

## Recorded Map Class 01

### **A brief introduction to the Map classes and their importance for the examination.** (5:19 PM)

- Both from World's perspective and India's perspective
- World:
- Introduction
- Political Locations - Boundaries and neighbours
- Physical - Mountains, Plains, rivers, etc
- Economic Aspect - Transportation, Minerals
- Oceanic and Current related
- India:
- Introduction
- Mountain, Plateaus, Island, Rivers
- Environment - Wetlands, NP, TR, BR, Ramsar Sites, etc
- Transportation, resources, etc
- Current related locations from India's perspective
- Tribes of India through Map, etc

### **Basics of World Mapping:** (5:42 PM)

- 7 Continents and 5 Oceans
- Pacific Ocean, Atlantic Ocean, Indian Ocean, Arctic Ocean, Southern Ocean
- Ocean cover 70% of the earth's surface
- Southern Ocean is the fifth Ocean and is the recent edition ie in the year 2000 by International Hydrographic Organisation (IHO)
- Rationale - As it does not mix with other waters easily due to westerlies
- Unofficially the Southern Ocean is also called Austral Ocean
- Pacific Ocean:
- The Pacific Ocean is the largest and the deepest ocean on average and has a Pacific Ring of Fire
- It is twice the size of the Atlantic Ocean
- The Pacific Ocean has the deepest point in the ocean ie Marian Trench and has Challenger Deep; Major country near is the Philippines; Approximately it has a depth of 10,994 metres
- Atlantic Ocean:
- It is the youngest Ocean 250 million years is its age
- It is the 2nd largest ocean and is in S-shape
- The most prominent feature is the Mid-Atlantic Ridge which is also in S-shape
- The Drake Passage connects the Pacific Ocean with the Atlantic Ocean
- Indian Ocean:
- Only Ocean to be named after a country
- The Indian Ocean is connected to land towards the North
- Arctic Ocean - It is the smallest ocean out of all the 5 oceans
- It has no landmass and is covered with ice
- The area under the ice is decreasing due to Global warming
- The polar bear is the largest land carnivore which is there in the Arctic
- Due to Arctic amplification, the impact of Global warming is more as it has a fragile ecosystem
- Also weakening of Atlantic meridional overturning circulation (AMOC) is taking place
- Human beings have been existing here for long times; Also, Neanderthal existed here

### **Continents:** (6:05 PM)

- Continents as per size - Asia, Africa, North America, South America, Antarctica, Europe, Oceania is in decreasing order
- No standard and official definition for the continent
- Till the edge of the continental shelf, it is continent and beyond it is part of world oceans
- The Ural Mountains as the boundary between Europe and Asia
- Caucasus Mountain Region - Armenia, Azerbaijan and Georgia
- Turkey connects both Asia and Europe; Istanbul (earlier Name - Constantinople, Silk Route used to pass through this)
- Seas - the Caspian Sea, the Black Sea and the Mediterranean Sea
- Asia and Africa - the Sinai Peninsula is under the control of Egypt

- New Guinea Island - Boundary between Asia (Indonesia) and Oceania (Papua New Guinea)
- Highest Point of Asia - Mount Everest is between Nepal and China
- Deepest Point on the continent - Dead Sea (between Israel and Jordan)
- Europe - It is called the Peninsula of the Peninsulas
- Vatican City - Smallest Country is in Europe
- Alps Mountains and Mount Elbrus in Caucasian Mountains which is the highest Point
- The Caspian Sea is the lowest point in Europe
- Africa:
- Africa is the only continent through which Tropic of Cancer, Capricorn and Equator passes through it
- Strait of Gibraltar and the Nile River
- Dark Continent - Because it was not explored much
- The highest point of Africa - Mt Kilimanjaro
- Lowest Point of Africa - Lake Assal (Djibouti)
- Americas - It consists of both North and South America
- Both are connected but not connected to other continents
- North American - Greenland (Denmark), USA, Canada, Mexico, etc
- South America - Chile, Argentina, till the Drake Passage
- Americas are called the New World
- Latin America excludes USA and Canada
- Highest Point of N. America - Mount McKinley or Denali in Alaska, etc
- South America: (7:09 PM)
- Andes and Drakes passage
- Amazon River and Orinocco River passes through Venezuela
- Angel Falls is the highest waterfall in the world ie 979 metres
- Highest Point of S. America - Mt Aconcagua in Argentina ie 6960 metres
- Deepest Point of S. America - Valdez Peninsula
- Oceania:
- Presence of a large number of Islands - Micronesia, Melanesia and Polynesia; Australasia
- Micronesia - Kiribati and Marshall Islands,
- Melanesia - Papua New Guinea Islands, Fiji Islands (due to Melanin Pigmentation)
- Polynesia - A large number of islands spread over a large area; Hawaii Island (50th State of USA), Eastern Island, New Zealand
- Great Dividing Range - Australia
- Southern Alps - New Zealand
- Mount Wilhelm
- Deepest point - Lake Eyre in Australia
- Antarctica:
- It is also called as White continent as 99% of it is covered in ice
- It is also called Terra Australis Incognita ie land south unknown
- Antarctic Treaty System, 1961 - Antarctica belongs to no one and is for peaceful purpose, etc

#### **Indian Mapping:** (7:39 PM)

- Neighbouring Countries:
- Land Boundary - Pakistan, Afghanistan, Nepal, Bhutan, Myanmar, Bangladesh, China
- Through Wakhan Corridor India is connected to Afghanistan also
- Bangladesh (4000 Kms), China (3500 Kms), Pakistan (3300 KMs), Nepal (1700 KMs), Myanmar (1650 Kms), Bhutan (700 Kms), Afghanistan
- Maritime boundaries, Land Boundaries and various CAPF
- Extreme Points of India:
- In Gilgit Baltistan and Indira Col near Sichen
- Cape Comorin, Kanyakumari (on land) and Indira Point
- Easternmost Point - Kibithu (Arunachal Pradesh)
- Western Most Point - Sir Creek (Kutch, Gujrat)
- Highest Point - Mt K2 or Mt Godwin Austin
- Lowest Point in India - Kuttanad, Kerala
- **States and Union Territories (UTs):** (7:59 PM)
- 28 states in India and 8 Union Territories (UTs), etc

**Topics for the next class:** Continuation of Map work, etc  
**Recorded Map Class 02**

**A brief overview of the class.** (1:03 PM)

- World - Political border, Physical features, Ocean reliefs, economic
- India - Physical Features, Drainage system, environmental, economic
- Current locations

**India:** (1:17 PM)

- Border states of Chattisgarh - Andhra Pradesh, Telangana, Odisha, Jharkhand, Madhya Pradesh, Maharashtra, Uttar Pradesh. (Not Bihar)
- No direct passage between Rajasthan and Maharashtra
- Ladakh is connected to Himachal Pradesh (not Punjab)
- Haryana has no international border and is not connected to Uttarakhand directly
- Punjab and Rajasthan are connected directly and have an international border with Pakistan
- Paonta Sahib - is an important pilgrimage site for Sikhs and the Yamuna river crosses Himachal Pradesh here
- South:
- Kerala has boundaries with Tamil Nadu and Karnataka
- Tamil Nadu has boundaries with Kerala, Karnataka and Andhra Pradesh
- There is no border between Telangana and Odisha
- There is a direct border between Andhra Pradesh and Chattisgarh
- East:
- There is a border between Uttar Pradesh and Chattisgarh
- No border between Chattisgarh and Bihar
- No border between Madhya Pradesh and Bihar
- No border between Madhya Pradesh and Jharkhand
- Northeast:
- Sikkim has only a border with West Bengal
- Assam has a border with Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Meghalaya
- Homework:
- States having international borders
- Capitals of all the states

**World:** (1:51 PM)

**Asian Continent - Political:** (1:52 PM)

- Regions - West Asia/Middle East, Central Asia, South Asia, South-East Asia, South Asia
- The Arctic Ocean, Caspian Sea - Boundary between Asia and Europe
- Black Sea, Mediterranean Sea; the Red Sea, Gulf of Aden, Arabian Sea, Persian Gulf, Gulf of Oman; Bay of Bengal; Andaman Sea - on the eastern side of the Andaman Islands, Gulf of Thailand; South and the East China Sea, Yellow Sea, Sea of Japan and East Sea, Bering Sea

**West Asia:** (2:02 PM)

- Not in West Asia - Georgia, Armenia and Azerbaijan
- Countries - Turkey and Iran; Yemen and Oman; Saudi Arabia,
- Cyprus - It is a member of the EU; geographically located on the continental shelf of Asia; in the UN it sits in the Asia-Pacific group
- Ankara is the capital of Turkey; Turkey is both in Europe and Asia
- The Aegean Sea and Sea of Marmara (connected with the Black Sea) - separate European Turkey and Asian Turkey; Istanbul (earlier Constantinople - silk trade used to pass through) is in European Turkey; the largest city of entire Europe
- Iran - capital is Tehran; waterbodies - Caspian, Sea, Gulf of Oman, Arabian Sea, Persian Gulf
- Persian Gulf - Iran on North; Iraq, Kuwait, Saudi Arabia (also access to the Red Sea),
- No country in West Asia is landlocked
- UAE (Capital - Abu Dhabi) is between Saudi Arabia and Oman (Muscat)
- Houthi rebels in Yemen and the civil war is going on
- Qatar (Doha) - It is a peninsula; with only a border with Saudi Arabia
- Bahrain - It is an island
- Riyadh is in the middle of Saudi Arabia; Mecca and Medina are in Saudi Arabia; Monarchy still prevails there

- The capitals of these countries are important
- Oman has a coast in the Persian Gulf
- Gulf of Oman - Oman and UAE
- Gulf of Aden - Yemen, Somalia, Djibouti
- Red Sea - Yemen, Saudi Arabia, Israel, Egypt, Sudan, Eritrea, Jordan
- Gulf of Suez and Gulf of Aqaba (Jordan, Saudi Arabia, Israel, Egypt - two ports Aqaba - Jordan; Elat - Israel)
- Jordan (Amman) - has a coast in the Gulf of Aqaba; the Jordan River marks the border between Jordan and Israel; It enters and drains into the dead sea (the lowest point on the continent of the earth)
- Israel - the land of Jews; Jerusalem is capital
- Palestine - West Bank (west bank of Jordan river) and Gaza
- Lebanon (Beirut is the capital)
- Syria - Damascus is the capital of Syria
- Golan Heights - occupied by Israel in 1967 during 6 days of the war; junction of Syria, Jordan, Israel and Lebanon
- Shia countries - Iran, Iraq and Bahrain and Lebanon; ruler of Syria ie Assad but people are Sunni
- Sunni - Saudi Arabia
- Kurdistan - Border area of Turkey, Iraq and Syria; tribal people who live here are Kurds
- GCC - Kuwait, Saudi Arabia, Bahrain, Qatar, UAE and Oman are part of it; Iran and Iraq are not part of it

#### **Central Asia:** (3:14 PM)

- 5 Central Asian Countries - Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan, Turkmenistan
- Afghanistan is not traditionally part of Central Asia
- India has a border with Afghanistan in Wakhan Corridor
- All are landlocked countries except Turkmenistan and Kazakhstan
- Uzbekistan is doubly landlocked - surrounded by all landlocked country
- Capitals:
- Kazakhstan - Nur Sultan
- Kyrgyzstan - Bishkek (Pamir Knot, Bishkek Declaration for Snow Leopard Conservation)
- Uzbekistan - Tashkent
- Tajikistan - Dushanbe
- Turkmenistan - Ashgabat

#### **South Asia:** (3:34 PM)

- They are called SAARC Countries
- Afghanistan, Pakistan, India, Nepal, Bhutan, Bangladesh, Sri Lanka, Maldives
- Try to refer to the capitals of these countries

