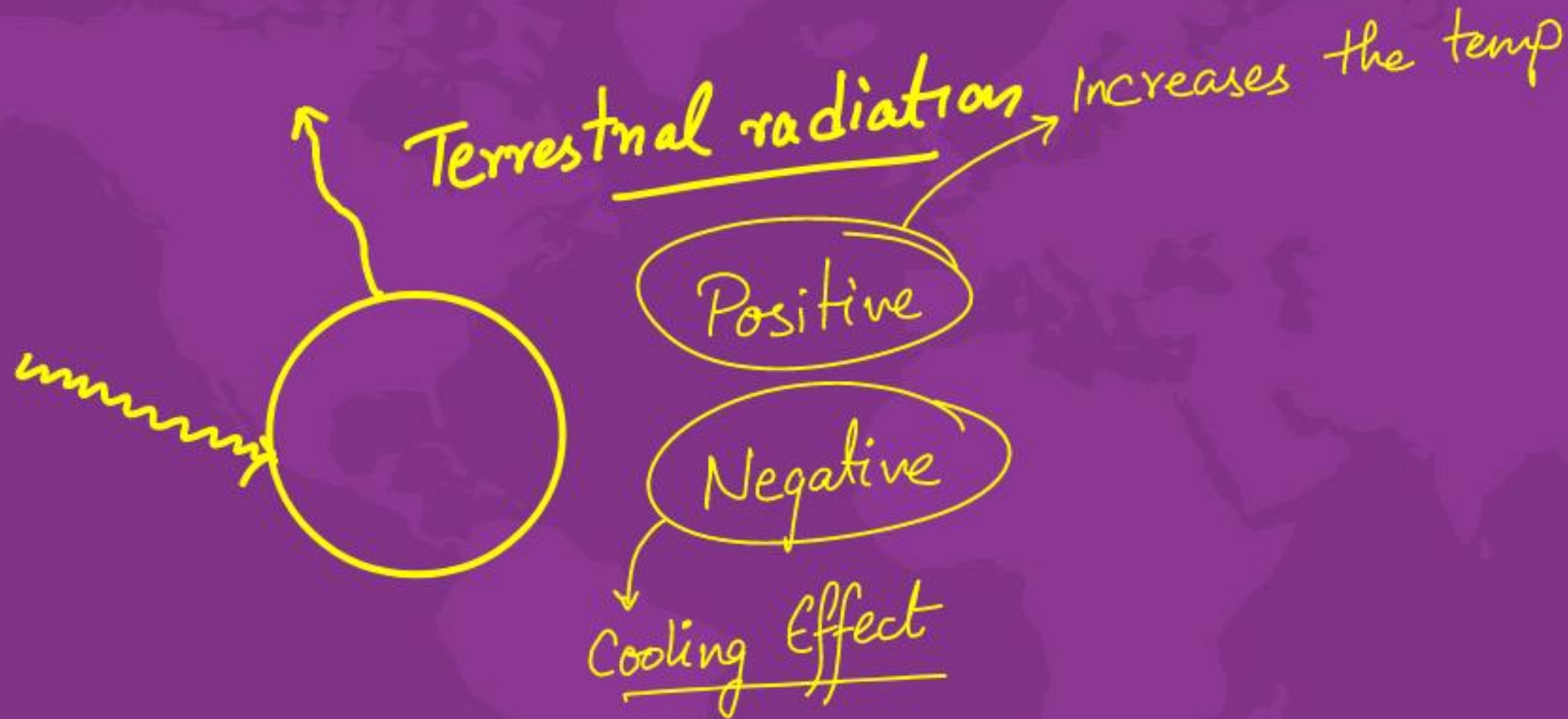


TARGET MAINS 2022

# CSE MAINS QUESTIONS DISCUSSION

## GEOGRAPHY-2

Q. What are Climate Forcings? How do they influence the climatic conditions on the planet?









## Introduction :

What we mean by forcings. Mention about positive and negative forcings.

heating

cooling

## Body:

Detailing of natural and anthropogenic forcings. Example : Solar Cycles , Milankovitch Cycles, Volcanic Eruptions, pollutions etc.

