



MPPSC Foundation Batch 2025

By
Shubham Gupta sir

General Information of India

1) Geographical
Location of India







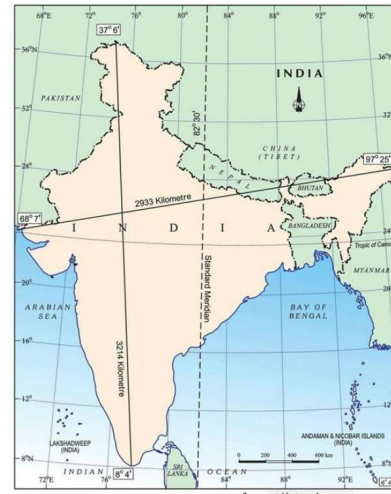
2) Indian States & Union
Territories

3) India's borders & Neighboring
Countries

4) Other Facts

1.1) Geographical Location of India

- A) Location 
- B) Nomenclature of India 
- C) Area & Population of India 
- D) Latitudinal & Longitudinal extent of India 



A) Location

1) Hemisphere

- ↳ Latitude :- Northern
- ↳ Longitude :- Eastern

2) Continent :-

Asia

↓
South Asia

↓
Indian Subcontinent

↓
India Pakistan Nepal Bhutan Bangladesh



3) India is 876 km away from equator

A) Location

1) Hemisphere

- ↳ Latitude :- Northern
- ↳ Longitude :- Eastern

2) Continent :- Asia

↓
South Asia

↓
Indian Subcontinent

↓
India Pakistan Nepal Bhutan Bangladesh

3) India is **876 km** away from equator





B) Nomenclature of India

■ Formal Names (Article 1) :-

1) Bharata :- Puranas

- According to Rigveda, the name Bharat was formed from a clan named Bharat.
- According to Vayu Purana, the name Bharat came from the name of Bharat, son of King Dushyant.

2) India :- Greek

1) Argavarta	Abode of the Aryans (Brahmavarta)
2) Jambudvipa	Asia
3) Hindustan	Persian called Indus as Hindu and region as Hindustan.
4) Bharat Varsh	Vedic literature
5) Tianzhu	Chinese traveller
6) Nabhivarsha	



जम्बूद्वीप	एशिया
क्रौंचद्वीप	उत्तरी अमेरिका
प्लक्षद्वीप	दक्षिण अमेरिका
शाकद्वीप	यूरोप
पुष्करद्वीप	अफ्रीका
शाल्मलीद्वीप	ऑस्ट्रेलिया
कुशद्वीप	इंडोनेशिया, फिलीपींस

1 MELUHA

Appears in ancient texts of Mesopotamia to refer to the Indus Valley Civilization

2 BHARAT/ BHARATVARSHA

Appears in Puranas as the land between the 'sea in the south and the abode of snow in the north'.

3 ARYAVARTA

Appears in the Manusmriti as the land occupied by the Indo-Aryans

4 JAMBUDVIPA

Appears in Vedic texts and is still used in a few Southeast Asian countries to describe subcontinent.

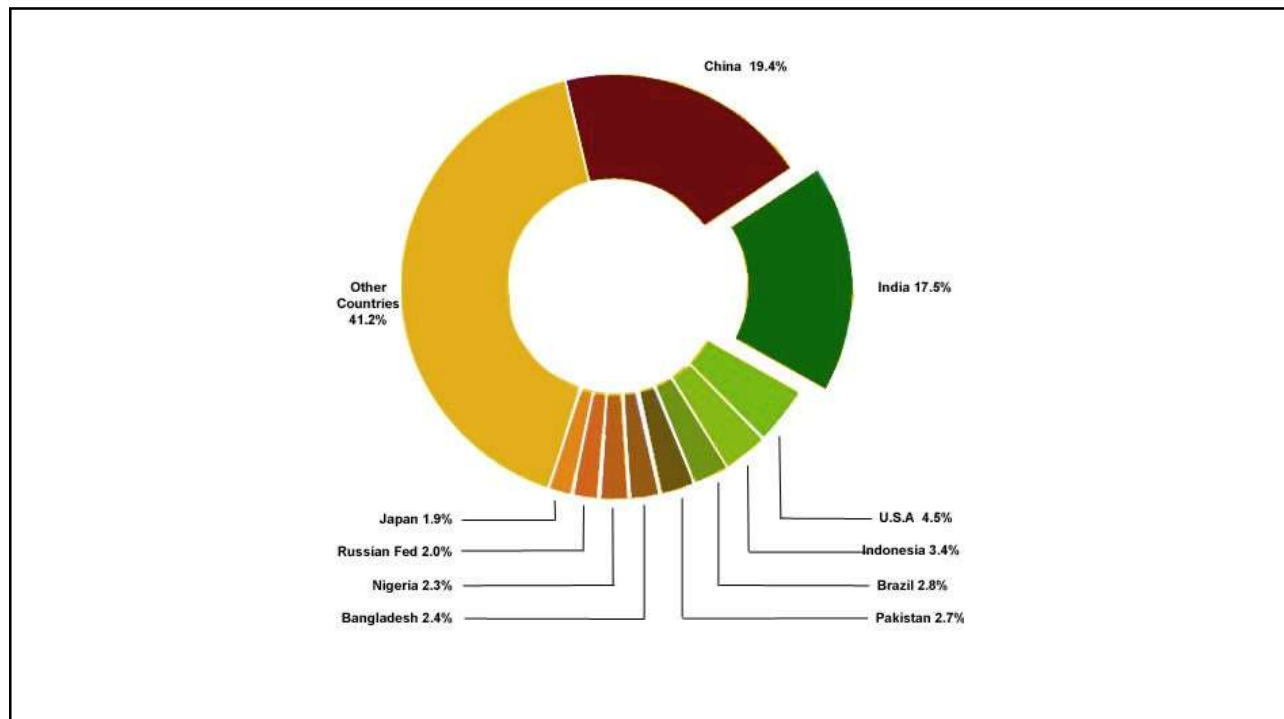
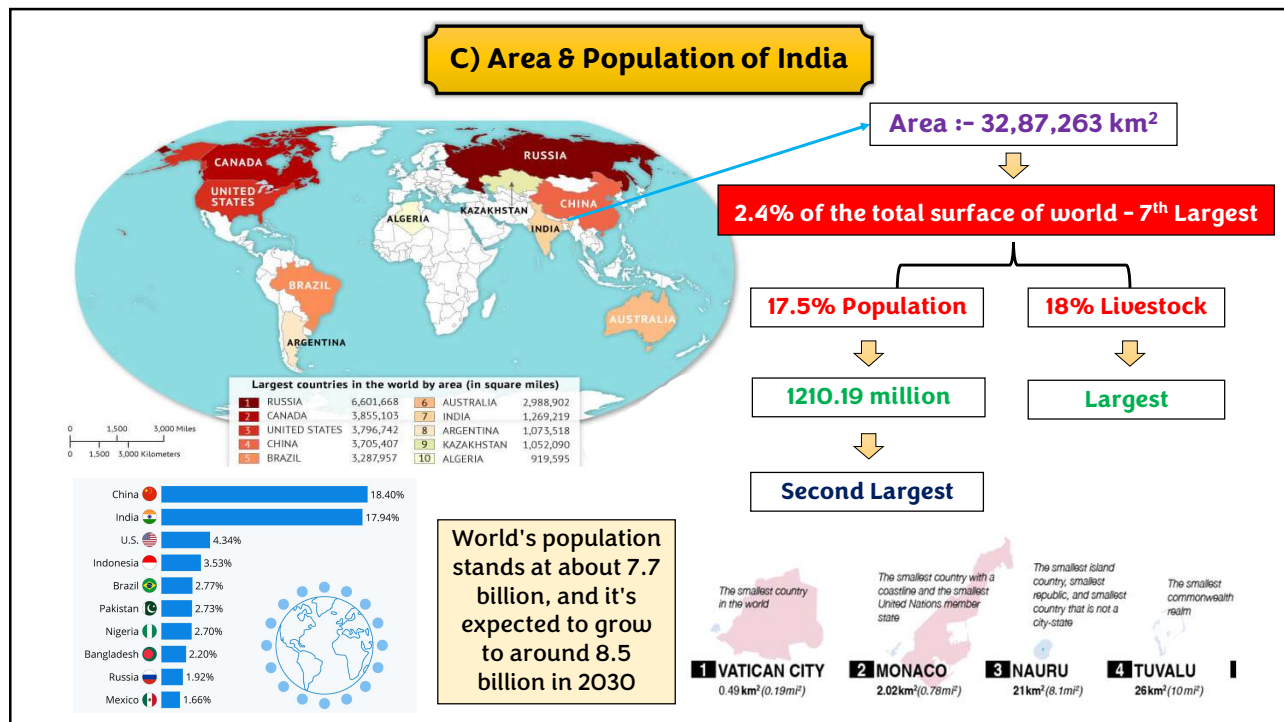
5 HIND/HINDUSTAN

First used by Persians to refer to the land across river Sindhu.

6 INDIA

First used by the Greeks, who transliterated 'Hind' as 'Indus'

Date	Name	Source
c. 486 BC	Hidush	Naksh-i-Rustam
c. 440 BC	India	Herodotus
c. 300 BC	India/Indikē	Megasthenes
c. 140 AD	Indoi, Indou	Arrian
c. 590 AD	Hind	Istakhri
c. 650 AD	Five Indies	Xuanzang
c. 944 AD	Hind, Sind	Masudi
c.1020 AD	Hind	Al-Birūnī
1205 AD	Hind	Hasan Nizāmī
1298 AD	India the Greater, India the Minor, Middle India	Marco Polo
c. 1328 AD	India	Friar Jordanus
1404 AD	India Minor	Clavijo



D) Latitudinal and Longitudinal extent of India

Earth

- Huge size
- Diversity of climate
- Location



Martin Behaim :- Model of the Earth (Globe)



Scientists drew imaginary lines on the globe



Horizontal Line: -
Latitude

Vertical line: -
Longitude



Shape of India is **Quadrangular**.

37°6' North Latitude
Indira Col

68° 7' East
Longitude (Guhar
Moti, Gujarat)

97° 25' East
Longitude (Kibithoo,
Anjaw, AP)

2933
3214

8°4' North Latitude
(Kanyakumari, TN)

6°4' North Latitude (Indira Point/La-Hi-Ching
/Pygmalion/Parsons Point)

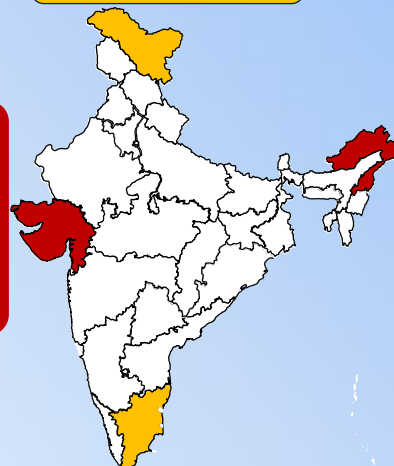
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8°4' North Latitude
(Kanyakumari, TN)

6°4' North Latitude
(Indira Point)



D.1) Latitudinal Expansion Of India

- 1) **Mainland** :- $8^{\circ} 4'$ North latitude to $37^{\circ} 6'$ North latitude
- 2) **Including Islands** :- $6^{\circ} 4'$ North latitude to $37^{\circ} 6'$ North latitude
- 3) The climate of an area is determined by latitude lines.
- 4) **Climate of India** :- Tropical monsoon climate
- 5) Tropic of Cancer passes through 8 states of India
 - ± Gujarat, Rajasthan (Shortest), Madhya Pradesh (Longest), Chhattisgarh, Jharkhand, West Bengal, Tripura, Mizoram
 - ± **GURBA** – Gandhinagar, Ujjain, Ranchi (On Cancer), Bhopal, Agartala

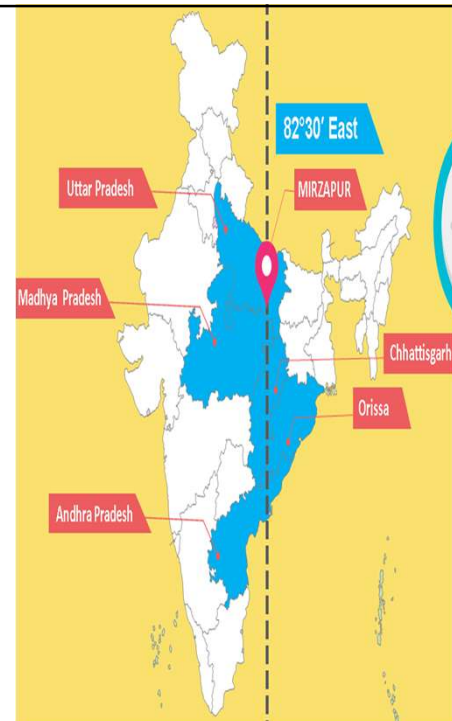


24 degrees north latitude -latitude passing through most Indian states

Gujarat, Rajasthan, Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura, Manipur and Mizoram (10)

D.2) Longitudinal Expansion Of India

- 1) 68°7' East Longitude to 97°25' East Longitude
- 2) The time of a place is determined (Standard timeline)
- 3) **Longitudinal difference** :- 29° (About 2 hours)
- 4) **Standard timeline of India :-**
 - ↪ 82.5° East longitude, which passes through Naini of Prayagraj
 - ↪ IST is 5 hours 30 minutes ahead of Greenwich Mean Time
 - ↪ **5 States** :- Uttar Pradesh, MP, Chhattisgarh, Odisha & Andhra Pradesh
 - ↪ Indian Standard Time was established on 1 September 1947. When IST was established, the Central Observatory was in Chennai, which was later established in Shankargarh Fort in Prayagraj.
 - ↪ Before independence, India followed three major time zones - Bombay, Calcutta and Madras



D.3) Advantages of India's Geographical Location

India is the seventh largest country in the world based on area and the largest based on population, to which the following points provide strategic importance -

- 1) India is situated in the middle of South Asia, which is helpful in promoting trade between East and West Asia.
- 2) The coastline of India is the largest coastline located in the Indian Ocean which proves why the Indian Ocean was named after India.
 - ↪ India can provide leadership to all countries in the Indian Ocean region
 - ↪ Helpful in stopping China's expansionist policies by increasing Indo-Pacific cooperation in the Indian Ocean region.
- 3) India is a peninsula which provides India, extensive coastline on the east and west which increases trade opportunities.
- 4) Almost all types of terrestrial forms are found in India such as snow-clad mountains, evergreen forests, cold and hot deserts, coral reefs which make India a special tourist attraction.

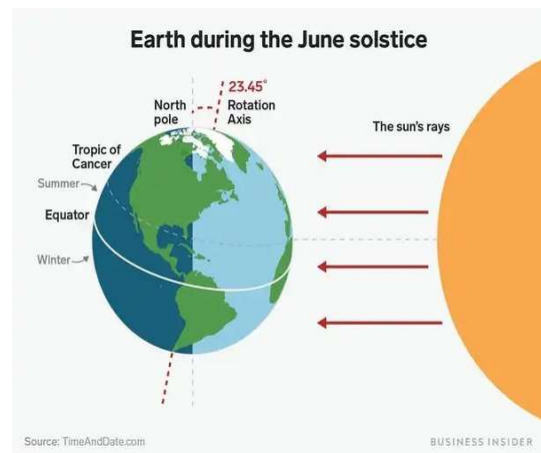
D.4) Advantage of India's central position in the Indian Ocean

The Indian Ocean is the third largest ocean after the Pacific and Atlantic Oceans and is the only ocean named after a country. The Indian Ocean is named after India because of India's central location in the Indian Ocean. It has benefited from the central position of India in the Indian Ocean as follows-

- 1) India is situated in the middle of the Indian Ocean, hence it connects Europe to west and East Asia.
- 2) India's central position in the Indian Ocean has helped India establish close links with West Asia, Africa, and Europe from the west coast and with Southeast and East Asia from the east coast.
- 3) The sea trade between Europe and East Asia passes through India.
- 4) No other country in the Indian Ocean has as much coastline as India (7516.6 km).
- 5) Due to such strategic position of India and it is a security provider for many small countries in the Indian Ocean.

D.5) Day length in Kashmir and Kanyakumari

- 1) The duration of the day and night difference get decreases when we move toward the equator from the poles (zero degrees latitude) and the duration of the day and night difference get increases when we go away from the equator to the poles (90 degrees latitude). Most of the year, there are 12 hours of day and night at the equator. The reason for the same is that mid-day sun rays make 90 degrees angles for a larger duration of the year at the equator.
- 2) Kanyakumari ($8^{\circ}4'N$) is very close to the equator as compared to Kashmir ($37^{\circ}N$), which is why the difference between the duration of day and night is hardly felt at Kanyakumari, but we feel the difference between the duration of the day and night in Kashmir.

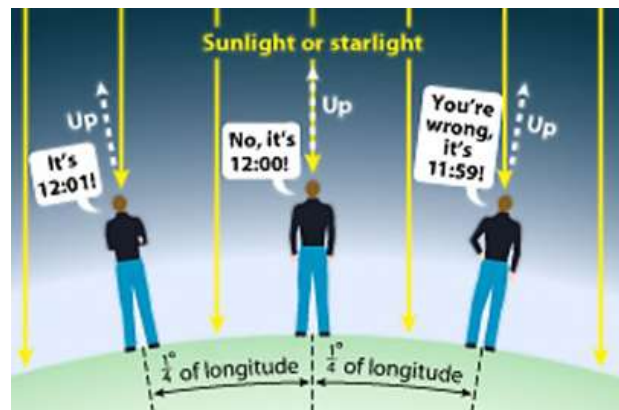


D.6) Why 82°30'E Has Been Selected As The Standard Meridian Of India?

