, write and understand.	2. National languages

1951 → 18.25%  
1991 → 52.25%  
2001 → 65.35%  
2011 → 74.04% } literacy rate

2001   
 (Male) 75.26%  
 (Female) 53.67% } 25% literacy rate

2011   
 Male 82.14 (%)  
 65.46% } 17% literacy rate

## States literacy rate:-

1. Kerala — 93.91%. (94%) (Highest literacy rate)
2. Bihar — 63.84%. (64%) (Least literacy rate)
3. Mizoram — 91.58%. (Second highest literacy rate)

→ Highest tribal people living in Mizoram.

4. Tripura — Third highest literacy rate.

→ Manik Sarkar, Tripura CM (1998 Mar-11 to still continued).

He is the poorest CM in the world.

## Union territory:-

1. Lakshadweep — 92.28%. (Highest U/T literacy rate.)

↓  
95% muslims there

2. Dadra Nagar Haveli — 75.51%. (Least U/T literacy rate.)

## Highest literacy districts:-

2011 census

1. Sarchief — 98.76%.
2. IZwal — 98.50%.

## Urban and Rural population:-

### Population density:-

1. Bihar is the highest population density in India

2011 → 382 sq. km → Bihar — 1102

2001 → 324 sq. km → W.B — 1034

### U/T:-

1. First highest population density U/T in India is Delhi

11252 sq. km NCT of Delhi

2. Chandigarh — 9252 sq. km (second place)

3. Least Andaman Nicobar — 46 sq. km

## Religious population:-

1. Hindus — 80.5%.
2. Muslims — 13.6%.
3. Christians — 2.4%.
4. Sikhs — 1.9%.
5. Buddhist — 1.0%.
6. Jains — 0.4%.
7. Parsis

## Hindus:-

1. Ambedkar says Hinduism means not only Hindu but also Buddhism, Jainism, Sikkism.
2. Hinduism is the oldest religion in the world.
3. Founder less religion.
4. Hinduism starts BC 2700

Civilization — It doesn't change. (Taratarala anavayithi)

Culture — generation to generation it change (present culture)

5. Largest Hindu temple in the world "Angkorvat temple" in Cambodia. "Lord Vishnu" temple is located here.
6. Largest Hindu population state (%) — Himachal Pradesh  
population wise — U.P

## Muslims:-

1. "SACHAR committee" appointed for Muslims Socio-Economic
2. Muslim population in terms of % — Jammu Kashmir  
in terms of population — U.P, Assam
3. The only state in India highest reservation state Tamilnadu (69%)

## Christians:-

1. St. Thomas, he is the first christian to come to India in the period of Gondophorous king's period.
2. Nagaland mother tongue is English  
% wise christians — Nagaland  
population wise — Kerala

## Buddhism:-

### Sikhs:-

1. World latest religion Sikhism. (1469 A.D)
2. The founder of sikhism is Guru Nanak. He is born in Talwandi village (Pakistan).
3. % and population wise punjab.

### Buddhism:-

1. 

Buddism

  - vihara → Tawang (Arunachal pradesh) → largest buddhist vihara
  - chaitya (worship place) → Karlay (Maharashtra) → largest buddhist chaitya.
2. % — sikkim  
population — Maharashtra.
3. Ambedkar religion is Buddhism. He died with Buddhist religion.
4. "Modern Manu" is Ambedkar B.R.
5. First law minister is B.R. Ambedkar
6. He is the Only Buddhist leader in India (Dr. B.R. Ambedkar)

## Jainism:-

1. population wise — Maharashtra. parsis also <sup>more</sup> in Maharashtra  
%. wise — Rajasthan

S.C.  
(16.2%)

% → punjab

population → U.P

S.T's  
(8.4%)

% → Mizoram

population → M.P.

## Tribal population in India:-

### 1. Gonds :- (1 crore people)

- Largest tribal population in India. Present existing in central India.
- Gonds are located in Telangana (Adilabad).
- "Lord Hardinge" abolished a Gonds crime.

### 2. Santhals :-

- Second largest tribal population in India.
- Santhals apprised during the Duhousie period.

→

### 3. Angamies → Assam

### 4. Abhors → N-E states

### 5. Kukis → Manipur

### 6. Lepchas → Sikkim

### 7. Khonds → Odisha

### 8. Kols → M.P

### 9. Bhils → M.P

### 10. Todas → Neelagiri Hills (Tamilnadu)



11. Mundas → Jharkhand

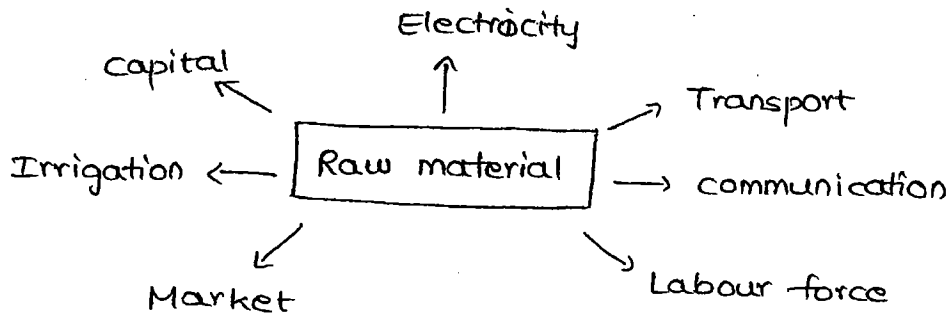
12. Bakkarwal's → J & K

13. Gujjara's → J & K, H.P., Rajasthan.

## CHAPTER - 9

### INDUSTRIES IN INDIA

→ "Raw material" is main essential for Industry.



→ Oldest Industries in India are Textiles and Iron Industry.

1757	}	East India company ruled India
1857		
1947	}	British parliament ruled.

Textile Industry:-

1. Oldest Industry in India. Largest Agro based Industry in India.
2. Cotton, Jute, woolen, silk comes under Textile Industry

Cotton Industry:-

1. First old textile Industry in India
2. First cotton mill, 1818 Fort gluster (Calcutta)
3. First modern cotton mill, 1854 (Mumbai).
4. Cotton industries are more concentrated in Tamilnadu, Maharashtra, Gujarat.

## Jute Industry:-

1. First Jute Industry in India <sup>R</sup> Raishra (W.B) in 1855.

## Woolen Industry:-

1. Wool comes from "Marino" sheeps.
2. First woolen industry in Kanpur (U.P) 1876.
3. Wool producers Rajasthan, Punjab

## Silk Industry:-

1. First silk Industry in Dharwar (Karnataka).

## Iron Industry:-

1. First Iron industry in Fawla (Chennai) 1830.
2. 1870 → Kulti (W.B).
3. 1907 → TISCO, Jamshedpur (Jharkhand).

TISCO - Tata Iron and Steel company.

4. TISCO getting water from Subarnarekha, Kharkai River.
5. TISCO is the largest steel company in India.
6. Indian Iron steel company (IISCO) - Burnpur (W.B)
7. In 1923 → Visheshwarayya Iron steel Limited at  
Bhadravathi (Karnataka).
8. First public sector Iron Industry in India (V.I.S.L)

## Multipurpose steel plants in India:-

1. The prestigious project in India is POHANG steel company (Pohang steel company) with the joint venture of India and South Korea.

2. This is the Asia's largest steel company

3. "Arcelor mittal" established a world largest steel plant in Odisha.

Multi purpose steel plant

4. First multi purpose steel plant is Bhilai (Mahanadi) in Chattisgarh. → Russia collaboration

5. Rurkela steel plant (Brahmani river) → Odisha → ~~Russia collabo~~<sup>ration</sup>  
"West Germany collaboration".

6. Bokaro steel plant → Jharkhand → Russia collaboration  
→ Subarna Rekha river  
→ largest public sector steel company

7. Durgapur steel plant → W.B → U.K Collaboration

U.K. — [ Britain  
Northern Island  
Wales  
Scotland

→ River "damodar" supply water

8. Vishakapatnam steel plant (or) Rashtriya Ispat Nigam Limited (RISNL) → A.P → Russian collaboration  
→ Only offshore steel plant in India.

→ All steel plants in India held at river side but this plant held at sea.

9. Brahmani steel plant → Cuddapah (A.P)

→ River Krishna

→ ~~is~~ second private largest steel plant in India.

→ This steel plant is now under S.A.I.L.

10. Vijayanagara steel plant → Karnataka (Hospet)

11. Salem steel plant → Tamilnadu.

## Automobile India:-

1. "Detroit" (U.S.A), world largest automobile centre.
2. "Pitampura (M.P)", largest automobile centre in India.
3. "Nanocar" is a world ~~largest~~ <sup>first</sup> cheapest car.
  - "Nano" word taken from Japan.
  - "Nano car plant" is export from "sanand" (Gujarat).
  - First "Singuru (W.B)" this plant is there, but within some days it transferred to "sanand (Gujarat)".
4. "Gurgaon (Haryana)" → "Maruthi car plant"
  - In India "Maruthi 800 car" is banned recently.
  - This "Maruthi 800" car engine having a Euro-II engine it pollutes more so it is banned officially.
5. "Volkswagon plant" → pune
6. "Mahendra and Mahendra" plant → pune
  - largest '4' wheeler plant in India.

## Paper Industry:-

1. paper raw materials
  - Bamboo, sabai, wood pulp, cellulose, water
2. World largest paper producer America.
3. World largest wood pulp producer Canada.
4. Only one country in the world "paper" is used as a currency "China".
5. In India, the only king is used paper currency is "Mohammad - Bin - Tughlaq"

6. In India major Newsprint factory "Nepa Nagar" (M.P.) in 1955.
7. "Paper less currency" and "paper less education" established only country in world is "Australia".
8. Australia used plastic currency in the world.

### Sugar Industry:-

1. In 1903 → First sugar industry, Bihar  
 → 2<sup>nd</sup> largest Agro based Industry  
 → Sugar Industry more concentrates U.P, Bihar, Tamilnadu.

### Cement Industry:-

1. In 1904 → First cement Industry, Chennai  
 M.P  
 Telangana → '8' factories } concentrates more.  
 Tamilnadu

### Alluminium Industry:-

1. Bharat Alluminium company in India (BALCO) in 2001  
 "BALCO" → Korba (Chattisgarh).
2. "NALCO" → Koraput (Odisha) → National Alluminium company
3. "INDALCO" → Muri (Jharkhand) → Indian Alluminium company
4. "HINDALCO" → Ranikhet (U.Khand) → Hindustan Alluminium company

### H.A.L

1. Koraput (Odisha) → Migair Craft Engines are made
2. Hyderabad (Telangana) → Electrical and Electronics are made
3. Nasik (Maharashtra) → Aeroplane body frames are made

4. Lucknow, Kanpur (U.P) → passenger Aeroplanes are made
5. Bangalore (Karnataka) → Assembling Unit.
6. "Seattle (U.S.A)" → world largest Assembling Unit.