Eccentricity      Axial Tilt

## Conclusion :

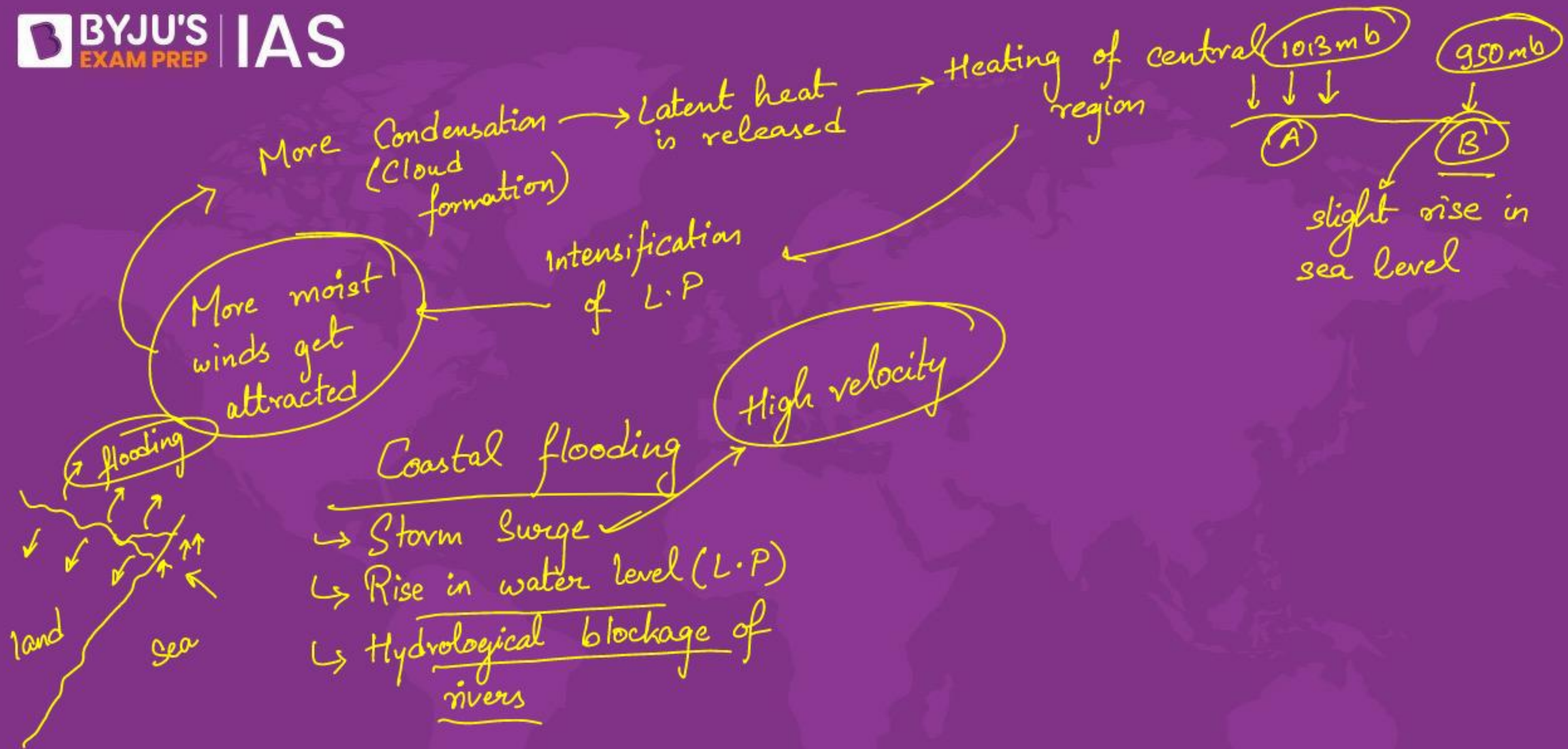
Climatic forcings have the potential to disturb the energy balance of the earth. With the aim to limit the heating to the target of 1.5 degrees, we need to understand these forcings in further detail and with certain negative forcings, we eventually can limit any further temperature rise.



Q. Why do tropical cyclones develop only over water bodies? Discuss the coastal flooding caused by tropical cyclones.









## Introduction :

Brief about a tropical cyclone and the destruction that it leaves in its wake.