#### **South-East Asia:** (3:37 PM)

- It has 10 countries that are members of the ASEAN
- 5 countries for the mainland - Myanmar, Thailand (maritime boundary with India in the Andaman Sea), Vietnam, Laos, Cambodia; also known as Indo-China
- 5 Island countries - Malaysia, Singapore, Indonesia, Brunei, Philippines
- This region has maximum Archipelago due to Ocean Ocean Convergent boundaries
- Coco Islands - Myanmar has a maritime boundary with India
- Thailand - Bangkok (Bangkok Declaration - ASEAN was established through this declaration)
- Laos - Vientiane is the capital
- Cambodia - is famous for its Angkor Wat Temple; Phnom Penh is the capital
- Vietnam - Hanoi is the capital
- Malaysia - Kuala Lumpur is the capital; Islamic majority country
- Singapore - Island; is the world's busiest port
- Indonesia - Sumatra, Java; Jakarta is the capital and is in Java; now the capital is being shifted; It has the highest Islamic population in the world
- Brunei - Bandar Seri Begawan is the capital
- The Philippines - Manila is the capital; it has 3 important regions ie Luzon, Visayas and Mindanao
- Note: East Timor is part of Asia but not part of ASEAN

**Topics for the next class:** Continuation of World Mapping, etc

**Recorded Map Class 03**

**The class started at 1.10 PM**

**A brief overview of the previous class:**

### Maps of South-East Asia: (at 1.16 PM)

- **The capitals:**
- Myanmar --> **Nay Pyi Taw.**
- Thailand --> **Bangkok**
- Cambodia --> **Phnom Penh**
- Laos --> **Vientiane**
- Vietnam --> **Hanoi**
- Indonesia --> **Jakarta** (**Jakarta** is situated on the island of **Java**). **Indonesia** is planning for **shifting** its **capital** from **Jakarta** due to **sea-level rise** & its effects.
- **Straight of Johor** separates **Singapore** from **Malaysia**.
- Large number of **volcanoes** around Indonesian islands and replenishing of **nutrients**.
- **Borneo islands** (one of the pristine regions; rainforest vegetation)
- Singapore --> **Singapore city** (the strategic route for trade through narrow passage).
- Brunei --> **Bandar Seri Begawan**.
- Philippines --> **Manila**.
- Taiwan --> **Taipei**.



### East Asia: (at 1.33 PM)

- It consists of a total of **five countries** of **China (Beijing)**, **Mongolia (Ulaanbaator)**, **North Korea (Pyongyang)**, **South Korea (Seoul)**, and **Japan (Tokyo situated on Honshu island)**.
- Only **Russia** and **China** surround **Mongolia**.
- **Mongolia** is rich in **Uranium**.
- **38th parallel**, a popular name given to **latitude 38° N** that in East Asia roughly **demarcates North Korea** and **South Korea**.
- **Japan** has **four** major islands: **Hokkaido** (northernmost); **Honshu** (bigger one), **Sikoku**, and **Kyushu**.
- **Tokyo** is the **largest city** for the **urban population** in the world (the **second largest** in **New Delhi** by population).



#### • Russia & nearby regions: (at 1.45 PM)

- Known as the erstwhile **USSR** or the **Soviet Union** consisted of **15 countries** are Russia, **five** Central Asian countries (**Kazakhstan**, **Kyrgyzstan**, **Tajikistan**, **Turkmenistan** and **Uzbekistan**), Georgia, Armenia (rich in petroleum and Gas resources), Azerbaijan, Ukraine, Belarus, Moldova, Estonia, Latvia and Lithuania.
- **Countries** surrounding the **Caspian Sea** (the **largest lake**): **KRAIT** --> **Kazakhstan**, **Azerbaijan**, **Russia**, **Iran** and **Turkmenistan**.
- **Aral Sea** (90% dried) is situated between **Kazakhstan** and **Uzbekistan**.
- **Armenia** is a **landlocked country**.
- Between **Armenia** and **Azerbaijan** (**Muslim-dominated country**), the land/region is called **Nagorno Karabakh** (currently in **Azerbaijan**).





Europe: (at 2.41 PM):

- Norway, Denmark, Sweden, and Finland.
- UK and Ireland.
- **Eastern Europe:** Poland, Czechoslovakia, Austria, Hungary, Romania, Bulgaria, Serbia, Albania, Yugoslavia, Macedonia.
- **Western Europe:** France, Germany, Spain,
- **Waterbodies** of Europe: the Caspian Sea, Black sea, Aegean sea, Mediterranean sea, Adriatic sea, Black sea, Norwegianian sea, North Sea, Baltic sea, etc.
- **Scandinavian countries** include Norway, Sweden, and Denmark.
- **Nordic countries** include Norway, Sweden, Denmark, Finland, Iceland and Greenland.
- England, Wales, Scotland, Northern Ireland and the Republic of Ireland.
- England and Wales are called Britain.
- England, Wales and Scotland are called Great Britain.
- Great Britain and Northern Ireland together called the United Kingdom (UK).
- The **Republic of Ireland** is a **separate** country and is **not** a part of the UK.
- Countries having borders with the Atlantic Ocean are Portugal, Spain, France, the UK, Iceland, Norway
- North sea touches the UK, Norway, Germany, Denmark, etc
- Spain, France and Italy have coastal borders with the Mediterranean sea.
- **Germany** has their coasts with both the North Sea and the Baltic sea.
- The **Baltic sea** covers Germany, Poland (capital: Warsaw), Estonia, Latvia and Lithuania.
- **Three Baltic** countries are Estonia, Latvia and Lithuania.
- **Adriatic sea:** Italy (Western side of the Adriatic sea) + **BSC MA** (Bosnia, Slovenia, Montenegro and Albania).
- **Aegean Sea:** Turkey and Greece.
- **Straight of Marmara** provides the **link** between the **Aegean sea** and the **Black sea**.
- The **black sea** covers **six** countries: **BRUGRT** (Bulgaria, Romania, Ukraine, Georgia, Russia and Turkey).
- The **sea of Azov** surrounds **two** countries: **Ukraine** and **Russia**.
- The **youngest** country in Europe is **Kosovo** (separated from **Serbia** and recognized by the UN).
- **NOTE:** Kindly go through the EU and Non-EU countries and groups like Eurozone.



Americas: (at 2.32 PM)

- **Northern America:**
- It consists of Canada, the USA, Mexico, Central America, Caribbean islands and Denmark.
- **Canada** (the land of Lillies and the capital is Ottava) is the second-largest country in terms of area.
- The **capital** of the **USA** is **Washington D.C.**
- The **USA**: 48 mainland states + Alaska + Hawaiian islands
- **St. Lawrence** makes the boundary between Canada and the USA.
- Rio Grande River separates the USA and Mexico.
- **Mexico** (capital: Mexico city) is situated between two Gulfs: the Gulf of Mexico and Gulf of California.
- **Central America** consists of **seven** countries: **Four** countries (**BEGH**: Belize, El Salvador, Guatemala and Honduras) in the north and **three** are in the south (**NCP**: Nicaragua, Costa Rica and Panama).
- **Except** for Belize and El Salvador, **all other five** Central American countries touch the borders of both the Caribbean sea and the Pacific ocean.
- The **northern triangle** is denoted by **three** countries of **El Salvador, Guatemala** and **Honduras**.
- **Entire** Caribbean islands are divided into the **Greater Antilles** and the **Lesser Antilles**.
- Cuba, Jamaica, Haiti, Dominican Republic consist of the **Greater Antilles**.
- **Bermuda Triangle**.
- **Bermuda** is a territory of the **UK**.
- **Puerto Rico** is a territory of the **USA**





- **Southern America:**
- **Venezuela** is a petroleum dominated economy.
- **Lake Maracaibo** is a rich resource of petroleum
- The largest country in Southern America is **Brazil**.
- The **Equator** passes through **Ecuador**.
- Other countries are **Colombia, Suriname, Guiana, Argentina, Uruguay, Peru** (a landlocked country), **Bolivia** (a landlocked country), **Chile**.
- **Argentina** is known for **Silver**.
- **Chile** and **Colombia** have borders with both the Atlantic ocean as well as the Pacific Ocean.
- The **major** southernmost islands are **Tierra del Fuego**.
- **Lithium triangle** countries are **Argentina, Chile** and **Bolivia**.



Africa: (at 3.27 PM)

- The **countries** that have coasts with the **Red Sea** are Egypt, Sudan, Eritrea and Djibouti.
- **Sudan** was separated into Sudan and South Sudan.
- **Darfur** is situated in the region of Sudan.
- **Djibouti code of conduct for maritime security.**
- **Ethiopia** is known for **one** of the **best coffee** quality in the world.
- **Horn of Africa: SEED** that is Somalia, Ethiopia, Eritrea and Djibouti.



- Eastern coastal countries are Somalia, Kenya, Tanzania, Mozambique, Malawi, Mozambique, South Africa, Madagascar, etc.
- **Tanzania** is famous for **Kilimajaro**.
- **Namibia** is famous for the **Namib desert** (known for its **highest sand dunes** in the **world**).
- **Five countries** that touch the **Mediterranean sea** are **Morocco, Algeria, Tunisia, Libya** and **Egypt (MATLE)**.
- **Jasmine revolution** happened in Tunisia.



#### Australia: (at 3.50 PM)

- Coastal cities of Australia connotes for **BSCMAPH** consist of Brisbane, Sydney, Canberra, Melbourne, Adelaide, and Perth from the east to west.



#### Arctic circle and Antarctica: (at 3.53 PM)

- In the **Arctic circle**, **India** has a station called **Himadri** in the Svalbard region.
- The **Arctic Council** was established on **19 September 1996** when the governments of **Canada**, the Kingdom of **Denmark**, **Finland**, **Iceland**, **Norway**, the **Russian Federation**, **Sweden**, and the **United States** signed the **Ottawa Declaration**.
- **India** has regions in **Antarctica** that are **Dakshin Gangotri** (abandoned), **Maitri** (currently operational), and **Bharti**.
- **Dakshin Gangotri** was the **first scientific base station** of **India** situated in **Antarctica**, part of the **Indian Antarctic**



Programme.

# ARCTIC REGION





#### Important passes: (at 3.58 PM)

- **Tropic of Cancer** (passes through North America, Africa and Asia):
  - In Africa: **Western Sahara, Niger, Algeria, Mauritania, Egypt, Libya, and Mali.**
- **Tropic of Capricorn:**
  - Tropic of Capricorn passes through **Chile, Argentina, Paraguay and Brazil** (Abbreviation is **BCAP**) in South America.
  - In **Africa**: Namibia, Botswana, Mozambique, Madagascar and South Africa (NBMS).
  - In **Asia and Ocean**: Australia.
- **Equator:**
  - In **Africa**: Gabon, Congo, DRC, Uganda, Kenya and Somalia (**GSDCK**).
  - In **South America**: Ecuador, Colombia and Brazil (**ECB**).
- **Prime Meridian** passes only through the **UK, France and Spain** in Europe.
- The **prime meridian** and **Equator** meet at the **Gulf of Guinea**.

The topics for the next class: (Physical features and related maps of the world).

