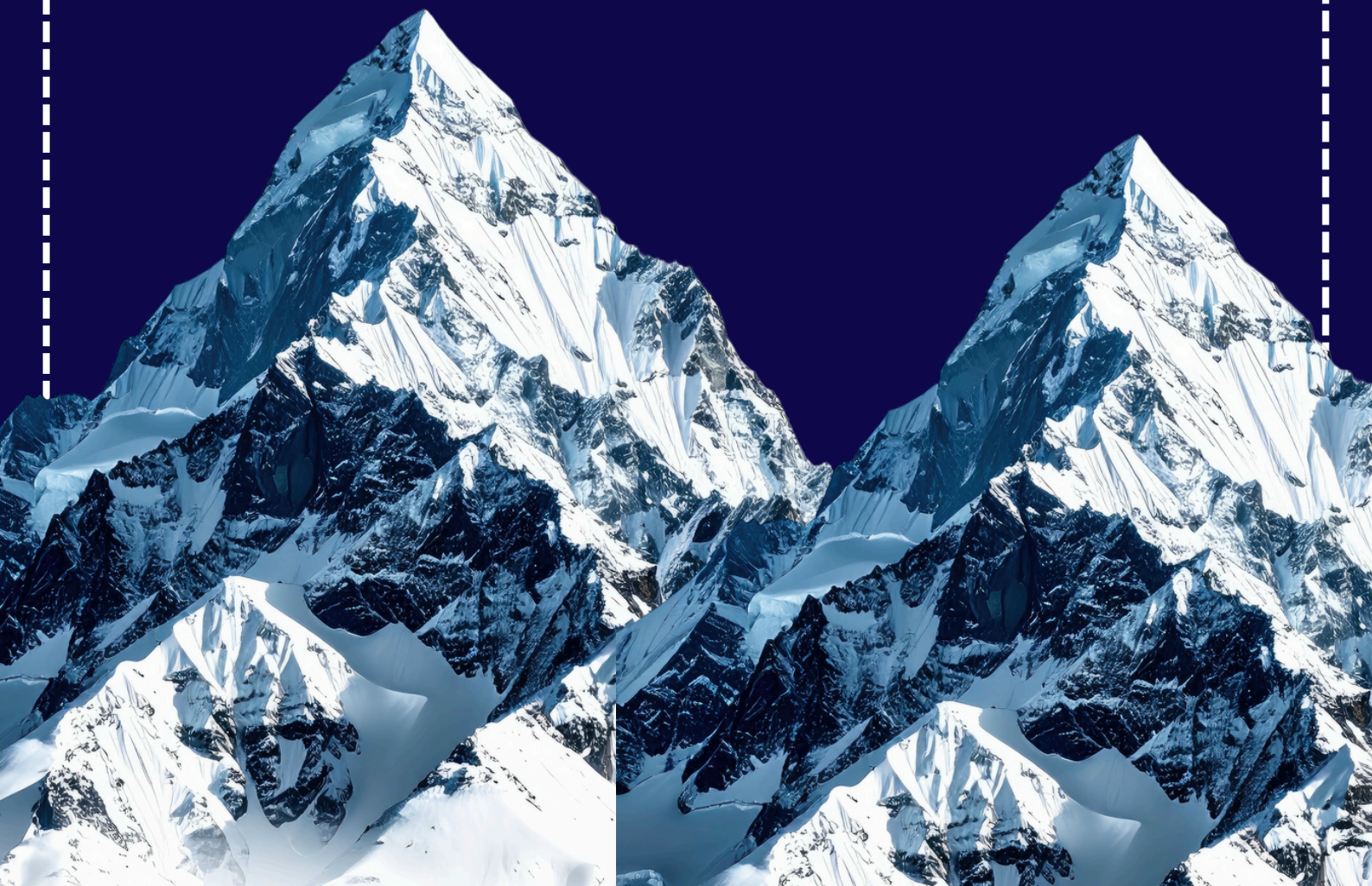
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Topic - Himalayas



Physiographic Divisions Of India

- India is Divided into six physiographic divisions based on the varied physical features.

1. Himalayas / Northern Mountains
2. Northern Plains
3. Indian Desert
4. Coastal Plains
5. Peninsular Plateau
6. Islands

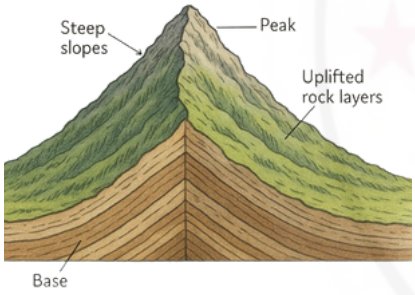


Mountains

Mountains are landforms that are much higher than the surrounding land. They usually steeper than the hills and often have a sharp peak, or summit.