## Body :

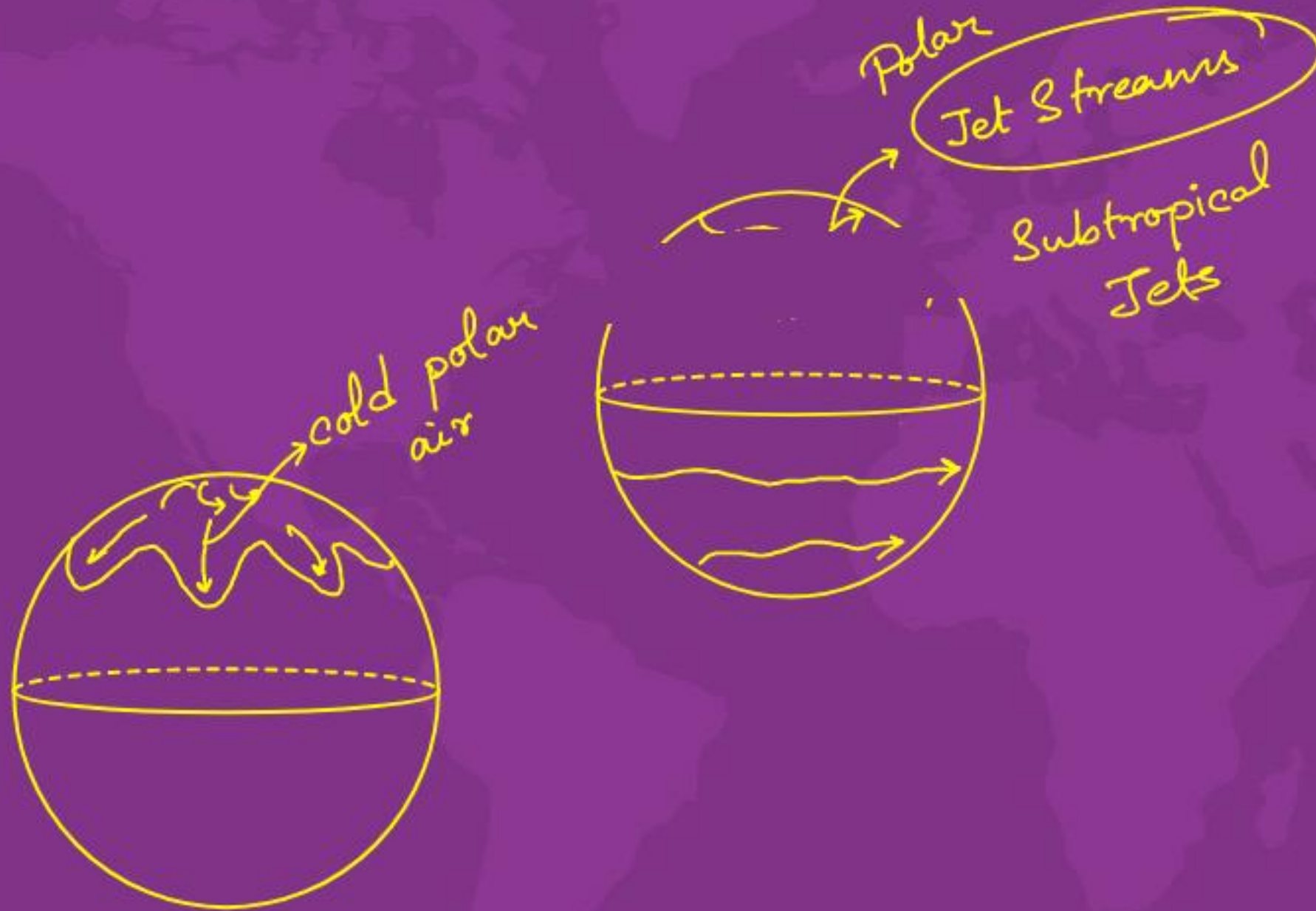
Importance of the maritime air mass to sustain the formation and intensification of cyclone.

Coastal Regions experience floods because of three reasons, low pressure, storm surges and hydrological blocking.