Recorded Map Class 04

#### A brief overview of the previous class (1:10 PM)

- SEA countries
- Arctic council
- Black sea countries.
- Adriatic sea countries

#### Mountains' (1:18 PM)

- **Nature of formation**
- Block mountain.
- Fold mountain
- Volcanic mountain

- **Based on the age of formation, there are four types.**
- Precambrian mountains (540 million years ago), highly weather mountains.
- Example Laurentian plateau (eastern Canada)
- Caledonian mountains 450 to 350 Mya (old fold mountains) example Appalachian Mountain, rich in iron ore and coal reserves.
- Example 2->Aravalli in India
- Example 3- Great Dividing Range.
- Example3- Southern alps (New Zealand)- The highest peak is Mt Cook (aka Aoraki)
- Hercynian mountains Formed during (250 to 350 Mya) aka block mountain. Example Black Forest (on the border of Germany and France). It's the horst and graben in Rhine valley, Vosges is block mountain (horst)
- Black forest source of Danube River
- Ural mountain (partly Block Mountain due to rifting and it's also old fold mountain) between Siberian and Eastern Russia
- Altai Mountain and Altai Mountain à block mountains.
- Alpine mountains such as the Himalayas.
- Another example Pamir knot Armenian Knot, Karakoram range, Kunlun Shan,
- Hindukush- Afghanistan
- Taurus mountain in Turkey
- Caucasus mountain
- Zagros mountain and Elbrus mountains in Iran
- Khyber Pass is located on Hindukush Mountain in Pakistan.
- Mont Blanc is the highest peak of the alps.
- Africa-Atlas Mountain, highest peak Mt Kilimanjaro, Mt Kenya (on the equator) but snow-capped throughout the year due to its altitude.
- Rocky Mountain, Alaska range (Highest peak is) Mt McKinley aka Mt Denali.
- Rocky mountain in North America. The Sierra Nevada extends into Mexico as the Sierra Madre
- Andes mountain In South America and the highest peak is Aconcagua (Brazil is not part of the Andes). There are 7 countries through which the Andes pass and they are Venezuela, Colombia, Ecuador, Peru, Bolivia, Chile, and Argentina.

#### **Volcanos of the world (2: 11 PM)**

- **Types of volcanos**
- Active- erupted at least once in the human history
- Dormant (Not erupted in the human history) but has a link with a magma chamber
- Extinct – cut-off from the Magma chamber.
- North America ->Mt St Helens's (active volcano)
- Mauna Loa (active volcano) and Mauna Kea (dormant) are both on Hawaiian island
- Highest active volcano in the world Ojos del Salado in South America and its active volcanos
- Cotopaxi and Chimborazo are active volcanoes in Ecuador
- Mt Vesuvius in Italy and Mt Stromboli in Italy on Sicily island
- Asia- Mt Fuji in Japan, Krakatoa volcano between (Java and Sumatra) erupted in 1883.
- Mt Merapi on the island of Java, Mt Semeru (the highest volcano in Indonesia), last erupted in Jan 2021.
- Most active volcanos of Indonesia is Sinabung in Sumatra
- Philippines Taal volcanos.
- **Volcanos in the news in the last 2 years**
- White Island volcanos, 2019 in New Zealand.
- Volcano Sangay Ecuador's (2020)
- Cumbre Vieja (La Palma) canaries island of Spain (Dec 2021)
- Mt Aso in Japan.
- Hunga Tonga in Tonga island and erupted in Jan 2022.

#### **Deserts of the world (3:04 PM)**

- **Cold deserts**
- Gobi deserts
- Ladakh deserts
- Mohave, Namib, Atacama Desert etc
- Africa desert example Sahara
- Sahel region \_ semi-arid desert

- Sandy desert of Sahara is known as erg
- Rocky desert is known as HAMADA
- Libya has a Libyan desert
- Nubian desert in Sudan
- Eastern desert in Egypt
- Namib desert is known for the highest dunes in the world
- The Kalahari Desert in Botswana. It's one of the direst deserts and Bushman lives here.
- Swampy area of North of Botswana Okavango swamps.
- **North America**
- The Mojave Desert. It has Death Valley. The lowest pint in North America
- Sonoran or Arizona desert.
- **South America**
- The Atacama Desert
- Patagonian Desert (Chile and Argentina). It's a national park.
- **DESERT Of Asia**
- Rub al Khali in Arabian Peninsula.
- Dushte kavir and Dushte lut are salt desert
- Karakum desert is a cold desert in Turkmenistan.
- Thar desert India
- Gobi Desert in China

#### **Australia desert (3: 35 PM)**

- Great Victorian desert
- Great sandy desert
- Tanami desert
- Simpson desert
- **Plateau**
- Kimberley plateau in Australia
- Temperate grassland known as Downs.
- Ayers rock in Australia is the largest sandstone monolith in the world
- **North America**
- Great planes (part of Canada and USA). Aka as prairies (wheat-growing region)
- Columbia and Colorado Plateau between Rocky and cascade mountain.

#### **Rivers (3:35 PM)**

- Alaska Yukon river for gold placer deposits. drains into the Bering Sea
- McKenzie river in Canada it's the largest river in Canada and drains into the Arctic Ocean
- Columbia river from the Columbia plateau drains into the Pacific Ocean and the Colorado River in the Gulf of California.
- Colorado river has Grand Canyon.
- Mississippi river. its delta looks like a bird's foot. It drains into the Gulf of Mexico.
- St Laurens river drains into the Atlantic Ocean. This rover has Niagara waterfall (USA and Canada border)
- Hudson river has a long island and the city is New York

#### **South America (3:45 PM)**

- Brazilian islands are famous for coffee plantations.
- Altiplano Chile, Peru, Bolivia, and Argentina
- Highest navigable lake is Lake Titicaca in the Andes mountains
- Selvas are the rainiest of South America
- Llanos are to the north of Selvas
- Pampas are the temperate grassland of South America.
- Amazon river widest river in the world
- 2<sup>nd</sup> widest river in the world is the Brahmaputra.
- Paraguay and Uruguay rivers in South America
- Drakensberg plateau near to coast

#### **African rivers (4:05 PM)**

- Nile river. it flows for 6650 km. Major tributaries are White Nile (Lake Victoria), Blue Nile (Ethiopia), and Atbara (Ethiopia highland).
- Lake Nasser is a manmade lake in the region.



- Millennium dam on Blue Nile River.
- Congo river, Congo Forest. Congo river cuts the equator twice.
- It originates from Lake Tanganyika.
- Stanley waterfall on Congo River. It's a series of seven waterfalls.
- Zambezi river passes on the border of Zambia and Zimbabwe. It has Victoria waterfall and drains into the Indian ocean
- Limpopo river crosses the tropic of Capricorn twice and drains into the Indian ocean.

**The topic of the Next class** - mapping continues...

### **Recorded Map Class 05**

#### **A brief overview of the previous class (1:10 PM)**

##### **Rivers of Europe (1:16 PM)**

- Lisbon is located on river Tagus River
- Paris is located on the seine river. It drains into the English Channel.
- English Channel is a water channel between France and UK.
- Thames river through London. It drains into the North Sea
- Rhine river flows through Germany and drains into the North Sea. It originates in the Alps. It crosses a total of 6 countries (France, Germany, Netherlands, Switzerland, Austria, and Liechtenstein).
- Rhone is France's Major river and drains the Mediterranean sea.
- **Black sea**
- Danube, Dnieper, and Dniester drain into the black sea.
- Danube 2<sup>nd</sup> the longest river in Europe,
- The Volga is the longest river in Europe.
- Kyiv is located on the bank of the river which Pripyat flows through Chernobyl
- **Three important rivers of European Russia**
- Volga river drains into the Caspian Sea.
- Don river Drains into a sea of Azov. Sea of Azov connected to Mediterranean Sea etc
- Ural river
- the Aral Sea near the Caspian Sea
- the Aral Sea dried up 90 % in the last 20-30 years. After hydroelectric power plants were built by the Soviet Union. The Aral Sea is between Kazakhstan and Uzbekistan. It's fed by the Amu Darya and the Syr Darya
- **Asian Russian rivers**
- Lena river from lake Baikal and drains into the arctic ocean
- **West Asian rivers**
- Tigris and Euphrates originate from turkey and merge with each other before draining into the Persian Gulf.
- **China rivers**
- **Four major rivers of China from north to south**
- **Amur river.** Forms border between Russia and China.
- **Huang Ho River** (yellow river). (Named yellow because of yellow-colored sand coming from loess plateau) it drains into the yellow sea.
- **Chang Jiang River** (the third-longest river in the world) aka Yangtze River. Drains into East China seas. Three Gorges dam is located on this river.
- Shanghai is located near the Mouth of the Yangtze River
- **Pearl river.** Hongkong and Macau are located on the Pearl river

##### **Plateau (1:51 PM)**

- Anatolia plateau is in Turkey from which originates Tigris and Euphrates rivers
- Tibetan Plateau- largest as well as highest plateau formed due to convergence plate boundary. The average height is 4500 meters
- **Rivers of Southeast Asia. (West to East)**
- Irrawaddy river (flows through Myanmar). Drains in Bay Of Bengal
- Salween river drains into the Bay of Bengal
- Chao Phraya river on which Bangkok is located. drains in the gulf of Thailand
- Mekong river comes from China and drains into the South China sea. It touches five countries of Indochina. That's why India has Mekong Ganga cooperation MGC). It formed the border between Cambodia and Myanmar.

##### **Important lakes of the world (2:00 PM)**

- **NORTH America**
- Great bear
- Great slave lake. known for its copper and gold deposits.
- Five great lakes of North America (caused due to glacial erosion in the Ice age (west to east)
- Superior lake
- Except for Michigan all the lakes share a border with USA and Canada.
- Chicago is located on the bank of Michigan
- Lake Superior is known for superior quality iron ore.
- Huran lake
- Eire
- Ontario river. Toronto is located on the bank of the Ontario River.
- Between superior and Huran the canal is soo canal
- Hudson river connects to Erie there is a canal called as Erie canal

#### **Lakes in Africa (2:19 PM)**

- Lake Assal and it's the lowest point in Africa. In Djibouti
- Lake tana source of Blue Nile Ethiopia.
- Turkana and Ethiopia
- Victoria lake. It's the third-largest lake. (Caspian is 5 times largest than lake superior and superior is the 2<sup>nd</sup> largest lake). The Equator passes through the lake
- Tanganyika lake. It's 2<sup>nd</sup> deepest lake. And 2<sup>nd</sup> largest (Lake Baikal is the deepest lake in the world)
- Nyasa lake (in Malawi).

#### **Lakes in Asia (2:31 PM)**

- Dead sea
- sea of galilee
- Lop Nur near Gobi Desert China. It's the nuclear testing site in china.
- Tonle sap is the lake of Cambodia.
- Lake Toba in Sumatra. Its caldera lake,
- Lake kajin sara lake in Nepal. The highest lake in the world
- Lake Eyer. the lowest point of Australia and known for natural springs

#### **Ocean (2:57 PM)**

- Isthmus- narrow land connecting to bigger land
- Strait is a navigable waterway that connects two large water bodies.
- Panama is known for Panama Canal. The USA constructed it in 1914. The length of the canal is 65kms.it connects Panama City to the colon.
- Isthmus of Suez (the Sinai Peninsula and Africa). Suez Canal was constructed in 1869.
- Isthmus of kra. the proposed canal is the kra canal in Southeast Asia
- **Peninsula**
- Land surface covered by the ocean on three sides.
- **Important peninsulas of the world are**
- Baja California peninsula
- Florida peninsula
- Iberian Peninsula of Europe On which Spain and Portugal are located.
- Demark is also a peninsula.
- Cape Verde is the westernmost part of Africa
- Southernmost part of Africa is Cape Agulhas.

#### **Important islands of the world (3:23 PM)**

- Largest island is Greenland.
- 2<sup>nd</sup> largest new Guinea island
- Borneo is 3<sup>rd</sup> largest
- 4<sup>th</sup> is Madagascar
- Galapagos island of South America. It's from Ecuador. Darwin made his experiments on Galapagos Island. The Equator passes through it.
- It's UNESCO's first World Heritage site. It has the largest tortoise in the world.
- St Helene island
- **The Mediterranean Sea**
- Balearic island controlled by Spain

- Sardinia island of Italy. (Known for viticulture)
- Corsica belongs to France. Napoleon was borne here.
- Sicily belongs to Italy.
- Malta island is an independent country
- Crete island belongs to Greece
- Cyprus island near Turkey.
- **The Indian Ocean**
- Socotra island. It controls the ships coming from Suez Canal. It's under Yemen. It was leased to the USA till 2021. Yemen rebels Houthis captured the Socotra Island.
- Lakshadweep
- the Maldives
- airship and docking facilities to be built by India on the assumption that island
- Comoros
- Agalega island is part of Mauritius.
- Reunions island.
- These above islands created an informal group name as vanilla islands for promoting tourism. Sri Lanka is also part of it. India has proposed A and N be accepted as part of the vanilla island.
- Chagos archipelago. It's under the UK. Historically it's part of Mauritius.