- 1) It is difficult to prepare a separate local time for each longitude, so for convenience, we have a standard meridian. So, we can say, the standard meridian of the country is selected for marking the time zone of the country.
- 2) The standard meridian of countries largely depends on the longitudinal extent of the country. A country with greater longitudinal extension has more than one time zone or standard meridian. For example, due to greater longitudinal expansion of America and Russia, 11-11 time zones have been created.
- 3) The longitudinal extent of mainland India is between 68°7'E and 97°25'E which is about 30°. That is why, From Gujarat to Arunachal Pradesh, there is a time lag of two hours ($30 \times 4 = 120 \text{ minutes} = 2 \text{ hours}$).
- 4) To avoid other problems arising from many time zones, there is only one time zone in India. There is also an international understanding among the countries of the world to select the standard meridian in multiples of 7°30' (30 minutes of time) of longitude, which is why the standard meridian of India has been selected 82°30'E (Passing through Mirzapur, Uttar Pradesh), it is nearly middle of 68°7'E and 97°25'E. And it passes almost in the middle of India.

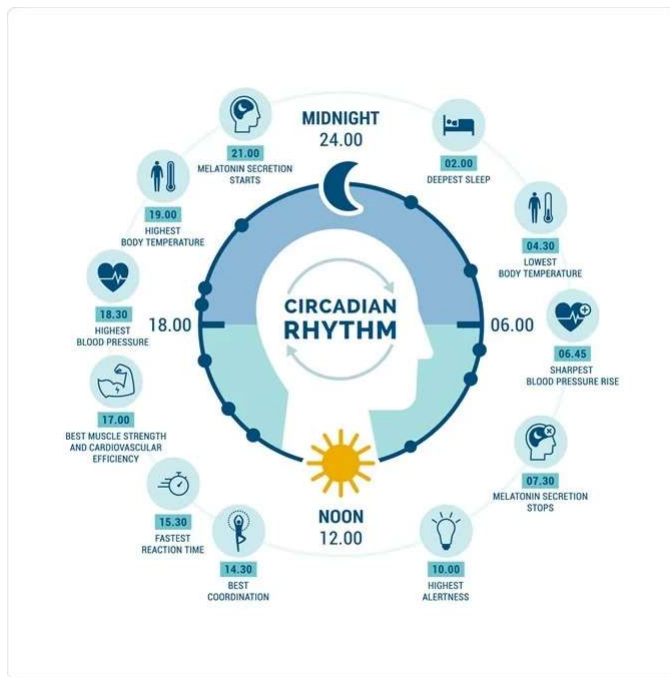
D.7) Local time

- 1) When the Sun is highest in the sky at a place and exactly above the longitude of that place, then the time there is considered to be 12:00 noon.
- 2) All the clocks there are struck at 12:00 and these clocks tell the local time there. All places located on one longitude have the same local time, but places located on different longitudes have different local time.
- 3) This change in local time occurs at the rate of 4 minutes per degree or one hour per 15° of longitude.



D.8) Daylight Saving Time

- 1) **Daylight saving time (DST)** is the practice of setting forward the clocks by one hour from the standard time during the summer and one hour back during autumn.
- 2) **Purpose :** To make better use of natural daylight. More work can be done when natural light is available. In the 28 member countries of the European Union, the clocks are moved forward on the last Sunday of March, while they are moved back on the last Sunday of October.
- 3) **Practice in India :** India does not follow this concept as countries near the Equator do not experience high variations in daytime hours between seasons.
- 4) **Reasons for adoption :** In April 1916, during World War I, Germany and Austria introduced DST to reduce the use of artificial lighting. Many countries gradually adopted this process
- 5) **Criticism of the practice**
 - ✎ The most energy-consuming appliances run at all hours of the day, reducing the impact of such a move.
 - ✎ Studies have also shown body clock disruptions due to the DST have adverse health effects.
 - ✎ Adverse effects on circadian rhythm – In the US, one hour of sleep loss increases the fatal crash rate by 5.4% to 7.6%.



Circadian rhythm is the 24-hour internal clock in our brain that regulates cycles of alertness and sleepiness by responding to light changes in our environment. Our physiology and behavior are shaped by the Earth's rotation around its axis.



Daylight Savings Time	
PROS	CONS
1. Fewer Accidents in Evening More evening sunlight hours improves visibility and decreases accidents. ¹	1. More Vehicle Accidents in the Morning Studies show a rise in car accidents on the first workday after daylight savings time. ³
2. Helps the Economy Longer evening daylight hours help promote shopping after work for 8 months of the year. ¹	2. More Workplace Injuries Research shows 5.7% more workplace injuries, and 67.6% more workdays are missed due to injuries on the first Monday following DST than on other days. ⁴
3. Promotes More Active Lifestyle More evening sunlight hours creates a 3% increase in participation in outdoor activities vs screen-time after work. ¹	3. Adverse Physical Health Effects DST time changes make sleeping or waking difficult thus increasing risk of obesity, problems with diabetes, and cardiovascular disease. ³
4. More Useful Daylight Hours You are more likely to be awake and use the daylight in the evening after work than in the morning before work.	4. Adverse Mental Health Effects Return to standard time in the fall is linked to depression due to shorter exposure to daylight. ³

D.9) Tea Garden Time

In Northeastern states the sun rises and sets earlier than the official working hours. To deal with this tea gardens of Assam have been following 'Tea Garden Time' which is one hour ahead of India Standard Time (IST).

D.10) Demand of separate time zones

India adopted 82.5 degrees east longitude as the standard timeline on 1 September 1947. Before this, there were three time zones in India (Kolkata, Bombay and Madras). As a result, after 1947, the North-Eastern states of India and Andaman and Nicobar are demanding a separate standard time zone due to following reasons: -

- 1) Wide longitudinal extension of India :- India's width from east to west is 2933 kilometers and the difference in longitudinal extension is about 30 degrees or 2 hours.
- 2) Negative impact on productivity
- 3) Increase in energy consumption due to lack of hours of natural light
- 4) Tea Garden Time Zone has been in use in Assam since colonial times
- 5) Obstacles in establishing better coordination with nature

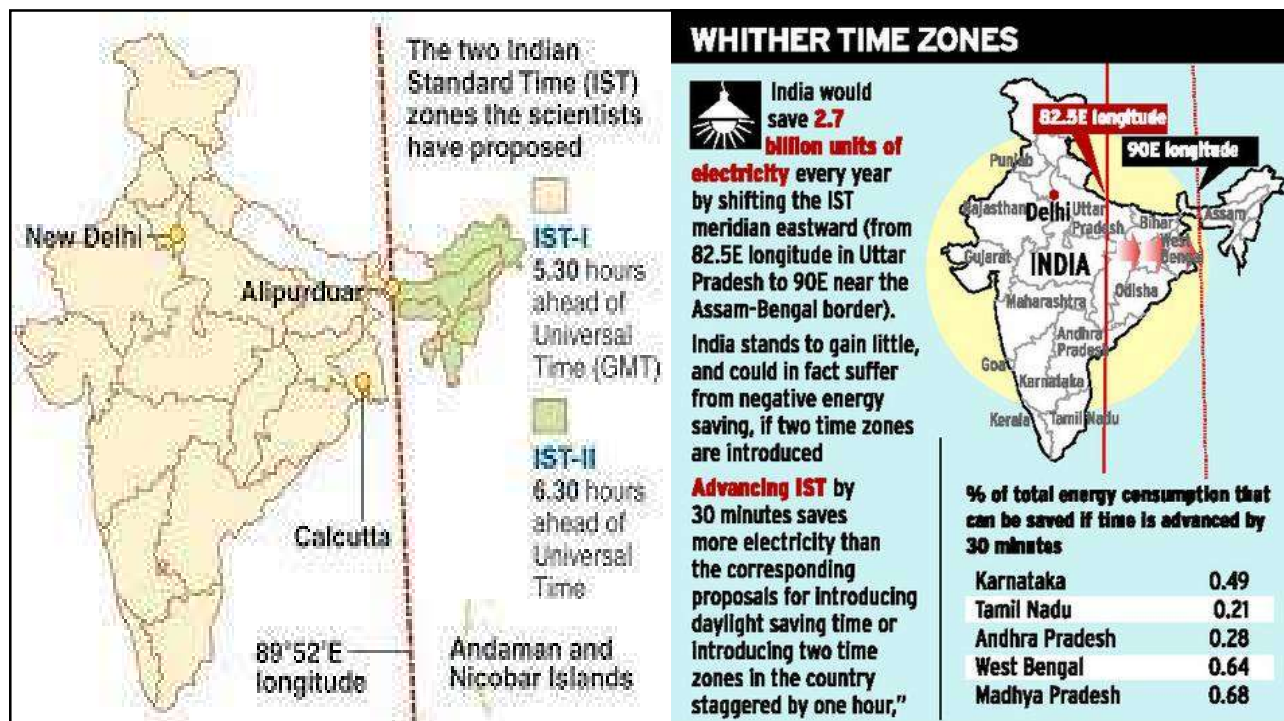
Arguments in favor of two time zones :- Recently, a study conducted by the Council of Scientific and Industrial Research (CSIR) has supported the concept of two time zones for the following reasons :-

- 1) 82.5 degrees longitude should be kept as standard time for entire India while a separate time zone should be created for the North-Eastern states.
- 2) Increase in productivity and reduction in energy consumption (about 2.7 billion units of electricity saved)

Arguments against two time zones: - In 2001, the Government of India constituted a committee of four members under the Ministry of Science and Technology, which rejected the concept of two time zones for the following reasons. :-

- 1) Increase in complexity in timetable of transport modes like trains, airlines and possibility of accidents.
- 2) Problems in centre-state and inter-state coordination
- 3) According to government, India's longitudinal extension is not so great that it requires another time zone.
- 4) Decrease in India's literacy and educated rate

Since the demand for separate time zone has been there since independence, the government should constitute an expert committee and this issue can be resolved by taking into consideration the views of all stakeholders.



1.2) Indian States & Union Territories

1) 28 states & 8 Union Territories

2) **October 31, 2019 :-** Jammu and Kashmir and Ladakh

3) **November 27, 2019 :-** The merger of these two UTs takes place by the **Dadra and Nagar Haveli and Daman and Diu**

4) **Largest states (area) -** Rajasthan, Madhya Pradesh, Maharashtra, Uttar Pradesh

5) **Smallest states (area) -** Goa, Sikkim, Tripura, Nagaland

6) **UT (Area) -** Largest Ladakh & Smallest Lakshadweep

7) **UT (Population) -** The largest is Delhi, the smallest is Lakshadweep.

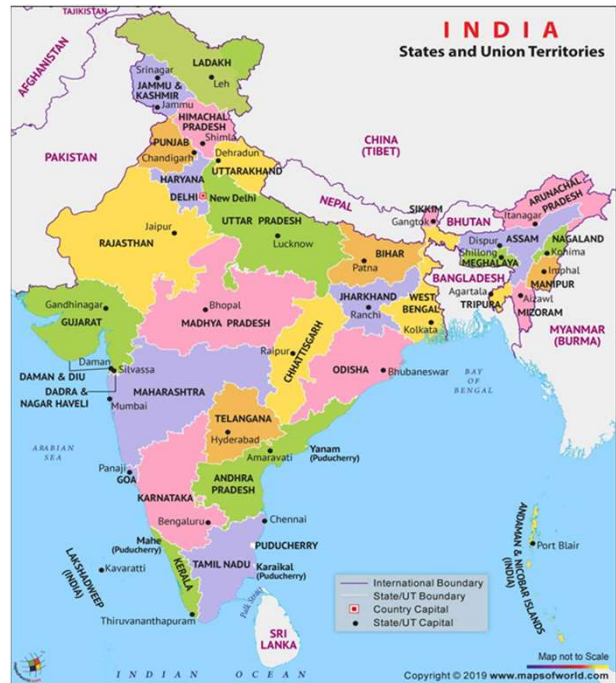
8) **As of April 2022 :- 779 districts (640 in 2011)**

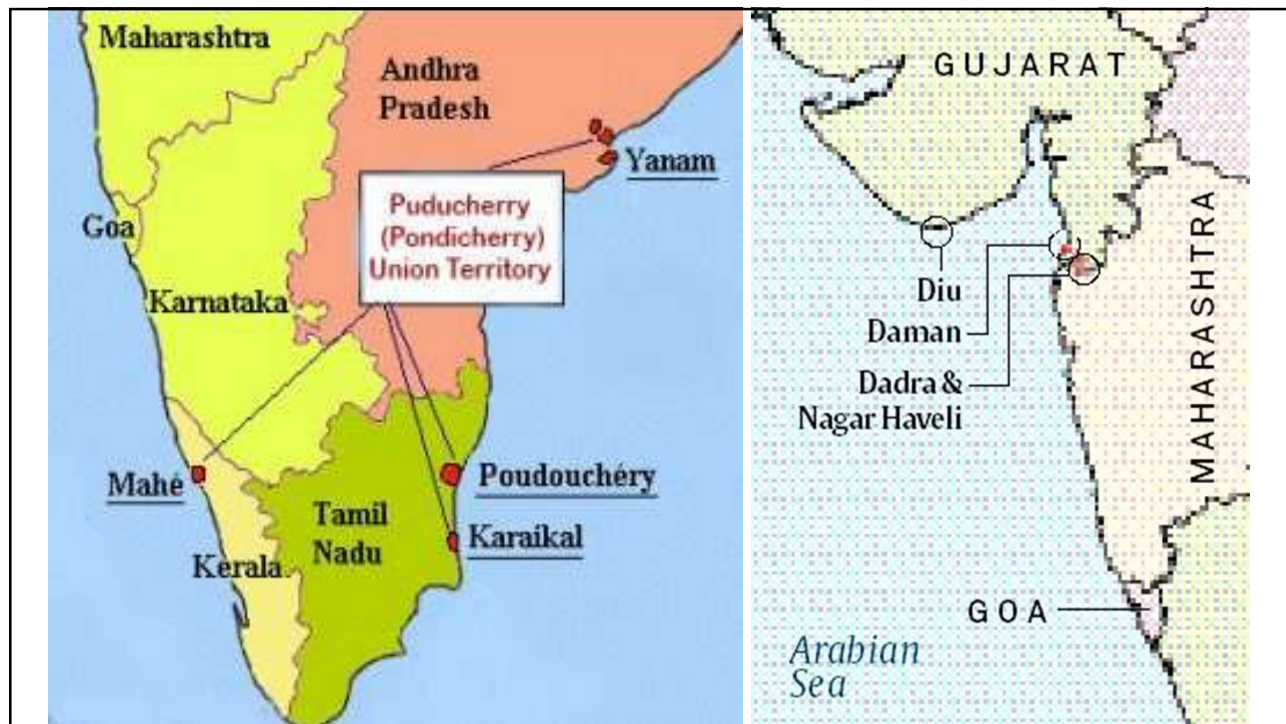
ℒ **Largest district (area) :-** Kutch (Gujarat), Leh (Ladakh), Jaisalmer (Rajasthan), Barmer (Rajasthan)

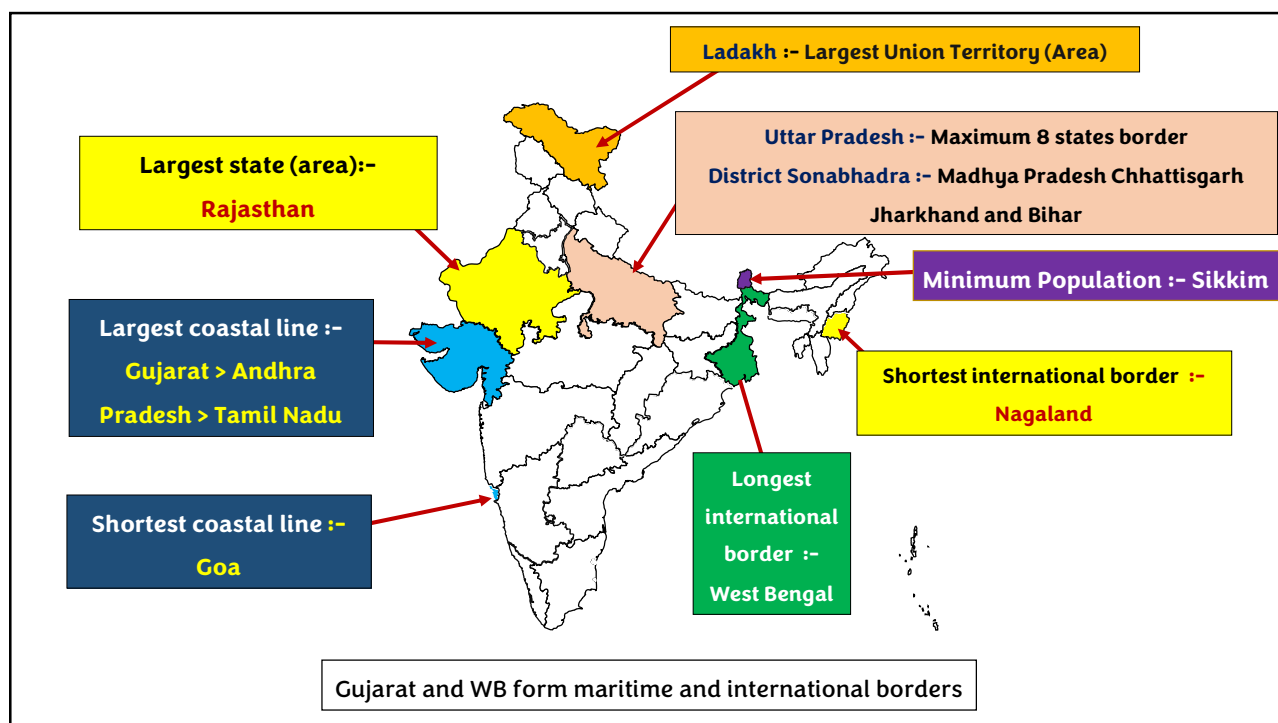
ℒ **Smallest district (area) :-** Mahe (Puducherry)

ℒ **Largest district in population :-** Thane, Maharashtra

Andaman and Nicobar Islands	Port Blair
Chandigarh	Chandigarh
Dadra and Nagar Haveli and Daman & Diu	Daman
National Capital Territory of Delhi	Delhi
Jammu & Kashmir	Summer – Srinagar Winter – Jammu
Ladakh	Leh
Lakshadweep	Kavaratti
Puducherry	Puducherry





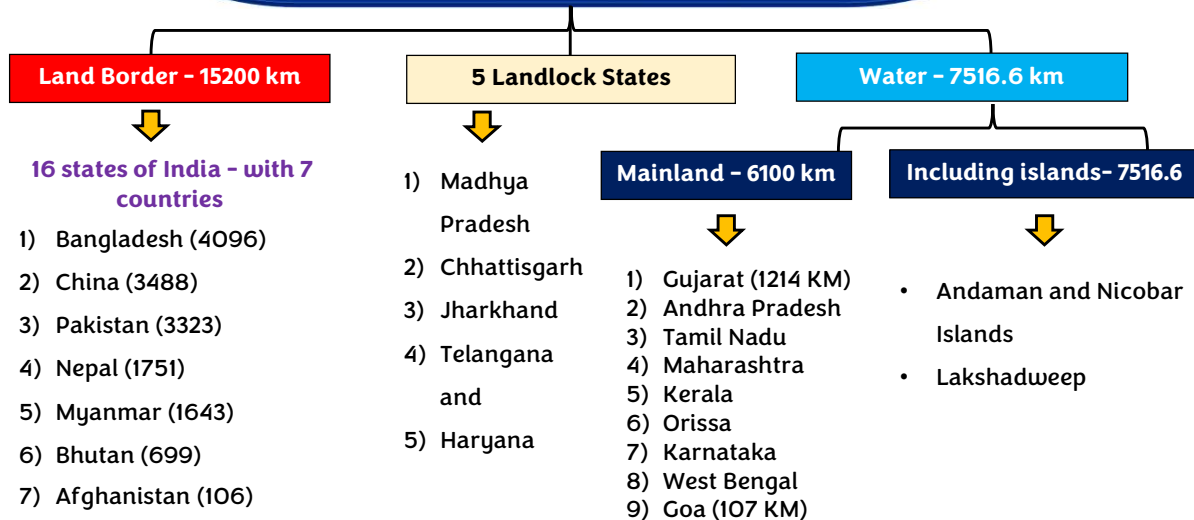


STATEMENT IN REPLY TO PARTS (a) TO (e) OF THE LOK SABHA STARRED QUESTION NO.498 FOR 30.04.2013.