## Conclusion :

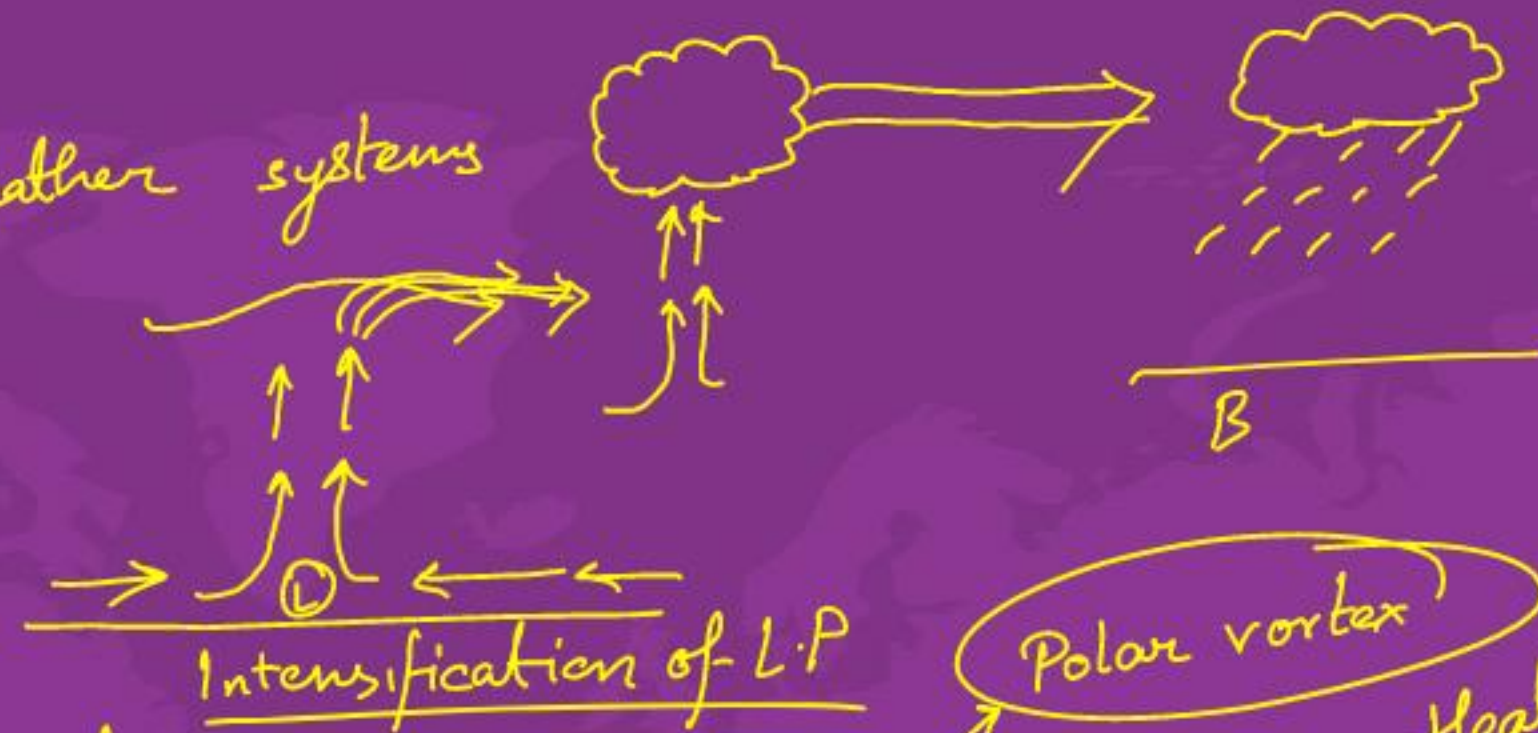
These cyclones are becoming more intense and frequent across the globe and hence resilient infrastructure and coastal management is the need of the hour along with mangroves as barriers.

Q. What are the climatological impacts of Jet streams?





→ Carrier of weather systems



→ Prevention of mixing of air-masses  
Heat waves & cold waves



Polar vortex

Heat waves in Europe

→ Impact on Monsoon → Subtropical Jet → Onset of Monsoon

→ Tropical Easterly Jet  
→ Somali Jets



## Introduction :

A brief about the Jet streams needs to be mentioned.



## Body :

Influences the climate in various parts by being a carrier of pressure systems.

They influence the occurrence of events such as heat waves and polar vortices across areas.

They play a substantial role in onset of monsoons and the strength of monsoonal winds.

Temporary jets → Subtropical Jet

## Conclusion :

The influence of temporary and permanent jets needs to be understood further as they interact with the local systems to produce variations which influence factors such as amount of rainfall and the limit of the dry season.



Q. Discuss the factors which impact the formation of Ocean Currents with the help of Ocean currents prevalent in the Northern Atlantic.

Introduction

Body

- ↳ Solar Insolation
- ↳ Prevailing winds
- ↳ Coriolis force
- ↳ Shape of Coastline
  - ↳ Antilles C.
  - ↳ Florida C.
- ↳ Bottom Relief
  - ↳ mid-oceanic ridges

Thermal expansion





## Introduction :

Brief definition of the ocean currents with certain names as examples.

## Body :

Discuss the primary and the secondary factors for these ocean currents while simultaneously choosing examples from the northern Atlantic Ocean for each of the factors.