#### **Strait and channel (4:03 PM)**

- Strait is narrow and shallow. Strait is natural.
- Channel is wide and deep. it is natural as well as manmade. Channel is always navigable
- Denmark strait between Iceland and green land
- Drake passage Between south Antarctica and the Antarctic
- Mozambique and Madagascar by Mozambique channel.
- Marmara and the black sea is the Bosphorus strait
- Strait of Kerch between sea Azov and black sea
- France and England- English Channel.
- Bab al Mandab between the Red Sea and the Gulf of Aden
- The Strait of Hormuz is between the Persian Gulf and the Gulf of Oman.
- strait of malacca between Malaysia and Indonesia
- Palk strait between India and Srilanka
- Formosa Strait between Taiwan and china

**The topic of the Next class-** Mapping continues...

#### **Recorded Map Class 06**

#### **BRIEF REVIEW OF THE PREVIOUS CLASS (1:12 PM)**

#### **MINERAL AND DISTRIBUTION AROUND THE WORLD**

- REFER TO THE HANDOUTS

#### **MAJOR HIGHWAYS OF THE WORLD (1:16 PM)**

- The highway is a term used in India
- In the USA, it is called Freeway, In Germany, it is called Autobanns; In France, it is called Autoroute; In England, it is called Motorways; In Italy, it is called Autostrade.
- Transcontinental Highways- Which connect two parts of the continent.
- Most important is Pan American Highway-Pan-American Highway, the **network of highways connecting North America and South America.**
- Trans African Highway Network- 56000 km- Not completed yet. It is implemented by **the United Nations Economic Commission for Africa (UNECA), the African Development Bank (ADB), and the African Union in conjunction with regional international communities.**
- Asian Highway Network- Agreements have been signed by 32 countries. India is also a part of this network. It is implemented by UNESCAP and Funded by Asian Development Bank.
- **The International North-South Transport Corridor (INSTC)** is a multi-modal connectivity project that establishes transport networks (ship, rail, and road routes) for moving freight between India, Russia, Iran, Europe and Central Asia.
- The modern-day INSTC is a multi-modal transportation route linking the **Indian Ocean and the Persian Gulf** to the **Caspian Sea** via Iran, and then onwards to **northern Europe** via St. Petersburg in Russia.
- **Mumbai** is at the southern hub of the route.
- The route extends to **Bandar Abbas** in Iran via sea.

- From Bandar Abbas to **Bandar-e-Anzali** by road on the Iranian mainland. From Bandar-e-Anzali to **Astrakhan** by ship across the Caspian Sea. Astrakhan is a Caspian port in the Russian federation. The city lies on the two banks of the Volga River. From Astrakhan to **other regions** of the Russian Federation, and further into Europe by Russian Railways.
- **Ashgabad Agreement** is an agreement to implement an International transport transit corridor between Central Asia-Persian Gulf-India. Pakistan is also a part of this.
- **OBOR**- This project was started in 2013. It has two components Belt and Road. China OBOR invests in nearly 70 countries and international organizations.
- **China-Myanmar Economic Corridor**- Was recently proposed. China connecting Myanmar and the Indian ocean. It is a Building road and rail transportation from Yunnan Province in China through Muse and Mandalay to Kyaukpadaung in Rakhine State (in News because of the Rohingya crisis)
- **IMT (India-Myanmar-Thailand)**: It is under implementation. It will connect Moreh in India with Mae Sot in Thailand via Myanmar. India proposed to include Cambodia and Vietnam also but still, it is not accepted.
- **Global Gateway Project**- Opposite project Of OBOR
- **Three Seas Initiative of Europe**: It is a regional effort in Europe to expand cross-border energy, transportation, and digital infrastructure and boost economic development in the area between the Adriatic Sea, Baltic Sea, and the Black Sea.

#### Railways (1:42 PM)

- In the US- Northern Transcontinental and Southern transcontinental
- **Trans- Siberian Railway**
- The Trans-Siberian Railway offered a critical transportation link between **European Russia** and **Siberia** and the **Russian** Far East at the time.
- It is the world's longest railway line, stretching over 9,289 kilometres from Russia's capital, Moscow, to Vladivostok, which is located in the Sea of Japan.
- It crosses the Ob and Yenisei rivers in the Ural Mountains.
- It connects **Europe and Asia**.
- The Trans-Siberian railway travels through **eight different time zones** from beginning to end.
- Trans-Continental Railway- From Perth to Sydney

#### Types of Ports

- Entrepot Ports: These are collection centres where the goods are brought from different countries for export. Singapore is an entrepot for Asia.
- Port of Call: These are the ports which originally developed as calling points on main sea routes where ships were used to anchor for refuelling, watering and taking food items. Later on, they developed into commercial ports. Aden, Honolulu and Singapore are good examples.
- Oil Port: These ports deal in the processing and shipping of oil. Some of these are tanker ports and some are refinery ports. Maracaibo in Venezuela, Essekhiria in Tunisia and Tripoli in Lebanon are Tanker Ports. Abadan on the Gulf of Persia is a refinery port.
- Naval Ports: These are ports which have only strategic importance. These ports serve warships and have repair workshops for them. Kochi and Karwar are examples of such ports in India.
- Riverine Ports
- Bandar Abbas
- **Chahbar Port**
- Chabahar Port is a seaport in Chabahar located in south-eastern Iran, on the Gulf of Oman. The port of Chabahar is located on the Makran coast of Sistan and Baluchistan Province, next to the Gulf of Oman and at the mouth of the Strait of Hormuz. Being close to Afghanistan and the Central Asian countries of Turkmenistan, Uzbekistan etc.
- **Sittwe Port:**
- **Duqm Port**- The Port of Duqm is strategically located situated on the southeastern seaboard of Oman. India can use it.
- **String Of Pearls Include- From Eastern Part**- Sittwe- Chittagong- Hambantota- Gwadar- Mombasa (Kenya)
- **NEED**- The Northern European Enclosure *Dam* (*NEED*)
- Nepal- **Mustang Valley**: The Mustang Valley **consists of Lower Mustang and Upper Mustang, which was once the former kingdom of Lo. It is said that Mustang valley contains a very good amount of Uranium.**
- **Panmunjom**: Demilitarize the zone between North Korea and South Korea. Created between 38 Degree North parallel.
- **Addu Atoll**- Southernmost island of Maldives.



- **Faroe Island**- Belongs to Denmark
- **Peru was in News Recently**- Because of an Oil spill which resulted in the declaration of 90 days of environmental emergency. i
- In Nepal Micro-Hydropower Project: **Langtang**
- In Bhutan, WLS is in News- **Sakteng WLS** (China is claiming Sakteng belongs to them)
- New Caledonia: Pacific Ocean- French Overseas territory

#### INDIA (2:27 PM)

- Important Cities located in the same Longitude
- Mumbai- Surat, Ahmedabad, Gandhinagar, Jodhpur, Islamabad (Pakistan)
- Srinagar- Amritsar, Jaipur, Belgavi, Mangalore
- New Delhi- Manali, Shimla, Delhi, Bhopal, Bangaluru, Kanyakumari
- Kanpur and Chennai are located on the same longitude
- Lucknow and Vijaywada
- Allahabad And Raipur
- Varanasi and Vishakhapatnam
- Patna and Ranchi
- Gangtok and Kolkata
- Shillong and Dispur
- Aizwal and Port Blair
- **In the Latitude:**
- Agra- Jaisalmer; Jaipur; Agra; Gorakhpur; Guwahati; Dispur
- Surat and Nagpur and Raipur are on the same latitude
- Mangalore, Bangalore And Chennai
- **Cities located close to the Tropic of Cancer**
- Above the TOC: Aizawal and Agartala
- Below the TOC: Bhuj, Gandhinagar, Ahmedabad, Bhopal, Jabalpur, Ranchi, Kolkata
- **State Located on the same Latitudes and Longitude**
- **TOC Passes through** Rajasthan, Gujarat, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura and Mizoram.
- **UT of India: 8 UT**- Delhi, Andaman and Nicobar, Chandigarh, Dadra and Nagar Haveli and Daman and Diu, Jammu and Kashmir, Ladakh, Lakshadweep, and Puducherry.
- Pondicherry: **UT was formed in 1962 out of the four former colonies** of French India. **Pondicherry** (now Puducherry) and **Karaikal** along India's southeastern Coromandel Coast, **Yanam**, farther north along the eastern coast, and **Mahe**, lying on the western Malabar Coast, surrounded by Kerala state.
- **Daman And Diu and Dadra and Nagar Haveli:**
- Daman and Diu are two widely separated districts situated on the southern side of Gujarat.
- Daman is an enclave on Gujarat's southern coast and Diu encompasses an island off the southern coast of Gujarat's Kathiawar Peninsula.
- Dadra and Nagar Haveli consist of two separate parts. Dadra is surrounded by the state of Gujarat and Nagar Haveli lies on the borders of Maharashtra and Gujarat.
- Both were colonised by the Portuguese and were liberated in December 1961.
- Daman Ganga river flows in Dadra and Nagar Haveli
- **NCT: 11 districts under NCT.** The Constitution (Sixty-ninth Amendment) Act, 1991 declared the Union Territory of Delhi to be formally known as the National Capital Territory of Delhi.
- **NCR: Broader region.**
- **Jammu-Kashmir and Ladakh:**
- **Jammu:** Hindu dominated. Geographically, they are low hills part of Shivalik and lesser Himalayas. Vaishno-Devi is in Jammu.
- The Jammu Bordered States- Punjab (Pathankot) and Himachal
- **Kashmir Valley:** Muslim Majority area, Srinagar HQ.
- Ladakh: Buddhist Majority.
- Political Division:
- India: Jammu, Kashmir Valley & Laddakh region
- Pakistan(since 1947): Gilgit-Baltistan & Azad Kashmir region
- China (after 1962) : Aksai Chin region

- Johnson's line shows Aksai Chin in erstwhile Jammu and Kashmir (now Ladakh) i.e. under India's control whereas McDonald's Line places it under China's control.
- The Line of Actual Control is towards China and the Line of Control is toward Pakistan
- The Shaksgam Valley was ceded to China by Pakistan in 1963 when both countries signed a boundary agreement to settle their border differences.
- The Siachen Glacier is the longest glacier in the Karakoram range and the second-longest in the world outside of polar regions.
- The Siachen Glacier is a glacier located in the eastern Karakoram range in the Himalayas just northeast of the point NJ9842 where the Line of Control between India and Pakistan ends.
- **Galwan Valley**
- The valley refers to the land that sits between steep mountains that buffet the Galwan River.
- The river has its source in Aksai Chin, on China's side of the LAC, and it flows from the east to Ladakh, where it meets the Shyok river on India's side of the LAC.
- The valley is strategically located between Ladakh in the west and Aksai Chin in the east (currently controlled by China)
- **Pangong Tso lake**
- It is Brackish water.
- **Pangong Tso** is 135 km long, of which more than two-thirds is under Chinese control.
- **Daulat Beg Oldie:** DBO is the northernmost corner of Indian Territory in Ladakh, and has the world's highest airstrip.
- Its strategic importance is that it connects Leh to DBO, virtually at the base of the Karakoram Pass that separates China's Xinjiang Autonomous Region from Ladakh.
- **Demchok Sector:**
- It is a disputed region centred on the villages of Demchok situated near the confluence of the Charding Nullah and Indus River.