(a) The total length of coastline along each of the coastal State/UT in the country is as follows:

Sl. No.	State / UT	Length of coastline (in km)
(i)	Gujarat	1214.7
(ii)	Maharashtra	652.6
(iii)	Goa, Daman and Diu	160.5
(iv)	Karnataka	280.0
(v)	Kerala	569.7
(vi)	Tamil Nadu	906.9
(vii)	Pudducherry	30.6
(viii)	Andhra Pradesh	973.7
(ix)	Odisha	476.4
(x)	West Bengal	157.5
(xi)	Lakshadweep Islands	132.0
(xii)	Andaman & Nicobar Islands	1962.0
	Total Coastline	7516.6

1.3) India's borders & Neighboring Countries



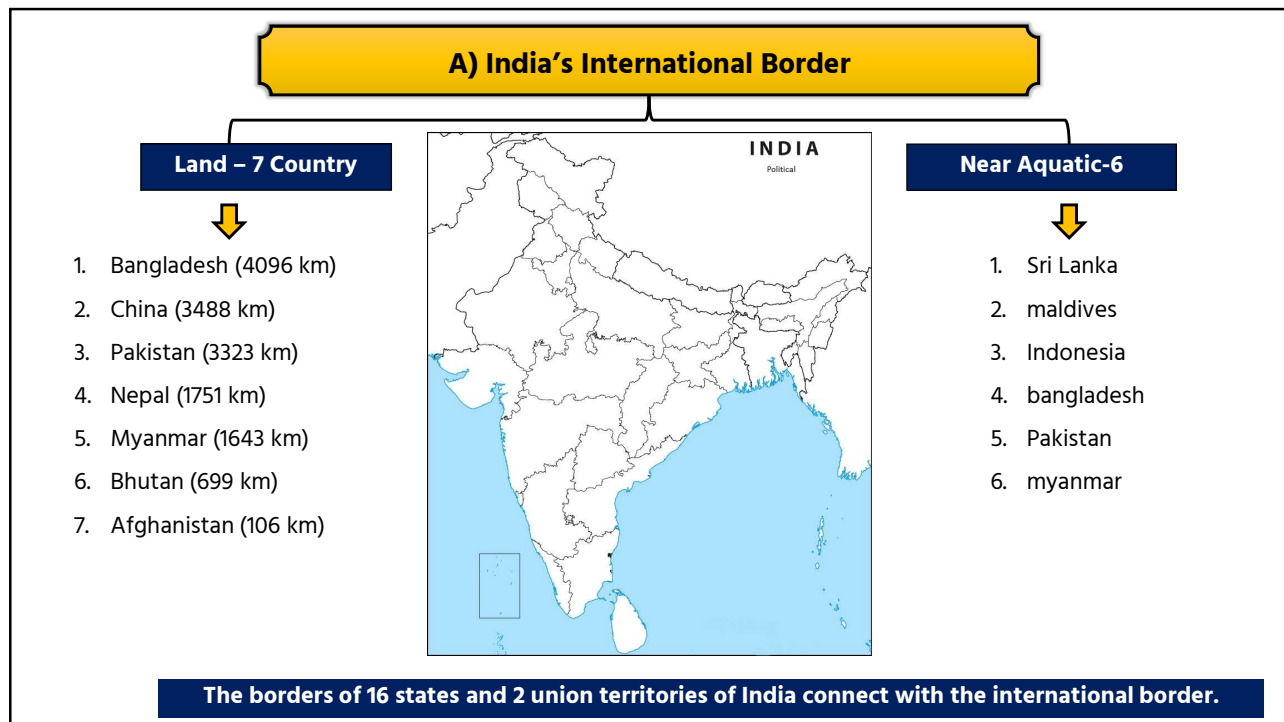
NOTE

Types of International Boundary

Geographical Boundary
 Jura Mountains :- France-Switzerland
 Pyrenees Mountains: France and Spain
 Arakanyoma :- India-Myanmar

Latitudinal Boundary
 38° :- North and South Korea
 49° :- America and Canada

Superimposed Boundary
 India and Pakistan
 India and China



Bangladesh (4096 - BSF)	5 State :- West Bengal, Assam, Meghalaya, Tripura, Mizoram	<ul style="list-style-type: none"> ▪ Zero line between tripura-bangladesh
China (3488 - ITBP & SFF)	<ul style="list-style-type: none"> ▪ 4 State :- Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh ▪ 1 union territories :- Ladakh 	<ul style="list-style-type: none"> ▪ Mac mohan line ▪ Line of actual control (Lac)
Pakistan (3323 - BSF)	<ul style="list-style-type: none"> ▪ 3 State :- Punjab Rajasthan and Gujarat ▪ 2 union territories:- Jammu Kashmir and Ladakh 	<ul style="list-style-type: none"> ▪ Radcliffe line ▪ Line of control (Loc)
Nepal (1751 - SSB)	5 State :- Uttarakhand, UP, Bihar, West Bengal, Sikkim	
Myanmar (1643 - AR)	4 State :- Arunachal Pradesh, Nagaland, Manipur, Mizoram	<ul style="list-style-type: none"> ▪ Natural limit
Bhutan (699 - SSB)	4 State :- Sikkim, West Bengal, Assam, Arunachal	
Afghanistan (106)	1 union territories :- Ladakh	<ul style="list-style-type: none"> ▪ Durand line

THE SEVEN CENTRAL ARMED POLICE FORCES



International Border	Guarded by
Indo - Pakistan Border	Border Security Force (BSF)
Indo - Bangladesh	Border Security Force (BSF)
Indo - China Border	Indo - Tibetan Border Police (ITBP)
Indo - Nepal Border	Sashastra Seema Bal (SSB)
Indo - Bhutan Border	Sashastra Seema Bal (SSB)
Indo - Myanmar Border	Assam Rifles (AR)

B) International Land Border of India

B.1) India-Bangladesh Border



- 1) Longest International boundary of India – **4096 km**
- 2) **5 States :-** West Bengal, Tripura, Meghalaya, Mizoram and Assam
 - Tripura is surrounded by Bangladesh/International border on three sides.
 - The border of Tripura and Bangladesh is called ZERO LINE.
- 3) **Major Issues :-**
 - I. Sundarbans
 - II. Tipaimukh Dam
 - III. Teesta River
 - IV. Teen Bigha Corridor
 - V. Farakka Barrage
 - VI. Illegal migration
 - VII. Trains
 - VIII. Land Border Agreement

B.1.1) Sundarbans Delta

1. The world's largest delta by the Ganges Brahmaputra River

2. **Sundarbans**
- Eastern - Bangladesh
 - Western - India
- Wetland
 - 27th Ramsar site
 - Mangrove

3. **Formation**
- Ganga - Padma
 - Brahmaputra - Jamuna
- Meghna
- ↓
- Bay of Bengal

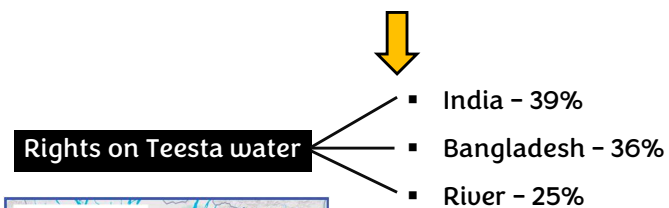


B.1.2) Teesta River

1) **Source** - Sikkim (Tso Lhamo Lake & Zemu Glacier)

2) **Mouth** - Brahmaputra (Jamuna) River

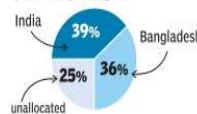
3) India-Bangladesh Agreement on Teesta River in 1983



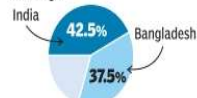
What is the dispute

► Bangladesh wants **50% of Teesta's water** between Dec and May annually; **India claims a share of 55%**

Negotiations on since 1983, preliminary deal gave



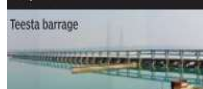
In 2011, Delhi & Dhaka struck interim deal for 15 years – India would get



► But Banerjee opposed it; signing shelved to later that year

► Teesta water-sharing agreement waiting to be signed since 2011

Hydropower on Teesta is another point of conflict; At least **26 projects** on the river mostly in Sikkim, aimed at **producing some 50,000MW**



What is the Teesta

- Teesta originates in Sikkim from the Khangse and Zemu glaciers
- Its major tributary – Rangeet – joins it at Darjeeling's Teesta Bazaar
- At Mekhliguni in north Bengal's Cooch Behar, it enters Bangladesh, joins Brahmaputra
- Teesta is Bangladesh's fourth largest transboundary river for irrigation and fishing
- Teesta floodplain covers 2,750sq.km in Bangladesh
- Of Teesta's catchment, 83% in India; 17% in Bangladesh
- Its catchment supports about 10m people – and 14% of crop
- Nearly 1 lakh hectares across 5 districts impacted by upstream drawdowns from the Teesta in India

B.1.3) Tin Bigha Corridor

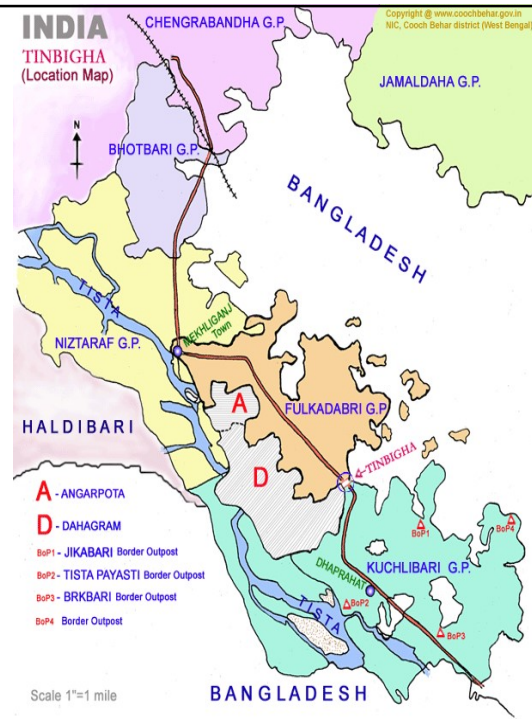
- 1) **Location :-** Cooch Behar, West Bengal
- 2) Connects Dahagram–Angarpota enclave of Bangladesh to the rest of Bangladesh.
- 3) The Corridors were leased to Bangladesh on 26 June 1992
- 4) October 19th, 2011, corridor was opened for 24 hours

B.1.4) Trains

- 1) **Maitri Express** - Calcutta to Dhaka - 2008
- 2) **Bandhan Express** - Calcutta to Khulna - 2018
- 3) **Mithali Express** - Haldibari to Chilahati - 1 June 2022

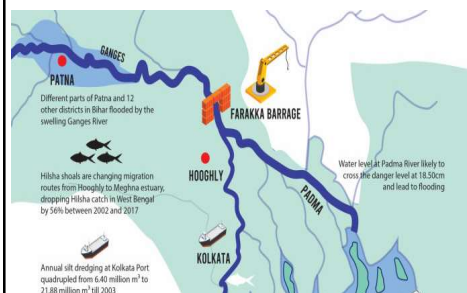
B.1.5) Tipaimukh Dam

- 1) **Location** - Tipaimukh, Manipur
- 2) **River** - Barak, a tributary of the Brahmaputra



B.1.6) Farakka Barrage

- 1) **Location** - Murshidabad, West Bengal
- 2) **Foundation** - 21 April 1975
- 3) **Objective** - To increase the water supply in the Hooghly River from the waters of the Ganges so that there is no problem of silt in port of Calcutta (London of East).



B.1.7) India Bangladesh Land Border Agreement

- 1) **Background :-** Indira Rahman Accord of 1974
- 2) **7 May 2015 :-** Land border dispute between India and Bangladesh was ended by the 100th Constitutional Amendment 2015.
- 3) Accordingly, Bangladeshi enclaves (51) located in India were merged in India and the Indian enclaves (111) located in Bangladesh of were assigned to Bangladesh.
- 4) For this purpose, this amendment act amended the provisions relating to the territories of four states (**Assam, West Bengal, Meghalaya and Tripura**) in the First Schedule of the Constitution.

REDRAWING INDO-BANGLA BORDER			
Exchangeable Indian enclaves in Bangladesh: 111 (17160.63 acre)	Adverse possession areas to be acquired by India West Bengal 2398.05 acre Meghalaya 240.578 acre Tripura 138.41 acre <small>(All enclaves in Bengal)</small>	Adverse possession areas to be transferred to Bangladesh Assam: 268.39 acre Meghalaya: 41,702 acre WB: 195759 acre	



B.1.8) Illegal Migration

1) **East Pakistan :-** 1971 Mukti Vahini, (Bangladesh)

2) **1961 to 1980 :-** More than 10 lakhs people



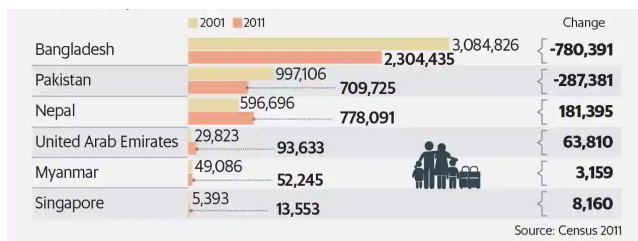
Protest in India (Assam) :- 15 August 1985 (Assam Accord)



✳ Government of India and AASU

✳ Provision of NRC in Assam

✳ Name in voter list till 24 March 1971



- NRC (National Register of Citizen) is the register which contains the details of all Indian citizens.
- It was prepared after the 1951 census. The register contained details of all persons enumerated during that census.
- In this, only the names of those Indians are being included who are living in Assam before March 25, 1971. After that those reaching the state will be sent back to Bangladesh
- NRC is applicable only in those states from where citizens of other countries enter India. NRC report itself tells who is an Indian citizen and who is not.

B.2) India-China Border

1) Length of border :- **3488 km**

2) **4 Indian States :-** Arunachal Pradesh, Uttarakhand, Himachal Pradesh, Sikkim

3) **One union territory :-** Ladakh

4) **Names of Indo-China border :**

✳ **McMahon Line**

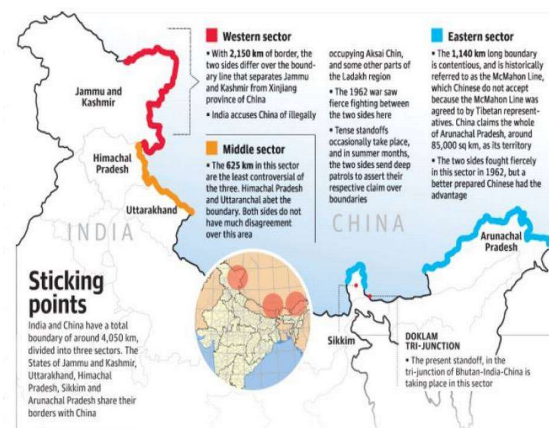
- » Shimla Agreement between India and Tibet in 1914
- » Henry McMahon's boundary line determination

✳ **LAC (Line of Actual Control) :-** A ceasefire line drawn after the India-China war of 1962

5) **Major issues between India and China :-**

- ✳ India China War, 1962
- ✳ Brahmaputra river dispute

- ✳ Doklam plateau dispute
- ✳ Kailash Manasarovar
- ✳ OBOR (One Belt One Road)
- ✳ Galwan Valley
- ✳ Pangong Tso Lake dispute
- ✳ Arunachal dispute



B.2.1) India-China war, 1962

- 1) China illegally occupied the Aksai Chin region of India
- 2) LAC (Line of Actual Control) :- A ceasefire line drawn after the India-China war of 1962
- 3) Pakistan gifted part of the Shaksgam Valley to China in 1963 as a gift.