B.H.E.L.

→ Jammu, Haridwar (U.Khand), Bhopal (M.P), Hyd (Telangana),  
Bangalore (Karnataka), Tiruchirapally (Tamilnadu),  
Mannavaram (Andhra Pradesh) → Chittor

^  
N.T.P.C. BHEL Joint venture.

Ship building Industries:-

1. In 1941, Hindustan shipyard, inaugurated by Rajendra prasad.
2. In 1943, Talausha shipyard, inaugurated by Nehru.
3. Hindusthan shipyard is also called vishaka ship yard (A.P)
4. Mazgaon dockyard (Maharashtra) → war ships made
5. Garden reach works → Kolkata (W.B)

Pharma Industries:-

1. Indian drug pharmacy Limited (I.D.P.L)
2. In India Antibiotics drug pencillin is export from "pimpri (Maharashtra)".
3. "Hyderabad" is famous for pharma. (Asia's largest pharma city)  
↓  
Synthetic drug
- Riskesh → Antibiotics made.
- National Institute of pharma Education Research (NIPER)

WORLD

GEOGRAPHY



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# CHAPTER - I

## SOLAR SYSTEM

- Universe is created with Energy + Matter (visible).
  - study of space is called cosmology
  - "Aristotle" (4<sup>th</sup> B.C) told earth was Round.
  - "Eristonics" introduced Geography<sup>word</sup>. Geo means earth, graphy means describe. He introduced Latitudes and Longitudes.
  - "Hipporcus" divided earth in 360°.
  - "Aryabhatta" was a student of Nalanda University
    - ↓
    - Surya siddanta } books
    - Aryabhattiyam }
- Aryabhatta discovered some ~~items~~ things.
1.  $\pi$  - value
  2. Earth rotates its own axis
  3. He discovered solar and Lunar eclipses.
  4. Aryabhatta did not discovered "zero (0)"
  5. "zero" discovered Unknown Indian.

### Ptolemy :-

1. Earth is the centre point of whole universe.
2. He introduced Geo-centric theory

### Copernicus :-

1. He introduced Helio - centric theory.
2. According to this theory, sun is the centre point of whole universe

Kepler:-

1. He introduced planetary motion theory

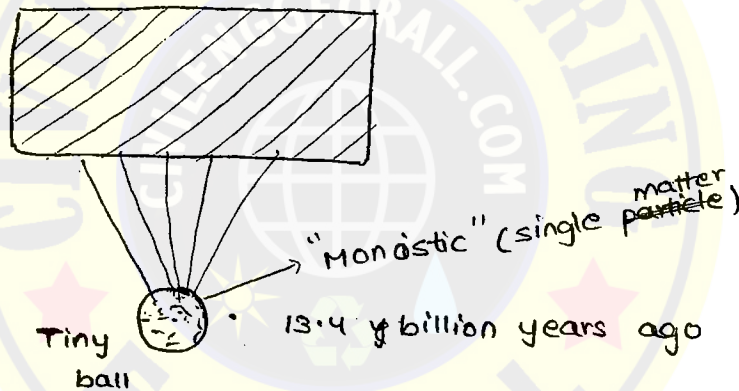
2.

H - Alfien:-

1. He introduced electro magnetic force theory.

Big Bang theory:-

1. Big Bang theory was introduced by George Lamitaire
2. According to this theory the universe was created from single particle.
3. still the universe is expanding according to this theory
4. Big Bang theory is also called Monistic theory.



5. God's particle

"2008" (2000 scientist works in this Big Bang theory)

↓

L → Large

H → Hydrogen

C → Collider

Kanth :- (Mathematician)

1. He introduced Gaseous Hypothesis theory.

Laplace:- (philosopher)

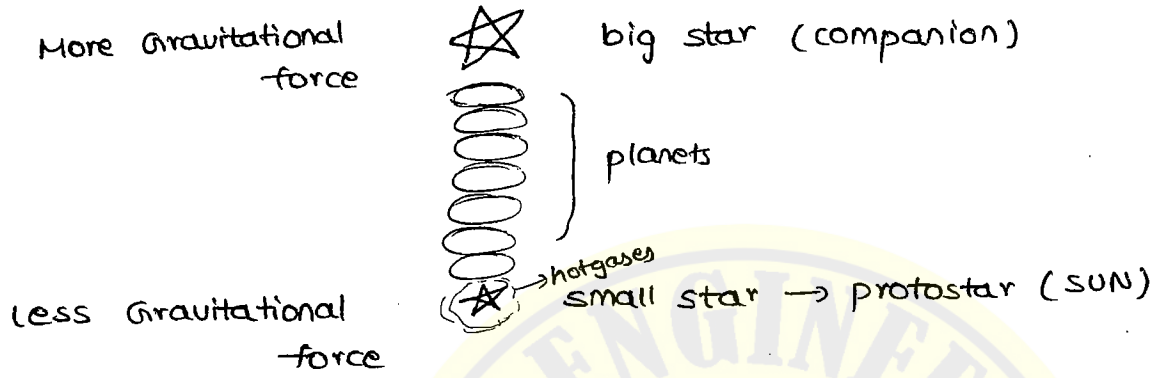
1. He introduced Nebular Hypothesis theory

Monistic

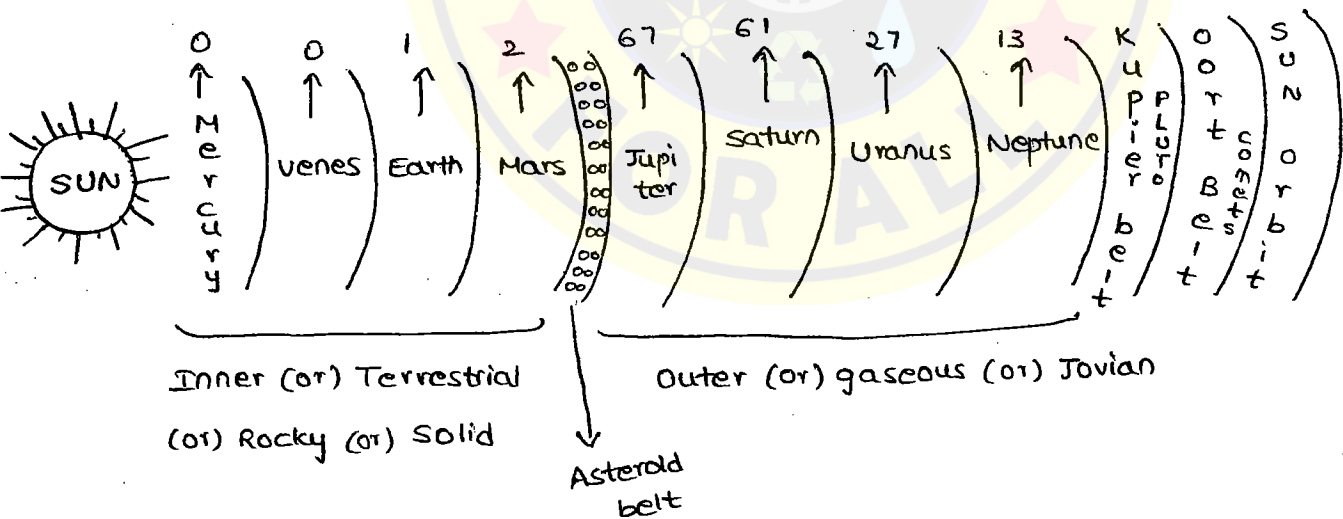
→ Due to gravitational collapse of hot gases universe was created. (Kant and Laplace said this).

Chamberlin and Moulton :-

1. planetesimal theory (How the planets is formed)
2. It is a Dualistic theory.



3. When big star comes nearer to small star, the hot gases in the small star get attracted to the big star, so planets are formed. This is said by Chamberlin and Moulton



Mercury :-

1. Smallest planet in solar system
2. Least revolution planet in solar system

Rotation - 59 days (Rotates its own axis)

Revolution - 88 days (Rotates its own axis + Sun)

3. No atmosphere
4. No satellites
5. Greek's called "God of commerce".

### Venus:-

1. Venus is called "God of beauty and love".
2. Venus, <sup>Uranus</sup> is called "Retrograde planets".
3. Retrograde means the direction of this two planets rotates "E-W" direction. Remaining planets rotates "W-E" direction.
4. It is nearest planet to the earth.
5. Venus, Earth both are called Twin planets
6. Hottest and Brightest planet

N.A.S.A → CO<sub>2</sub> (90-95%) in Venus  
Approx. 500°C.

→ CO<sub>2</sub> (0.003%) in earth  
Approx. 40°C.

7. Morning and Evening star is called Venus.
8. No satellites

### Earth:-

Earth  $\left\{ \begin{array}{l} 3^{\text{rd}} \text{ in distance} \\ 5^{\text{th}} \text{ in diameter.} \end{array} \right.$

1. 5<sup>th</sup> largest planet in universe
2. Blue planet
3. Highest density planet
4. One satellite (Moon).

## Moon :-

1. How much ~~1/4~~ of From the earth, <sup>59% area</sup> moon surface area only can be seen.

Rotation } 27 1/2 days (only one, rotation, revolution is same)  
Revolution }

2. Moon rays reach in earth within 1.03 sec

3. In 1969, Jul-21 "Apollo-11" (U.S.A) [space ship]

Neil Armstrong, Maikhel Melvin } landing on moon.  
Edward Altrin → commander

4. The landing place of "Apollo-11" space ship is called "Marious"

5. Neil Armstrong, first he set foot on moon such a place is called "Sea of Tranquility".

6. Leibnitz (10,670 m) is the highest mountain on moon.

7. China sent recently (Dec-2, 2013) "Change-3 satellite" on moon.

8. In 2008, Oct-22 PSLV-C-11 Chandrayan-I launch satellite on moon in Satish Dawan space centre (India).

9.	India	U.S.A
Started	2008	1969 started
	95% information	65% information got U.S.A abt moon
	2014 abt moon	2014

10. Perigee - minimum distance  
Apogee - maximum distance

11. The average distance in b/w moon & earth 3,84,000 km

12. Study of moon is called "Selenology"

Mars :-

1. God of war
2. Red planet
3. In 1971, NASA, Viking-I satellite sent by NASA
4. Spirit Rover      All are satellite on Mars  
Beagle  
Curiosity (sent 2011 - Land on Aug-6, 2012)  
M.O.M (Mars Orbital Mission) (Mangalyan) Nov-5, 2013 (India)  
Maven (NASA) (2013, Nov-18)
5. Two satellites (Phobos, Deimos)

Asteroid belts :-

1. These are called Mini planets.
- \* 2. They revolve in between Mars and Jupiter.

Jupiter :-

1. God of All Gods (or) God Heaven (or) Giant planet (or) King of planets.
2. Largest planet.
3. Less rotation planet (9 hours 56 min)
4. Highest rotation planet is Venus (243 days)
5. Venus is not having an electro magnetic force, so it rotates slow.
6. Jupiter was discovered by Galileo.
7. Highest satellites (67)

\* → Ganymede → Largest satellite in Solar system.