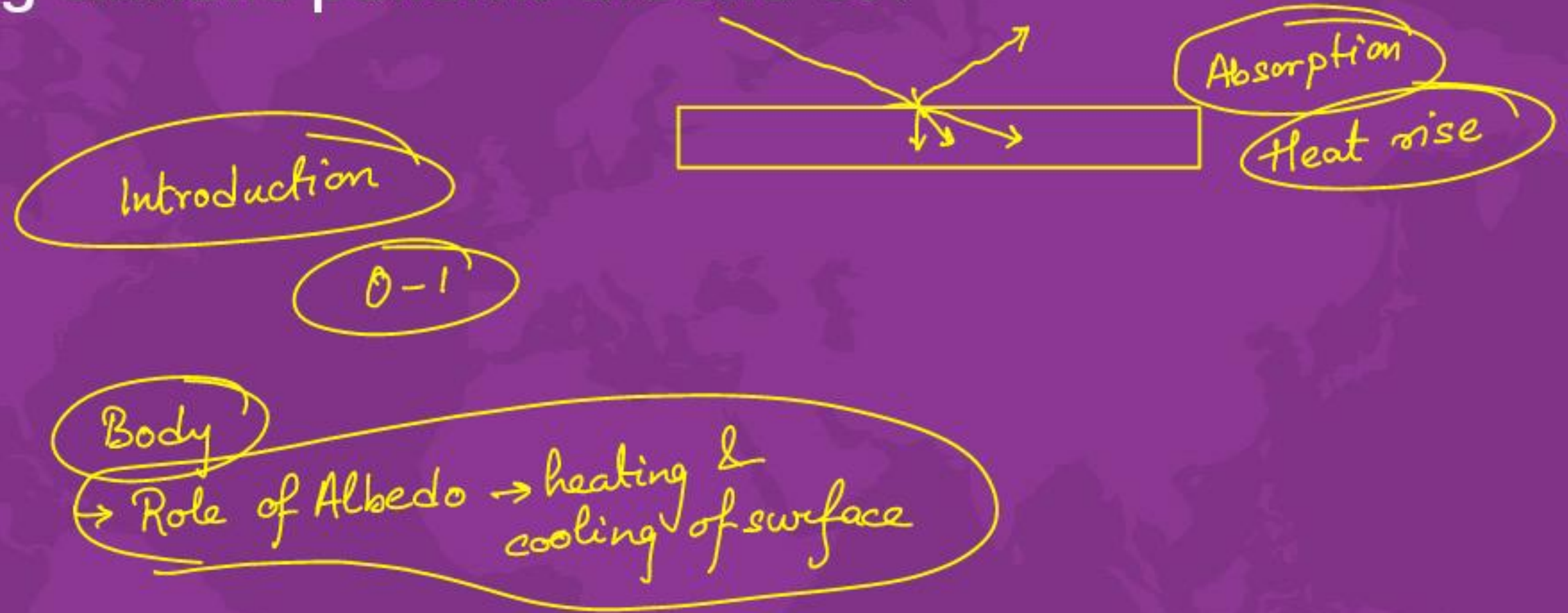
Or

First a discussion of the factors can be done very briefly and then the currents of the northern Atlantic can be mentioned with variances being highlighted.

## Conclusion :

These ocean currents are very vital not only as an influence on the marine ecosystems but also on the climate across the globe. The assimilation of multiple factors make these currents a reality.

Q. What is the concept of Albedo? How does it help us understand the fast changing climatic patterns around us?





## Climatic impacts

→ Formation of Urban Heat Islands

→ Clouds → low level clouds

→ Aerosols →  $\text{SO}_2$  aerosol → cooling

→ Black Carbon

→ Increases the amount of insolation absorbed

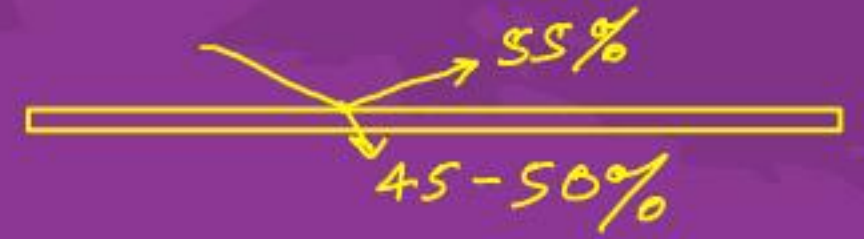
→ Rise in temp.

→ Increased melting

→ Polar areas → Increased rate of melting

→ Thinning of Ice

→ Greater absorption





## Introduction :

A brief definition of albedo and the property to reflect.

## Body :

A description about the relationship between the amount of heat reflected and the temperature observed in an area.

- ↳ Leads to a self sustaining feedback cycle of polar melting, more particularly in the region of the arctic.
- ↳ Role of aerosols which leads to melting of glaciers in the Himalayan alpine belt leading to climatic changes.
- ↳ Albedo from the clouds can bring about a cooling effect on the ground surface.
- ↳ Can lead to Urban Heat Islands being created.

## Conclusion :

With increasing pollution and deposition of carbon, the issue gets exaggerated.