B.2.2) Brahmaputra River Dispute

- 1) Construction of 4 big dams by China :- Jiacha, Jangmu, Daggu, Jiexu
- 2) **Impact on India :-**
 - Risk of Water logging
 - Water scarcity
 - Power shortage

WATER POWER

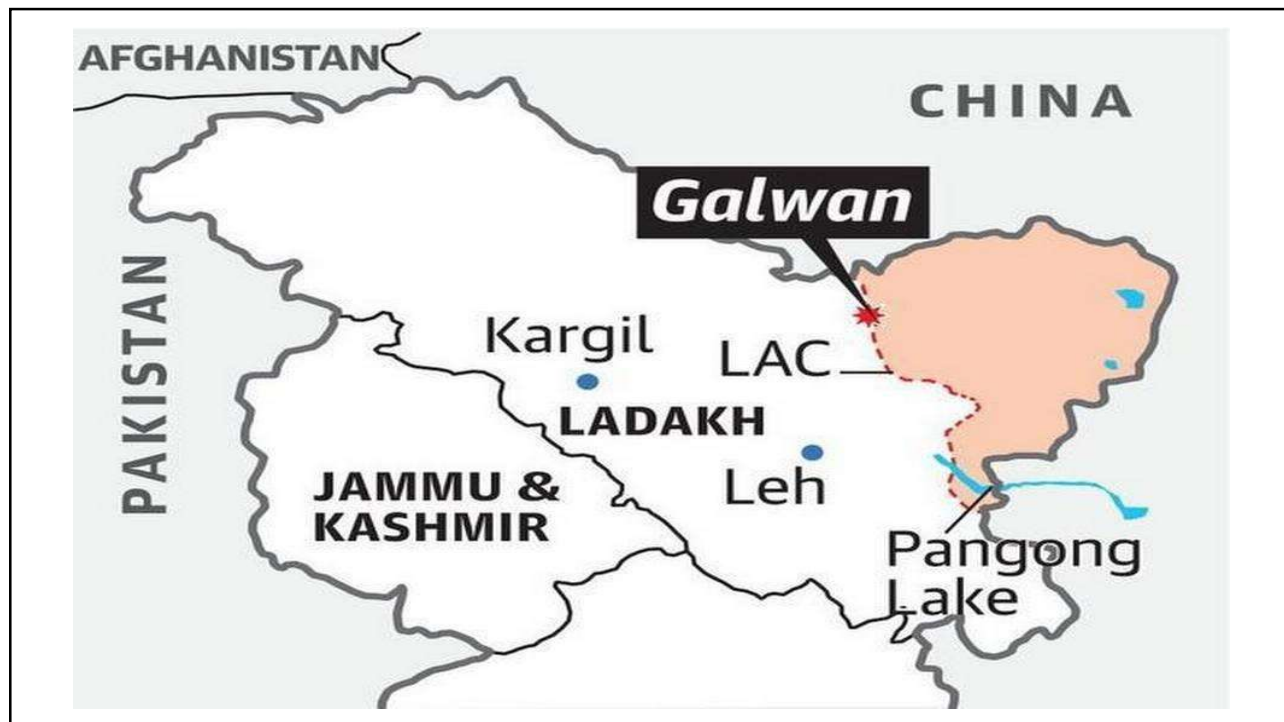
1 DAGU 640 MW	2 JIEXU	3 ZANGMU 510 MW	4 JIACHA 320 MW
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B.2.3) Doklam plateau dispute

- 1) **Location :-** Chumbi valley of Bhutan
- 2) Located at the triangular junction of India, Tibet & Bhutan and close to Nathu La Pass.
- 3) **Strategic importance -** Place is just 30km from Siliguri corridor (Chicken neck of India)
- 4) **Dispute :-** Road construction in this area by China





B.2.4) Kailash Mansarovar

- 1) **Location :-** Mansarovar Lake (100 km from Tibet-Uttarakhand border)
- 2) Hinduism, Buddhism, Jainism and Bon (Bon: the religion of Tibet that differentiates itself from Buddhism)
- 3) Among Hindus, Mount Kailash is traditionally recognized as the abode of Lord Shiva.
- 4) It is considered by Hindus to be the center of the earth and a manifestation of heaven.
- 5) **Routes of Kailash Mansarovar Yatra :-**
 - 1) Sikkim Route :- Via Nathula Pass
 - 2) Kathmandu route
 - 3) Uttarakhand route :- Via Lipulekh Pass (Shortest route)

B.2.5) Galwan Valley

- 1) Recently, there was a violent skirmish between the soldiers of Galwan Valley in India and China.
- 2) Location - Aksai Chin, Galwan River
- 3) The source of the Galwan River is present in Aksai Chin and later it meets the Shyok River of India.
- 4) Dispute :- In map of China, the entire Galwan Valley is shown as part of the territory controlled by China.



B.2.6) Lake Pangong Tso

- 1) Tension was seen between Indian and Chinese soldiers in Ladakh near Pangong Tso Lake.
- 2) **Location :-** A long, deep, endorheic (landlocked) saltwater lake situated at an altitude of more than 14,000 feet in Ladakh Himalayas.
- 3) **Dispute :-** 45km area of this lake is in India, while 90 km area lies in China)
- 4) **Strategic importance :-** Chushul Valley, Rezang La (Pass)



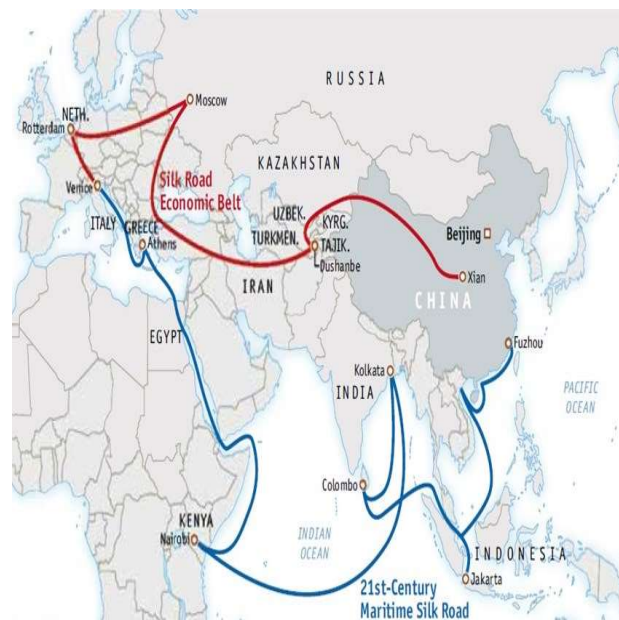
B.2.7) Dispute of Arunachal

- 1) Recently, there have been reports of three villages being built by China at 5 km from Bum La Pass in Arunachal Pradesh.
- 2) Satellite images as of November 2020 show that a full-fledged village has been constructed on the banks of the Tsari Chu River in Upper Subansiri district of Arunachal Pradesh
- 3) China claims the whole of Arunachal Pradesh as South Tibet.



B.2.8) One Belt One Road (OBOR)

- 1) China's proposed connectivity project
- 2) **Objective :-** Connecting China to Europe, Africa and Asia through road, rail & waterways .
- 3) 70% of the world's population and 75% of known energy reserves
- 4) India is not agreeing to join the OBOR due to the inclusion of the China-Pakistan Economic Corridor (CPEC) in the OBOR. As the CPEC corridor passes through Pakistan occupied Kashmir, which India considers as its part.





- 1) 4 states viz., Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh and a Union Territories of Ladakh (erstwhile state of Jammu & Kashmir) share a border with China.
- 2) The Sino-Indian border is generally divided into three sectors namely: Western sector, Middle sector, and Eastern sector.

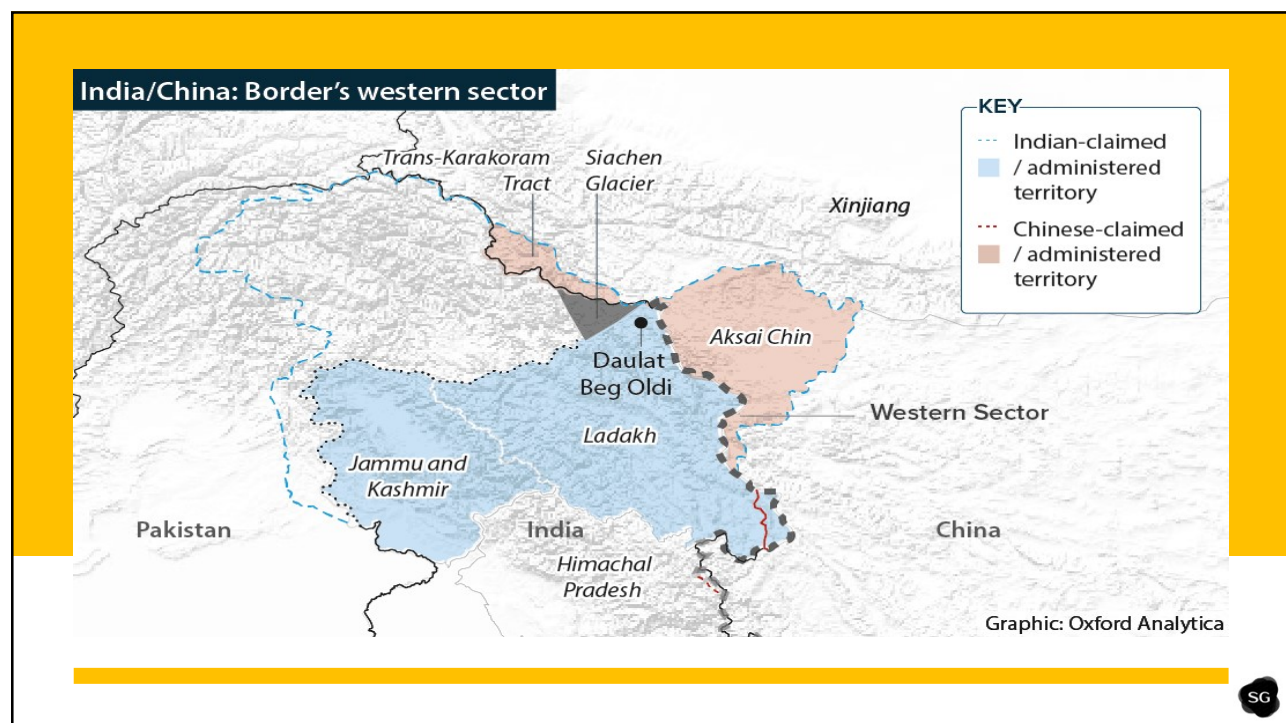


Western Sector

- 1) In the western sector, India shares about 2152 km long border with China.
- 2) It is between Union Territory of Ladakh (erstwhile state of Jammu and Kashmir) and Xinjiang Province of China.
- 3) In this sector, there is a territorial dispute over Aksai Chin. India claims it as part of erstwhile Kashmir, while China claims it is part of Xinjiang.
- 4) The dispute over Aksai Chin can be traced back to the failure of the British Empire to clearly demarcate a legal border between China and its Indian colony.
- 5) During the time of British rule in India, two borders between India and China were proposed- Johnson's Line and McDonald Line.

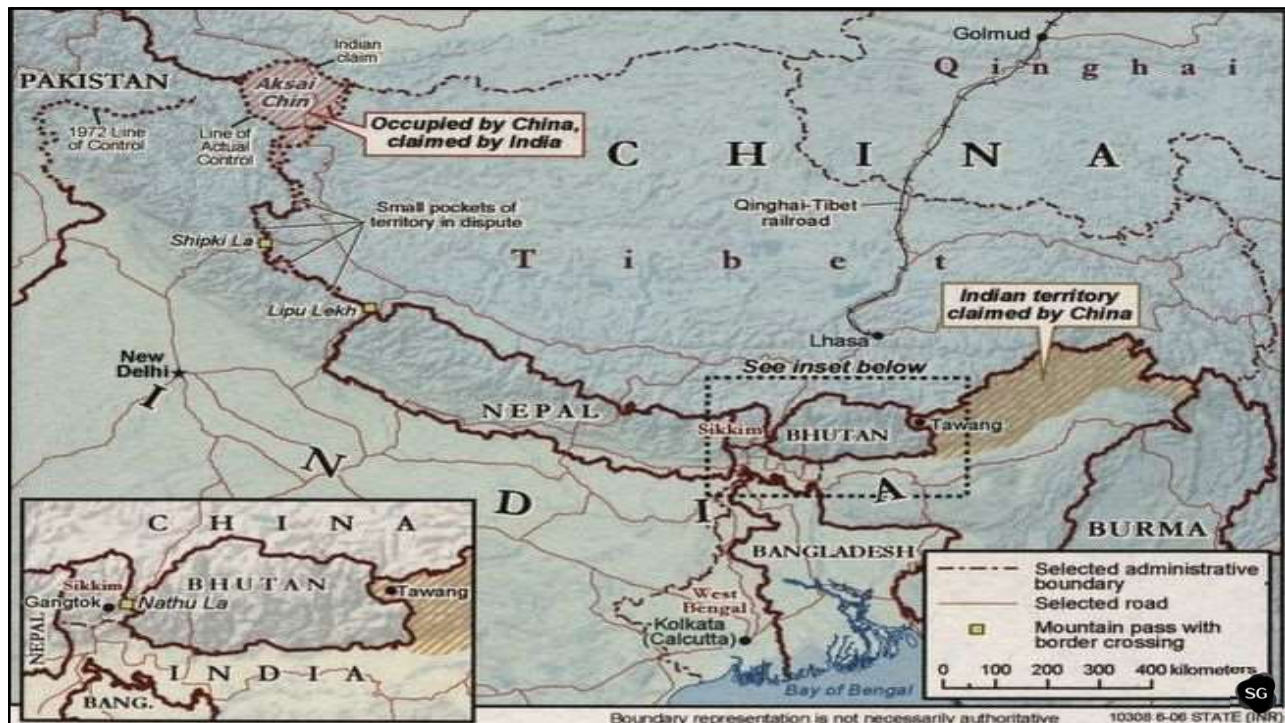
- ◇ The Johnson's line (proposed in 1865) shows Aksai Chin in erstwhile Jammu and Kashmir (now Ladakh) i.e. under India's control whereas McDonald Line (proposed in 1893) places it under China's control.
 - ◇ India considers Johnson Line as a correct, rightful national border with China, while on the other hand, China considers the McDonald Line as the correct border with India.
- 1) At present, Line of Actual Control (LAC) is the line separating Indian areas of Ladakh from Aksai Chin. It is concurrent with the Chinese Aksai Chin claim line.

SG



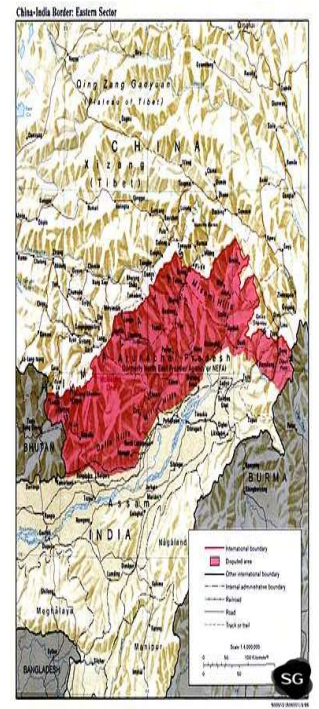
Middle Sector

- 1) In this sector, India shares about 625 km long boundary with China which runs along the watershed from Ladakh to Nepal.
- 2) Himachal Pradesh and Uttarakhand touch this border with Tibet (China) in this sector. Both sides do not have much disagreement over the border in this area.



Eastern Sector

- 1) In this sector, India shares a 1,140 km long boundary with China.
- 2) It runs from the eastern limit of Bhutan to a point near the Talu Pass at the trijunction of Tibet, India and Myanmar.
- 3) This boundary line is called McMahon Line.
- 4) China considers the McMahon Line illegal and unacceptable claiming that Tibetan representatives who had signed the 1914 Convention held in Shimla which delineated the McMahon line on the map were not having rights to do so.



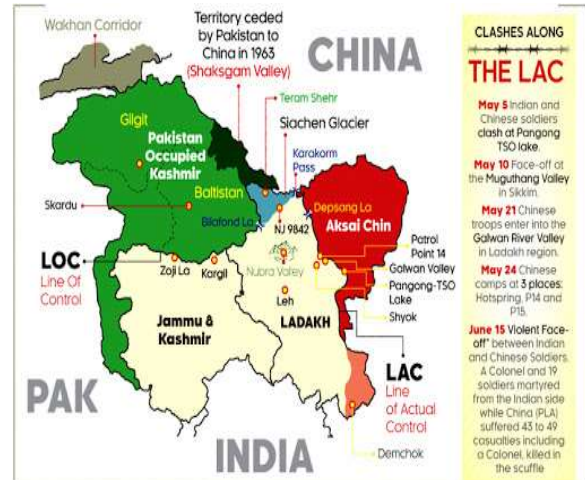
B.3) India-Pakistan Border

- 1) Length of India-Pakistan border :- **3323 km**
- 2) **3 Indian states** :- Rajasthan, Gujarat and Punjab
- 3) **2 Union Territories** :- Jammu-Kashmir & Ladakh
- 4) **Names of India-Pakistan border :-**
 - ✳ **Redcliff Line** - Cyril Radcliffe determined the boundary between India and Pakistan.
 - ✳ **LOC (Line Of Control)** :- Ceasefire line between India and Pakistan determined by Shimla Agreement in 1972.
- 5) **Issues between India and Pakistan :-**
 - ✳ PoK (Pakistan occupied Kashmir)
 - ✳ India Pakistan war
 - ✳ Sir creek
 - ✳ Rann of Kutch



B.3.1) Pakistan occupied Kashmir

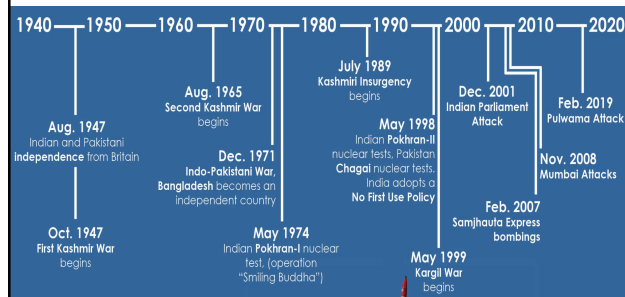
- 1) Illegally occupied by Pakistan by the war of 1947
- 2) **Capital :-** Muzaffarabad (Neelum/Kishanganga river in India)
- 3) **Pok (two parts) :-** Azad Kashmir and Gilgit-Baltistan
- 4) In 1963 Pakistan gave the Shaksgam valley to China
- 5) As per the resolution passed in 1994 by the Parliament of India, both Pakistan Occupied Kashmir and Gilgit-Baltistan are integral parts of the state of Jammu and Kashmir.
- 6) India's highest peak K2 is in Gilgit-Baltistan of Pak occupied Kashmir.