→ Callisto

→ Europa

→ Io

## Saturn :-

1. God of Agriculture
2. Second largest planet.
3. Floating planet (or) Least density planet
4. Ring structure planet
5. "Titan" is a independent atmospheric satellite on Saturn.
6. Nasa sent "Hyugens satellite" in Titan.  
"kessini satellite" in Saturn.

## Uranus :-

1. God of wealth
2. Green planet
3. It rotates from E-W

## Neptune :-

1. God of sea
2. Highest revolution planet: (248 years)
3. Lowest revolution planet is mercury (88 days)
4. Coldest planet

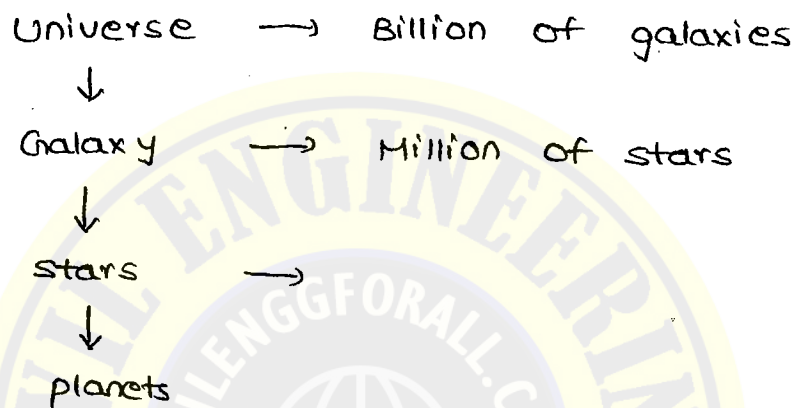
## Pluto :-

1. It was deleted or removed from planet status in 2006.
  2. It is a dwarf planet which belongs to kupter belt
  3. Large massive
  4. More gravitational force
  5. Should not intersect (or) bisect each other.
  6. God of death
  7. Pluto was discovered Lovelay in "A30".
- } planet characteristics (or) conditions

8. At pluto satellite "Charon".

- \* → Nearest star from the earth, "Sun"
- Nearest star after the sun, "Alphacentuari"
- Brightest star from the earth, "Sun"
- Brightest star after the sun, "Ceres"
- Nearest star from the sun, "proximacentuari"

Galaxy :-



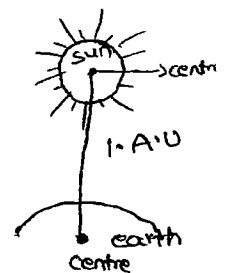
1. Galaxy means "congregation of stars"
2. Galaxy shape "Spiral shape"
3. Sun belongs to "Milkyway Galaxy" (or) "Akash Ganga"

\* Sun :-

1. It is a medium size star
2. Its rotation is 25 days
3. Its revolution is Galactic year (or) cosmic year

cosmic year = 250 million years

4. Sun revolves around Milkyway galaxy
5. planets distance measured by A.U (Astronomical unit)
6. Stars distance measured by parsec
7. The distance b/w Sun and earth is 1 A.U (150 million km)
8. the distance is calculated centre point of sun and centre point of earth.



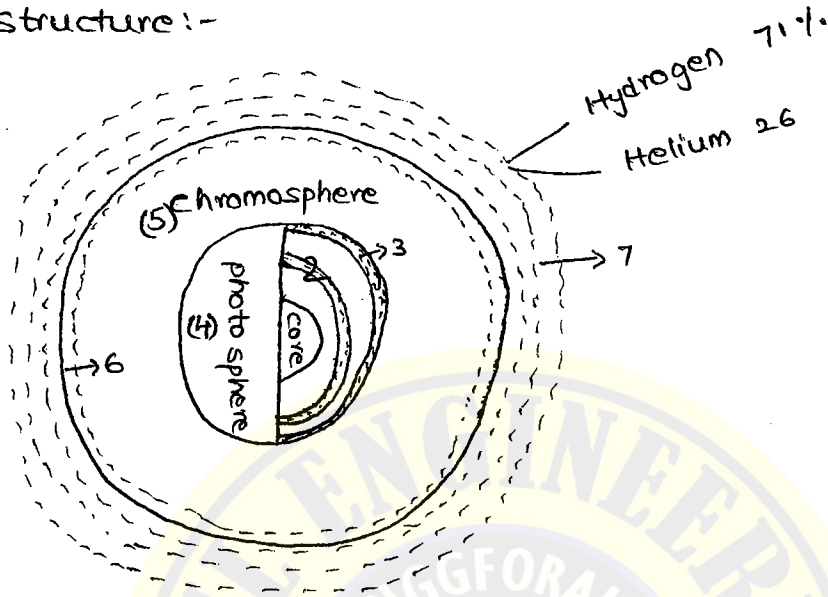


9. 1 parsec = 3.26 light year

per sec light year travels = 3 lakh km.

1 light year =  $9.46 \times 10^{12}$  km

10. Sun structure:-



Inner:-

1. core
2. Radio active zone
3. convectional zone
4. photosphere

Outer:-

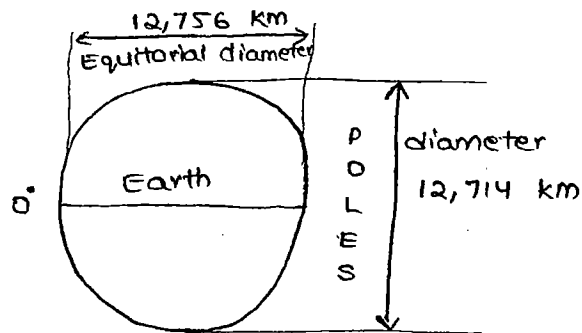
5. chromosphere
6. Transitiona zone
7. corona.

- Core part Thermo nuclear fussion occur
- Sun rays are produced at core (More energy temp. 15 million  $^{\circ}\text{K}$ )
- photosphere is a visible part (only  $6000^{\circ}\text{C}$ )
- color part and large part of the sun is Chromosphere
- Corona emits (or) omits light rays.
- corona can be seen at <sup>the time of</sup> Solar Eclipses.
- Chromosphere (medium  $32000^{\circ}\text{C}$ )

Earth:-

Land area - 29 %.

Water area - 71 %.



1. Earth equatorial radius,  $R = 6378 \text{ km}$ .

2. Total Earth circumference  $40,075 \text{ km}$ .

Age of earth:-

4.6 billion years

→ There is a two scientific techniques used to find the age.

1. Uranium dating

2. C14 dating (or) Half-a-life

→ "Living organisms" can be identified by using "C14 dating".

→ "Non living organisms" can be identified by using "Uranium dating".

Deepest point on the earth surface:-

1. Dead sea (Israel - Jordan)

Deepest point in the ocean:-

1. Mariana Trench (Pacific ocean).

→ Highest temperature recorded in the world (or) earth surface  $58^\circ\text{C}$  Libya (African country).

→ Least temperature recorded in the world " $-89.6^\circ\text{C}$  (Antarctica)"

# Composition of the earth:-

M X

O → Oxygen (46.6%) → Abundant element.

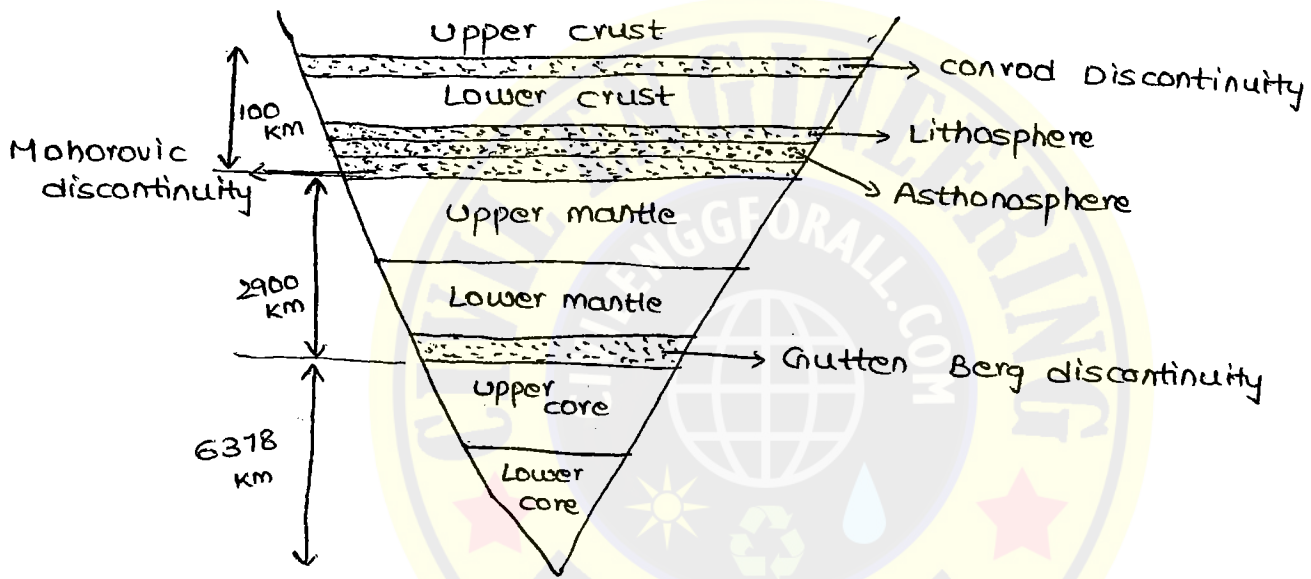
S → silicon (27.8%)

A → Aluminium (8%)

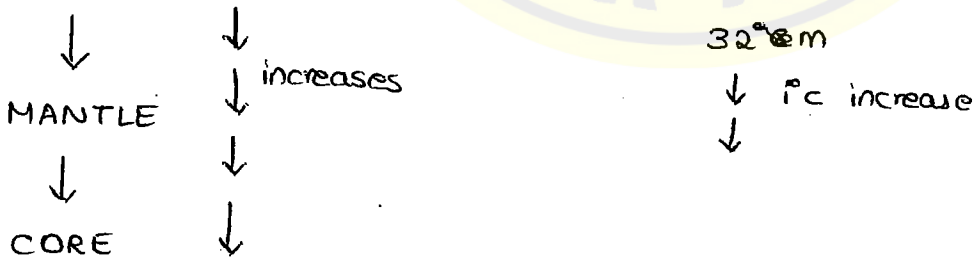
I → Iron (5.1%)

C → calcium (3.6%)

## Earth structure:-



CRUST → Temperature, Density, pressure



→ Temperature, Density, pressure are increased from crust to core

→ Every 32 m → 1°c increases.

