☀️ Monsoon in India – SSC Notes

1. Definition of Monsoon

- **Monsoon: Seasonal reversal of wind direction due to differential heating of land & sea**
- **Two main types in India:**
  1. **South-West Monsoon (Summer Monsoon) → June to September**
  2. **North-East Monsoon (Winter Monsoon) → October to December**

2. Mechanism of Monsoon

A. South-West Monsoon (SW Monsoon)

- **Cause: Low pressure over Northern India & Thar Desert, high pressure over Indian Ocean**
- **Wind Direction: From Indian Ocean → Indian subcontinent**
- **Onset:**
  - **Kerala → 1st June**
  - **Delhi → 29 June (approx.)**
- **Withdrawal: 1st September to 30th September**
- **Features:**
  - **Brings 70–80% of annual rainfall**
  - **Responsible for agriculture & water resources**

B. North-East Monsoon (NE Monsoon)

- **Cause: High pressure over Indian land in winter, low pressure over Bay of Bengal**
- **Wind Direction: From Northeast → Southeast coast**
- **Onset: October**
- **Withdrawal: December**
- **Features:**
  - **Major rainfall for Tamil Nadu, Andhra Pradesh, Kerala (Malabar Coast)**
  - **Less widespread than SW Monsoon**

3. Rainfall Regions of India

Region	Average Rainfall	Monsoon Type	Features
Western Ghats	2000–5000 mm	SW Monsoon	Heavy rainfall, dense forests
North-East Hills	2000–4000 mm	SW Monsoon	Cherrapunji, Mawsynram → World's wettest places
Plains (Ganga-Brahmaputra)	1000–2000 mm	SW Monsoon	Fertile soil, agriculture hub
Rajasthan & Gujarat	<500 mm	SW Monsoon	Arid & semi-arid,

			erratic rainfall
Tamil Nadu	800–1200 mm	NE Monsoon	Receives most rainfall in winter
Leeward side of Western Ghats	<500 mm	Rain shadow	Deccan Plateau → Semi-arid

4. Types of Rainfall

1. **Orographic Rainfall**
   - **Caused by mountains**
   - **Example: Western Ghats, North-East Hills**
2. **Convectional Rainfall**
   - **Caused by intense heating & rising air**
   - **Example: Interior plains in summer**
3. **Cyclonic / Frontal Rainfall**
   - **Caused by low pressure & cyclones**
   - **Example: Coastal storms, Bay of Bengal cyclones**

5. Factors Affecting Monsoon

- **Differential heating of land & water**
- **Himalayas → Barrier for cold winds, guides SW Monsoon**
- **Western Ghats → Orographic rainfall, rain shadow effect on leeward side**
- **El Nino & La Nina → Global climatic phenomenon affecting rainfall**

6. Importance of Monsoon

- **Agriculture → Kharif crops (Rice, Cotton, Sugarcane)**

- **Water resources → Rivers, reservoirs, hydro-power**
- **Economy → Rain-fed agriculture contributes ~50% rural income**
- **Biodiversity → Supports forests & wildlife**

7. Important SSC Points – Monsoon

- **SW Monsoon → June to September → Brings 70–80% rainfall**
- **NE Monsoon → October to December → Mainly Tamil Nadu & Andhra Pradesh**
- **Onset in Kerala → 1st June**
- **Withdrawal from North India → September end**
- **Wettest place in India → Mawsynram, Meghalaya (~11872 mm/year)**
- **Rain shadow → Leeward side of Western Ghats (Interior Deccan Plateau)**