B.3.2) India Pakistan war

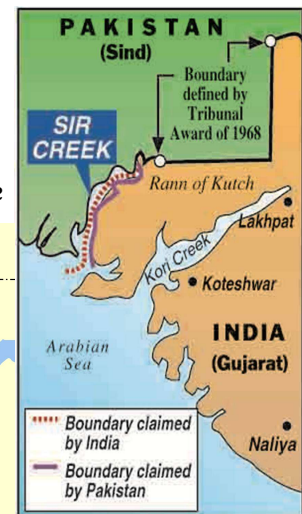
Four wars between India and Pakistan :-

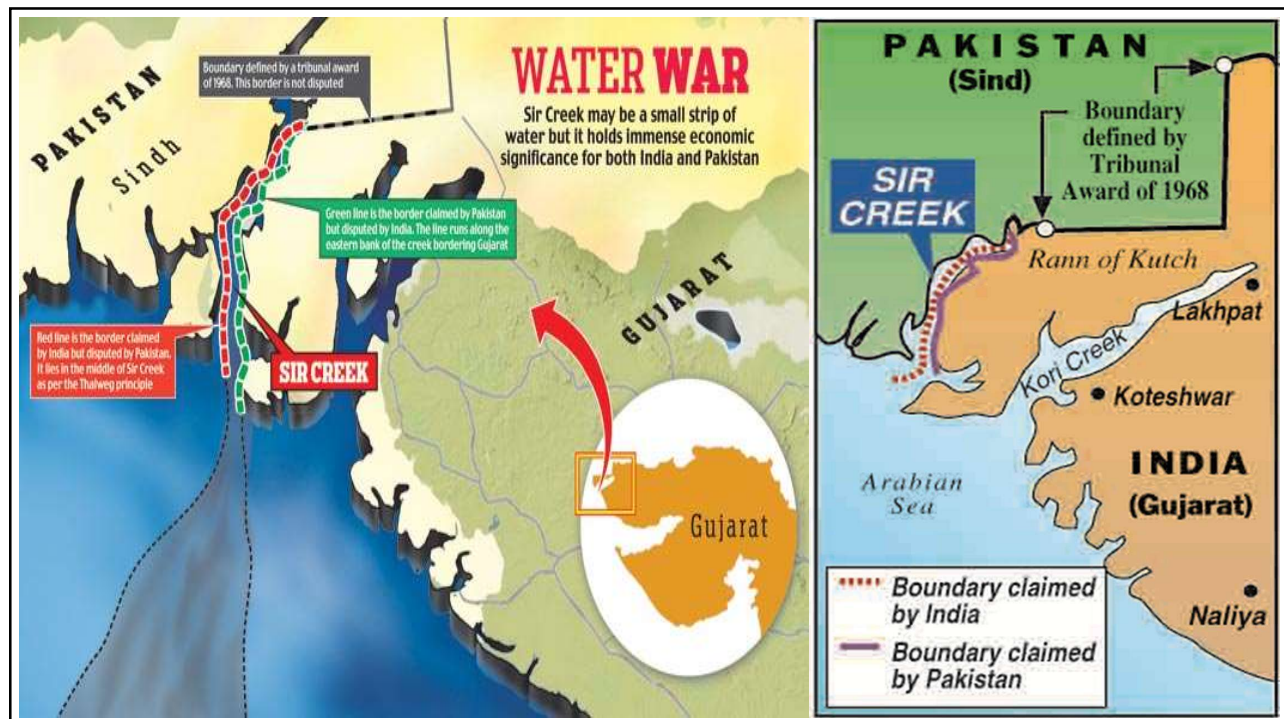
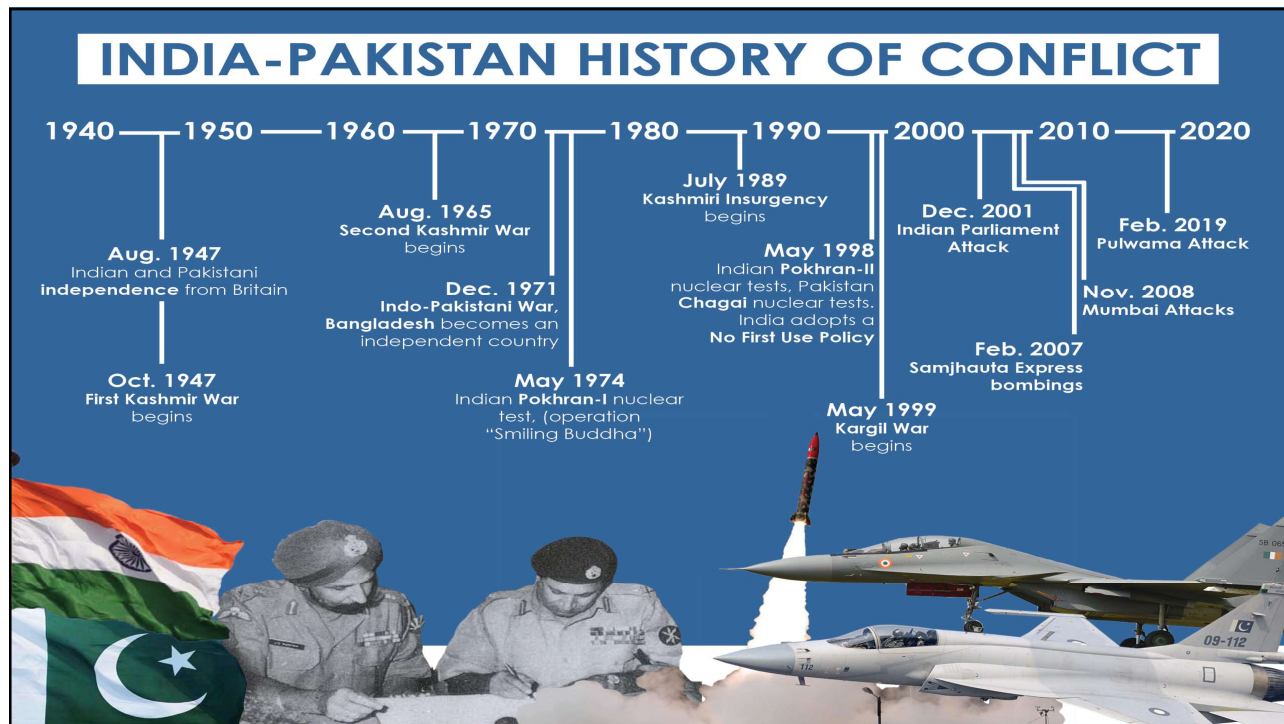
- **1947 :-** Demarcation of LoC between India and Pakistan
- **1965 :-** Operation Gibraltar - World's largest tank war after World War II
- **1971 :-** Muktiwahini
- **1999 (Kargil) :-** Operation Vijay



B.3.3) Sir Creek

- 1) **Creek :-** A narrow piece of water where the sea flows into the land
- 2) **Sircreek :-**
 - 96 km long
 - Fish production
 - Salt/petroleum
 - Fisherman's dispute





- 1) Sir Creek is a 96-km strip of water disputed between India and Pakistan in the Rann of Kutch marshlands.
- 2) Originally named Ban Ganga, Sir Creek is named after a British representative.
- 3) The Creek opens up in the Arabian Sea and roughly divides the Kutch region of Gujarat from the Sindh Province of Pakistan.

4) Dispute :-

- ⊙ Interpretation of the maritime boundary line between Kutch and Sindh. Before India's independence.
- ⊙ After India's independence, Sindh became a part of Pakistan while Kutch remained a part of India.
- ⊙ Paragraph 9 of this verdict states that the boundary between Kutch and Sindh lies 'to the east of the Creek,' (Green Line) which effectively implied that the creek belonged to Sindh and, therefore, to Pakistan.
- ⊙ On the other hand, Paragraph 10 states that since Sir Creek is navigable most of the year.
- ⊙ According to Thalweg principle, a boundary can only be fixed in the middle of the navigable channel, which meant that it has to be divided between India and Pakistan.

- ⊙ India has used this para to consistently argue that the boundary needs to be fixed in the middle of the creek.
- ⊙ Pakistan, however, claims that Sir Creek isn't navigable but India claims that since it's navigable in high tide, the boundary should be drawn from the mid channel.

5) War in 1965 and tribunal :-

- ⊙ After the 1965 war, British Prime Minister Harold Wilson successfully persuaded both countries to end hostilities and set up a tribunal to resolve the dispute.
- ⊙ The verdict of the tribunal came in 1968 which saw Pakistan getting 10% of its claim of 9,000 km (3,500 sq. miles).
- ⊙ Since 1969, 12 rounds of talks have been held over the issue of Sir Creek, but both sides have denied reaching any solution.
- ⊙ The region fell amid tensions in 1999 after the Pakistan Navy shot down a MiG-21 fighter plane, but the last rounds of talks were held in 2012. Since then it's been status quo.

B.3.4) Rann of Kutch

- 1) **Location :-** A deserted region of salty marshes spread to the north and east of Kutch district in Gujarat
- 2) **Area :-** 23,300 km²
- 3) On 9 April 1965, Pakistan suddenly invaded and captured a part of it.
- 4) According to the decision of the International Court of Justice (19 February 1968), Pakistan got 10% of Rann of Kutch and 90% of it is given to India.



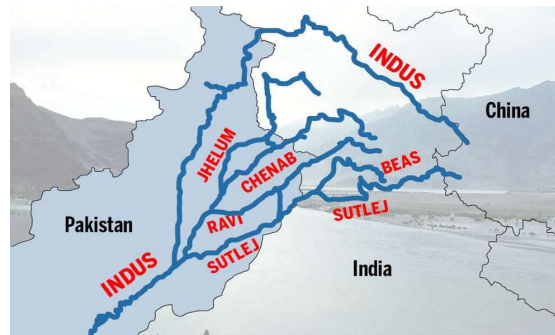
B.3.5) Siachen Glacier

- 1) An icy region located in Ladakh, India
 - **Height :-** 5700 M
 - **Length :-** 72 km
 - **Width :-** 2 - 3 km
- 2) The Indian Army liberated Siachen from the occupation of Pakistan by Operation Meghdoot on 13 April 1984.
- 3) World's highest battlefield
- 4) Karakoram ➤ Saltoro range ➤ Nubra River ➤ Shyok River ➤ Indus River

This glacier is the longest in the Karakoram and the second longest glacier on Earth, excluding the poles. It is also called the **third pole**

B.3.6) Indus Water Treaty

- 1) **Indus River System :-** Indus, Jhelum, Chenab, Ravi, Beas and Sutlej rivers
- 2) On 19 September 1960, the Indus Water Treaty was signed between India and Pakistan with the assistance of the World Bank :-
 - **India - Eastern Rivers - Ravi, Beas and Sutlej**
 - **Pakistan - Western Rivers (Jhelum, Chenab, Indus)**
 - India can build hydroelectric projects (Run of the River Project) on 3 western rivers



- 1) **2 Jan 2016 - 5 Jan 2016 :-** Pathankot attack
- 2) **18 September 2016 :-** Uri attack
- 3) **29 September 2016 :-** Surgical strike by India on Pakistan by land route.
- 4) **14 February 2019 :-** Pulwama attack
- 5) **26 February 2019 :-** Balakot strike by India on Pakistan by air.

Projects built by India on the Indus River System (Jammu and Kashmir)


1) Jhelum River	☺ Tulbul Project ☺ Uri Project
2) Kishanganga River (Tributary of Jhelum)	☺ Kishanganga Project
3) Chenab River	☺ Dul Hasti Project ☺ Baglihar Project ☺ Salal Project

The Indus Water Treaty

The 56-year-old Indus Water Treaty between India and Pakistan has been instrumental in the peaceful sharing of the water of Indus and its tributaries.

With the recent spurt of tensions between the two countries and PM Narendra Modi's statement that "blood and water cannot flow together" followed by India's decision to suspend meetings of Indus Water Commission, here is a look at the treaty and its ingredients:

Signed on: **September 19, 1960**
 Signatories: **Prime Minister Jawaharlal Nehru and Pakistan's President Ayub Khan**
 Brokered by: **The World Bank**



Features

- Rivers Beas, Ravi and Sutlej to be governed by India while Indus, Chenab and Jhelum by Pakistan
- India is allowed to use 20 per cent of Indus water for irrigation, power generation and transport purposes
- A permanent body called Indus Water Commission solves disputes arising over water sharing
- River Indus originates from China, but it is not a part of the treaty

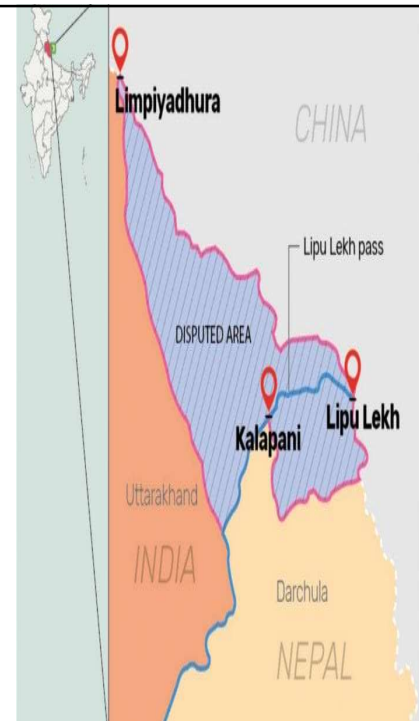


India and Pakistan exchanged list of nuclear installations

- In 1988, India and Pakistan signed an agreement on the prohibition of attacks on nuclear installations and facilities. Recently, lists of nuclear installations have been exchanged under this agreement.
 - This agreement came into force in 1991.
- This agreement provides that both countries will provide information to each other on 1 January of each calendar year about the nuclear installations and facilities to be covered under this agreement.
- The 33rd such list has been exchanged this year. Such lists were exchanged for the first time on January 1, 1992. Since then this list has been exchanged continuously.

B.4) India-Nepal Border

- 1) **Length of India-Nepal border :-** 1751 km
- 2) **5 Indian states :-** Uttar Pradesh, Bihar, Uttarakhand, Sikkim, West Bengal
- 3) An open boundary
- 4) **Issues of dispute between India and Nepal :-**
 - New Map by Nepal - Uttarakhand's Kalapani, Limpiyadhura and Lipulekh as its territory
 - Nepal has also included the 'Susta Zone' located on the border of Bihar
 - According to Nepal, under the Sugauli Treaty (1816) all the areas east of the Kali (Mahakali) River, including Limpiyadhura, Kalapani and Lipulekh, are an integral part of Nepal.



B.5) India - Myanmar (Burma) Border

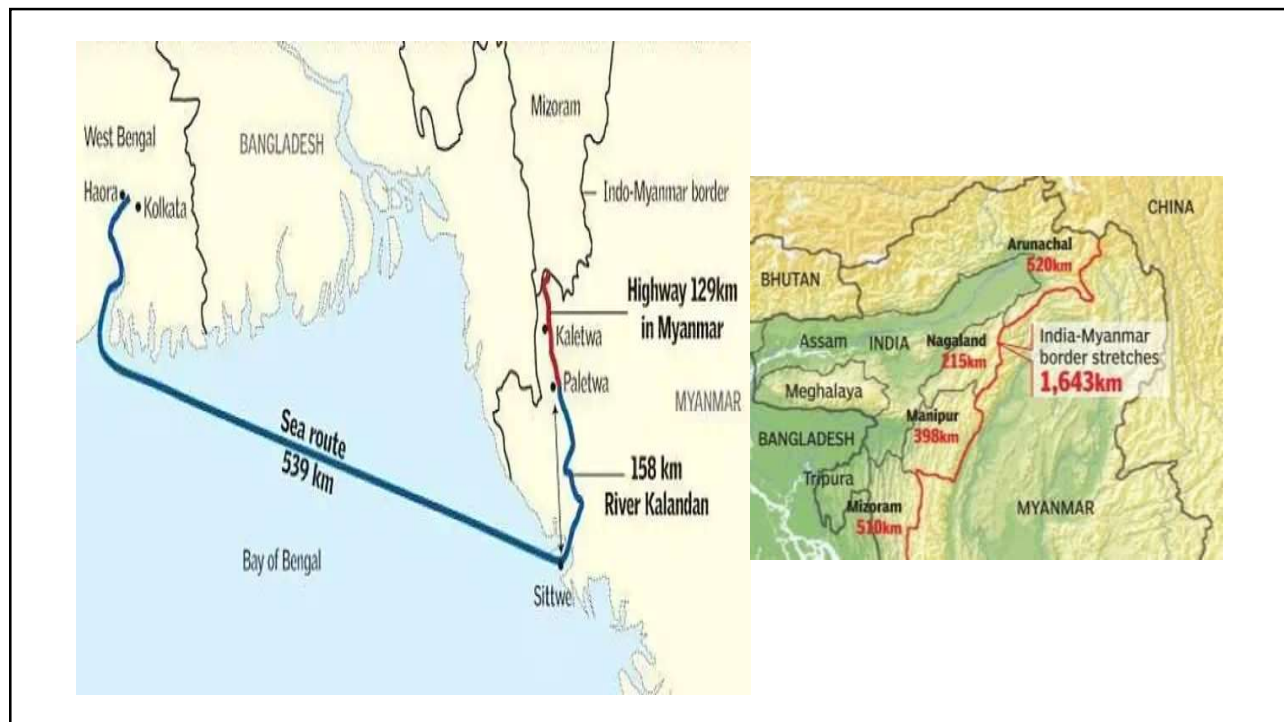
- 1) **Length of India-Myanmar border :-** 1643 km
- 2) **4 Indian states :-** Arunachal Pradesh, Mizoram, Manipur, Nagaland
- 3) **Natural Boundary :-** Arakan Yoma mountain range
- 4) **Issues :-** Terrorism, Human Trafficking & Insurgency
- 5) **Major Facts :-**
 - Early name - Burma
 - Gate to Southeast Asia
 - Government of India Act 193 - Myanmar was separated from India in 1937.