## Lithosphere:-

1. It is a solid rock area part of the crust
2. Entire vegetation, mountains, plateaus, plains, soil part of the lithosphere.

## Asthenosphere:-

It is a weak and hot area.

1. Maximum and earthquake waves are generated at Asthenosphere.

## Crust:-

1. It consists of Silicon, Aluminium (SI/AL)
2. It could be different from Ocean crust (thin = 45 km) and Continent crust (thick, 100 km).

## Mantle:-

1. It consists of (SI/MA) Silicon, Magnesium.
2. It occupies 2900 km.

## Core:-

1. It consists of (NI/FE) Nickel, Ferrous.
2. It occupies 6378 km.

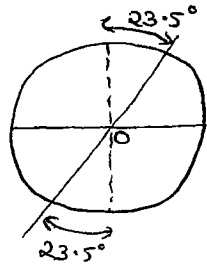
## Earth Movements:-

1. Earth Obliquity
2. Earth Eccentricity
3. Earth precision
4. Earth rotation
5. Earth revolution

• Earth Obliquity:-

1. Earth Obliquity means Inclination Axis of Earth.

2. Now present Earth obliquity is  $23.5^\circ$

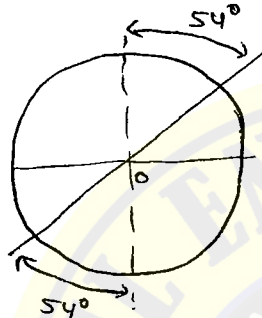


→ "Seasons" →

we are enjoying seasons  
winter, summer,

present.

3. Future earth obliquity is  $54^\circ$



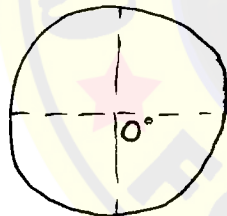
→ Extreme climatic conditions.

Future

If i change it takes

41000 years

4. past earth obliquity is  $0^\circ$



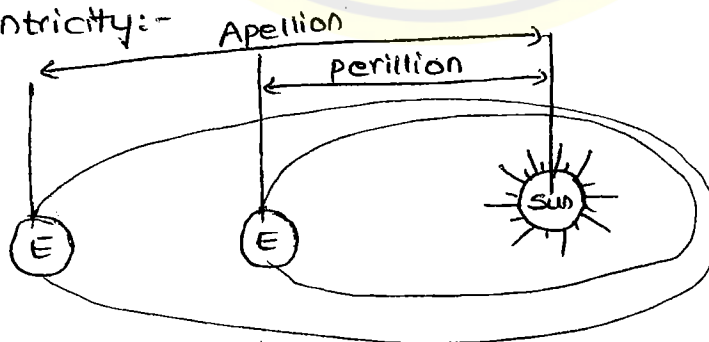
"No season"

↳ There was no seasons

"Neozoic"

→ "cold"

• 2. Earth Eccentricity:-



1. Earth revolves around the sun in the form of "Ecliptic path"

perihelion:-

Minimum distance in between sun and earth is called perihelion.

January - 3<sup>rd</sup> - perihelion day

Aphelion:-

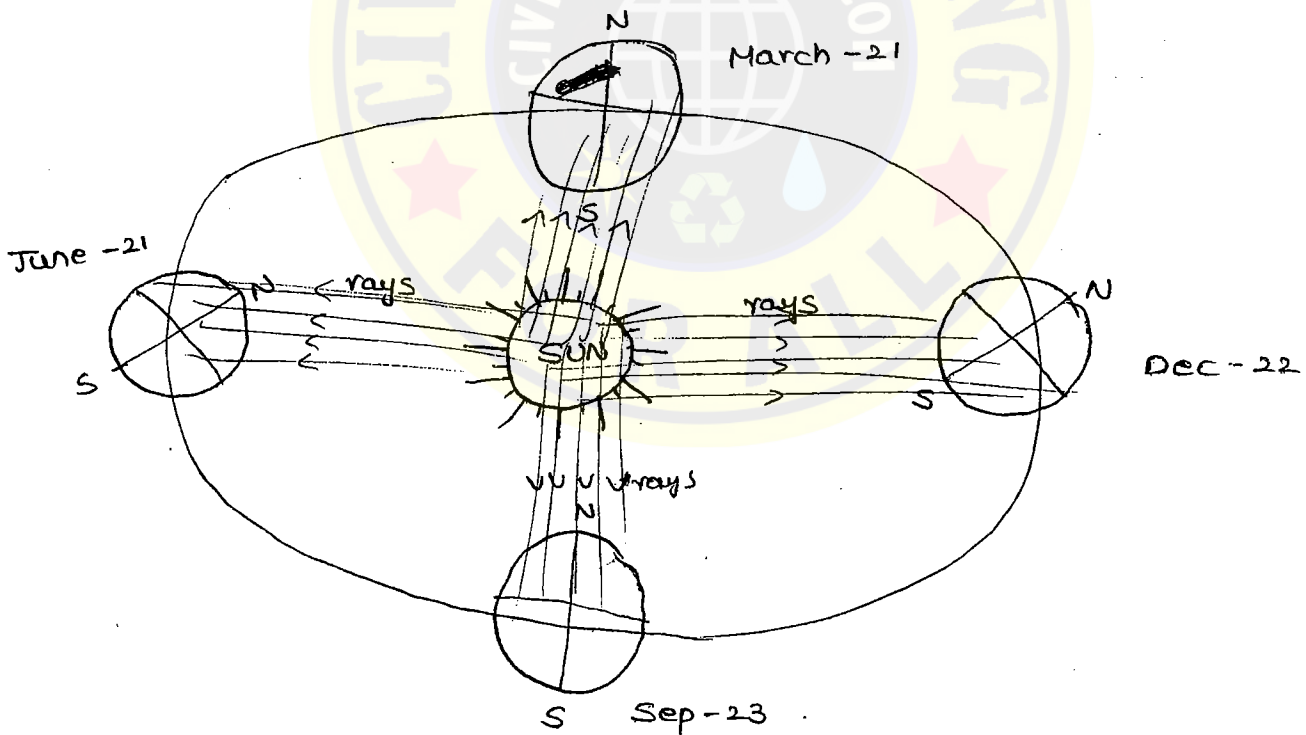
Maximum distance in between sun and earth is called Aphelion

July - 4<sup>th</sup> - Aphelion day

perihelion - 147 million km.

Aphelion - 152 million km

→ Average is 150 million km in b/w sun and earth.



June - 21 :-

1. It is called "summer 'solstice solstice'". On this day sun rays falls vertically entire Northern Hemisphere.
2. Norway is called Midnight sun because it is located in Arctic circle.

2. All countries in the Northern Hemisphere on this day experienced "Longest Day" i.e., day time is more than night time.
3. During the summer solstice, North pole and Arctic circle experienced light upto 6 months continuously. At the same time south pole experienced upto 6 months continuously dark.

December - 22:-

1. December - 22 called winter solstice. On that day sun rays falls vertically entire southern hemisphere.
2. Australia country receives more sun's vertical rays during the winter solstice period.
3. Australia longest day is Dec-22. But it is shortest day in India.
4. During the winter solstice period, south pole experiences continuous light upto 6 months. At the same time North pole experienced upto 6 months continuously dark.

March - 21, Sep - 23:-

1. These two are called Equinoxes (or) Equal days. On these two days entire globe receives sun's vertical rays.
2. So the day and night entire world equal rays (12h : 12h)
3. Kanyakumari which receives sun rays always vertically.

### 3. Earth precision:-

1. It is caused by gravitational force, and torque of the other objects in the universe like Moon, Deba, vega are stars.
2. wobbling movement of the earth (or) larger Axis of earth is called precision.

### 4. Earth rotation:-

1. Earth rotation is 23 hrs - 53 min - 4.09 sec (or) 24 hrs

$$24 \text{ hrs} = 360^\circ$$

$$1 \text{ Hr} = 15^\circ$$

$$60 \text{ min} = 15^\circ$$

$$4 \text{ min} = 1^\circ$$

2. Day and Night
  3. Ocean currents
- } One generated by earth rotation.

### 5. Earth Revolution:-

1. It takes  $365 \frac{1}{4}$  days
2. Seasons
3. Difference of length of day and night.

### Terminology:-

1. Solar day → A day which depends on sun reference
  2. Sideral day → A day which depends on Moon reference
- ↑ 24 hrs  
↓ 23 hrs 56 min
- } 4 min

### 3. Nebulus :-

→ Stars<sup>s</sup> are originated at Nebulus.



4. Black hole → Death place of stars

→ Subramanyam Chandrasekhar (Indian) researched on black hole. Chandrasekhar effect (Noble prize got in this research).

5. Constellation :-

→ cluster of stars

Ex:- Hydra ~~Orion~~ → Largest constellation  
Orion

6. Comet :-

→ Remains of Hot gases of planets and Asteroids.

→ Halley comet

↳ Once in a 76 years it appears

1510 → First visible

1986

2062

→ Shoemaker Levy comet

↳ It was discovered in 1993.

→ Templeton comet

↳ Nasa sent one satellite ~~of~~ "Deep Impact".

7. Dog stars :-

→ North pole and south pole both are called Dog stars. It is also called Fixed stars.

## Latitudes and Longitudes:-

### Latitudes:-

$0^\circ$  = Greater circle (or) Equator

$23.5^\circ$  N/L = Tropic of cancer

$23.5^\circ$  S/L = Tropic of capricorn

$66\frac{1}{2}$  N/L = Arctic circle

$66\frac{1}{2}$  S/L = Antarctic circle.

→ Total Number of latitudes is  $1 + 90 + 90 = 181$

→ Latitudinal difference on the globe remains same

$1^\circ$  latitude = 111 km.

### Longitudes:-

$0^\circ$  passes through Atlantic Ocean  
 $0^\circ$  line = prime Meridian

London (Green witch village) =  $0^\circ \rightarrow$  12 Noon

India =  $82.5^\circ \rightarrow ?$

$$\frac{82.5^\circ}{1^\circ = 4'}$$

$$1^\circ = 4'$$

$$82.5^\circ = 330' = 5\frac{1}{2} \text{ hrs}$$

If in London 12 noon then in India  $5\frac{1}{2}$  PM

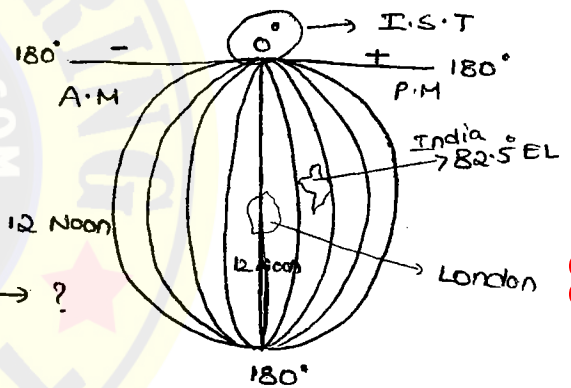
EX:-) India and England cricket match was started at Lord stadium at England at 3 P.M. The match would be watch by Indian channels at what time?

