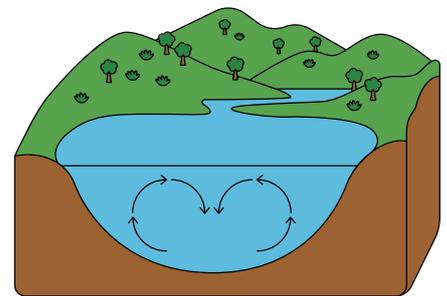


## CHAPTER- 3

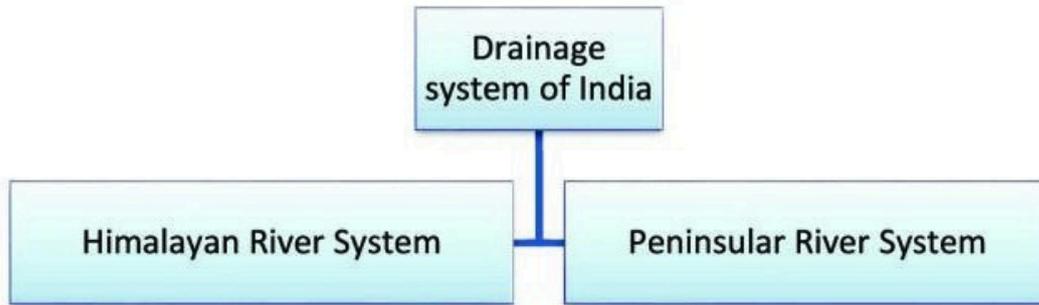
### DRAINAGE

#### POINTS TO REMEMBER :

- The term **Drainage** describes the river system of an area.
- The area drained by a single river system is called a **Drainage Basin**.
- The world's largest drainage basin is of **Amazon River**.
- Any elevated area like mountain or an upland which separates two drainage basins is called **water divide**.
- The streams within a drainage basin form certain pattern called **drainage pattern**.
- The four types of drainage pattern are-
  -  Dendrite
  -  Trellis
  -  Rectangular
  -  Radial
- The river which is filled with water throughout the year is called **Perennial River**.
- A river along its tributaries is called **river system**.
- The small river which joins a large river is called the **tributary** of the large river. eg. Yamuna, Kosi, Gandak etc. are the tributaries of Ganga River.
- In its lower course river water is divided into many channels forming **distributaries**. Eg. Bhagirathi- Hoogly is the distributaries of Ganga river.
  - I. In its **upper course** the speed of water is very high so it cuts the valley to form waterfall, V-shaped valley, rapids, gorges and canyon and carries silt with them.
  - II. In their **middle course** vertical erosion gives way to side erosion and hence forms alluvial fans, alluvial plains meander etc.
  - III. In its **lower course** rivers loses its carrying capacity due to absence of slope and hence deposit all its silt and debris to form flood plain, braided channels, ox-bow lakes, delta etc.



- Drainage system in India-



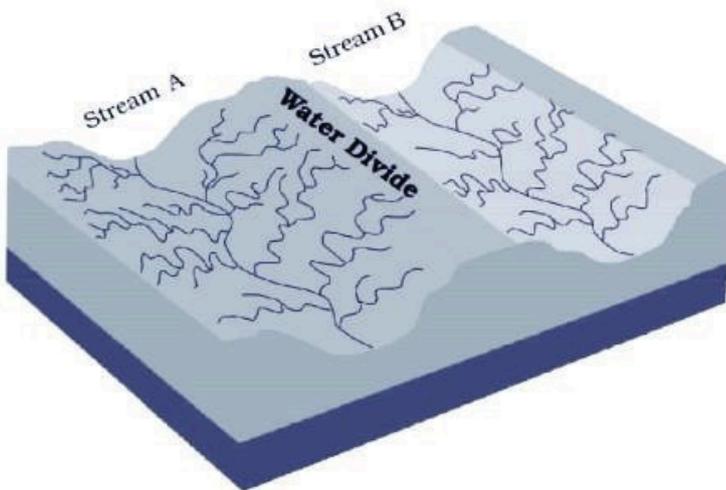
- Difference between Himalayan and Peninsular River System-

Himalayan River System	Peninsular River System
They are perennial (water throughout the year) as they are fed by the melting snow.	They are seasonal as they are fed on rain-water.
They have long course.	They have shorter course.
They are mostly flown through unstable areas of new fold mountains of Himalaya.	They are mostly flown through stable areas of Gondwana land.
They perform high erosion and depositional work in their course.	They don't perform these activities on such scale.