#### **Doklam Plateau (3:59 PM)**

- The Doklam Plateau is a disputed patch of land at the junction of Tibet, Sikkim (India), and Bhutan.
- The area of Doklam is of great strategic significance to India, China, and Bhutan.
- The Doklam is an area characterized by a plateau and a valley, located between Chumbi Valley (Tibet), Ha Valley (Bhutan), and Sikkim (India).
- The Chumbi Valley and Siliguri Corridor to the north and south of Doklam are important mountain chokepoints.

#### **WITH NEPAL (4:01 PM)**

- **KALAPANI**
- Located in the easternmost corner of Uttarakhand's Pithoragarh district
- It is wedged in between Limpiyadhura, Lipulekh and Kalapani.
- The area is under India's control but Nepal claims the region because of historical and cartographic reasons.

#### **SIR-CREEK (4:04 PM)**

- Sir Creek is a 96 km strip of water in the marshes of the Rann of Kutch in Gujarat.
- It is a disputed region **between India and Pakistan**. The creek roughly separates the Kutch region in India and Pakistan's Sindh province.
- Sir Creek opens up into the Arabian Sea.
- It is an important fishing ground and is one of the largest fishing sources in Asia. Another reason for its significance is the possible presence of oil and gas reserves under the sea in that area.

#### **TOPIC FOR THE NEXT CLASS: WILL COVER MOUNTAINS**

#### **Recorded Map Class 07**

#### **Class started at (1:17 PM)**

#### **Physiography of India (mountain, plains, plateau, and islands) (1: 21 PM)**

- **Mountains**
- **Himalayan Mountain**
- **Parallel ranges**
- Trans Himalayas
- Great Himalayas (tallest continuous mountain)
- Lesser Himalaya
- shivaliks
- **Divisions of Mountains of North**

- **Trans Himalayas**
- **Karakorum ranges.**
- Rocks of the Karakorum range are volcanic in nature and hence black. Its region of glaciers. K2 is the highest peak in the Karakorum range. K2 is also called Godwin Austin. It's the 2<sup>nd</sup> highest peak in the world (8600 Meters). its Indian highest peak.
- K2 is steeper than Mt Everest.
- **Ladakh ranges** between Shyok and the Indus River.
- South east corner of Ladakh is Pangong Tso.
- In these regions there is a breed of sheep changthangi goat which is famous for Pashmina wool.
- **Zaskar range.**
- Tso Moriri is a lake in the southeastern part.
- Its brackish water lake
- **Greater Himalayas**
- These Himalayas extends from Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh.
- It is single continues range from west to east.
- Average height is 6000 meters
- Westernmost point of the Greater Himalayas is the Nanga parvat and the easternmost part of Namcha Barwa.
- Mt Everest is part of these Himalayas.
- Kangchenjunga (on the border of Sikkim and Nepal)
- Makalu in Nepal
- Western most is Nanga parvat(Jammu and Kashmir), Kamet (UK), Nanda Devi (UK) Annapurna(Nepal), Manaslu (Nepal), Everest (Nepal), Makalu (Nepal), and Kangchenjunga and Namcha Barwa
- **Middle Himalayas**
- It's made of multiple ranges.
- Aka as lesser Himalayas of Himachal Himalayas.
- Average height is 4000 meters.
- Pirpanjal is the northernmost part of the Middle Himalayas. They are in HP as well s Jammu and Kashmir
- Between Pirpanjal and Greater Himalayas there is the Jhelum River and Kashmir valley
- Dhauladhar in Himachal. Kulu valley between Dhauladhar and Great Himalayas.
- Kangra valley to the south of Dhauladhar. Dharamshala is near Kangra valley.
- Mussoorie range and Nagtibha range Uttarakhand
- Mahabharat range in Nepal.
- Arunachal Himalayas (lesser Himalayas and Shivalik's merged at Arunachal)
- **Lesser Himalayas.**
- Known for hill stations. Such as Manali, Dalhousie, Dharamshala, Shimla, Solan, Mussoorie, Nainital, Darjeeling (West Bengal)
- Duns are between Lesser Himalayas and Shivalik.
- Duns is the longitudinal valley between the Himalayas
- Example Dehradun, Udampur dun,
- **Shivalik's range**
- Average height is 1000 meters.
- Duars formation along the foothills of Shivalik Himalayas such as Assam.
- **Northeast mountains called Purvanchal Himalayas.**
- Assam, Arunachal, etc
- Nagaland \_ Naga hills
- Manipur- Manipur hills. (at the center there is lake Loktok lake)
- Mizo hills (run north to south) in Mizoram. Aka Lushai hills
- the State of Mizoram is called as Molasses basin because of soft unconsolidated deposition.
- Tripura has Ridge and valley topography.
- Meghalaya Hills. (Garo Hills, Khasi, and Jaintia) part of Meghalaya plateau.
- Barail and Mikir hills

#### **Passes in the Mountains (2:31 PM)**

- Passes are also known as ghats (in southern India).
- **In Jammu and Kashmir.**

- Karakorum Pass (highest pass in India at 5600 meters)
- Burzil pass (Srinagar to Gilgit) on the Northside of the great Himalayas
- Khardungla passes North of Ladakh (It had the highest motorable road OF WOLRD)
- Presently highest motorable road is Umling la
- Zoji la connects Srinagar to Leh. It's located on Zaskar Mountain.
- Zoji la tunnel is the longest bi-directional tunnel in entire Asia. (14 Km)
- Banihal Pass (connects Jammu and Srinagar) Banihal pass known for having Jawahar tunnel.
- Shyama prasad Mukherjee Tunnel connects Jammu to Srinagar also knowns as the chenani nashri tunnel
- **Himachal Pradesh passes.**
- Rohtang pass above Manali.
- Atal tunnel connects Manali to Spiti valley
- Baralacha la pass (connects Manali to Leh).
- Shipki la
- Sutlej river enters India through this pass
- **Uttarakhand**
- Thaga la pass
- Mana pass
- Niti pass
- Dharma pass
- Limibiduriya pass
- Lipu lekh pass
- **Sikkim**
- Jelep la
- Nathu la
- Naku la
- **Arunachal Pradesh**
- Tawang Pass
- Tunga pass
- Bum la pass
- India Myanmar and Tibet trijunction pass is Diphu pass.

#### Glaciers (3:18 PM)

- **Trans-Himalayan region**
- Largest nonpolar glacial is the Fedchenko glacier in Tajikistan.
- 2<sup>nd</sup> largest is the Siachen glacier near Nubra valley
- Baltoro glacier near Siachen glacier on Karakorum mountains and In POK.
- Hispar Glacier is the longest non-polar glacier in the Karakorum range.
- **Himachal Pradesh**
- Bara shigri glacier->Chenab River originates from this glacier.
- Sonapani glacier near Rohtang pass near lahul spiti.
- **Uttarakhand**
- Banderpunch glacier is above Yamunotri.
- Some headwater of Yamuna is derived from banderpunch.
- Gangotri glacier->Bhagirathi River originates from this glacier
- Chorabari glacier.
- Kedarnath glacier.
- Milam glacier.
- Pindari glacier
- **Sikkim**
- Zemu glacier near base of Kanchenjunga.

#### Peninsular region (3:34 PM)

- **Mountains**
- Aravalli's
- Vindhya's
- Satpura
- western ghat



- Eastern ghats
- Gir range in Gujarat.
- Extension of Vindhya's is Kaimur hills
- Ajanta, satamala, balaghat, and Harishchandra west to east in Maharashtra.
- Aravalli passes through three states and 1 UT (Gujarat, Rajasthan and Haryana, and Delhi). The highest peak is Mt guru shikar
- Aravalli's is taller in the southern part
- Vindhya's and Satpura are an example of Block Mountain.
- Vindhya hills, Narmada River, Satpura, and Tapi river from north to south.
- Western ghat south of Tapi to Kanyakumari (cape comorin)
- Freshwater swamps in the Western ghats of Kerala and Karnataka are Myristica swamps
- Western ghats are in Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamilnadu.
- Peak of Maharashtra are kalsubai, and Mahabaleswar. Mahabaleswar is the source of the Krishna River and salher
- **Sahyadri in Karnataka.**
- Baba bhudan
- Kudremukh
- Nilgiris hills (Karnataka, Tamilnadu, and Kerala).
- Between Nilgiris and Annamalai hills there is a gap called as Palghat gap.
- Ooty is located in Nilgiris hills.
- Nilgiris hill is a location where eastern ghat meets western ghat.
- Anamudi is the highest peak in Peninsular India and Annamalai hills.
- Palani hills has kodaikanal lakes (its manmade lake)
- **Eastern ghat**
- Highest peak is Mahendragiri hills.
- Eastern ghat is wider than western ghat
- Nallamala hills aka black hills.
- Erramala hills (red hills)
- Pallakonda hills to the south of Nallamala hills.
- Javadi hills
- Shevroy hills
- Cochin to Coimbatore through Palghat

#### **Plateau (4:00 PM)**

- Shillong plateau (Meghalaya)
- Between Aravalli's and Vindhya is the malwa plateau.
- Bundelkhand plateau
- Chotanagpur plateau.
- Hazarai Bagh plateau on chotanagpur plateau
- Deccan plateau( MH, Karnataka, Ap, Telangana ).
- Dandakarnaya is plain of Chhattisgarh
- Karnataka plateau has two parts. the part near Western ghat is hilly and the rest part of Karnataka is maidan which is a plain region.

#### **Coasts (4:10 PM)**

- Eastern coast is the emerging coast
- Western coast is submergent coast (Especially till Karnataka). From south Karnataka to Kerala its emerging coast
- Odisha coast is called as Utkal coast (it has Mahanadi delta)
- Lake south of Mahanadi is chilka lake.
- North of Mahanadi River is Baitarani River
- Andhra coast
- Tamil Nadu coast
- KG delta to Cauvery delta is called coromandel coast.
- Kathaiawadi coast in Gujarat
- From daman to goa is known as the Konkan coast
- Karnataka to Kerala is Malabar coast which is emergent in nature.

**The topic of the Next class** – islands, lakes, and rivers

## Recorded Map Class 08

### BRIEF REVIEW OF THE PREVIOUS CLASS (1:09 PM)

#### ISLANDS (1:15 PM)

- Two major groups of Islands- Andaman and Nicobar
- **Andaman Group**
- They are Volcanic Islands
- The Andaman islands are divided into 4 main islands i.e. **North, Middle and South and Little Andaman**
- **Port Blair**, the capital of Andaman Nicobar Islands lies in the South Andaman.
- **Northernmost Island**- Landfall Island
- **Coco Island**- Belongs to Myanmar
- **Saddle peak** in North Andaman is the highest peak
- **THE BARREN AND NARCONDAM ISLANDS**, north of Port Blair, are **volcanic islands**. Barren Island is the only active volcano in India.
- It is known for Evergreen Vegetation
- In Andaman- Ross Island was renamed as Netaji Subhash Chandra Bose Island; Neil Island as Shaheed Dweep Island; and Havelock Island as Swaraj Island.
- The Centre has recently renamed **Mount Harriet (South Andaman), a historical tourist spot in the Andaman and Nicobar islands**, as 'Mount Manipur'.
- **Nicobar Island-**
- **Tillangchong Island**- It is an island in the Nicobar district of Andaman and Nicobar Islands, India.
- Among the Nicobar islands, the **Great Nicobar** is the largest. It is the southernmost island and is very close to Sumatra island of Indonesia. The **Car Nicobar** is the northernmost.
- The southernmost point of the country is Indira Point (Nicobar Islands)

#### LAKSHADWEEP ISLANDS (1:31 PM)

- Lakshadweep Islands situated in the Arabian Sea is a group of 36 islands
- **The entire Lakshadweep group of islands has been declared an organic agricultural area under the Participatory Guarantee System (PGS) of India** (Which is implemented by the **Ministry of Agriculture and Farmers' Welfare**.)
- **Lakshadweep is the first Union Territory to become 100% organic.**
- In the Arabian Sea, there are three types of islands- **Laccadive, Minicoy, and Amindivi Islands**
- **Amendivi Islands** are the northernmost while the **Minicoy island is the southernmost.**
- **Kavaratti** is the administrative capital of the Lakshadweep Islands. It is also the principal town of the Union Territory.