A) London - 3 P.M -  $0^\circ$

India - ? -  $82.5^\circ$

$$82.5 = 5\frac{1}{2} \text{ hours}$$

$$3 \text{ P.M} + 5\frac{1}{2} = 8:30 \text{ PM.}$$



\*\* 180° Longitude = International Date line

Ex 1)

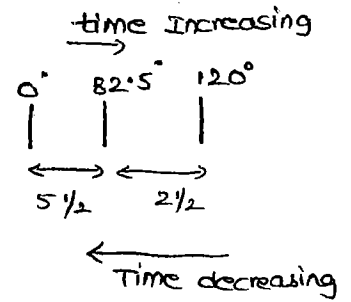
Japan - 120° - 11 A.M (Japan time)

India - 82.5 - ?

$$\underline{37.5^\circ}$$

$$37.5 \times 4 = 150 \text{ min} = 2 \frac{1}{2}$$

$$\Rightarrow 11 \text{ A.M} - 2 \frac{1}{2} = 8:30 \text{ AM (India-time)}$$



- International Date line passes through "Bering sea"
- It passes through Fiji, Sumavo, American Sumavo, Tonga
- Chronometer is used to measure exactly time measure in oceans.
- When a ship travels E-W it losses 1 day. If same ship travels W-E it gains 1 day.
- E-W = add (+), W-E = subtract (-)
- International Date line passes in b/w Sumavo and American Sumavo (days change).

# Earth Forces

## Earth Forces

Endogenic forces

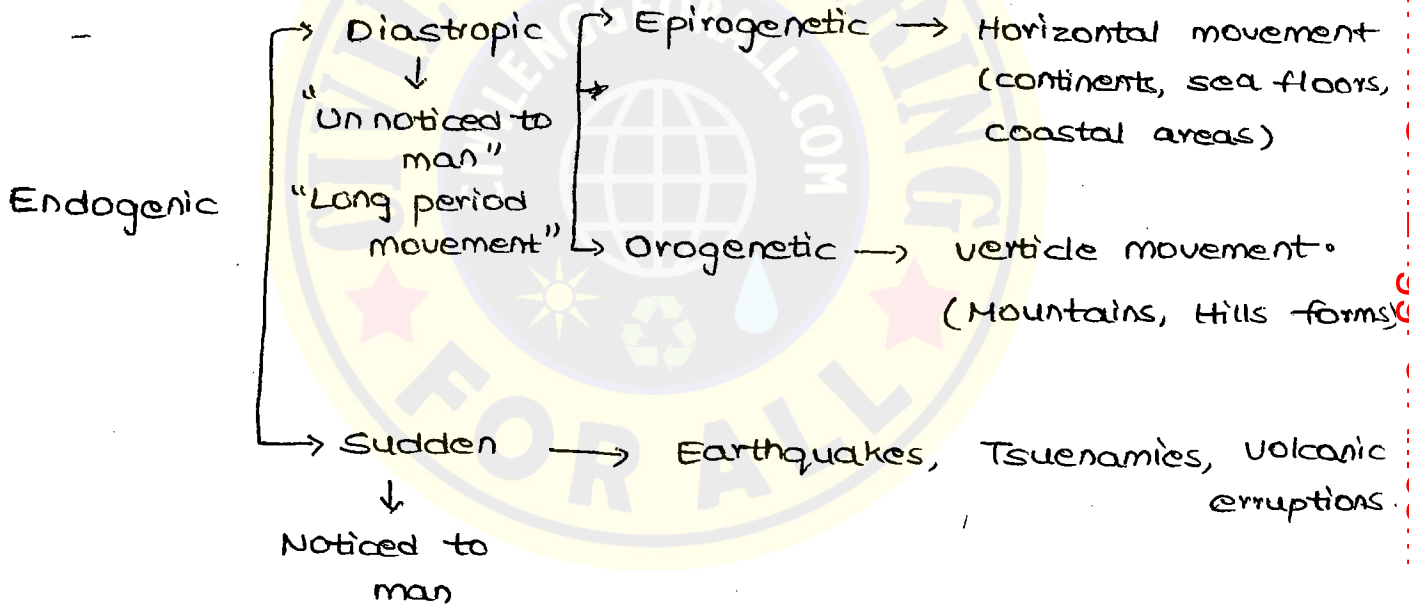
Exogenic forces

1. Thermal Reactions

- ↓
- physical
- chemical
- Biological

### Endogenic forces :-

They are two types. i) Diastropic ii) Sudden



### Mountains :-

26% - Land

1% - population.

### Types of mountains :-

1. Fold — New / old | compressional forces

2. Block (or) Fault — Tensional forces / VDsaiges (France)

Black forest | Germany  
Herz | (mountains)

### 3. Volcanic mountains :-

1. Cotapoxi (Equador)

2. DTOS - Del - Saledo (Argentina)

↳ Highest volcanic mountains

3. Fujiyam (Japan)

↳ Holly volcano

4. Mount. Mayan (Philliphines)

5. Mount. Vesuvius (Italy)

6. Mount. Stromboli (Mediterranean sea)

↳ Light house of the world.

7. Mount. Krakotava (Indonesia)

8. Barren

Narcondum

| India

9. Mount Kilimanjaro (Tanzania)

↳ Highest peak in Africa.

4. Residual (or) Relict (or) Circum denudation mountains:-

↳ Aravalli hills.

### Earth Quake:-

Quake means Tremour, Trembling, shaking.

Causes:-

1. Hydro static pressure (or) Anthropological

↓

construction of dams and projects.

2. Digging of mines and Formation of Tunnels.

3. Nuclear Tests

4. Volcanic Eruptions

5. Elastic - Rebound theory.

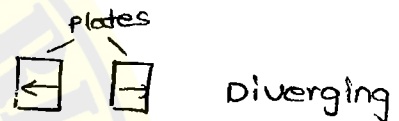
↓  
"Iso static"

→ Australia is a only county (or) continent free from Earthquakes.

6. Plate tectonic theory :-

→ Wezhar (German scientist) told "Earth is a combination of plates"

1. Constructive plate movement



2. Destructive plate movement

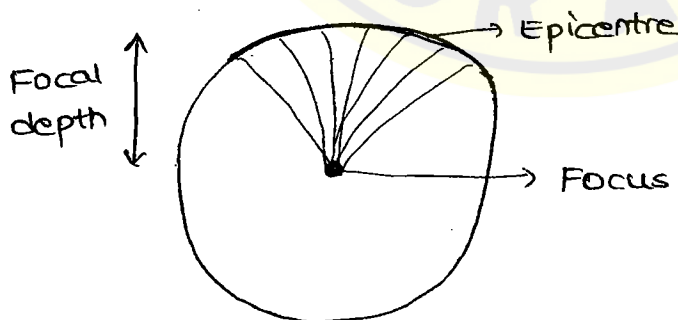


3. Conservative plate movement



Focus :-

1. Where an Earthquakes waves are generated



2. A place which is vertically occupied on the earth surface is called "Epicentre"

3. Based on Focal depth an Earthquake waves are divided into three types


i) Deep Earthquake waves (300 - 700 km)

ii) Medium (60 - 300 km), iii) Shallow - below 60 km.

→ Shallow waves are highly destructive.

Based on two types:-

1. Body waves:-

P, primary waves — push waves / Longitudinal waves 

'P' waves can travel solid, liquid and gaseous

S, secondary waves — Transverse waves

'S' waves can travel solids ~~wave~~ only 

2. Surface waves:-

'L' waves → They can travel in any direction.

→ Seismograph is used to measure the Earthquake movements

→ Richter scale and Mercalli scale are used to find the Earthquake intensity

Earthquake zones in India:-

1. The lines are joining the <sup>equal</sup> earthquake areas is called Isoseismal areas.
2. In India present earthquake zones are four. Earlier five.

Richter Scale intensity	zones	I	- Deleted
		II	- 4.9 - No risk
		III	- 6.9 - Medium risk (Much in India)
		IV	- 7.9 - High risk
		V	- above 7.9 - vulnerability risk

→ Delhi is located in IV - zone

→ Hyd, Mumbai, Bangalore, Chennai is located in III - zone

→ N-E states, Himachal, Sikkim is located in II - zone.

## History of an Earthquake :-

1556 - south china Earthquake - 5 lakh people died.

### In India

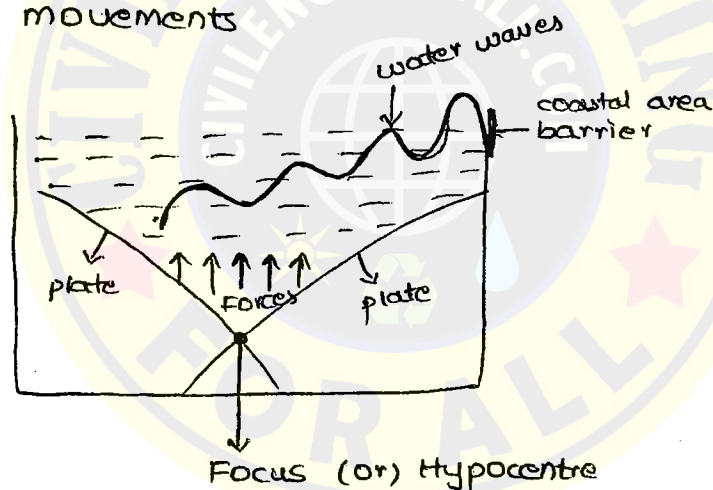
- 1967 - Koyana } Maharashtra.
- 1993 - Lathur }
- 2001 - Bhuj (Gujarat)

## Tsunami :-

1. In Japan word Tsu = Harbour, nami = wave.

### Causes :-

1. Sub duction of plates under the ocean
2. volcanic eruptions
3. Land slides
4. Geological movements

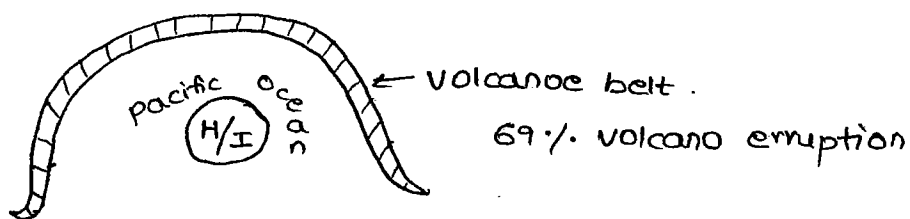


Tsunami speed is equal to Jet Aeroplane Speed.  
750-800km/hr

## Early warning centre :-

1. World Tsunami warning centre

a. HONOLULU (Hawaii Island) → America property



→ Largest volcanic belt in world Hawaii Island (Ring of fire)



2. In India National Tsunami warning centre is setup at Hyderabad, name "INCOIS"

INCOIS - Indian National centre for Oceanic Informatic system.