Types of Mountains

1. Fold Mountains



2. Block Mountains



3. Volcanic Mountains



1. Fold Mountains

They are formed when tectonic plates collide, causing the Earth's crust to buckle and fold. These mountains are often characterized by parallel ridges and valleys.

There are two types of Fold Mountains

Young Fold Mountain

- Mountains that were formed by tectonic activity a few million years ago.
- E.g. Himalayas, Andes (located in South America and is world's longest mountain range), Alps (Europe), Rockies (North America), Atlas (Africa), Caucasus mountains.

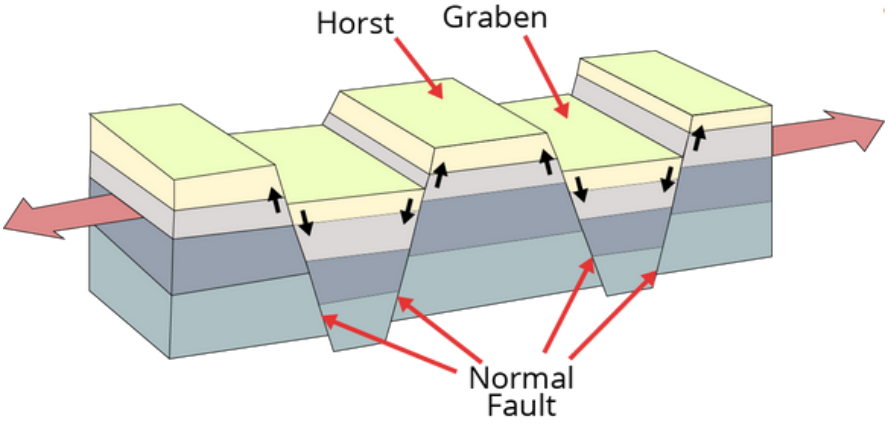
Old Fold Mountain

- Mountains that were formed by the folding of the Earth's crust in the distant past.
- E.g. Aravalli (residual mountains), Ural (separates Asia and Europe), Appalachians (North America).

2. Block Mountains

Block mountains are formed when large areas of the Earth's crust are broken and displaced due to vertical slippage.

- **Horst**: Raised block of land bounded by faults, often appearing as a ridge or plateau.
- **Graben** (also known as Rift Valley)→ Lowered block of land between two faults, often forming a valley are formed in block mountains
- E.g: Vindhya and Satpura, Vosges Mt. (France), Harz Mt. (Germany), Great African Rift Valley



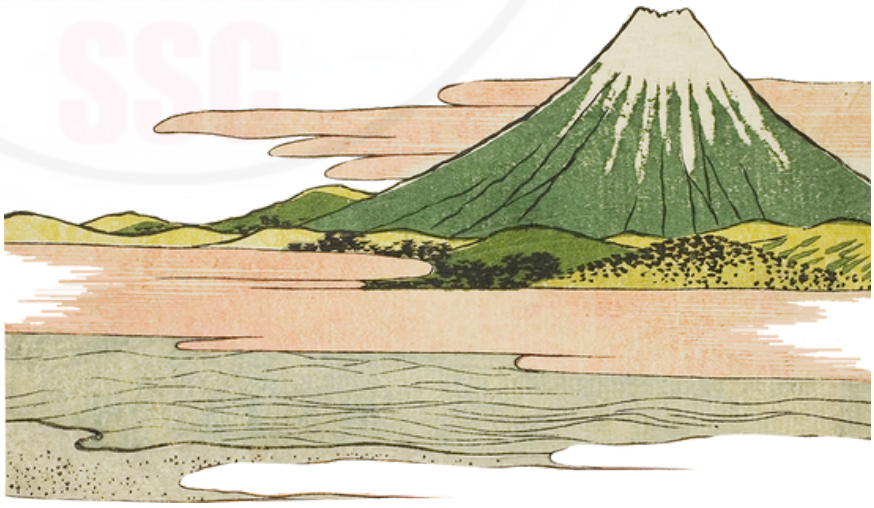


3. Volcanic Mountains

They are formed when magma from the Earth's mantle rises to the surface and erupts, Creating lava flows that builds up over time.