#### Other

- **New Moore Island:**
- Although the island was **uninhabited** and there were no permanent settlements or stations located on it, both **India and Bangladesh claimed sovereignty over it because of speculation over the existence of oil and natural gas in the region**
- **Majuli Island:** Mājuli is a large river island in the Brahmaputra river, in Assam.
- **APJ Abdul Kalam Island:** Dr Abdul Kalam Island, formerly known as Wheeler Island, is an island off the coast of Odisha. It is India's most advanced missile testing site.
- **Sriharikota Island:**
- Sriharikota is a barrier island off the coast of Andhra Pradesh.
- It houses India's only satellite launch centre in the Satish Dhawan Space Centre (also known as SHAR) and is used by the Indian Space Research Organization to launch satellites
- **Pamban Island:**
- It is located between India and Sri Lanka in the Gulf of Mannar and in the Ramanathapuram district of the state of Tamil Nadu.
- It is also known as Rameswaram Island.
- **Adam's Bridge also known as Rama's Bridge or Rama Setu** is a chain of limestone shoals, between Pamban Island, also known as Rameswaram Island, off the southeastern coast of Tamil Nadu, India, and Mannar Island, off the northwestern coast of Sri Lanka. Geological evidence suggests that this bridge is a former land connection between India and Sri Lanka.
- **St. Mary Island:** Coast of Karnataka. They are known for their distinctive geological formation of columnar rhyolitic lava
- **Willingdon Island** is the largest artificial island in India, which forms part of the city of Kochi, in the state of Kerala.

- **Diu Island:** It is located off the south coast of Kathiawar. Diu is an offshore island on the western coast, off the Gulf of Cambay, bordering the Junagarh district. It is separated from the Gujarat Coast by a tidal creek.
- **The Great Channel** is located six degrees north of the equator and is popularly referred to as the 'Six Degree Channel'
- The Great Andaman group of islands in the north is separated by the **Ten Degree Channel** from the Nicobar group in the south.
- The **Coco Strait** is between the **North Andaman islands and the Coco Islands of Myanmar.**
- **Duncan's passage** separates Little Andaman from South Andaman.
- **9 Degree Channel** separates the island of **Minicoy from the main Lakshadweep** archipelago.
- **8 Degree Channel** separates the islands of **Minicoy and Maldives.**
- **St. George's Channel** is located between Little Nicobar and Great Nicobar.

#### RIVERS (1:55 PM)

##### INDUS RIVER:

- It **originates on Kailash Mountain** and flows in a narrow valley north-westward through Tibet, where it is known as **Singi Khamban or Lion's Mouth**. It follows a long, nearly straight course **between the Ladakh and Zaskar ranges** in Ladakh.
- The river flows northwest and enters in Ladakh region in India from a place called **Demchok**, after entering India Indus river flows in between the Karakoram and Ladakh ranges but closer to the Ladakh range.
- It is joined by the **Zaskar River at Leh.**
- Zaskar river, Suru river, Soan river, Jhelum River, Chenab River, Ravi River, Beas river, Satluj river, and Panjnad river are its major **left-bank** tributaries.
- Shyok River, Gilgit river, Hunza river, Swat river, Kunnar river, Kurram river, Gomol River, and Kabul river are its major **right-bank** tributaries.
- **Nubra River-It is the main tributary of the Shyok River (Rising from the Karakoram Range)**
- The **Kabul River empties into the Indus River** near **Attock, Pakistan**. It is the main river in eastern Afghanistan and the Khyber Pakhtunkhwa province of Pakistan.
- **Chenab:**
- The Chenab originates from near the Bara Lacha Pass in the Lahul-Spiti part of the Zaskar Range.
- Two small streams on opposite sides of the pass, namely **Chandra** and **Bhaga**, form its headwaters. The united stream **Chandrabhaga** flows in the northwest direction through the **Pangi valley**.
- It flows through the Jammu region of J&K into the plains of Punjab in Pakistan. The river is crossed in J&K by the world's highest railway bridge named **Chenab Bridge**.
- Recently, the Power Minister inaugurated the diversion of the **Marusudar River** of the **Pakal Dul Hydroelectric Project**. River Marusudar, a tributary of Chenab in district Kishtwar of UT of J & K.
- A holy pilgrimage to **Vaishno Devi- in the Ban Ganga river**
- **Jhelum-** It is a tributary of the Chenab River. The river Jhelum rises from a spring at Verinag situated at the foot of the Pir Panjal in the southeastern part of the valley of Kashmir in India. It flows northwards into **Wular Lake. It flows Inside J and K.**
- **Ravi River:** The Ravi River originates Dhauladhar range of the Himalayas in the Chamba district of Himachal Pradesh. Ravi has its source in the Kullu hills near the Rohtang Pass in Himachal Pradesh.
- **Beas River:** The Beas originates near the Rohtang Pass on the southern end of the Pir Panjal Range, close to the source of the Ravi. It meets the Satluj river at **Harike in Punjab. The Pong Dam** is situated on the Beas River
- **Satluj:**
- The Satluj rises from the Manasarovar-Rakas Lakes in western Tibet.
- Like the Indus, it takes a north-westerly course up to the Shipki La on the Tibet-Himachal Pradesh boundary.
- Bhakra Dam
- **Construction of Ujh multipurpose project:** This project will create storage of water on river Ujh, a tributary of Ravi for irrigation and power generation in India.
- **Indus Water Treaty 1960-** The Indus system comprises of main **Indus River, Jhelum, Chenab, Ravi, Beas, and Sutlej**. The basin is mainly shared by India and Pakistan with a small share for China and Afghanistan.
- Under the treaty signed between India and Pakistan in 1960, all the waters of three rivers, namely **Ravi, Sutlej, and Beas ( Eastern Rivers) were allocated to India for exclusive use.**
- While, the waters of Western rivers – **Indus, Jhelum, and Chenab were allocated to Pakistan** except for specified domestic, non-consumptive, and agricultural use permitted to India as provided in the Treaty.

- **Dulhasti-** It is a run-of-the-river hydroelectric power station on the Chenab River, Kishtwar district of the Indian Union Territory of Jammu and Kashmir.
- **Kishanganga-** It originates at Drass in the Kargil district of J&K. The Neelum River enters Pakistan from India near the Line of Control and then runs west till it meets the Jhelum River

## GANGA

- The **Ganga** originates as **Bhagirathi** from the **Gangotri glacier** in Uttarakashi District of Uttarakhand
- Alaknanda River joins Bhagirathi at Devprayag. From Devprayag the river is called as Ganga.
- **The five confluences of Ganga river are :**
- **Vishnuprayag** – Dhauliganga joins the Alaknanda;
- **Nandprayag** – River Mandakini joins
- **Karnaprayag** – River Pindar joins
- **Rudraprayag** – River Mandakini joins
- **Devprayag** – Bhagirathi river and Alaknanda river form Ganga river
- **Alaknanda:**
- It rises at the confluence and feet of the Satopanth and Bhagirath glaciers in Uttarakhand.
- It meets the Bhagirathi River at Devprayag after which it is called the Ganga.
- Its main tributaries are the Mandakini, Nandakini, and Pindar rivers.
- The Hindu pilgrimage centre of Badrinath lies on the banks of Alaknanda.
- **Dhauliganga:**
- It originates from Vasudhara Tal, perhaps the largest glacial lake in Uttarakhand.
- Dhauliganga is one of the important tributaries of Alaknanda. Dhauliganga is joined by the Rishiganga river at Raini. It merges with the Alaknanda at Vishnuprayag.
- Tapovan Vishnugad Hydropower Project is being constructed on the Dhauliganga.
- The Ganga river mainly passes through the states of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal.
- **Left Tributaries of Ganga**
- Ramganga; Gomti River; Ghaghra River; Kali River; Gandak River; Burhi Gandak; Kosi River
- **Right Bank Tributaries:**
- Yamuna River: Chambal River; Banas River; Sind River; Betwa River
- Ken River; Damodar; Son River
- **Ramganga**
- A tributary of the Ganga river, it drains south-western Kumaun. Ramganga River originates in the southern slopes of Dudhatoli Hill in the Chamoli district of Uttarakhand.
- It also flows through the dun valley of Corbett National Park. It finally meets the Ganga near Kannauj. Bareilly city is situated on its banks
- **Gomati:**
- This river originates from Gomati Tal near Pilibhit in the state of Uttar Pradesh. The Markandey Mahadeo temple is at the confluence of the Gomti and the Ganges. This river meanders through Lucknow city.
- **Ghaghara**
- The Ghaghara originates in the glaciers of Mapchachungo. Alternatively known as Karnali
- Rapti, Chhoti Gandak, Sharda, and Sarju are the major tributaries of this river
- **Kosi**
- It is also known as Saptakoshi for its seven upper tributaries. It originates in Triveni in Nepal. It carries heavy silt during the rainy season and causes extreme floods. So this river is also known **as the” Sorrow of Bihar “** It joins with the Ganges in the state of Bihar.
- **Yamuna**
- It is the largest tributary. It originates from the Yamnotri glacier on the Bandarpunch Peak. Its main affluent in the upper reaches is the Tons which also rises from the Bandarpunch glacier. Tons, Pabbar and Giri are important tributaries.
- **Chambal:**
- The Chambal rises in the highlands of **Janapao Hills** in the **Vindhyan Range**. It flows through the **Malwa Plateau**. The Chambal River flows in Kota. It forms the boundary between Rajasthan & MP.
- **The Betwa rises** in the Bhopal district (Vindhyan Range) and joins the Yamuna near
- The **Ken river** rising from the Barner Range of Madhya Pradesh joins the Yamuna near Chila.
- **Son:** The Son River rises in the **Amarkantak Plateau**. Its source is close to the origin of the Narmada. It passes along the **Kaimur Range**. The Indrapuri Barrage and Bansagar Dam are built along this river. Koilwar Bridge is located across this river.

- The **Damodar river** rises in the hills of the Chotanagpur plateau and flows through a rift valley. Meets Hoogli at Falta
- **Hooghly River:** It is the distributary of the Ganga river. The Ganga river splits into the Padma and the Hooghly river near Guria in Murshidabad. The Padma flows eastward through Bangladesh whereas Hooghly flows through West Bengal.

#### **BRAHMAPUTRA (3:29 PM)**

- Source-**Chemayungdung glacier (Kailash Range)**. Its source is very close to the sources of Indus and Satluj.
- In Tibet, known as TSANGPO; In China, known as YARLUNG ZANBO; In Assam: Dihang or Siong; Bangladesh: Jamuna; In Bangladesh known as **Padma River** when Combined Waters of Ganga and Brahmaputra; Called **Meghna**- From the confluence of Padma and Meghna
- It Turns southward near Namcha – Barwa. Enters Arunachal Pradesh as Dihang River at Sadiya, emerging from the mountains. Joined by the Dibang river from the north & Lohit river from the south Known as the **Brahmaputra**. It turns at Dhubri to enter into Bangladesh. After joining Teesta, known as Jamuna in Bangladesh. Joins Ganga & Megna then Merges to the Bay of Bengal.
- Tributaries: Dihang, Lohit, Subansiri, Teesta, Meghna (Barack in Assam), Manas
- The **Pakhui Wildlife Sanctuary and the Kaziranga National Park** are located near the Kameng River.
- **Manas:** The river valley has two major reserve forest areas, namely the **Royal Manas National Park in Bhutan and the contiguous Manas Wildlife Sanctuary**.
- The **Mishmi hills** are found along the upper course of the Dibang River.
- The Brahmaputra River is bounded by: North – Himalayas; East – Patkai Hill Ranges; South – Assam hills; West – Bangladesh Plain
- **Majuli**, an island, also a district of Assam, is known as the oldest and largest inhabited riverine island of the world, recognised by UNESCO.
- The Brahmaputra Mainly covers **Arunachal Pradesh, Assam, West Bengal, Meghalaya, Nagaland, and Sikkim**.