3. M.O.E.S - Ministry of Earth and sciences, setup in 2006.

4. Recently Indian ocean belt countries established ~~drought~~ DART Instrument at Chennai

D - Deep Ocean

A - Assesment

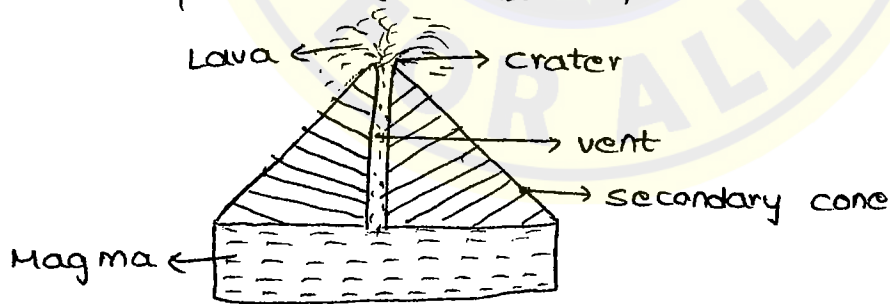
R - Reporting of

T - Tsunami

5. 2004, Dec - 26 } Tsunami affected Japan  
2011, Mar - 11 }

⊙ ↓  
Hypocentre (or) Focus "Sendon" (Japan)

Volcanic Erruptions:- (600-1200°C)



Gasous {  
Hydrogen  
Ammonium chloride  
Hydrogen sulphide  
sulphur dioxide  
CO<sub>2</sub>

Liquids - water vapours

Solids - small fragments

→ The only lake in India which is formed in volcanic eruption "Lonar lake (Maharashtra)".

Types of Volcanoes:-

1. Active Volcanoes

→ Oftenly they erupt (or) eject

Ex:- Mt. Stromboli.

2. Dormant Volcanoes → May be erupt.

Ex:- Barren volcano (India), Fujiyama.

3. Extinct Volcanoes

Ex:- Narcondum, Krakatova

Uses of volcanic eruptions:-

1. More fertile soils, Black soils are formed

2. Table lands or plateaus are formed.

3. Storage of minerals

\*\* Navigation canals in the world:- (IM)

1. Suez canal, designed by "Ferdinand - de - Lesseps"

2. Chandigarh (punjab, Haryana capital), this designed by "lee - carbusier"

3. Jaipur, designed by Dalaram

4. parliament, designed by "Adward Leutiens"

\*\* 5. Suez canal interlinks "Red sea" and "Mediterranean sea"

6. Panama canal interlinks "Atlantic ocean" and "Pacific ocean"

7. Kiel canal in Germany, it interlinks "North sea" and "Baltic sea".

## Rock Systems:-

mountains ← volcanic ← **Rock** → soil → vegetation → Economic  
Endogenic → Biological conditions → Earth rotation

## Igneous Rocks:-

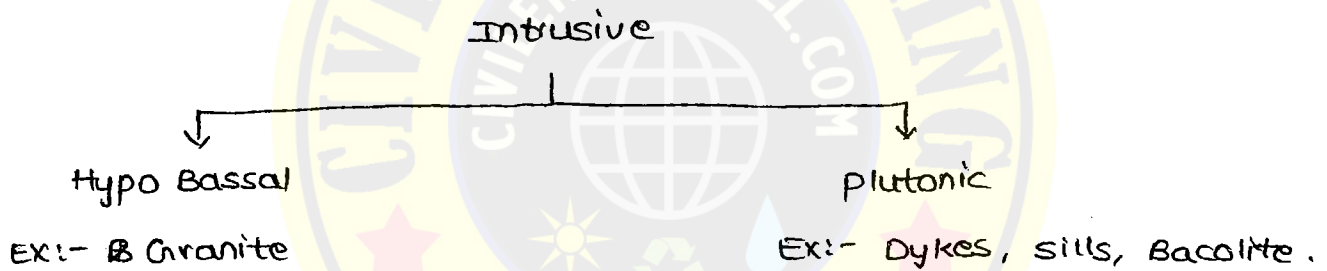
1. This is also called primary (or) parent rocks.
2. These are two types "Extrusive" and "Intrusive"

### Extrusive:-

→ Due to solidification of lava on the earth surface  
Ex:- Basalt.

### Intrusive:-

→ Due to solidification of lava within the earth crust  
Ex:- Granite



1. Large massive → fast → small rock  
slow → Large rock (Granite)
2. NO layers
3. Hard structure

## Sedimentary Rocks:-

1. These are formed by deposition of sediments by the rivers.
2. 75% minerals are available at sedimentary rocks.
3. These are occupied more.

## Commercial gases:-

1. Shale gas
  2. Coal
  3. Lime stone
  4. Sand stone
  5. petroleum
  6. Natural gas
4. Less Massive
  5. very soft
  6. There is a layers

## Metamorphic Rocks:-

1. Due to more temperature and high pressure sedimentary rock change to Metamorphic rocks.  
Ex:- Gold, Diamond, schist, Gneis.

## Atmosphere and pressure:-

1. Nitrogen ( $N_2$ ) - 78.08%.  
→ It controls flame  
→ It helps plant life and human life.
2. Oxygen ( $O_2$ ) - 20.29% (volume), 21% (weight)  
→ It supports for burning.
3.  $CO_2$  - 0.03%.

crayogenic : study of Low Temperature.

- $CO_2$  is used for freezing centres and chilling centres, food making, cool drinks.
- $CO_2$  is also called "Major trace gas"

Note:- Hydrogen, Helium, Argon,  $CO_2$  are trace gases.

4. Water vapours - 0.4%.

→ Most variable (or) variant element in the atmosphere.

5. Inert gases (or) Rare gases - 0.95%.

→ Helium, Neon, Argon, Krypton, Xenon, Radon

Helium:-

1. Second Lightest gas.
2. It is used in meteorological balloons.
3. It is used to fill in Aeroplane tyres.
4. Major inert gas.

Neon:-

1. Used in Advertising signs

Argon:-

1. Used in electrical bulbs.

Krypton:and Xenon:-

1. It is used in color T.V. picture tube.

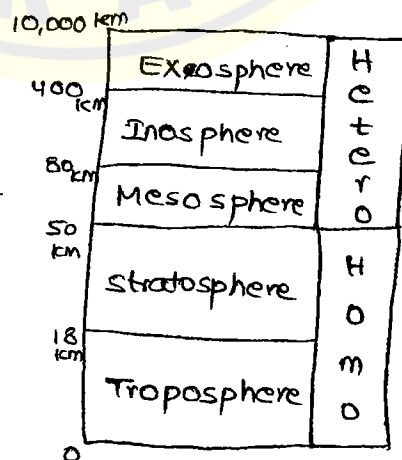
Radon:- (Almost all absence in the atmosphere, 0.000001)

Types of Atmosphere:-

1. Heterosphere
2. Homosphere

Sub division of Atmosphere:-

1. Troposphere
2. Stratosphere
3. Mesosphere
4. Ion (or) Thermosphere
5. Exosphere.



## Troposphere:-

1. It is extended upto 18 km
2. It is responsible for all weather phenomena.
3. Every 168 m =  $1^\circ$   
1 km =  $6.4^\circ$  | falls universal Lapse Rate.

## \*\* Bad Ozone:-

1. It concentrated in the troposphere.
2. It is formed due to chemical reaction b/w volatile organic compounds and Nitrate oxides.
3. Bad ozone is formed more at high temperature.
4. Ozone thickness more at equator less at poles.

8

## Good Ozone:-

1. It is located in stratosphere.
2. It is formed by naturally



3. It filters sun's U.V rays.

→ In 1985, NASA found ozone depletion in Antarctica.

→ U.N.O declared Sep-16, 1992 "World Ozone day".

→ Units of ozone (or) ozone are measured by "Dopson"

## Factors of depletion of ozone:-

1. Chloro Fluoro carbons
2. Hydro chloro Fluoro carbons
3. P. F. C.

## \*\* 4. Halons

→ chlorine

→ Bromide

→ Methyl bromide

→ Methyl chloroform

→ In 1997 Japan "kyoto protocol" is used to control the depletion of ozone.

Stratosphere:-

1. It is extended upto 50 km.
2. It is best suitable for travelling of aeroplanes
3. With height temperature increases.

Mesosphere:-

1. With height temperature falls.
2. It extended upto 80 km

Inosphere:-

1. With height temperature increases
2. It extended upto 400 km
3. It consists of electrically charged ions which they reflect radio waves to the earth.

Exosphere:-

1. It extended upto 10,000 km

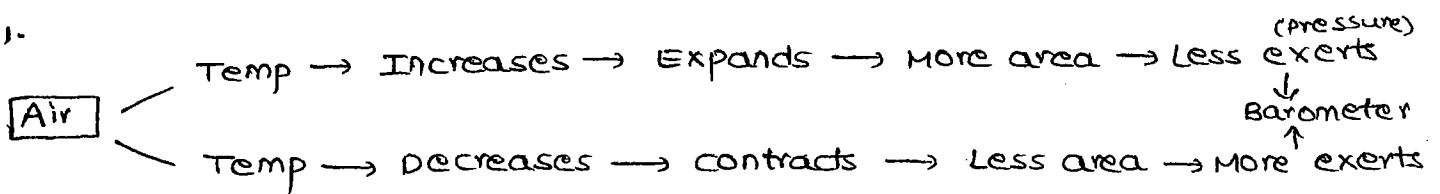
→ Air is a mixture of gases that weight exists pressure.

Pressure:-

1. Units of pressure is m.b (milli bar)
2. It measures "Aneroid barometer"
3. Normal pressure at sea level is 1013.25 m.b
4. Normal pressure at inches is 29.9 inch. (sea level)  
76 cm of Hg  
760 mm of Hg

## 1. Pressure temperature Relation:-

1.



→ If temperature increases pressure decreases

→ If temperature decreases pressure increases.

