🌪️ Cyclones & Local Winds – SSC Notes

1. Cyclones

Definition

- **Cyclone: Rotating storm system with low pressure at the center, strong winds, heavy rain**
- **Other Names: Hurricane (Atlantic), Typhoon (Western Pacific)**

Types of Cyclones

Type	Region	Features
Tropical Cyclone	**Oceanic regions near equator**	**Form over warm sea → High speed winds → Rain, storm surge**
Temperate / Extratropical Cyclone	**Mid-latitudes**	**Form along front → Cold & warm air meet → Rain, snow**
Tornado / Tornado Cyclone	**Land → Tornado-prone areas**	**Very localized, extremely strong winds, short-lived**

Causes of Cyclones

1. **Warm sea surface temperature (>26.5°C)**
2. **Low-pressure system formation**
3. **Coriolis effect → Rotation direction (N.H. → counterclockwise, S.H. → clockwise)**
4. **High humidity in lower atmosphere**

Impact of Cyclones

- **Destructive winds → Houses, power lines damaged**
- **Heavy rainfall → Floods, landslides**
- **Storm surge → Coastal flooding**
- **Casualties & economic loss**

Cyclone-Prone Areas in India

- **Bay of Bengal → Odisha, West Bengal, Andhra Pradesh, Tamil Nadu → More cyclones**

- Arabian Sea → Gujarat, Maharashtra, Kerala → Less frequent

Disaster Management Measures

- Cyclone warning → IMD (India Meteorological Department)
- Evacuation of coastal population
- Strengthening shelters & embankments

2. Local Winds

Definition

- Local Winds: Short-duration winds, confined to a small area, caused by local temperature & pressure differences

Types of Local Winds in India

Wind	Season	Region	Features
Loo	Summer	North India plains	Hot, dry, speeds 40–80 km/h, causes heatwaves
Land Breeze	Night	Coastal areas	Cool air from land → Sea
Sea Breeze	Day	Coastal areas	Cool air from sea → Land
Kalbaishakhi / Nor'westers	Pre-monsoon	Bengal, Assam, Bihar	Sudden thunderstorms, heavy rain, hail
Foehn / Chinook Winds	Winter	Himalayan valleys	Warm, dry → Melt snow rapidly

3. Important SSC Points – Cyclones & Local Winds

- Cyclone → Low pressure center, rotating winds → Tropical & Temperate
- N.H. → Counterclockwise, S.H. → Clockwise
- Bay of Bengal → Frequent cyclones, Arabian Sea → Less frequent
- Local Winds → Loo (Hot summer), Sea Breeze & Land Breeze (Coastal), Kalbaishakhi (Thunderstorms), Foehn (Himalayas)
- Disaster management → IMD warnings, evacuation, shelters