6) **Operation Sunrise (2015 and 2019) :-**

Indian and Myanmar forces destroyed terrorist and extremist organizations present in Myanmar.

- 7) **Kaladan Project :-** Connects Kolkata to the Sittwe port of Myanmar, with this project the distance between Kolkata and Mizoram is about 1800 km. about 930 km. Will be





C) Maritime boundary of India

C.1) Introduction

- 1) India's coastal border
 - total coastal range :- **7516.6 km**
 - main coastal range :- **6100 km**
- 2) The borders of 9 states touch the coast

NOTE

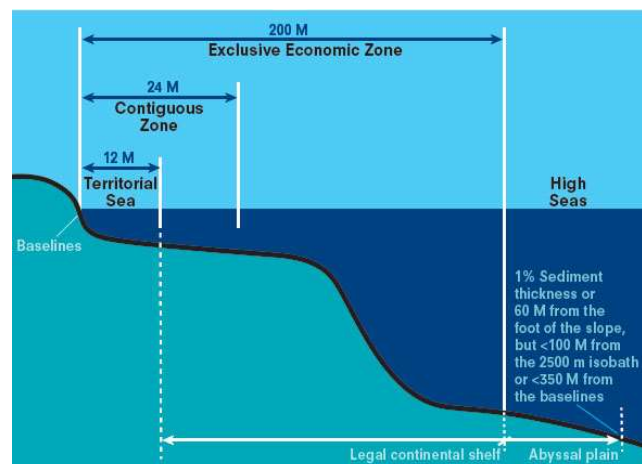
According to the Coastal Zones of India Ministry of Environment and Forests, the total length of India's coastal range is 7516.6 km, in which the length of the mainland coastline is 5422.6 km and the coastal length of the islands is 2904 km.



C.2) UNCLOS Maritime Zones

According to the United Nations Convention on the law of the sea (UNCLOS), 1982, the aquatic boundary of a country is divided into 5 parts :-

UNCLOS (United Nations Convention on the Law of the Sea) 1982





C.2.1) Internal Water

- 1) Sea water located between the land area and the base line
- 2) Full Sovereign rights (no right of innocent passage)
- 3) Internal waters include all the water bodies (rivers, gulfs, lakes etc.) of the concerned country.
- 4) Base line:- A straight imaginary line joining the crooked shore.

C.2.2) Territorial Sea

- 1) Water area extending up to a distance of 12 nautical miles from the baseline
- 2) **Full Sovereign rights** - limited by the innocent passage

C.2.3) Contiguous

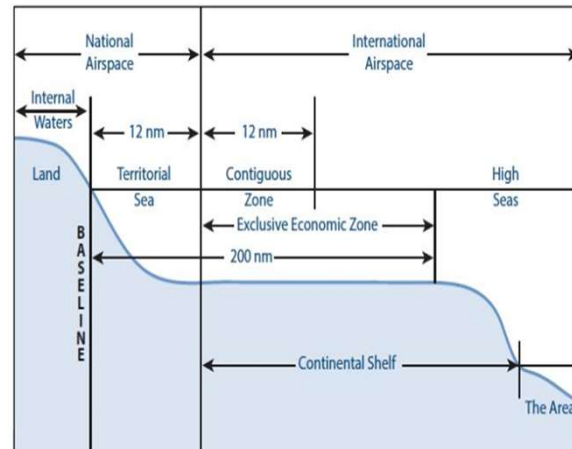
- 1) The contiguous zone extends seaward up to 24 nm from its baselines.
- 2) **Empowerment :-** Prevent and punish infringement of fiscal, immigration, sanitary, and customs laws

C.2.4) Exclusive Economic Zone (EEZ)

- 1) Maritime area extending up to 24 nautical miles from baseline
- 2) **Jurisdiction :-**
 - Sovereign rights for exploring, exploiting, conserving and managing natural resources
 - Production of energy from the water, currents and wind

C.2.5) High Seas

- 1) Exclusive Economic Zone (200 nautical miles from baseline) Maritime Area
- 2) **Empowerment :-** Equal rights to all countries



NOTE

1) Strait :- Such water body which separates two land masses and, connects two larger bodies of water

2) Isthmus :- Narrow piece of land connecting two larger mass and separates two waterbodies

3) Gulf :- Water body which is connected from the ocean and is surrounded by land from three sides and has a narrower opening

4) Bay :- Its opening is broader and expanded



C.3) India's Maritime International Boundary

Sri Lanka

Indonesia

Pakistan

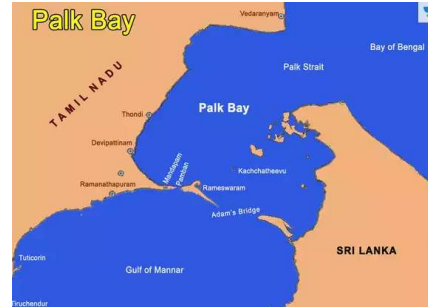
Maldives

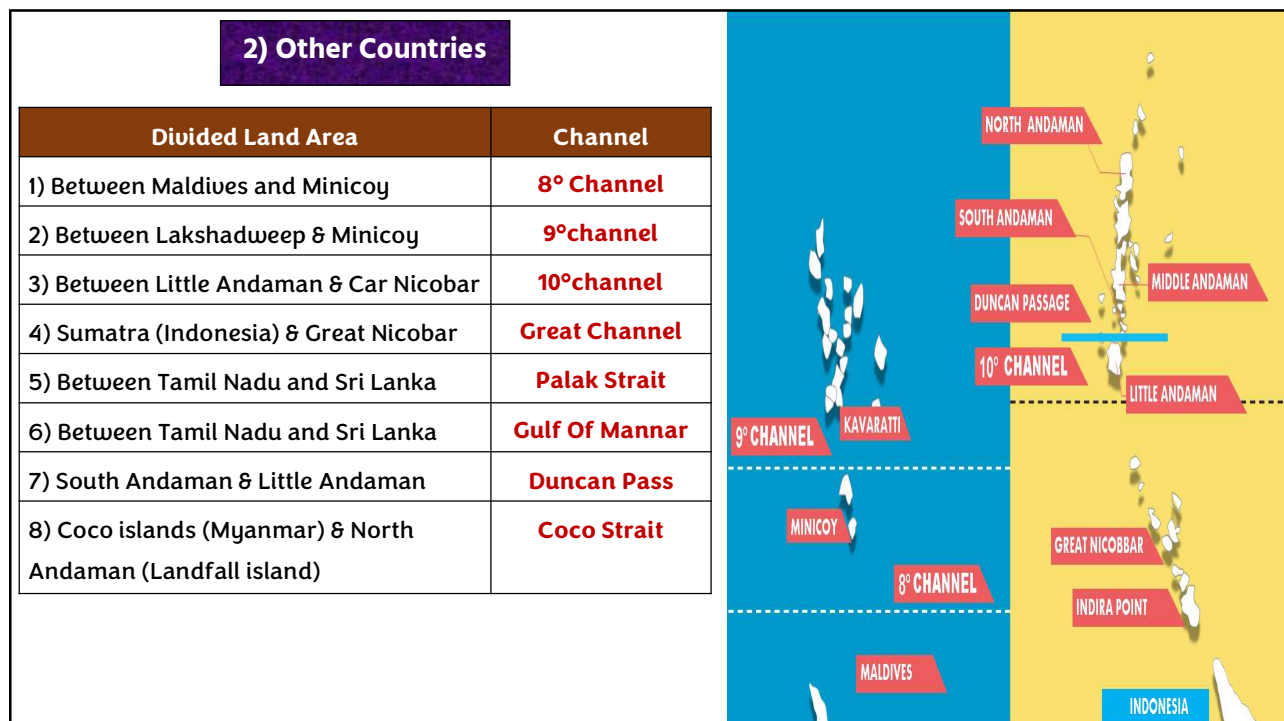
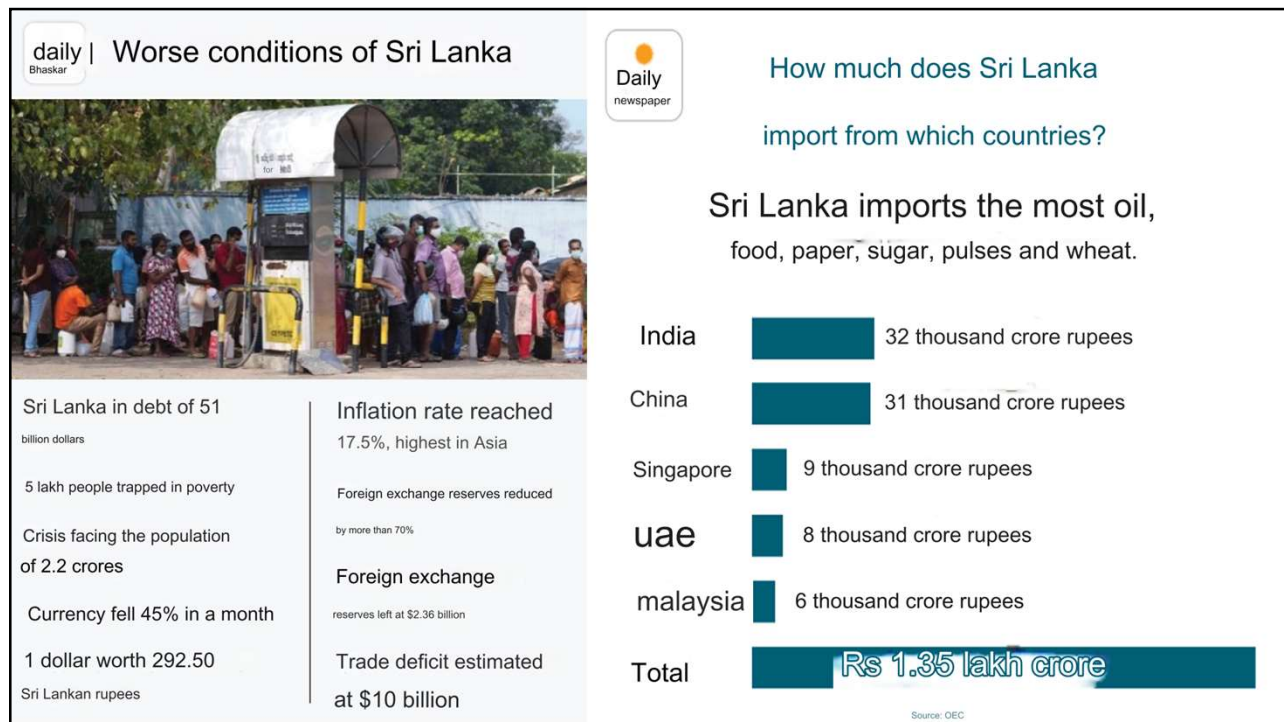
Bangladesh

Myanmar

1) Sri Lanka

- 1) Overseas, India's nearest neighbor
- 2) **Other names :-** Tamraparni, Cylon, Island of gems, tea drop of India
- 3) **Palk strait :-**
 - Separates India and Srilanka
 - Connects the bay of Bengal with the Palk bay
- 4) **Ramsetu / Adam bridge :-** 50 km long bridge between India (Pamban island, Tamilnadu) and Srilanka
- 5) **Issue :-** Fisherman & Kachchatheevu island



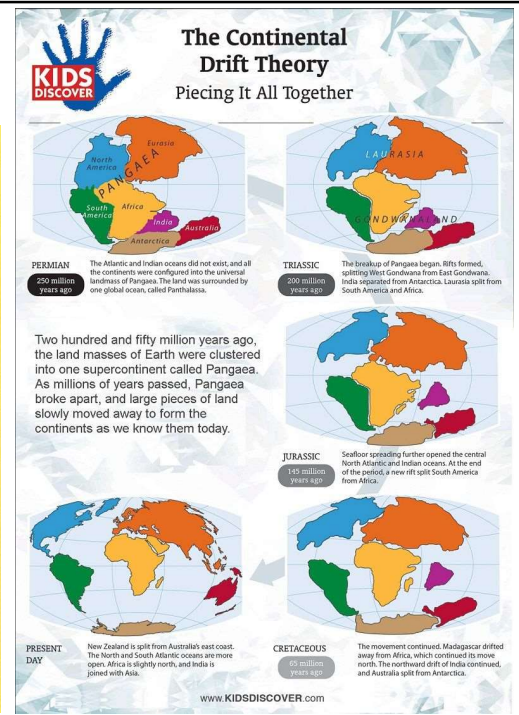
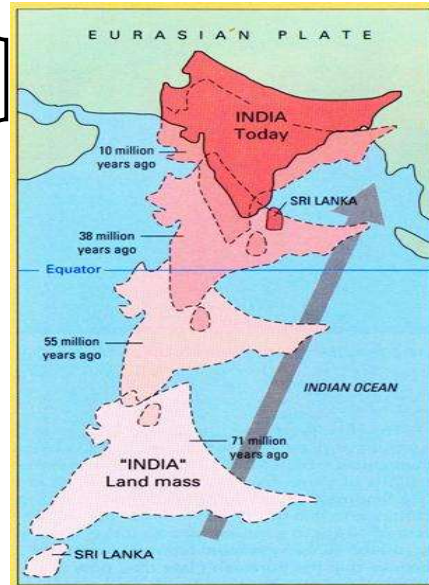


1.4) Other Facts

India's Geographical Development Sequence



India Evolved From
Gondwana Land



- 1) Pakistan wants to divide the Run of Kutch with the help of which line - **24 ° latitude line**
- 2) When was the international border between India and Pakistan determined by Sir Radcliffe - **17 August 1947**
- 3) Longest Beach of India - **Marine Beach (Chennai)**
- 4) India's largest saltwater Inland lake - **Sambhar Lake (RJ)**
- 5) The India-Myanmar border is determined by natural hills - **Mispi, Patkoi, Naga and Arakan Yoma Hills**
- 6) Andaman Nicobar is called **Marqat Island**
- 7) Longest Dam - **Hirakud Dam (Mahanadi Orissa)**
- 8) Coldest Place - **Trans (Ladakh)**
- 9) Ancient name of Indian ocean - **Ratnakar**
- 10) The Indian Ocean is called the **Key to the Seven Seas**
- 11) The Indian Ocean is called the **Zone of Peace**
- 12) Which area is considered the heartland of India in terms of fertility - **Ganga plain**
- 13) Which geographer said that India has as much right to be called a continent as Europe - **George B. Cressey**
- 14) Hottest Places - **(Beriyawali) Bikaner/ Jaisalmer 56°C**
- 15) **Colaba Point is in Mumbai, Point Calimere is in Tamil Nadu and Point Pedro is in Jaffna (Northeast of Sri Lanka).**

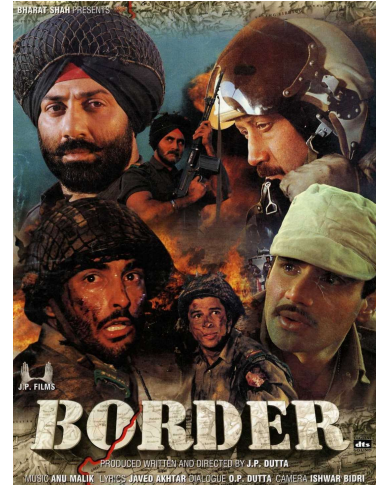
- 16) **Sombrero channel** :- this channel separates Little Nicobar from Car Nicobar. Connects the Indian ocean with the Andaman sea.
- 17) **Jaffna (Tamil-majority)** is connected to the rest of Srilanka by the Elephanta pass.
- 18) Between **Dhanushkodi** near Rameswaram in India and **Talaimannar** in Srilanka, there is a line of submerged atolls called the **Adam's bridge**.
- 19) People of the Khasi tribe of Meghalaya cultivate the roots of plants called rubber trees and convert them into bridges, which are called living root bridges. In local language it is called jingkeng iron.
- 20) Earth's magnetic equator passes through Thiruvananthapuram in south India
- 21) The **sankosh river** forms the boundary between **Assam and Arunachal Pradesh**.
- 21) Puducherry union territory includes – Mahe (kerala), Karaikal (TN), Pondicherry (TN) and Yanam (Andhra Pradesh).
- 22) The **Karakoram range** forms a water divide between the Indian subcontinent and China.
- 23) Three crescent shaped beaches meet in **Kanyakumari**
- 24) Which place of India is called the confluence of three seas - **Kanyakumari**

Hindenburg	Decided during the First World War (1947), it determines the border between Germany and Poland.
Mannerheim Line	Border line between Soviet Russia and Finland
Maginot Line	The border line between Germany and France drawn by France
17 th parallel line	Border line between north and south Vietnam
24 th parallel line	Near Kutch, which Pakistan considers to be the India-Pakistan border line, but India rejects it.
31 st parallel line	Between Iran and Iraq
38 th parallel line	Border line between north and South Korea
Oder-Neisse line	Border line between East Germany and Poland
Oder-Neisse line	Border line between East Germany and Poland
Siegfried Line	Border of France and Germany before World War II
Blueline	Between Lebanon and Israel

1.5) Types of International Borders

A) Boundary

- 1) Well-established line between two countries or states.
- 2) **The following are the functions of boundaries :**
 - ↳ The country's jurisdiction and sovereignty are marked by boundaries.
 - ↳ The country enjoys law operability and defense right under national boundaries.
 - ↳ The country enjoys collecting the tax under national boundaries.
- 3) **The boundaries can be marked :**
 - ↳ River, mountain, etc
 - ↳ The fencing barriers
 - ↳ Man-made wall



B) Frontier

- 1) Geographical areas between countries' boundary which do not have strong control over any nation is called frontier. Over the period, expansion of national boundaries is possible by encroachment in the frontier area.
- 2) So in one line, frontier and boundaries are the same and it represents a single geographical phenomenon with different time scales.
- 3) For examples,
 - ↳ In the village, in childhood, we all must have noticed that there was an unused area between the two farmers' agriculture fields and the same unused area was being encroached on by both farmers from time to time, the unused area is called the frontier, and the well-defined line is called the boundaries.
 - ↳ In medieval times, The almighty Himalayans were the frontier between India and Tibet, now there are well-defined boundaries between India and China.
 - ↳ In Africa, frontiers are still found between countries.