Examples:

- Mt. Stromboli (known as "Lighthouse of Mediterranean",
- Mt. Cotopaxi (Ecuador),
- Fujiyama (Japan),
- Barren and Narcondam (Andaman & Nicobar Islands),
- Ojas del Salado (world's highest active volcano in Chile-Argentina border),
- Mt. Kilimanjaro (Africa).



Himalayas

The Himalayas are one of the youngest fold mountains ranges in the world of tectonic origin and comprise mainly Sedimentary Rocks.



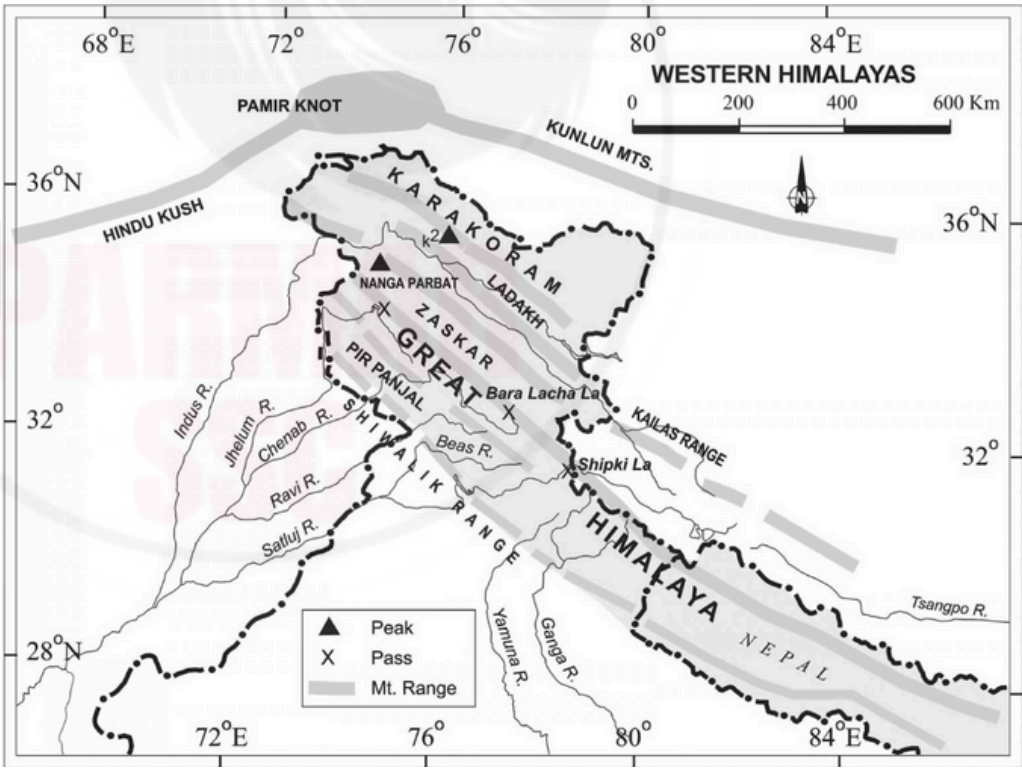
Formation of Himalayas

They were formed when the Indo-Australian tectonic plate and Eurasian (Asian) tectonic plate collided, this caused the closure of the ancient Tethys Sea, leading to the folding and uplifting of sediments deposited on its seabed. This resulted in creation of multiple massive mountain ranges which are collectively know as the Himalayas.

Geosyncline: It is an obsolete geological concept that described a long, linear trough in the Earth's crust where vast amounts of sediment accumulate, which was believed to later be deformed into mountain ranges

Mountain Ranges in Himalaya

1. Trans Himalayas
2. Greater Himalayas
3. Lesser Himalayas
4. Outer Himalayas



Trans Himalayas

- It is located north of Great Himalayas, the region is characterized by high plateaus and arid landscape.
- Average Elevation is 3000 m.
- Three division of Trans Himalayas are : Karakoram Range, Ladakh Range & Zanskar Range

Karakoram Range :

- It forms India's boundary with Afghanistan and China.
- Highest peak of this range is K2, also known as Mt. Godwin-Austen (8611 m), which is also world's second highest peak.
- Mt. Rakaposhi, Mt. Gasher Brum is also a part of Karakoram Range

Ladakh Range :