## 2. Pressure water vapours Relation:-

1. water vapour density 40% less than Air density.
2. Equatorial zone experiences less pressure due to presence of more water vapours.
3. Poles experiences more pressure due to less water vapours presence the atmosphere.
4. pressure

## 3. Pressure Earth rotation:-

1. Earth rotation maximum at equator, minimum at poles
2. While rotating earth its own spin centrifugal force is produced at equator. so it experience less pressure.
3. pressure

## 4. Pressure Gravitational force:-

1. Earth gravitational force would be less at equator and more at poles.
2. All the satellite launching stations are established at equatorial zone (nearest to equator) because of low pressure and low gravitational force.
3. In pressure cooker, increasing of pressure temperature pressure also increases

water boiling point in atmosphere =  $100^{\circ}\text{C}$

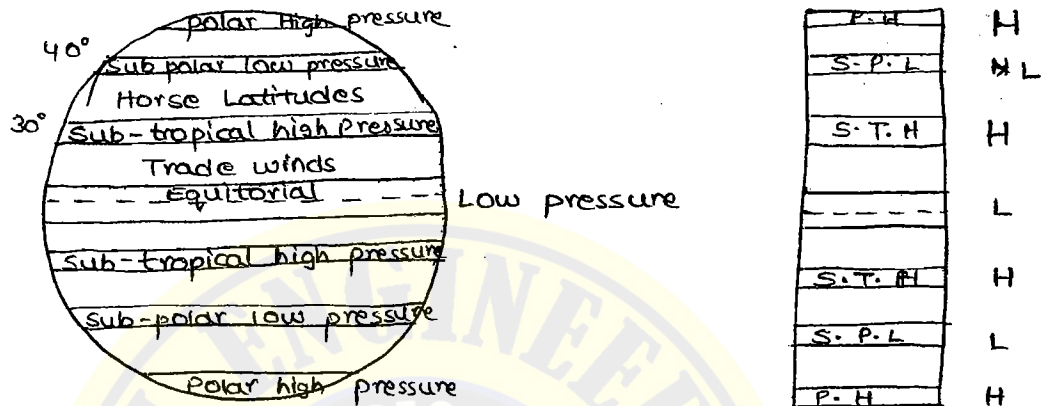
water boiling point in cooker =  $120^{\circ}\text{C}$



verticle distribution of pressure:-

1. At high elevations pressure would be less.
2. In aeroplanes normal pressure maintain by two air pumps.
3. verticle distribution of pressure depends on temperature

\*\* Horizontal distribution of pressure:-



Equitorial Low pressure:-

1. It is occupied 0 to 10° both sides of the (N-S) hemispheres
2. It is called "Doldrums".
3. It is also called "Equitorial calms".

\*\* Sub tropical High pressure:-

1. This pressure is called "Trade winds"
2. Trade winds also called "Easterlies".
3. India and East part of the Globe receives more rainfall due to Easterlies.
4. N-E and S-E trade winds merges at equator which is called I.T.C.Z
5. Trade winds are called permanent winds or planetary winds

### Sub polar Low pressure:-

1. Horse latitude lies in between  $30-40^\circ$  both sides of the hemisphere.

### Westerlies:-

1. West part of the globe receives rainfall due to westerlies due to occupy  $40-60^\circ$

$40^\circ$  - Roaring forties

$50^\circ$  - Furlous fifties

$60^\circ$  - screaming sixties

### Cyclones:-

1. A low pressure at centre point and increasing high pressure at surroundings

### Cyclone movements:-

Northern Hemisphere - Anti clockwise

Southern Hemisphere - clockwise

Tropical cyclone	Temperate (or) Mid latitude (or) westerlies cyclones.
1. It occurs only in water	1. It occurs both water and Land.

### Local names:-

1. Breeze

2. Gale

3. Storm

4. Hurrican → West Indies (appear)

5. Tornadoes → U.S.A & Canada (appear)  
(or)  
Twisters

→ wind speed measures by "Beaufort scale".

→ wind direction measures by "Wind vane".

- cyclone name of Japan, china, philippines are "Typhoons".
- Willy - Willy → Australia.
- India, srilanka, pak, Bangladesh — cyclones (or) Depressions
- In 2014, Mar-27 "Hallen cyclone" — Mozambique (s-w Indian ocean)
- "Hayan, phyllin" oct-2013 — phylliphin, Thailand.
- "HAD - HUD" oct-9, 2014 — North Andaman

Precipitation:-

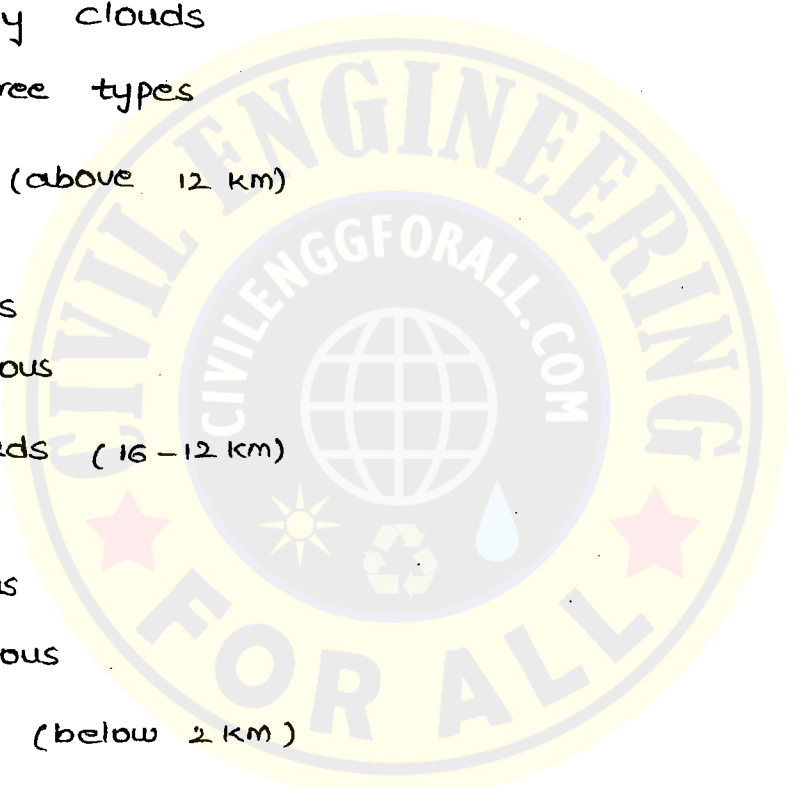
It caused by clouds

There are three types

1. High clouds (above 12 km)
    - a. cirrus
    - b. cirrostratus
    - c. cirro cumulous
  2. Medium clouds (16-12 km)
    - a. Altous
    - b. Altostratus
    - c. Alto cumulous
  3. Low clouds (below 2 km)
    - a. stratous
    - b. Strato cumulous
    - \* c. cumulonim bous
    - \* d. Nimbo stratus
- } Heavy rainfall (Black)

Types of precipitation:-

1. Drizle
  2. Rain
  3. snow-flakes
  4. sleet
  5. Hail
- \* Mist } these two do not come under precipitation  
\* Fog }



### 1. Drizzle:-

1. Diameter of Drizzle is below 0.5 mm.
2. It disappears when it touches the ground.

### Rain:-

1. Rain diameter is more than 0.5 mm.

### Snowflakes:-

1. It forms in cold, sub-polar areas
2. Ice flakes

### Sleet:-

1. Its diameter is greater than Rain diameter.

### Hail:-

1. Its diameter more than 15 mm.

### Mist and Fog:-

1. These are formed at industrial areas, simply suspended particles in air.

Smoke + fog = SMOG

→ It is very dangerous

→ Lung problems may occur.

### Oceans:-

#### Salinity:-

1. Equator experiences less salinity
2. Tropic of Cancer, Capricorn both experience more salinity due to more evaporation of water
3. Arctic and Antarctica due to melting of ice, less salinity experiences.
4. 1000 ml of water → 35 mg of salt.

5. East part of the globe experiences less salinity.
6. West part of the globe experiences more salinity.
7. "Lake van" (Turkey) highest salinity lake in the world.
8. "Caspian sea" is the largest salt water lake in the world.
9. Salinity = chlorides, sodium, Magnesium, sulphates. (55%)
10. "Dead sea" is the highest salinity sea in the world.
11. "Red sea" is the second highest salinity sea in the world.

12.

Ocean names:-

1. Pacific Ocean:-

1. First sailed (or) voyaged person in the world "Magellan".
2. It is the largest ocean in the world which occupy  $\frac{1}{3}$ rd area in the world.
3. It is the deepest ocean.
4. Ocean depth is measured by "Fathom".

1 Fathom = 6 feet.

Marginal waters of Pacific ocean:-

1. Yellow sea
2. Japan sea
3. South china sea (Largest sea in the world)
4. Bering sea

2. Atlantic Ocean:-

1. Capital 'S'-shaped ocean
2. Second largest ocean in the world.
3. Largest Island in the world "Greenland" is located in North Atlantic.

4. Bermuda triangle is located in central Atlantic ocean.
5. Gulf of Mexico, carabian sea, Guinea bay, Baffin Bay, Hudson Bay, English channel all are marginal waters of Atlantic ocean (part of)
6. First Indian swan English channel is "Aarthisaha"
7. In Atlantic ocean deepest part is called "purtarico Trench".

#### Indian Ocean:-

1. Third largest ocean in the world.
2. capital M-shaped ocean, Half an ocean
3. Madagaskar<sup>(1st)</sup>, srilanka<sup>(2nd)</sup>, Andaman Nicobar<sup>(3rd)</sup> are the largest Island in the world.
4. Sunda Trench is the deepest point in Indian ocean

#### Arctic Ocean:-

1. smallest ocean in the world.

#### Southern (or) Oceania (or) Antarctic Ocean:-

1. Australia + Nuzeland are called Oceania countries.

#### International boundaries:-

1. 16° boundary — Namibia, Angola.
2. 17° boundary — North vietnam and south vietnam.
3. 38° boundary — North and south Korea
4. 49° boundary — U.S.A and Canada
5. Karakoram — pak, china boundary
6. Gaja strip — Israil and palestina.
7. Maginot — Germany, France
8. Hiddenberg — Germany, poland.

## CONTINENTAL INFORMATION

1. South America :- (13 countries)

1. It is called "Bird continent", "Leaf continent", "continent for extremes"
2. There are 13 countries in South America
3. Largest country in South America is Brazil.
4. Equator passing through Ecuador, Columbia, Brazil.
5. "Aconcagua" is the highest peak in South America.
6. It is located in "Andes" Range.
7. "Bolivia" and "Paraguay" are land locked countries
8. Bolivia capital "Lopez", Lopez is the highest country capital in South America.
9. Tititaka lake (Bolivia) is the highest (height) lake in South America.

Amazon River :-

1. It is born at Andes and Largest river in the world (volume wise).
2. It merges into Atlantic Ocean.

Orinico River :-

1. World highest water falls "Angel waterfalls" located in Venezuela.
2. Atacama and Patagonia (Argentina) → coldest desert (North Chile) → (Driest desert)
3. Argentina country is called Land of the cattle and wheat.

chile country :-

1. World largest copper producer
2. Largest chewing gum producer
3. "chuquicamata" world copper town.
4. "Maracaibo" is largest lake in south America

Grass Lands in south America:-

1. Laos → venezuela
2. compass } Brazil
3. seluass }
4. pampass → south America
5. Alfa Alfa → Argentina.

Animals:-

1. puma:-

Dangerous cat family animal.