#### **MAHANADI**

- The Mahanadi basin extends over the states of Chhattisgarh and Odisha and comparatively smaller portions of Jharkhand, Maharashtra, and Madhya Pradesh.
- It has its source in the northern foothills of Dandakaranya in the Raipur District of Chhattisgarh
- **Left bank Tributaries:** The Seonath, the Hasdeo, the Mand, and the Ib.
- **Right bank Tributaries:** The Ong, the Tel, and the Jonk.

#### **GODAVARI (3:55 PM)**

- The Godavari river is the largest river system in Peninsular India.
- The River rises in the Sahyadris, near **Trimbakeshwar** in the Nashik district of Maharashtra. Godavari river originates from the Bramhagiri mountains at Trimbakeshwar.
- **Left Bank Tributaries:** Dharna, Penganga, Wainganga, Wardha, Pranahita, Pench, Kanhan, Sabari, Indravati etc.
- **Right Bank Tributaries:** Pravara, Mula, Manjra, Peddavagu, Maner etc.
- **Pranahita river** is a confluence of various other smaller tributaries like Wardha, Penganga and Wainganga Rivers
- **Kaleshwaram Project:** The project starts at the confluence point of the Pranahita River and the Godavari River

#### **Krishna River**

- Krishna river is the second largest river in peninsular India, 1st being Godavari river.
- River Krishna originates in the Western ghats at the **Jor village** of Maharashtra near **Mahabaleshwar**
- Krishna river starts from **Maharashtra** and then flows through **Karnataka, Telangana and Andhra Pradesh** it merges into the Bay of Bengal.
- Left Bank Tributaries: Bhima; Musi
- **Bhima:** Bhima river is also known as **the Chandra Bhaga river**. Originates from the Western Ghats at Bhima Shankar near Karjat village in Maharashtra is a tributary of the Krishna River.
- Right Tributaries: Ghatprabha; Malprabha; Tungabhadra
- Tungabhadra is the **largest tributary** of the river Krishna.
- It is formed by the **confluence of river Tunga and river Bhadra**
- The famous **Hampi site (UNESCO WHS)** lies on the bank of the river Tungabhadra.
- The famous **Virupaksha temple** also is on the banks of river Tungabhadra.
- The tributaries of the river Tungabhadra are:
- Left bank of Tungabhadra : **Tunga, Varada**.



- The right bank of Tungabhadra: **Bhadra, Vedavati, Handri.**
- Finally, Tungabhadra merges into river Krishna in **Andhra Pradesh.**

#### CAUVERY (4:09 PM)

- The Cauvery River (Kaveri) is designated as the ‘**Dakshin Bharat ki Ganga**’ or ‘**the Ganga of the South.**
- The Cauvery basin extends over the states of Tamil Nadu, Karnataka, Kerala, and the Union Territory of Puducherry
- The Cauvery River rises at Talakaveri on the Brahmagiri range near Cherangala village of Kodagu (Coorg) district of Karnataka.
- The river descends from the South Karnataka Plateau to the Tamil Nadu Plains through the **Sivasamudram waterfalls.**
- The falls at this point are utilized for power generation by the power station at Shivanasamudram.
- At **Hogennekkal Falls**, it takes a Southerly direction and enters the **Mettur Reservoir.**
- **Mekedatu project** is located in Muguru and Mekedatu villages, Kanakapura and Kollegal taluks of Ramanagara and Chamarajanagar Districts of Karnataka.
- The dam site is located about 3.0 Km downstream of the confluence of Arkavathy with the Cauvery river called ‘Sangama’.
- Two more tributaries Noyil and Amaravathi join on the right bank and flows as ‘**Akhanda Cauvery**’.
- Immediately after crossing the Tiruchirapalli district, the river divides into two parts, the Northern branch being called ‘**The Coleron**’ and the Southern branch remaining as Cauvery and from here the Cauvery Delta begins.
- After flowing for about 16 Kms, the two branches join again to form ‘**Srirangam Island**’.
- **Left Bank:** the Harangi, the Hemavati, the Shimsha, and the Arkavati.
- **Right Bank:** Lakshmantirtha, the Kabbani, the Suvarnavati, the Bhavani, the Noyil, and the Amaravati joins from the right

#### Vaigai

- The Vaigai river rises on the Eastern slopes of the Varushanadu hills near Kottaimalai in the Madurai district
- The Vaigai basin lies entirely in the state of Tamilnadu

#### NARMADA (4:23 PM)

- Narmada is the largest west flowing river in peninsular India.
- Narmada flows westwards through a rift valley between the Vindhyan Range on the north and the Satpura Range on the south.
- It rises from the Maikala range near Amarkantak in Madhya Pradesh, at an elevation of about 1057 m.
- Narmada basin extends over the states of Madhya Pradesh, Gujarat, Maharashtra, and Chhattisgarh
- **Dhuan Dhar Falls**
- The major Hydro Power projects in the basin are **Indira Sagar, Sardar Sarovar, Omkareshwar, Bargi & Maheshwar.**
- **Right bank tributaries** are the Barna, Hiran River, Tendon River, Choral River, Kolar River, Man River, Uri River, Hatni River, Orsang River
- **Left bank tributaries** – Burhner River, Banjar River, Sher River, Shakkar River, Dudhi River, Tawa River, Ganjal River, Chhota Tawa River, Kaveri River, Kundi River, Goi River, Karjan River

#### Tapi River (4:25 PM)

- The Tapti/Tapi River is located in Madhya Pradesh.
- It originates from the Multai reserve forest.
- The river is flowing through the states of Madhya Pradesh, Maharashtra, and Gujarat

#### Mandovi River (4:27 PM)

- It is known as Mandovi in Goa and Mahadayi river in Karnataka

#### PERIYAR RIVER (4:30 PM)

- The Periyar River is the **longest river in the state of Kerala** with a length of 244 km.
- It is also known as the ‘**Lifeline of Kerala**’ as it is one of the few **perennial rivers** in the state.
- Periyar River **originates** from the Sivagiri hills of Western Ghats and flows through the Periyar National Park.
- The **main tributaries** of Periyar are Muthirapuzha, Mullayar, Cheruthoni, Perinjankutti.
- The **Mullaperiyar dam** is located on the confluence of the Mullayar and Periyar rivers in Kerala’s Idukki district.
- It is operated and maintained by Tamil Nadu for meeting the drinking water and irrigation requirements of five of its southern districts.

### Chalakudy River

- **Chalakudy River or Chalakudy Puzha** is one of the longest rivers in Kerala. The river flows through Palakkad, Thrissur and Ernakulam District of Kerala and then the river makes its way to Tamil Nadu.
- Chalakudy River is mainly known for its **marine diversity**.
- The famous **Athirappally Waterfalls** are located on the Chalakudy River.

### TOPIC FOR THE NEXT CLASS: WILL COVER THE REMAINING TOPICS

#### Recorded Map Class 09

#### 1:09 PM) Lakes and Wetlands:

- **Ramsar Sites in India:**
- Total Ramsar sites in India = 49
- Important sites:
- 1st Chilka and Keoladeo
- Last Ramsar site declared = Bakhira
- Sambhar salt lake (Rajasthan) = is the largest inland saline water body in India. It is known for flamingos
- Keoladeo = Bharatpur Bird sanctuary (included in the Montreux Record)
- Loktak lake = aka Kaibul Lemjao NP, known for Phumdis, aka floating national park, dancing deer (Sangai deer) in Manipur also under the Montreux Record. Manmade barrage Ithai barrage is destructing the ecology
- Wular lake = On the Jhelum river in Kashmir valley, the largest freshwater lake in India other lakes are Tso Moriri
- Harike and Beas = Punjab
- Pong Dam = Himachal Pradesh
- Vembanad = aka Kayals (backwaters) in Kerala, it is the longest lake in India (95km)
- Point Calimere only wetland in TN
- Kolleru = Atapaka Bird Sanctuary in Andhra Pradesh
- Orissa = Bhitarkanika, Chilika lake, Mangaljodi wetlands (part of Chilika lake),
- Sunderbans = WB = Largest Ramsar site of India
- East Kolkata wetland = best example of wastewater treatment (best method of managing urban sewage water)
- 1st Ramsar site of Maharashtra = Nandur Madhemeshwar on the banks of Godavari river, it is known for Deolali Minnow (CE fish)
- Nangal Reservoir = Punjab (Panchsheel agreement between China and India was signed here)
- Karnataka, Goa, Chattisgarh, Jharkhand, Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, and Tripura (states which do not have any Ramsar site)
- **(1:35 PM) 12 Latest Ramsar sites:**
- Lonar Lake = **Maharashtra** = located inside Melghat tiger reserve, it is also part of a national heritage site, saline water body
- **Gujarat** = Thol Lake Wildlife Sanctuary (near Ahmedabad, part of central Asian Flyway), Wadhvana Wetland (near Vadodra, part of central Asian Flyway), **Khijadia Wildlife Sanctuary (near Gulf of Kutch)**,
- Kanwar Lake or Kabar Taal = Bihar, flood plains of Ganga, also part of Central Asian Flyway
- **Uttar Pradesh** = Bakhira Wildlife Sanctuary (near Gorakhpur, natural freshwater marsh, 10th Ramsar site of UP), Sur Sarovar (Agra, manmade Lake aka Keetham lake, Bear conservation centre), Haiderpur Wetland (near Hastinapura on the banks of River Ganga, known for Gharial (CE), Hog deer, Golden Masheer, Swamp Deer)
- **Haryana** = Sultanpur National Park (near Gurugram), Bhindawas (manmade freshwater lake, largest lake of Haryana)
- Asan Barrage = 1st Ramsar site of **Uttarakhand**, a tributary of Yamuna, declared as a conservation reserve, Red-Headed Vulture (CE) and White Rumped Vulture (CE)
- Tso-Kar = **Ladakh** located at above 4500 m, made up of two lakes = Tso-Kar (hypersaline lake) and Starsapek (freshwater), Black Naked Crane

#### (1:53 PM) Important sites of Mangroves in India:

- Sundarbans = largest Mangrove site in India
- Coringa mangroves = 2nd Largest Mangrove site in India, Andhra Pradesh, Hope Islands, olive Ridley turtle
- Bhitarkanika = Orissa
- Tamil Nadu = Pichavaram and Muthupet
- Karnataka

- Maharashtra = Along Ratnagiri,
- Gujarat = near Gulf of Kutch
- Andaman and Nicobar and Lakshadweep

#### **Coral Reefs in India:**

- Andaman Nicobar, Lakshadweep, Gulf of Mannar, Gulf of Kutch
- Malwan along the Maharashtra coast, Angria Bank coral reefs (a recent discovery)
- Netrani Island = old naval base near Udupi along Karnataka coast