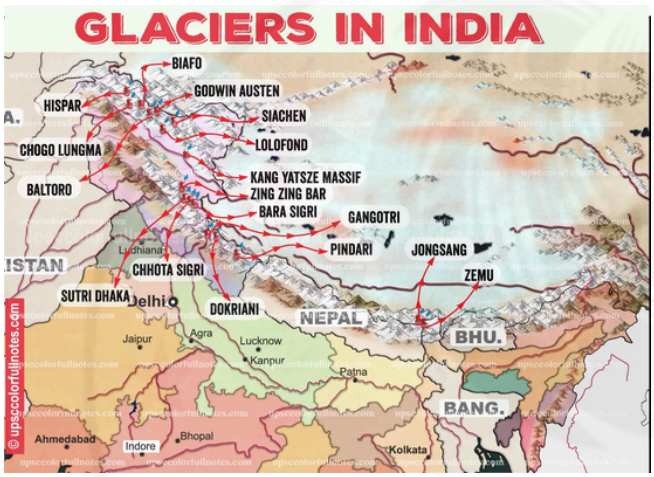
- It has the highest slope.
- Shyok (tributary of Indus) river flows between Karakoram and Ladakh range.

Zanskar Range :

- Kamet peak is the highest peak of this range.
- Indus river flows between Ladakh and Zanskar range

Glaciers of Karakoram Range

1. **Siachen**
   - 2nd longest non-polar glacier.
   - Highest battlefield (5700 m above)
   - Operation Meghdoot (1984).
2. **Baltoro** (Gilgit-Baltistan of Pakistan
3. **Hisper**
4. **Biafo**