2. Llama:-

camel like animal.

3. Rhea:-

Flightless bird belongs to south America.

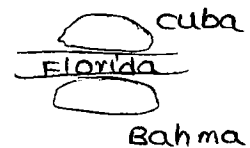
4. American phyton:-

Largest snake

Strait:-

1. Florida strait:-

cuba and Bahmas both are seperated  
by Florida strait





## Africa :-

1. Africa contain  $53 + \textcircled{1} = 54$  countries
2. 1 new country "South Sudan". It forms July-9, 2011
3. Africa — 20.4% (Area)  
          \ 14% (population)
4. Africa is called Dark continent, wild continent
5. Only one country in the world. ~~it~~ Three lines passes Equator, Tropic of cancer and Tropic of capricorn.
6. "<sup>(hot desert)</sup>Sahara" is the third largest desert in the world.
7. "Arctica" is the second largest desert in the world
8. "Antarctica" is the first largest desert in the world  
    → cold desert.
9. Largest hot desert is "sahara desert".
10. In sahara desert tribal people "Touregus" lived there.
11. In kalhari desert tribal people "Bushman" lived there.
12. Equator is passing in six countries (Africa)
  1. Gabon
  2. Congo
  3. Zaire
  4. Kenya
  5. Uganda
  6. Somalia
13. O.A.U = Organisation of African Union, capital is <sup>ababa</sup>Adis -  
country Ethopia.
14. Asia and Africa both are separated by <sup>Mandeb</sup>Baadb - El -  
strait.

## Rivers in Africa:-

1. Nile river is the world longest river.
2. Nile river is the combination of Blue Nile and White Nile.
3. Blue Nile origin is Victoria lake. It brings more water.
4. White Nile origin is Ethiopia plateau.
5. Nile river born at Victoria lake.
6. Nile river is called "Gift to Egypt".
7. Blue Nile and White Nile both rivers merge at Khartoum (Sudan).
8. Aswan dam is the world largest dam. It is constructed on Nile river.
9. Its water discharge into Mediterranean sea.

## Congo River:-

1. Second longest river in Africa.
2. It is born at East African plateau.
3. The only river in the world which crosses twice the equator.
4. Its water discharge into Atlantic ocean.

## Zambezi river:-

1. Victoria water falls wider and larger than Nigeria water falls which are located in Zambezi river.
2. Kariba dam is constructed under this river.

Orange river

Limpopo river

## Lakes in Africa:-

1. Malwai Lake:-

All type of varieties of fishes are available at this lake (South Africa).

2. Chad lake

3. Nasser Lake

4. Victoria lake → Largest lake in Africa

5. Tanganyika lake → second largest lake in Africa.

Mountains in Africa:-

1. Dragenberg (south Africa)

2. Atlas (Morocco)

3. Kilimanjaro (Tanzania)

4.

Deserts in Africa:-

1. Sahara Desert [ Touregus } "Nomadic"  
Bedoins } people lived there

2. Kalhari desert → Bushmen

3. Namib desert → It is a oldest desert.

Crops in Africa:-

1. Date fruit (Egypt)

2. Zanzibar (cloves)

3. Nigeria (palm oil)

4. Ghana (cocoa)

Grasslands in Africa:-

1. Wolds

Animals in Africa:-

1. Gorilla → central Africa

2. Tse-Tse fly → dangerous poisons fly.

Zoo in Africa:-

1. Savanna zoo
  2. Gigantic zoo
- } All type of animals are living there.

Horn of African countries:-

1. Somalia
2. Ethiopia
3. Djibouti

Land Locked countries in Africa:-

1. 15 land locked countries. Highest Land locked countries in world is South Africa.

NORTH AMERICA:-

1. North America (N.A)
2. Central America (C.A)
3. Latin America
4. Pan America

Latin America = S.A + C.A + Mexico

Pan America = N.A + S.A + C.A.

Latin mean Language.

5. Geographically Greenland belongs to N.A but administered by Denmark (European country)
6. North America and Asia both are separated by "Bering strait"

Rivers in America:-

1. Mississippi } → Longest river in North America.
2. Missouri }

3. St. Lawrence

4. Colorado

5. Hudson

6. Mezanze

7. Rio-Grande

→ Niagara water falls located at St. Lawrence.

→ Largest inland transport river (St. Lawrence).

→ Longest lift irrigation project (Colorado river)

→ California is called Orange City (world wide)

→ Colorado → California (Death valley)

→ New York is located at Hudson river. City of sky scrappers is called New York.

→ U.S.A and Mexico separated by Rio-Grande river.

→ Potomac river → Washington located

### Lakes in America:-

1. Lake Superior

2. Lake Michigan

3. Lake Ery

4. Lake Ontario

5. Lake Huron

all these are in b/w

U.S.A to Canada

Great Lakes.

→ Lake Superior is called Largest Fresh water lake in world.

→ Davis strait, separates Canada and Greenland.

→ New found Land belongs to America which is located in Atlantic ocean. Grand bank famous for world largest Fishing zone.

## Deserts :-

1. Sonoran desert
2. Mojavi desert

## Grass lands :-

1. prairies → "Largest commercial grasslands in the world."  
"Bread basket of the world."

## 2. A Airports :-

1. Artfield Jackson International Airport → Largest airport in the world.
2. Chicago railway station is largest railway station in the world.

→ pittsbergh - Iron & steel

→ philaselfia - Quater city.

## EUROPE (47 countries) :-

1. Ural mountains, caspian sea, black sea these are separated by Europe and Asia.
2. caspian sea is a largest salt water lake in the world.
3. Gibraltar strait
4. Dovers strait.
5. Africa (Morocco) and Europe (Spain) both are separated by Gibraltar strait.
6. England and France separated by Dovers strait.

## Mountains in Europe :-

1. Caca son
2. Alps mountain → "Elbrush" peak is a highest peak in Europe
3. Black forest
4. Hore

Africa	→	Kilimanjaro	} Highest peaks.
S.A	→	Aconcagua	
N.A	→	McKinley	
Europe	→	Elbrus	

### Important places in Europe:-

#### 1. Lorraine (France):-

→ Famous for Iron Ore.

#### 2. Rhur (Germany)

→ Famous for coal

#### 3. Antwerp (Belgium)

→ world largest diamond cutting centre.

#### 4. Helsinki (Finland)

→ It is called white city

→ Fine land country are called city of forest (or) land of thousand lakes.

#### 5. Istanbul (Turkey)

→ It is a Asia-European city.

→ Turkey is called "Sick man of Europe".

#### 6. England

Wales

Scotland

Northern Ireland

} Great Britain

} U.K

### Scandinavian countries:-

#### 1. Denmark

#### 2. Sweden

\* 3. Iceland → main occupation is "Fish Hunting"

\* 4. Norway → "Dogger bank" belongs to Norway. Its a "fishing zone"

#### 5. Finland

## Rivers :-

1. Volga river → Longest river in Europe
2. Danube river → International river. (It is only river <sup>many countries</sup> crosses)
3. po river → Venice city located in po river
4. Seine river → Paris
5. Tiber river → Rome
6. Thames river → London
7. Avon river → Bristol.

## ASIA :- (44 countries)

Asia / 65% population  
/ 30% Land mass

1. 44 countries are there.
2. China → Asian Lion
  - It is going to maintain 16 in relation with 16 international countries. Mainly Russia.
  - Yang-se-kiyang (Longest river in Asia) (5400km)
  - Ho-yang-Ho (Yellow river in Asia)
  - Capital of China is Beijing (It is called Peking).
  - Lopnor lake, nuclear testing centre for Japan and China.
  - Takla Makan desert, located in China.
  - Kunlun, Tianshan mountains are located in China
  - Anshan city (China) famous for Iron and steel.

Asia + Europe = Eurasia  
↓  
"Steppies Grasslands"



## Japan:-

1. Old name is Nippon
2. Tokyo → world largest population city  
Nagasaki → steel  
Yokohama → Textiles  
Nagoya → precision Instrument

## Singapore:-

1. Highest Urbanisation population in the world.

## Pakistan:-

1. country of canals.
2. Suliman, Kirthar mountains
3. Azarbaizan (Baku) is famous for petroleum.

Mongolia — second largest land locked country. Here Gobi desert

Kazigistan — First largest land locked country

→ Asia largest desert is Arabian Desert.

## Myanmar:-

1. Land of mountains
2. Irrawady river.

## Srilanka:-

1. North point of Srilanka is Dondra Range Trench.
2. Mahavelli Ganga is a River.
3. Sunda strait separated by Java and Sumatra Islands
4. Malacca strait separated by Malaysia and Sumatra

## Bangladesh:-

1. Country of Rivers and tributaries

## Australia:-

1. Down continent (or) Forgotten continent (or) Kangaroo continent (or) Flat continent (or) Contry continent.
2. Captain Cook discovered Australia in 1788.
3. Smallest continent in the world.
4. Tropic of Capricorn separated Australia in two parts.
5. World second largest Island "Papua New Guinea". No medic people living there. These people are very dangerous are called Head Hunters.
6. Australia and Papua New Guinea both are separated by Torres Strait.
7. Australia and Tasman Island are separated by "Bass Strait".
- 8.

## Newzeland:-

1. North Newzeland and South Newzeland both are separated by Cook Strait.



## Marsupilous :-

1. Marsupilous means pouch
2. Australian landmass are called Marsupilous. ~~land~~

## Deserts :-

1. Victorian desert
2. Sandy desert
3. Simpson desert

## Rivers :-

1. Murray rivers
  2. Darling river
- } Australia

## Grasslands in Australia:-

1. "Downs" Grassland

## Resources in Australia:-

1. Alluminium
2. Bauxite
3. Iron Ore reserves
4. coking coal
5. Uranium reserves

## Melbourne:-

1. Largest food processing centre in the world.

## Peak in Australia:-

1. Kosciuszko is the highest peak in Australia.

## ANTARCTICA:-

1. It is called white continent. (or) continent for <sup>Research</sup> science and
2. EOA First research centre at Antarctica "Dakshinangotri" in 1983. At present it is closed. It opened by India.
3. Malathi research centre
4. Bharathi research centre } established by India.
5. Lombard glacier → Largest glacier on the earth.
6. First Antarctica expedition by "S.Z. Quasim" in 1981.
7. N.I.O - National Institute of Oceanography (Goa)
8. In 2013, 30<sup>th</sup> <sup>Antarctica</sup> ~~ice~~ expedition by "Gandhi professor".
9. Highest peak in Antarctica "winson Massif".

Note:-



1. Caspian sea
  2. Black sea
  3. Mediterranean sea
- } 'surrounding countries