C) Buffer Zone

- 1) A buffer zone is a neutral area that separates two or more areas, and is designed to prevent harm or fighting from reaching something.
- 2) Demilitarised zones, border zones, restricted easement zones, and green belts are among the most common forms of buffers.
- 3) There have been examples of international conflicts to control buffer zones :-

- ✳ Nepal is situated between India and China, it can also be called a buffer zone country and to maintain their influence in Nepal, India and China interfere in the affairs of Nepal.
- ✳ The Swan Islands are located between Canada and Greenland, it serves as a buffer zone and is disputed by both countries.



D) Types of international borders

1) Anterior Limit :

- ↳ Even before the development of the modern cultural scene, there were some international boundaries, these boundaries are called pre-existing boundaries.

↳ **Example :-** Border between USA and Canada

↳ Properties :

- ☞ Usually marked by rivers, mountains or water bodies.
- ☞ there is usually no conflict
- ☞ usually does not change over time

2) Subsequent Limit :

- ↳ The range that came into existence after the existence of cultural landscapes (human settlement, and socio-cultural).

↳ Example :-

- ☞ The borders between India and Pakistan and the borders between India and Bangladesh are examples of the latter borders.
- ☞ Much controversy exists over the latter boundary.

↳ Properties :

- ☞ It is formed on the basis of religious, linguistic, ethnic, cultural and political differences.
- ☞ The latter boundary is marked at the line where the two cultural scenarios have minimal influence.

3) Superposition Limit :

↳ These boundaries ignore the political, cultural and social life of the local people

↳ Example :-

- ↳ Most of African countries border
- ↳ The border between North Korea and South Korea.
- ↳ border between india and pakistan

4) Residual Limits :

↳ A boundary that no longer holds any significance in the current cultural landscape but is still visible.

↳ Example :-

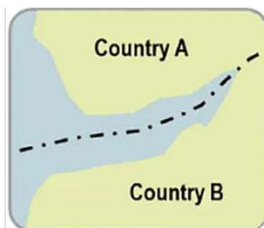
- ↳ Great Wall of China – was the border between China and Mongolia.
- ↳ Berlin separated East and West Germany.

5) Geometric Border :

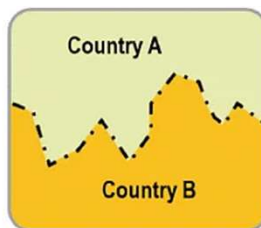
↳ The geometric boundary is marked by a straight line, regardless of cultural landscape.

↳ Example :-

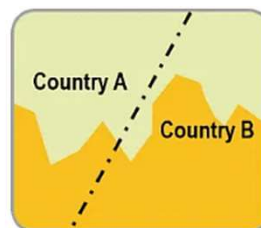
- ↳ The border between the United States and Canada.
- ↳ The border between North Korea and South Korea.

**Antecedent**

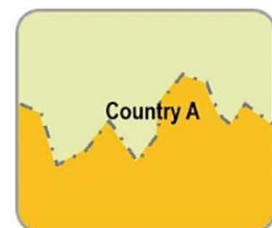
Pre-existing; commonly corresponds to a physical feature. Rivers, Bays, Lakes, Mountains.

**Subsequent**

Set after the settlements of different groups meet. Often correspond to their respective ecumene.

**Superimposed**

Boundary is imposed by an outside force (treaty). May not reflect existing cultural landscape.

**Relic**

No longer a boundary. Often the outcome of political changes. Still a visible imprint on the landscape.

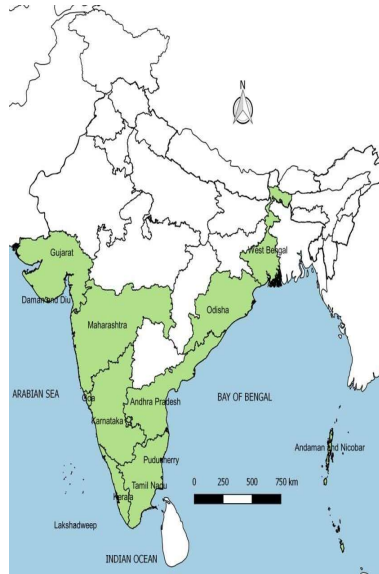
E) The difference between Frontiers and Boundaries

Boundary	Frontier
A well-defined demarcation of borders backed by law.	Geographical areas between countries' boundary which do not have strong control over any nation
The boundaries are mostly oriented inwards and are maintained at the government's will.	A frontier is oriented outward, exists physically on the ground, and is regarded as a dynamic entity.
Boundaries are drawn in the near present.	Frontiers are a phenomenon of the past.
A boundary is always drawn to separate with no scope of mutual interaction and exchange	Frontiers provide scope for mutual interaction and exchange.
Boundaries are political in origin and immovable.	Movable nature.
Example : India-Bhutan Border	Example : Northwestern Frontier Provinces of Pakistan.

Frontier	Boundary
1. Natural	1. Mostly Anthropogenic
2. Areal Concept	2. Linear Concept
3. Frontiers have no political dispute	3. Boundaries vary often disputable by the rival nations
4. Frontier generally has mountainous area, desert, marshes, etc. Thus, inhabitable	4. But boundaries have no such criteria
5. Frontiers are dynamic	5. Boundaries are static because once fixed, they hardly change

1.6) Coastal Water Bodies

- A. **Gulf of Kutch**
- B. **Gulf of Cambay or Gulf of Khambat**
- C. **Back Bay (Mumbai)**
- D. **Mahim Bay (Mumbai)**
- E. **Arabian Sea**
- F. **Laccadive Sea (Lakshadweep Sea)**



- G. **Gulf of Mannar**
- H. **Palk Bay**
- I. **Ramsetu (Adam's bridge)**
- J. **Sethusamudram project**
- K. **Bay Of Bengal**
- L. **Hukitola Bay**
- M. **Andaman Sea**

A) Gulf of Kutch

- 1) Northeastern arm of the Arabian Sea, extending between Rann of Kachchh & Kāthiāwār Peninsula.
- 2) It is a shallow water body.
- 3) This region has potential for tidal energy.
- 4) Major ports :- Kandla, Mundra, Salaya, and Ckha.
- 5) India's first Marine Wildlife Sanctuary and first Marine National Park which were created in the Gulf of Kutch in 1980 and 1982, respectively.
- 6) Home to endangered marine mammal, the dugong (Seas Cow).
- 7) Area is surrounded by corals and mangroves. Some of the finest coral reef fringe islands are found at Pirotan, Narala, Ajad and Positara.
- 8) Asia's largest oil refinery (Jamnagar Refinery) is located in this region.





B) Gulf of Cambay or Gulf of Khambhat

- 1) It is a bay on the Arabian Sea coast of India, bordering the state of Gujarat. The Gulf of Khambhat is about 200 km long, about 20 km wide in the north, and up to 70 km wide in the south.
- 2) Major rivers draining are the **Narmada, Tapti, Mahi, and Sabarmati** that form estuaries.
- 3) **Known for its extreme tides.**
 - ↳ It has a potential of 7000 MW of tidal energy
 - ↳ The Gujarat government is all set to develop India's first tidal energy plant. (50 MW)
- 4) **Alang shipyard :-** Known for marine salvage industry, half of all ships salvaged around the world are recycled here.
- 5) Historical port towns :- Bharuch, Surat, Khambhat, Bhavnagar & Daman.
- 6) The Gulf is shallow and abounds in shoals and sandbanks.
- 7) Mangroves are also found here, mainly in the Piram island.
- 8) **Malacca & Mal Banks** are sandbanks (shoals) in the Gulf of Khambhat in Gujarat



TIDAL ENERGY

Clear IAS

- According to the estimates of the Indian government, the country has a potential of **8000 MW** of tidal energy.
- This includes about 7,000 MW in the Gulf of Cambay in Gujarat, 1200 MW in the Gulf of Kutch, and 100 MW in the Gangetic delta in the Sunderbans region of West Bengal.
- The **Sihwa Lake** Tidal Power Station in **South Korea** has the largest electricity generation capacity at 254 megawatts (MW).
- The oldest and second-largest operating tidal power plant is in **La Rance, France**.
- **Tidal energy** : It is renewable energy that is powered by the natural rise and fall of ocean tides and currents.



C) Back Bay (Mumbai)

- 1) A waterbody off the coast of Mumbai city, in Arabian Sea.
- 2) The shore of Back Bay includes – Chowpatty Beach, Nariman Point, Marine Drive and Netaji Subhash chandra Bose point (The Queen's Necklace)

D) Mahim Bay (Mumbai)

- 1) This is a part of the Arabian Sea in Mumbai City. It is named after the island of Mahim and Salsette.
- 2) These two islands were merged during the early 19th century. The Mithi River drains into Mahim Creek.
- 3) It holds a small indigenous fishing population known as Kolis. Bandra-Worli project is a large infrastructure sea link located on Mahim Bay.



SEVEN ISLAND TO MUMBAI CITY



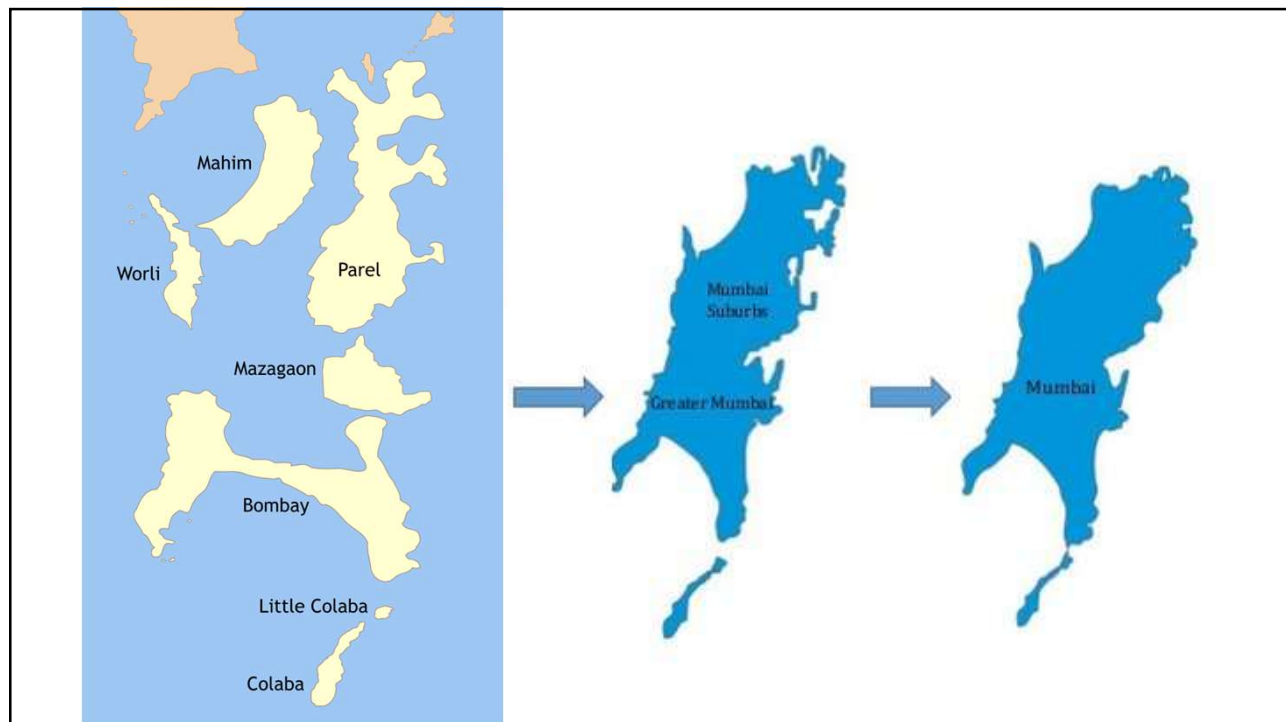
IN THE EARLIEST MAP THAT WAS DOTTED, MUMBAI WAS ORIGINALLY AN ARCHIPELAGO OF SEVEN ISLANDS. THEY WERE BOMBAY ISLAND, PAREL, MAZAGAON, MAHIM, COLABA, WORLI, AND OLD WOMAN'S ISLAND (ALSO KNOWN AS LITTLE COLABA). THE ISLANDS WERE COALESCED INTO A SINGLE LANDMASS BY THE HORNBY VELLARD ENGINEERING PROJECT IN 1784.



AFTER THE HORNBY PROJECT, THE MAP PLOTTED A MORE UNIFIED LANDMASS WITH ONLY A FEW PARTS FLOATING ALONG THE COAST OF WHAT WAS NOW CALLED THE MUMBAI SUBURBS AND GREATER MUMBAI.

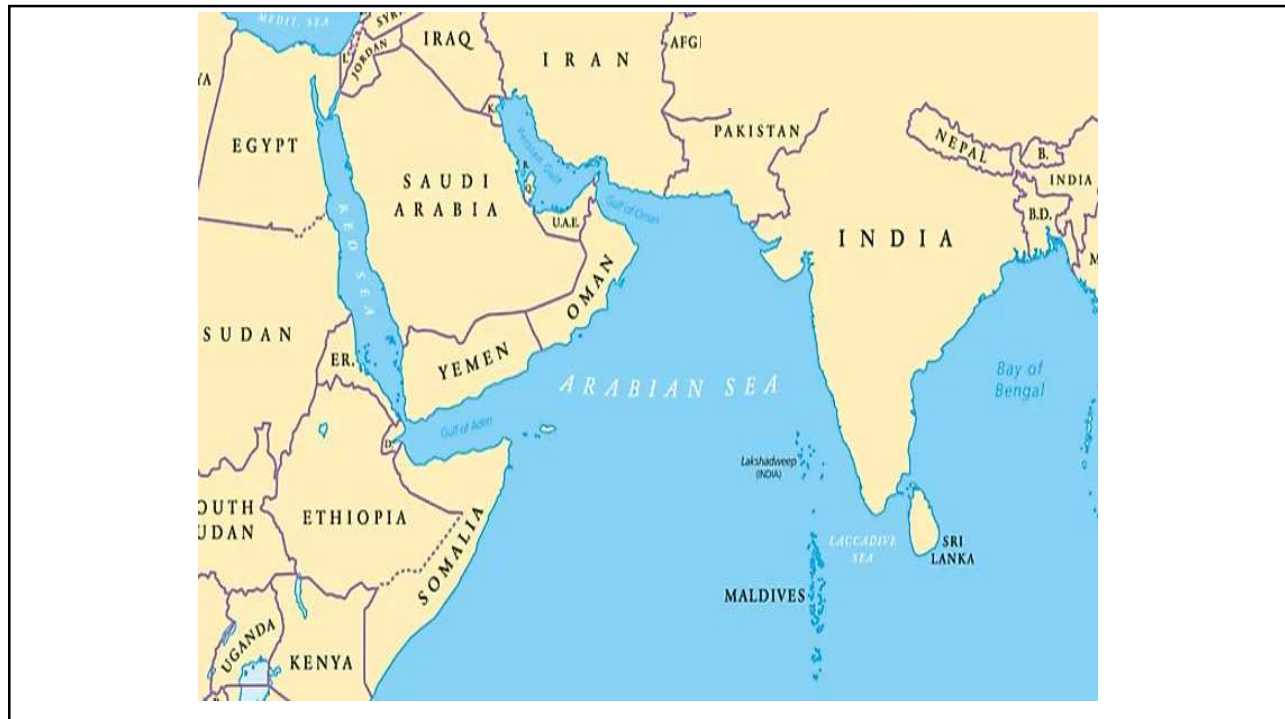


THIS IS THE CITY THAT WE HAVE KNOWN FOR AS LONG AS WE CAN REMEMBER. OVER THE YEARS, THE BOUNDARIES HAVE MERGED AND ONE CAN HARDLY BELIEVE THAT MUMBAI WAS ORIGINALLY SEVEN ISLANDS FLOATING IN THE ARABIAN SEA.