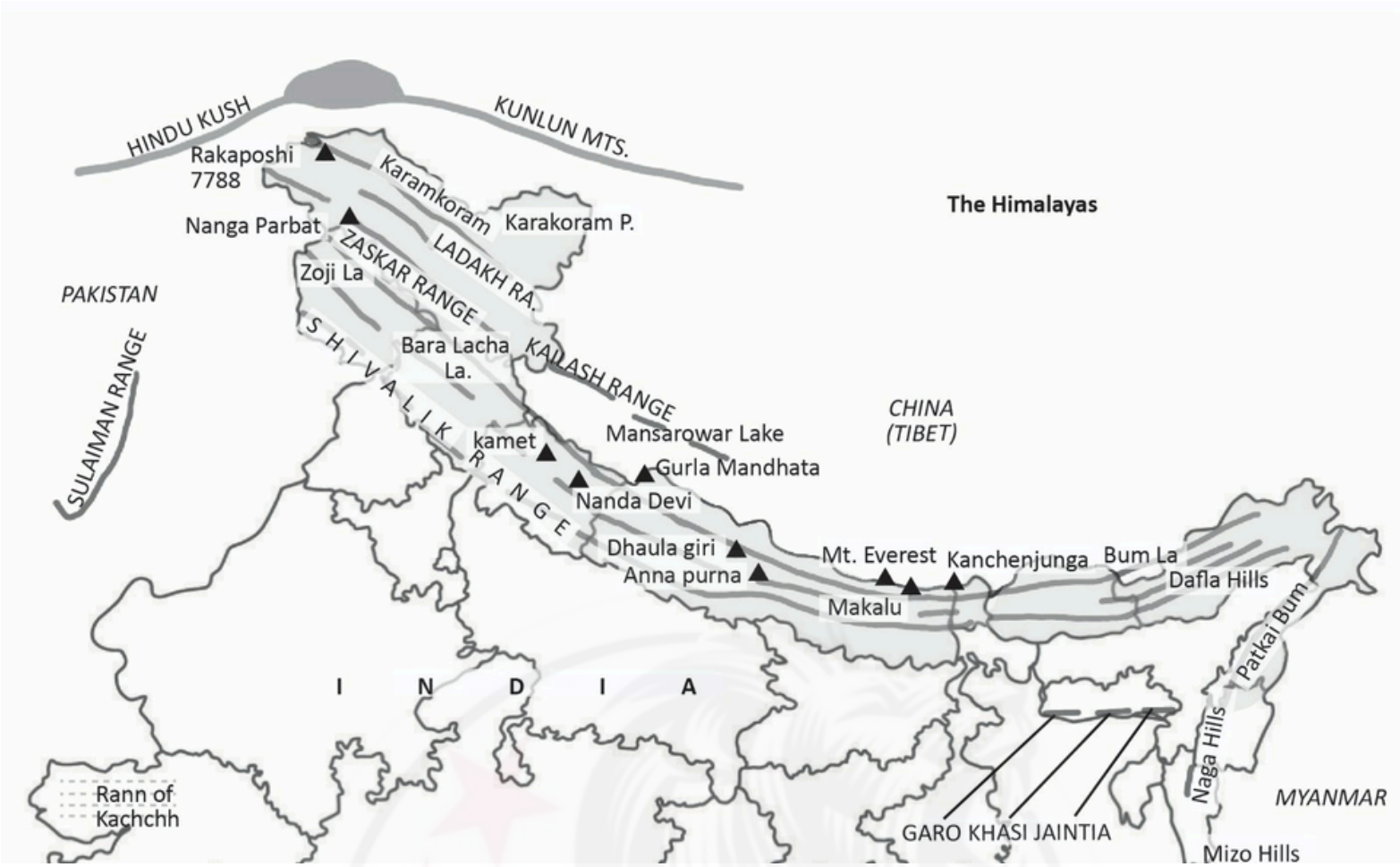


- Longest non-polar glacier in the world: Fedchenko Glacier in Tajikistan
- Longest glacier in the world: The Lambert Glacier in Antarctica

Greater Himalayas

- They are also known as Himadri /Inner Himalayas.
- They are formed due to asymmetrical folding.
- The core of Greater Himalayas is composed of granitic rock.
- Average height: 6000 m.
- Axial range: 2500 km.
- Width: 120-190 km.
- It's westernmost point is: **Nanga Parbat (8126 m).**
- It's easternmost point is: **Namcha. Barwa (shows syntaxial bending).**





Peaks of Greater Himalayas

1. Mt. Everest (Highest mountain in the world with 8848 m height) Local names: Sagarmatha (in Nepal) and Chomolungma (in Tibet).
2. Mt. Kanchenjunga (highest in India (Sikkim) with 8598 m height).
3. Mt. Lhotse (in Tibet and Khambu region of Nepal with 8516 m height).
4. Mt. Makalu (8485 m).
5. Dhaulagiri (8167 m) → Also known as White Mountain. Nepal
6. Annapurna (8091 m).
7. Nanda Devi (highest peak in Uttarakhand with 7816 m height).
8. Mt. Kamet (7756 m in Uttarakhand)

Note : Kedarnath, Badrinath, Banderpoonch are part of Great Himalayas.

- **All important Peaks are mentioned in the given figure above.**

Lesser Himalayas

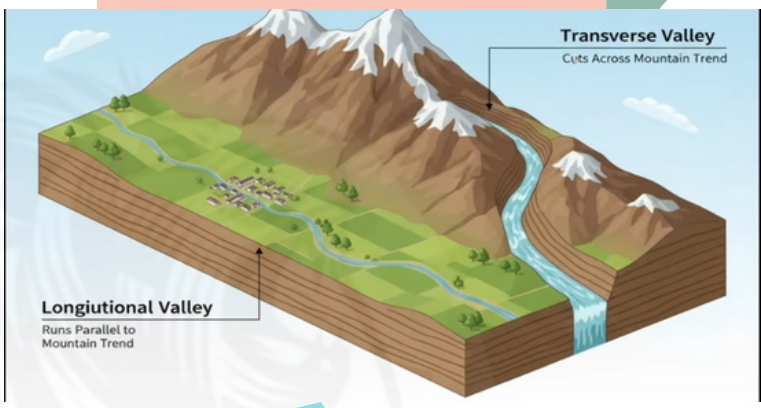
- They are also known as Middle Himalayas / Himachal.
- Average height : 4000 m
- Width: 60-80 Km.

Valley

- A valley is a low area of land between hills or mountains, typically with a river or stream flowing through it.
- Kashmir Valley is between Great Himalayas and Lesser Himalayas.
- Kangra Valley is type of Longitudinal valley that runs parallel to Mountain Trend, whereas Kullu Valley is type of Transverse Valley that cuts across Mountain Trend

Different Names of Lesser Himalayas

- In J&K : Pir Panjal Range
- In Himachal Pradesh : Dhauladhar
- Uttarakhand : Nagtibba
- Nepal : Mahabharat Range



Outer Himalayas

- They are also known as Shivalik
- Average height : 1000 m
- In the eastern part they disappear and Duars take its place.
- Longitudinal Valleys called Duns are formed between Lesser Himalayas and Shiwaliks.
- Largest Dun in India is Dehradun.
- The portion of Shiwalik lying in the region of Nepal is called the Churia Range

Note : Duars are soft unconsolidated deposits that are good for tea cultivation)