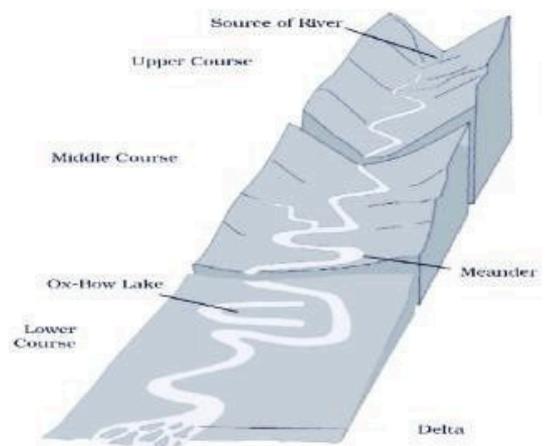
- The headwater of Ganga, called **Bhagirathi**, is joined by **Alaknanda** River at **Devprayag** in Uttarakhand.
- At **Haridwar** the Ganga emerges from the mountains on to the plains.
- **Brahmaputra River** rises in **Tibet** east of **Mansarovar Lake** where it is known as '**Tsang Po**'.
- The Brahmaputra River enters India in **Arunachal Pradesh** where it is called '**Dihang**'.
- . In Tibet Brahmaputra River carries less volume of water and less silt as it passes through cold and dry area
- In Bangladesh it is known as '**Jamuna**'.
- In peninsular India west flowing rivers are **Narmada and Tapti** which forms **Estuaries** instead of delta.
- **Godavari River** is also called the "**Dakshin Ganga**".
- **Narmada River** originates from **Amarkantak Hills** in Madhya Pradesh and form '**Dhuadhar waterfall**' near Jabalpur (M.P.).

- River Kaveri makes the second biggest waterfall in India called- 'Shivsamudram'.
- India's biggest waterfall is **Jog waterfall** on **Sharavati River** in Karnataka.
- Lakes are not only a place of scenic beauty but also have socio-economic importance like-
  - I. Encourages Tourism
  - II. Generation of hydroelectricity.
  - III. Regulates the flow of river water.
  - IV. During excessive rainfall it controls the flood whereas during draught it ensures the supply of water.
  - V. Helps in balancing the aquatic ecosystem.
  - VI. They are also a source of salt manufacturing site.