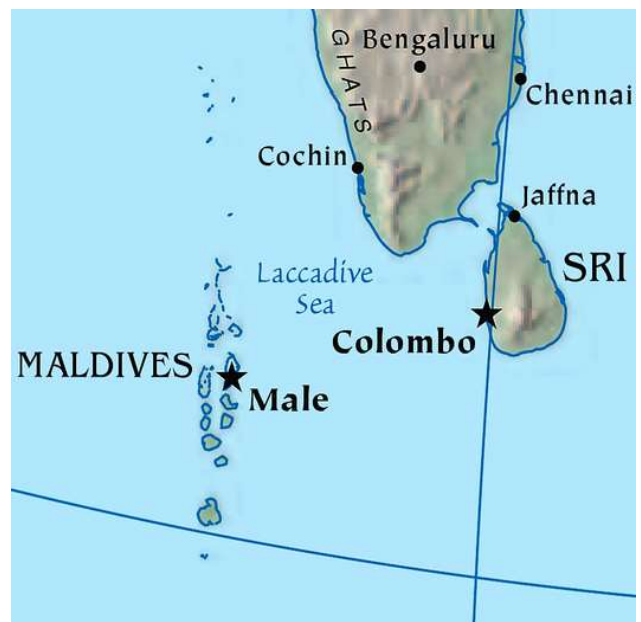
E) Arabian Sea

- 1) Lies between Indian subcontinent & Arabian Peninsula in Indian Ocean.
- 2) Bordered by Yemen, Oman, Pakistan, Iran, India & Maldives.
- 3) Important islands :- Lakshadweep Islands (India), Socotra (Yemen), Masirah (Oman), and Astola Island (Pakistan).
- 4) Indus - Largest river that flows into Arabian sea.
- 5) The Arabian Sea has two major branches :
 - ↳ The Gulf of Aden is in the southwest, which connects with the Red Sea via the Bab-el-Mandeb strait, and
 - ↳ The Gulf of Oman is in the northwest, which connects with the Persian Gulf.
- 5) Arabian Sea is located at crossroads of several major shipping lanes, making it a vital route for global trade and commerce. The sea is rich in oil and natural gas resources and is an important source of energy for the region.
- 6) The increase in cyclone activity in the Arabian Sea is tightly linked to the rising ocean temperatures and increased availability of moisture under global warming.



F) Laccadive Sea (Lakshadweep Sea)

- 1) A body of water bordering India, Maldives and Sri Lanka in Indian ocean.
- 2) It is located to the southwest of Karnataka, to the west of Kerala and to the south of Tamil Nadu.
- 3) This warm sea has a stable water temperature through the year and is rich in marine life.
- 4) Major cities on the shore :- Mangaluru, Kannur, Kozhikode, Kochi, Thiruvananthapuram, Tuticorin, Colombo, and Malé





C) Gulf of Mannar

- 1) It is an inlet of the Indian Ocean, between southeastern India and western Sri Lanka.
- 2) It is bounded to the northeast by Rameswaram, Adam's Bridge and Mannar Island.
- 3) Mouth of rivers:- Tambraparni (India) and the Aruvi (Sri Lanka).
- 4) Famous for pearl banks and sacred chank (a gastropod mollusk).
- 5) The Marine National Park was established in 1982 under the provisions of the Wildlife (Protection) Act, 1972.
- 6) Major ecosystem :- Coral Reefs, Mangroves, Mudflats, Creeks, Seagrass, & Seaweeds.
- 7) Recently, the dead coral reefs were observed near Kurusadai (Tamil Nadu), due to a seaweed species (*Kappaphycus alvarezii*) deliberately introduced for commercial cultivation some two decades ago.
- 8) The International Union for Conservation of Nature lists *Kappaphycus alvarezii* as one of the world's 100 most invasive species.
- 9) Seaweed : A huge variety of marine plants and algae that can be found in rivers, lakes, and other bodies of water.

Kappaphycus alvarezii (कप्पाफाइकस अल्वारेज़ी)

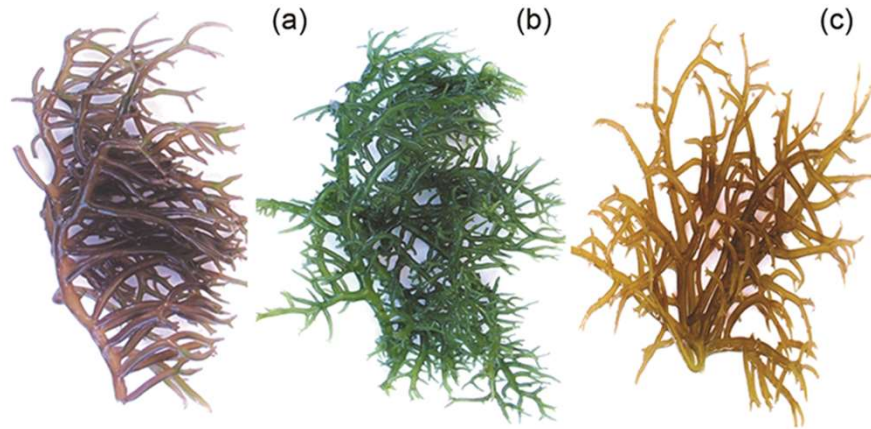
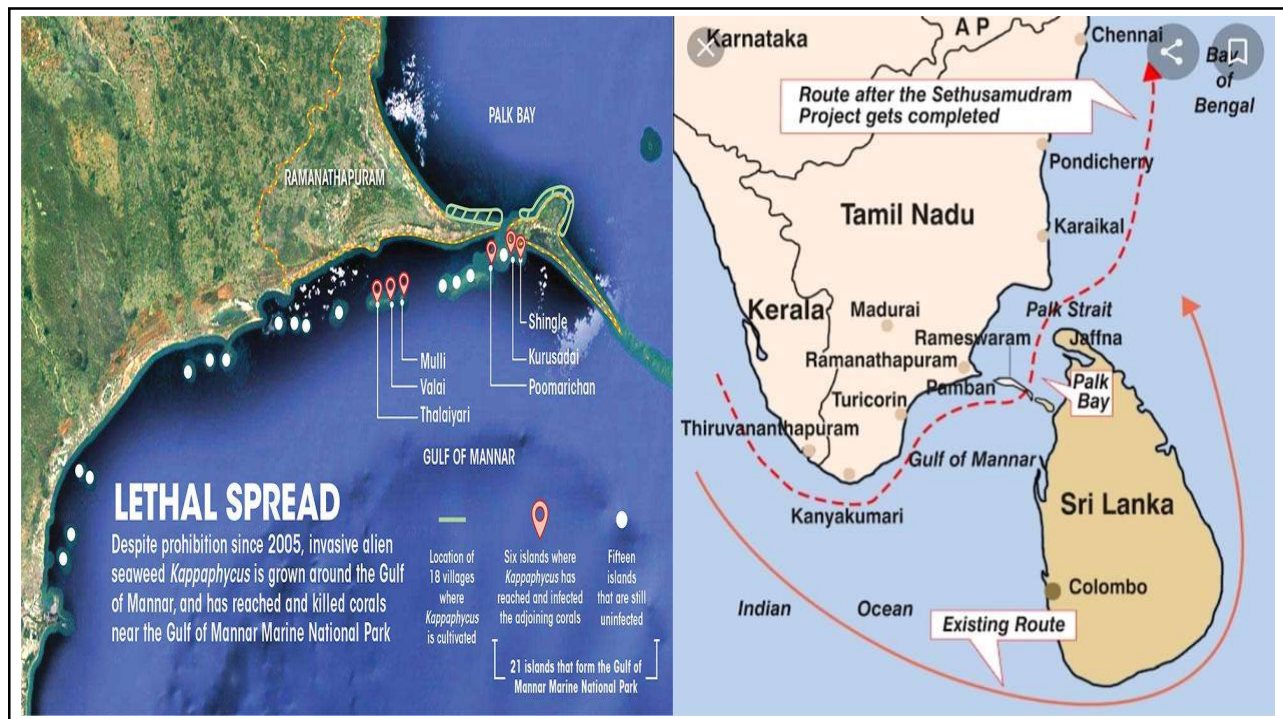
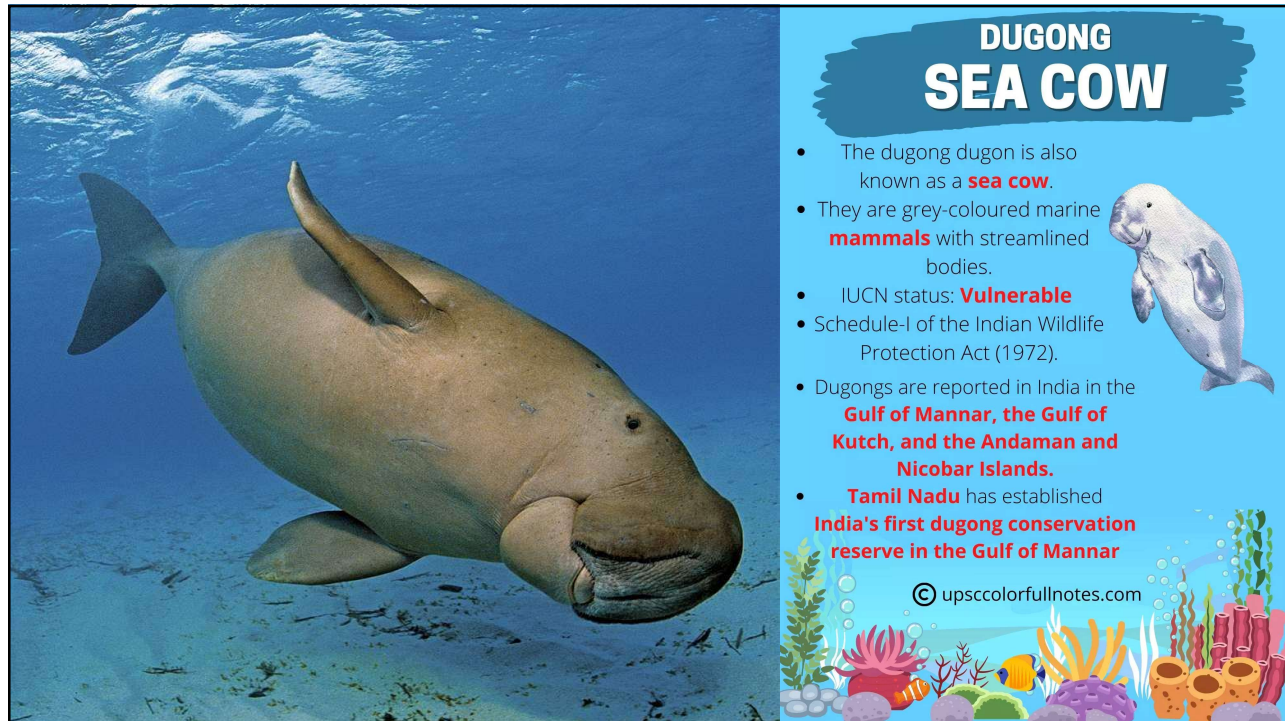


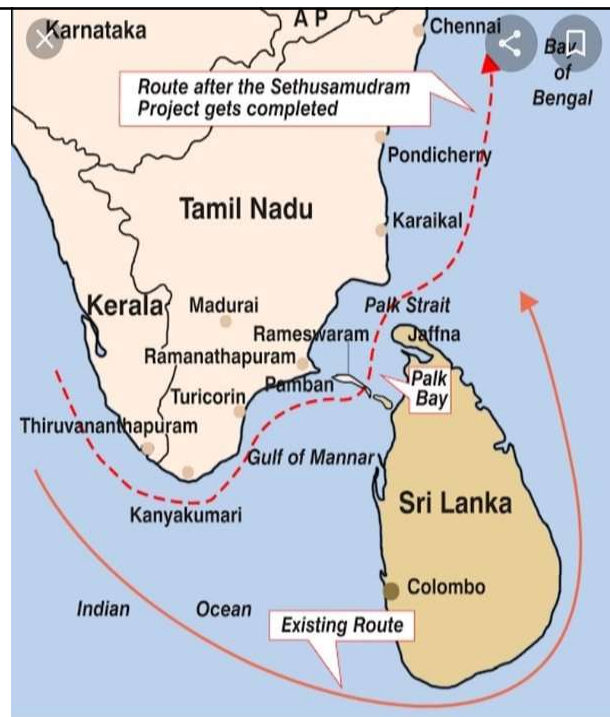
Fig. 1 — Three colour forms of *K. alvarezii*: (a) Brown, (b) Green, and (c) Pale Yellow





H) Palk Bay

- 1) A semi-enclosed shallow water body between India and Sri Lanka.
- 2) The north-eastern region of Palk Bay is exposed to the Bay of Bengal through the shallow Palk Strait allowing swells to enter. To the south, Adam's Bridge separates Palk Bay from the Gulf of Mannar.
- 3) Mouth of Vaigai River of Tamil Nadu.
- 4) It is known for its coral formation and great marine diversity.
- 5) Palk Strait :-
 - * Connects the Bay of Bengal with Palk Bay
 - * Separates - Tamil Nadu (India) and Jaffna (Sri Lanka).



I) Ramsetu (Adam's bridge)

- 1) A 48-km chain of limestone shoals between Pamban Island (Tamil Nadu) and Mannar Island (Sri Lanka).
- 2) The bridge finds mention in the Hindu epic Ramayana and is believed to have been constructed by Lord Ram to reach Sri Lanka to rescue Sita.
- 3) As per Islamic legend, Adam used this bridge to reach Adam's Peak in Sri Lanka.
- 4) The Sethusamudram Shipping Canal project aims to create a shipping route between India and Sri Lanka by building an 83-km-long deep water channel.
- 5) The Sethusamudram project has been opposed on environmental grounds.



HomeWork -

<https://www.iasparliament.com/current-affairs/the-ram-setu>



J) Sethusamudram project

1) Introduction :-

- ✦ Project aims to construct a shipping canal through the shallow waters of the Palk Bay and the Gulf of Mannar, which would reduce the distance and time required for ships to travel between Sri Lanka of India. The successful completion of the project is expected to cut travelling by about 350 nautical miles and will save 10 to 30 hours' sailing time.
- ✦ The depth of the sea along the bridge varies between 3 feet and 30 feet, making navigation by sea-worthy vessels impossible in this stretch.
- ✦ At present, ships bound for India's eastern coast have to circle around the entire island of Sri Lanka to reach Tuticorin, Chennai, Vizag, Paradip and other ports.



2) Challenges :-

- ✦ High energy waves may bring sediments
- ✦ The waves enter the Bay from its north and south, corresponding to how the channel is aligned.
- ✦ High frequency of cyclonic storms : A cyclone in 1964 was so powerful that it wiped out the town of Dhanushkodi.
- ✦ Dumping of dredged material may harm marine ecosystem
- ✦ Air and water pollution by the ships
- ✦ Religious belief of Significant Ram Setu : While environmental groups have been protesting against the project for the huge environmental cost it would entail, religious groups have been opposing it as they believe that the structure, which is mentioned in the Ramayana, is of religious significance.

Sindhu Sadhana is an indigenous exploration vessel which can stay underwater for up to 45 days.

K) Bay Of Bengal

- 1) It is the northeast part of the Indian Ocean, bounded by India, Bangladesh, and Myanmar.
- 2) The union territory of Andaman and Nicobar lies in the Bay of Bengal.
- 3) Deltas of Ganga, Brahmaputra, Mahanadi, Godavari, Krishna & Cauvery.
- 4) Importance :-
 - ✳ The regular monsoon from the Southeast winds of the Bay of Bengal.
 - ✳ The fertile delta region of the Bay supports a wide range of crops,
 - ✳ The region is also known for its diverse aquaculture, including fish, shrimp, and crab farming.
 - ✳ It is one of the largest warm-water bays in the world and its waters play a significant role in the region's weather patterns and monsoon circulation.
 - ✳ Home to a variety of species both on and off the coast - Marine Mammals (Dolphins, whales, & dugongs), Mangrove Forests, Coral Reefs etc.
 - ✳ This route is used for all sea trade with the east, southeast, and Asia Pacific.

L) Hukitola Bay

- 1) It is located in the state of Odisha, north of the Mahanadi River delta.
- 2) Hukitola island is the main attraction situated on this Bay. The island was formed from silt deposits.



M) Andaman Sea

- 1) A marginal sea of Indian Ocean, lying between the Andaman and Nicobar Islands and the Malay Peninsula.
- 2) Its southernmost end is called Breueh Island.
- 3) Mouth of Irrawaddy river.
- 4) The sea has been used for fishery, transportation and coral reefs islands



	Probable & Previous Year Questions	
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(Very short answer type questions)

- | | |
|--|---|
| 1) What is Sir Creek? – 2016
2) The Tropic of Cancer passes through which states of India? – 2015
3) Explain the origin of the name Bharat and India.
4) Describe the latitudinal and longitudinal expansion of India.
5) Gulf of Mannar | 6) The standard timeline of India passes through how many states?
7) Daylight savings time
8) Garden time
9) Circadian rhythm
10) How many UTs of India are there, which share a border with the sea?
11) Name 3 states that share maximum coastline.
12) Gulf of Kutch |
|--|---|

- | | |
|---|---|
| 13) Which are the three largest union territories of India in terms of area?
14) Which are 3 smallest states of India in terms of area?
15) What is an imposed limit?
16) Which are the four largest states of India in terms of area?
17) exclusive economic zone
18) Territorial waters
19) Ram Setu
20) Gulf of Khambhat
21) Bay of Bengal
22) New Moore Island | 23) 8, 9 & 10 degree channels
24) India was geographically part of which region?
25) Give 3 examples defining geographical boundary.
26) How many states of India share borders with Pakistan?
27) Sundarbans Delta.
28) Teesta River.
29) Farakka Barrage
30) McMahon Line
31) Radcliffe Line
32) Kaladan Project |
|---|---|

33) Rann of Kutch

34) Indus water agreement

35) Siachen Glacier

(Short answer type questions)

- 1) Explain the advantages of India's geographical location.
- 2) Why did India make 82.5 degrees east longitude the standard line? Explain
- 3) Should India adopt Daylight Saving Time?
- 4) Why is there a demand for two standard timelines in India? explain
- 5) Explain the division of aquatic areas according to United Nations treaties.