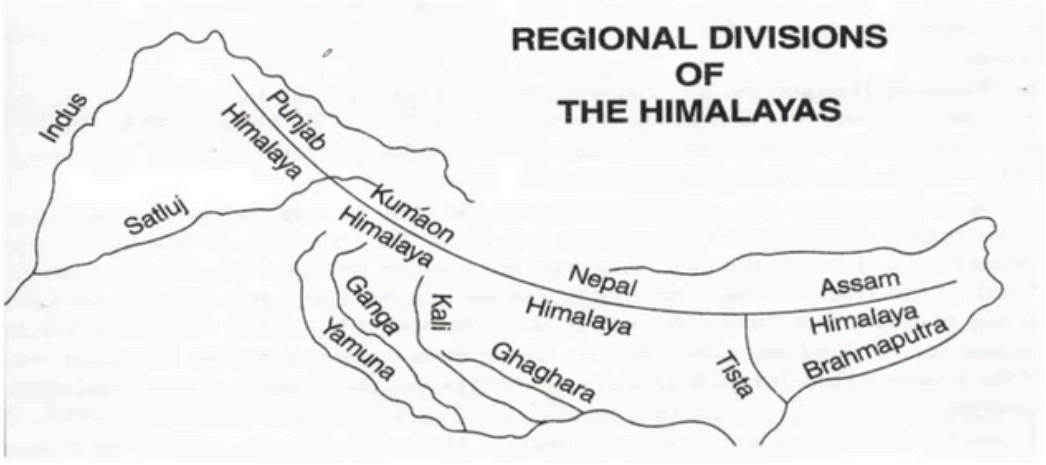
Regional Division Of Himalayas

Punjab Himalayas : Between Indus and Sutlej River.

Kumaon Himalayas : Between Sutlej and Kali River.

Nepal Himalayas : Between Kali and Teesta River.

Assam Himalayas: Between Teesta and Dihang River.



Kashmir Valley



- The Kashmir Valley is also known for the Karewa formations (composed of glacial and lacustrine deposits), which are used to grow Zafran, a local variety of Saffron.
- Zoji La on the Greater Himalayas, Banihal on the Pir Panjal, Photu La (Ladakh) on the Zanskar, and Khardung La on the Zanskar are some of the region's most important passes.
- This region also has some of the most important freshwater lakes, such as Dal and Wular, as well as saltwater lakes, such as Pangong Tso and Tso Moriri (Both are Salt Water Lakes)
- The Indus River and its tributaries, such as the Jhelum and Chenab, drain in this region.



Himachal & Uttarakhand Himalayas

- They are spread across three states: J&K, Himachal Pradesh, and Uttarakhand.
- It is drained by two of India's largest river systems, the Indus and the Ganga.
- The Bhotia tribe live largely in the valleys of the Greater Himalayan range. These are nomadic people who travel to the 'Bugyals' (summer grasslands in the mountains) in the summer.

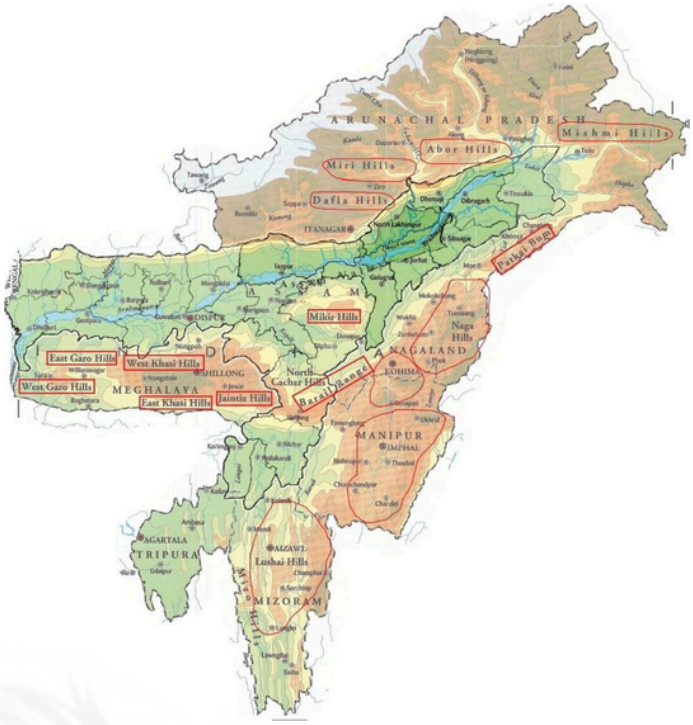
Important Hill Station

- Dharamshala
- Mussoorie
- Shimla

Darjeeling and Sikkim Himalayas

- It is home to India's highest peak Mt. Kanchenjunga.
- The Lepcha/Bhutia tribe live in the higher elevations of this region.
- Duar formation can also be seen here.