#### **(2:00 PM) Biosphere Reserves:**

- There are 18 Biosphere reserves in India
- UNESCO MAB (Man and Biosphere Reserve) = gives recognition to biosphere reserves
- **India's 12 Biosphere reserves have UNESCO-MAB recognition:**
- **1. Great Nicobar** = Important NP found here = Campbell Bay NP, Galathea NP, this entire region is actually part of Sundaland Biodiversity Hotspot, saltwater crocodile, giant leatherback turtle, Nicobarese and Shompen tribes are found here
- **2. Gulf of Mannar** = Pamban island, From Rameshwaram to Kanyakumari, part of both Sri Lanka (Talaimanner) and India, corals, mangroves, Dugongs (Sea cow)
- **3. Agasthyamalai** = Neyyar, Peppara, Shendurni Wildlife Sanctuaries, Kalakkad Mundanthurai Tiger Reserve,
- **4. Nilgiri** = trijunction of Kerala, Karnataka, and Tamil Nadu, associated with Kaveri and its tributaries, Waynad, Bandipur, Nagarhole, BR Hills Tiger Reserve, Satyamangalam Tiger Reserve, Mukhurti NP, Silent Valley NP, Species = Tiger, Elephant, Black Leopard (Kabini river)
- **5. Panna** = latest UNESCO recognized associated with **Ken river**, Species = Tiger, Sambhar, Sloth Bear, Swamp Deer, region is known for **Gonds tribe**
- **6. Achanakmar Amarkantak** = Narmada and Son river, Part of Maikal hills, species = 4-horned antelope, White Rumped Vulture (CE),
- **7. Panchamrhi Biosphere Reserve** = associated with the Tapi river, Satpura NP, and Bori NP, Species = Giant Squirrel, and Flying Squirrel
- **8. Simlipal** = Orissa, it is known for Semal Trees (red silk cotton tree), the Black tiger was found here,
- **9. Nanda Devi** = Uttarakhand, snow leopard, Himalayan black bear, Valley of flowers NP,
- **10. Kanchandjunga** = Sikkim, Snow Leopard, Red Panda,
- **11. Nokrek** = Meghalaya, Garo hills, receives very high precipitation, Red Panda
- **12. Sundarbans** = Largest Delta, Tiger, only tiger capable of swimming and hunting, fishing cat (E),
- **13. Manas** = In Assam, On Manas River tributary of Brahmaputra, Red Panda, Golden Langur, Pygmy Hog,
- **14. Dibru-Saikhowa** = Brahmaputra and Lohit and Dibru River, Tiger, water buffalo, Capped Langur,
- **15. Dihang-Dibang** = Musk Deer
- **16. Sheshachalam** = Part of Tirupati, Red Sanders, Slender Loris,
- **17. Rann of Kutch** = largest BR of India, Indian wild Ass, wild ass sanctuary, Flamingos, **Banni Grasslands**, known for night time fire (**chirbatti**)
- **18. Cold Desert Biosphere Reserve** = Pin Valley NP, Chandra Tal, Kibber Wildlife Sanctuary, snow leopard,

#### **Break 2:44 PM to 3:05 PM**

#### **Biogeographic Regions in India:**

- NTCA (National Tiger Conservation Authority) is the statutory body under Wild Life Protection Act
- There are 106 NP in India, MP has the highest NP (11),
- Hemis NP of Ladakh is the largest NP in the area in India
- South Button Island of Andaman and Nicobar is the smallest NP in India
- Jim Corbett is the oldest NP, established in 1936 as Hailey's NP
- Total Wildlife Sanctuaries are 564 in India (3.73% of total India's land area)
- There are a total of 53 Tiger Reserves, the latest one is Guru Ghasidas in Chattisgarh
- Biogeographic Regions = a region with common characteristics of Geography and Biodiversity
- **(3:17 PM) In India, there are 10 Biogeographic Regions:**
- **1. Trans Himalayas and 2. Himalaya** = low temperature, snow-covered, low precipitation, grass, Important NPs = Hemis NP (Ladakh), Pin Valley NP (HP), Dachigam NP (Shriagar, Kashmiri Stag(CE)), Valley of Flowers NP (UK), Nanda Devi NP (UK), Gangotri NP, Rajaji NP, **Fauna** = Kashmiri Stag, Himalayan Tahr, Snow Leopard, Black Naked crane, Tibetan Antelope (Chiru),

- **3. Desert and 4. Semi-Arid** = Gujarat, Rajasthan, and MP, **Fauna** = Lion, Camel, Tiger, Leopard, Black Buck, Flamingos, **Important NPs, and WLS** = Keoladeo NP (Bharatpur, Rajasthan), Sariska TR (Rajasthan), Ranthambore (Rajasthan. located between two rivers Banas and Chambal).
- Ramgarh Vishdhari TR (Rajasthan, 52nd TR of India), Wild Ass Sanctuary (Little Rann, Gujarat), Gir NP (Gujarat), Velavadar NP (Black Buck NP), Kuno Palpur NP (MP, Cheetah is to be re-introduced in here from Namibia), Desert NP (Jaisalmer, Rajasthan, famous for Great Indian Bustard, and Dinosaurs fossils).
- **5. The Western Ghats** = Kudremukh NP (Karnataka, dense wet evergreen forest), Periyar NP (also a tiger reserve, part of cardamom hills, lion-tailed macaque, Kerala), Parmabikulam TR (Kerala, it won Earth's Guardian Award), Bhagwan Mahavir WLS and Mollem NP (Goa)
- **6. Deccan Plateau** = Bandhavgarh TR (MP), Palamau TR (Jharkhand), Gurughasidas TR (Chhattishgarh, in between Chotanagpur and Bhagelkhand, the last known wild habitat of cheetah was found here in the 1950s),  
Nauradehi WLS (was also considered for the reintroduction of Cheetah), Panna, (MP), Pench (border of MP and Maharashtra), Tadoba Andhari (Maharashtra), Papikonda NP (Andhra Pradesh), Amrabad TR (Telangana, 2nd largest TR it is a part of Nallamala Hills), Daroji Sloth Bear Sanctuary (Karnataka), Bannerghatta NP (Bangaluru)
- **7. Gangetic Plains** = UP. Bihar, and W.B, fertile land, agricultural region, less forest, **Important NPs and WLS** = Jim Corbett NP (Ramganga river is flowing through it, the highest density of tigers), Pilibhit NP and Tiger Reserve (UP),  
Dudhwa NP (UP), Valmiki Tiger Reserve (Bihar, near to Gandak river), Vikramshila Gangetic Dolphin Sanctuary (Bihar, India's 1st Dolphin observatory), Sunderban NP, **Fauna** = Gharial, Hog Deer, Swamp Deer, Gangetic Dolphin,
- **8. North-East = Fauna** = One-horned Rhino, Tiger, Elephant, Hoolock Gibbon, Golden Langur, Capped Langur, Pygmy Hog, Bengal Florican.
- **Important NPs, and WLS** = Gorumara NP (WB), Buxa NP (WB), Raimona NP (Assam), Manas (Assam), Pobitora WLS (Assam), Orang NP (Assam), Kaziranga NP (Assam), Pakhui or Pakke TR (Arunachal Pradesh), Nameri (Assam).
- Talle WLS (Arunachal), Mouling NP (Arunachal Pradesh), Dibru-Saikhowa (Assam), Dehing-Patkai NP (7th NP of Assam), Namdhapa (Arunachal Pradesh), Keibul Lamjha (Manipur), Dampa NP (Mizoram)
- **9. Coasts and 10. Islands** = Guindy NP (Chennai, TN, crocodile breeding centre)
- **Last Tiger Census Best managed TR** = Pench (MP), Periyar TR (Kerala), Satyamangalam (TN)

**Break 4:16 PM to 4:28 PM**

#### **Transportation:**

- **Roadways:**
- National Highways (NHs) = earlier there was no specific method of numbering the NHs now they are named with some logic
- **Rules** = All the NHs are classified as North to South and East to West Highways, N-S Highways will be even-numbered and E-W Highways will be odd-numbered, the Even numbered highways increase from East to West similarly from odd-numbered highways increase from North to South
- Important NHs = Longest NH = 44 from Srinagar to Kanyakumari
- 2nd Longest NH = NH27 from Porbandar to Silchar
- **Golden Quadrilateral** = Delhi-Mumbai-Chennai-Kolkata (Delhi to Mumbai to Chennai = NH48, Delhi to Kolkata = NH19, Chennai to Kolkata = NH16)
- **Railways:**
- There are a total of 18 Railway Zones in India ((18th zone Southern coast railway)
- 17th = Kolkata Metro
- **Industrial Corridors, Dedicated Freight corridors (DFCs):**
- Eastern Dedicated Freight Corridor = Ludhiana to Dankuni (funded by WB)
- Western Dedicated Freight Corridor = Dadri to JNPT (Funded by Japan)
- Diamond Quadrilateral = Railways connectivity of Delhi-Mumbai-Chennai-Kolkata
- **Waterways:**
- Till 2015 we have 5 Inland waterways
- NW-1 = From Allahabad to Haldia (Ganga River)
- NW-2 = Sadia to Dhubri (Brahmaputra river)
- NW-3 = Kerala backwaters (Kollam to Kottapuram)
- NW-4 = backwaters and canals between Puducherry to KG Delta
- NW-5 = Northern part of Mahanadi Delta from Talcher to Dharma, Orissa
- NW-6 = Barak river was proposed

- Now there are 111 NW (5 + 106 new)
- **(4:44 PM) Ports:**
- Major ports = handled by the central govt, and minor ports are handled by the state govt.
- There are 12 major ports and 2 are under construction
- There are 9 coastal states in India
- **Major ports** = Kandla (Gujarat), JNPT (Maharashtra), Marmagao (Goa), New Mangalore port (Karnataka), Kochi port (Kerala), Chennai, Ennore, Tuticorin (TN), Vishakhapatnam (Andhrapradesh) Paradweep (Orissa), Haldia (WB)
- Newly announced ports = Enayam (Kanyakumari, TN), Wadhavan port (Maharashtra)
- **Important Tribes of India:**
- Andaman and Nicobar= there are 6 tribes and Nicobarese are not considered as PVTGs, Andamanese, Onge, Jarwa, Senteneles, Shompen
- North East - Garo, Khasi, Jaintiya, Dafla, etc.
- Northern India, Central India, Western Ghats, etc, to be referred from the PPT

**(4:54 PM) Few Other Important Locations which are in news in the last year:**

- Lemru Elephant Reserve = Chattishgarh
- Majuli Island, Loktak Lake, Mawmluch caves (Meghalayas), Sohra (Cherapunji)
- Kendrapara (Orissa), the only dist. where all the three species of crocodile are found
- Surat, Gujarat = India's first steel slag road was made
- Deucha Panchami = India's largest coal block and the world's 2nd largest coal block in WB
- Raigarh Fort = Maharashtra, captured by Chatrapati Shivaji
- Blue Flag Certification= last year 8 beaches of India got these two new beaches are also added = Kovalam (TN), and Eden beach in TN.
- Mahendragiri = Orissa, proposed it to be the 2nd biosphere reserve by Orissa govt.
- Pochampalli = Telangana = UN World Tourism Organization gave the best tourism village Award
- **Pilgrimage Sites** = Amarnath (Great Himalaya), Vaishno Devi, Dharamshala (Dhauladhar), Rishikesh (Shiwaliks), Haridwar (Bhabhar), Amritsar (Bari doab), Anandpur Sahib (Shiwaliks), Mount Abu (Aravalis), Ajmer (Aravalis), Dwarka and Somnath (Kathiawar Plains). Khajurao (Bundelkhand).
- Sanchi (towards Vindhyas), Ujjain (Malwa), Shreeshailam (Nallamala hills), Tirupati (Palkonda Range), Karnul (Rayalseema), Hampi (Tungabhadra River), Shabrimala (Pampa hills, Cardamom Hills), Nalanda (in plains), Konark and Puri (Mahanadi Delta), Kamakhya Temple (Brahmaputra river)

**Concluded**