- **Some important Diagrams:-**

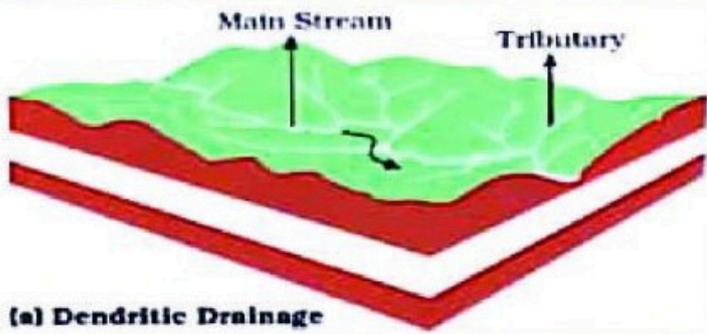


**1. Water Divide**

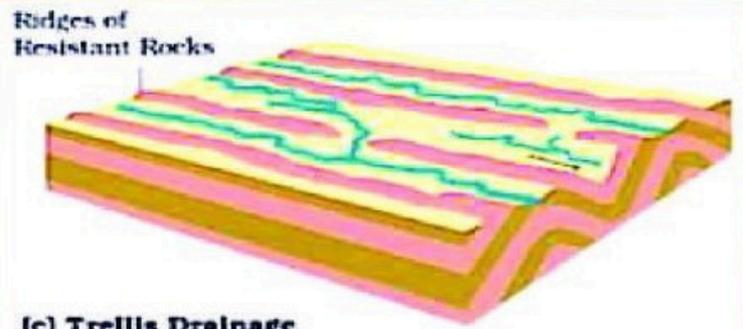


*Figure 3.3 : Some Features Made by Rivers*

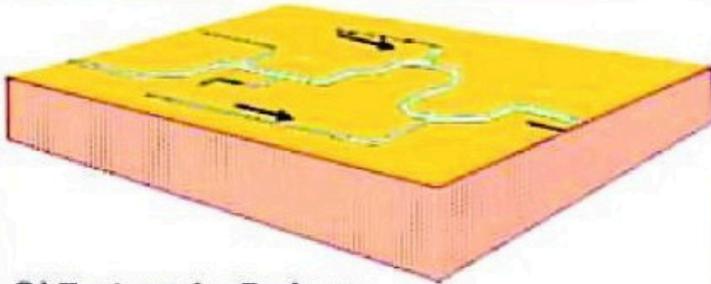
**2. Pattern made by river**



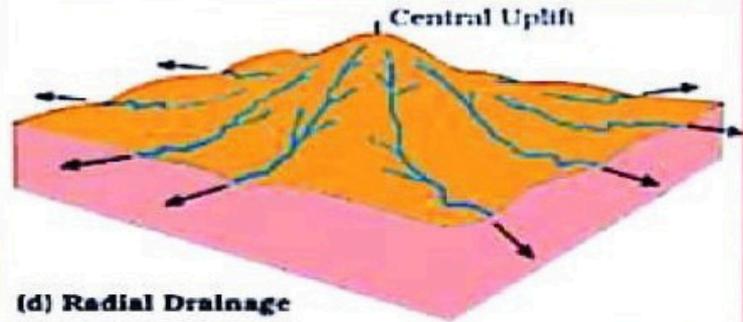
**(a) Dendritic Drainage**



**(c) Trellis Drainage**



**(b) Rectangular Drainage**



**(d) Radial Drainage**

Drainage Basin	Kashmir	Length	Tributary Rivers	Drainage Areas	Characterstics
Indus	Mansarovar lake(Tibet)	2900km	Sutlej,Ravi,Beas, Jhelum,Chenab	Jammu and Kashmir, Himachal Pradesh,Punjab	<ol style="list-style-type: none"> <li>1.One of the longest river of world.</li> <li>2. Enters India in Ladakh, 3.flows to Pakistan and drains in Arabian Sea</li> </ol>
Ganga	Gangotri glacier	2500km	Yamuna,ghagra, Gandak,kosi,Chambal,Son,Betwa	Uttarakhand ,Uttar pradesh,Bihar, west Bengal	<p>Ambala located on the water divide between Ganga, and Brahmaputra river system, Zaverage slope is 1m for every 6 km.</p> <p>The main stream of Ganga and Brahmaputra river form River Meghna</p>
Brahmaputra	Maansarovar lake(Tibet)	2900km	Dihang, Lohit	Arunachal pradesh,Assam	<ol style="list-style-type: none"> <li>1.It is slightly longer than Indus River.</li> <li>2. Most of its course lies outside India parallel to Himalaya.</li> <li>3. On reaching Namcha Barwa it takes "U" turn and enter India in Arunachal Pradesh.</li> </ol>
Narmada	Amarkantak hills(MP)	1312km	Sakkara,Dudhi,Tawa,Ganjal	Madhya pradesh, Gujarat	<ol style="list-style-type: none"> <li>1.Forms Gorge in marble hills, and "Dhuandhar waterfall"</li> </ol>

Tapi	Satpura range(MP)	724km	Purna, Girna, Panjhra	Madhya pradesh, Gujarat, maharashtra	Flows parallel to Narmada river through rift valley.
Godavari	Slope Western Ghats (Maharashtra)	1500km	Purna, wardha, prahinta, manjara, Vanganga	Maharashtra, Madhya Pradesh, Orissa, Andhra Pradesh, Telengana	Longest river of south India. Also known as "South Ganga"
Mahanadi	Highlands of Chattisgarh	800km	Shivnath, mand, daya	Orissa, Maharashtra, Chhattisgarh, Jharkhand	Drains in Bay of Bengal
Krishna	Mahabaleshwar(Maharashtra)	1400km	Tungabhadra, koyna, Ghatprabha, Musi, Bhima	Maharashtra, Karnataka, Andhra Pradesh	Drains in Bay of Bengal
Kaveri	Brahmagiri range(Western ghats)	760km	Amravati, Bhavni, Hemwati, Kabin	Tamilnadu, Kerala, Karnataka	Drains in Bay of Bengal