Arunachal Himalayas



- The eastern border of Eastern Himalayas is formed by Arunachal Himalayas.
- Orientation of Himalayas in Arunachal is South-west to North-West.
- Important peaks include: Kangtu and Namcha Barwa.
- Important river include: Kameng, Subansiri, Dibang.
- The Monpa, Dafla, Abor, Mishmi, Nyishi, and Nagas are some of the most well-known tribes from west to east.
- **Jhumming** is practiced by the majority of these groups. It's also known as **slash and burn** cultivation or shifting cultivation.

Important Ranges

- Patkai Hills.
- Naga Hills.
- Manipur Hills.
- Mizo/Lushai Hills.
- In Manipur and Mizoram (also known as Molasses Basin), the Barak is a significant river.
- The state of Manipur is known for world's only floating lake → Loktak Lake.
- Keibul Lamjao National Park is located here (World's only floating National Park)

Note : Garo, Khasi, Jaintia hills are not part of Himalayas but are part of Peninsular Plateau.

Eastern/Purvanchal Hills

- Eastern Hills/Purvanchal Hills are part of the Himalayan mountain chain, with a basic alignment from north to south.
- They extend from Arunachal Pradesh in the north to Mizoram in the south.

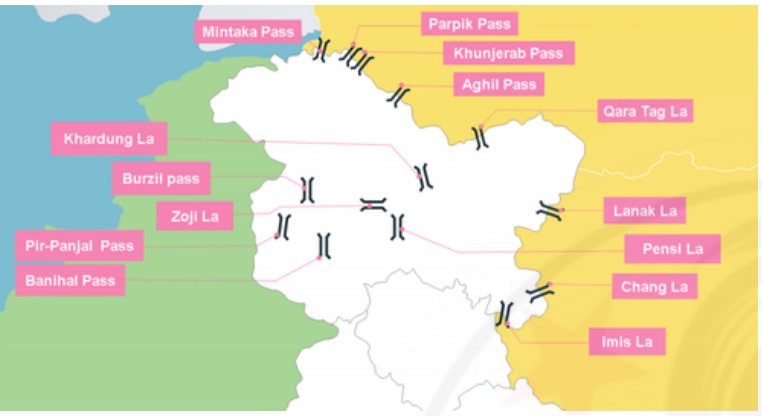
Orientation of Himalayas

- In J&K: North-West to South-East
- Sikkim: East-West
- Arunachal : South-West to North-East.
- Eastern Himalayas : North-South

Mountain Passes

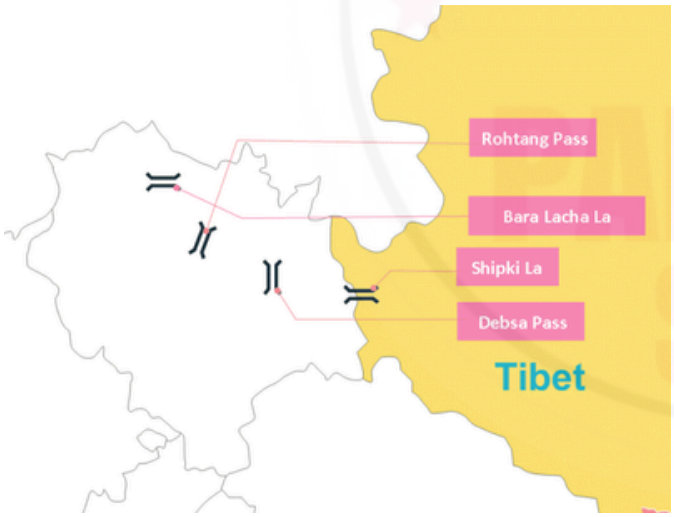
- A mountain pass is a route that runs through or over a mountain range.
- Mountain passes between mountain peaks may form during the formation of the mountain range, or they may form as a result of the action of glaciers, running water, or precipitation in the form of rain or snow.

J&K and Leh-Ladakh



- Karakoram Pass: It is the highest pass that connects India and China.
- Pir Panjal Pass and Banihal Pass: They connect Jammu to Srinagar.
- Burzil Pass: It is between Srinagar and Gilgit.
- Zoji La: It connects Srinagar in Kashmir to Leh-Ladakh.
- Umling La: World's highest motorable road (constructed through Project Himank) in Ladakh.

Himachal Pradesh



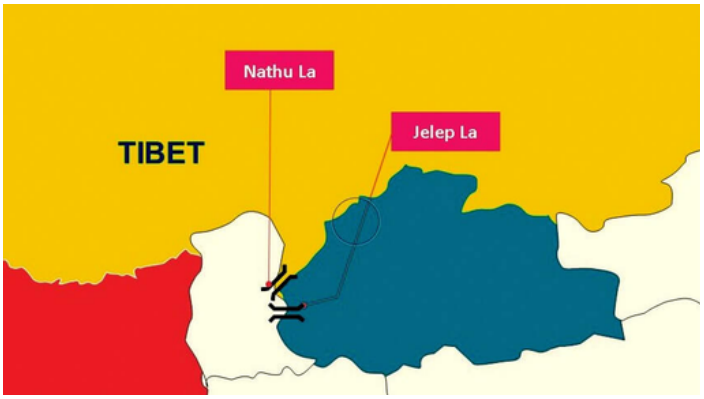
- Shipki La Pass: It connects Kinnaur district of Himachal Pradesh to Tibet, China. Sutlej enters in India through this pass.
- Rohtang Pass: It connects the Kullu Valley to the Lahaul and Spiti valleys in Himachal Pradesh (Atal Tunnel, the longest highway tunnel (9.02 km) is built under the Rohtang Pass).
- Bara-Lacha La Pass: It connects Lahaul and Leh by crossing the Zanskar range.

Uttarakhand

- Mana Pass: It connects the Mana with Tibet.
- Niti Pass: It also connects Uttarakhand and Tibet.
- Lipu Lekh Pass: It is between Uttrakhand, Tibet and Nepal, it acts as a tri-junction.
- Mauling La Pass: During the winter, this seasonal pass connecting Uttarakhand and Tibet.



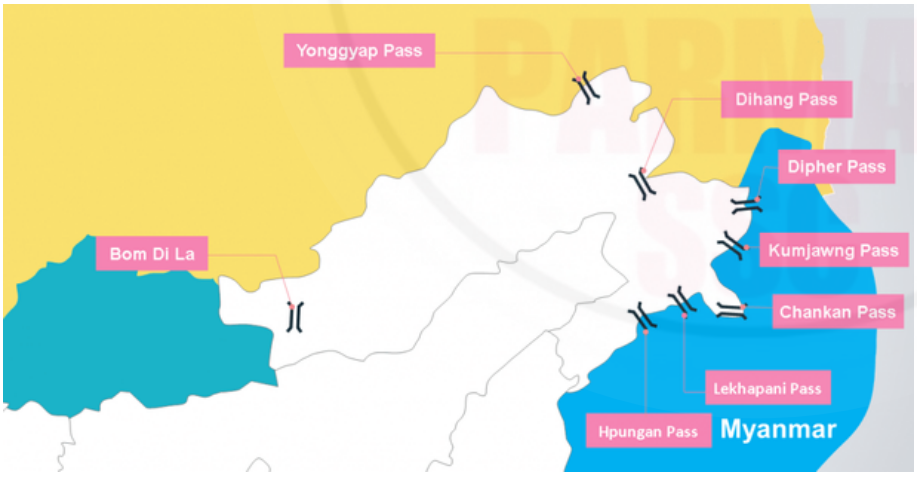
Sikkim



- Nathu La Pass: It links Sikkim and Tibet.
- Jelep La Pass: It is located on the border of Sikkim and Tibet.

Arunachal Pradesh

- Bom Di La Pass: It connects Arunachal Pradesh with Lhasa (Tibet)
- Sela Pass
- Dihang La Pass: This pass connects the states of Arunachal Pradesh and Myanmar.
- Pangsu Pass: It connects Arunachal and Myanmar.
- Bum La Pass: It is a border pass between China and Tawang district of Arunachal Pradesh.
- Diphu Pass: It is in Arunachal Pradesh that borders Myanmar and is close to the trijunction of India, Myanmar, and China.
- Yangyap Pass: It is a pass from where Brahmaputra river enters India.



Some Important Mountain/Peaks

- Mt. Jhopuno: Sikkim.
- Gorichen Peak: Arunachal Pradesh.
- Saramati: Highest peak of Nagaland.
- Kangto: Highest peak of Arunachal.
- Thaidawr Tlang: Tripura.
- Phawngpui (also known as Blue Mountain): Highest peak of Mizoram.
- Mt Iso : Highest Peak of Manipur