

Class- B.A. Part- II  
Paper – III (Hons.)

Date:- 20/04/2020 – 22/04/2020  
Monday to Wednesday

## Topic- Climatic Regions of India (Unit-Ist)

### Climatic Regions of India

- India has tropical monsoon climate with large regional variations in terms of rainfall and temperature.
- While classifying Indian climatic regions, most geographers have given more importance to **rainfall** than to temperature as variations in rainfall are much more marked than those of temperature.

Here we will see two classifications – Stamp's and Koeppen's.

### Stamp's Classification of Climatic Regions of India

- Stamp used **18°C isotherm** of mean monthly temperature for January to divide the country into two broad climatic regions, viz., **temperate or continental zone** in the north and **tropical zone** in the south.
- This line runs roughly across the root of the peninsula, more or less along or parallel to the Tropic of Cancer.
- The two major climatic regions are further divided into eleven regions depending upon the amount of rainfall and temperature.

### Temperate or Continental India

- The Himalayan region (heavy rainfall)
- The north-western region (moderate rainfall)
- The arid low land
- The region of moderate rainfall
- The transitional zone

### Tropical India

- Region of very heavy rainfall
- Region of heavy rainfall

- Region of moderate rainfall
- The Konkan Coast
- The Malabar Coast
- Tamil Nadu



MAP SHOWING STAMP'S CLASSIFICATION OF CLIMATIC REGIONS OF INDIA

### Temperate or Continental India

Region	Avg Temperature	Annual Rainfall
<b>Himalayan Region</b>	Summer = 4°-7°C Winter = 13°-18°C	East = Over 200 cm West = much less
<b>North-western Region</b> Northern parts of Punjab and southern parts of Jammu and Kashmir	Summer = 16°C Winter = 24°C	Below 200 cm
<b>Arid Lowland</b> Thar desert of Rajasthan, south western part of Haryana and Kachchh of Gujarat	Winter = 16° to 24°C Summer = 48°C	Below 40 cm
<b>Region of moderate rainfall</b> Punjab, Haryana, western Uttar Pradesh, Union Territory of Delhi, north-west Plateau area of Madhya Pradesh and eastern Rajasthan	Winter = 15°-18°C Summer = 33°-35°C	40 – 80 cm
<b>Transitional Zone</b> Eastern Uttar Pradesh and Bihar	Winter = 15°-19°C Summer = 30° – 35°C	100 -150 cm
<b>Tropical India</b>		
<b>Region of very heavy rainfall</b> Meghalaya, Assam, Tripura, Mizoram and Nagaland	Winter = 18°C in Summer = 32°-35°C	Over 200
<b>Region of heavy rainfall</b> Chhattisgarh, Jharkhand, Gangetic West Bengal, Odisha and coastal Andhra Pradesh	Winter = 18°-24°C Summer = 29°-35°C	100 – 200 cm
<b>Region of moderate rainfall</b> between Western and Eastern Ghats	Winter = 18°-24°C Summer = 32°C in	50 -100 cm
<b>Konkan Coast</b> Mumbai in the north to Goa in the south	Annual = 24°-27°C.	Over 200 cm
<b>Malabar Coast</b> Goa to Kanniyakumari	Annual = 27°C	Over 250 cm

<b>Tamil Nadu</b> <b>Tamil Nadu and adjoining areas</b> <b>of Andhra Pradesh</b>	Annual = 24°C	100 to 150 cm (Retreating monsoon)
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## Koeppen's Classification of Climatic Regions of India

- Koeppen's Classification of Climatic Regions of India is an empirical classification based on mean annual and mean monthly temperature and precipitation data.
- Koeppen identified a close relationship between the distribution of vegetation and climate.
- He selected certain values of temperature and precipitation and related them to the distribution of vegetation and used these values for classifying the climates.
- Koeppen recognized five major climatic groups, four of them are based on temperature and one on precipitation.

➤ The capital letters:

1. **A, C, D and E delineate humid climates and**
2. **B dry climates.**

➤ The climatic groups are subdivided into types, designated by small letters, based on seasonality of precipitation and temperature characteristics.

➤ The seasons of dryness are indicated by the small letters : f, m, w and s, where

1. **f – no dry season,**
2. **m – monsoon climate,**
3. **w – winter dry season and**
4. **s – summer dry season.**

- The above mentioned major climatic types are further subdivided depending upon the seasonal distribution of rainfall or degree of dryness or cold.

**a: hot summer, average temperature of the warmest month over 22°C**

**c: cool summer, average temperature of the warmest month under 22°C**

**f: no dry season**

**w: dry season in winter**

**s: dry season in summer**

**g: Ganges type of annual march of temperature; hottest month comes before the solstice and the summer rainy season.**

**h: average annual temperature under 18°C**

**m (monsoon): short dry season.**

- The capital letters S and W are employed to designate the two subdivisions of dry climate:

1. **semi-arid or Steppe (S) and**
2. **arid or desert (W).**

- Capital letters T and F are similarly used to designate the two subdivisions of polar climate

1. **tundra (T) and**
2. **icecap (F).**

**Table 12.1 : Climatic Groups According to Koeppen**

<i>Group</i>	<i>Characteristics</i>
A - Tropical	Average temperature of the coldest month is 18° C or higher
B - Dry Climates	Potential evaporation exceeds precipitation
C - Warm Temperate	The average temperature of the coldest month of the (Mid-latitude) climates years is higher than minus 3°C but below 18°C
D - Cold Snow Forest Climates	The average temperature of the coldest month is minus 3° C or below
E - Cold Climates	Average temperature for all months is below 10° C
H - High Land	Cold due to elevation

**Table 12.2 : Climatic Types According to Koeppen**

<i>Group</i>	<i>Type</i>	<i>Letter Code</i>	<i>Characteristics</i>
A-Tropical Humid Climate	Tropical wet	Af	No dry season
	Tropical monsoon	Am	Monsoonal, short dry season
	Tropical wet and dry	Aw	Winter dry season
B-Dry Climate	Subtropical steppe	BSh	Low-latitude semi arid or dry
	Subtropical desert	BWh	Low-latitude arid or dry
	Mid-latitude steppe	BSk	Mid-latitude semi arid or dry
	Mid-latitude desert	BWk	Mid-latitude arid or dry
C-Warm temperate (Mid-latitude) Climates	Humid subtropical	Cfa	No dry season, warm summer
	Mediterranean	Cs	Dry hot summer
	Marine west coast	Cfb	No dry season, warm and cool summer
D-Cold Snow-forest Climates	Humid continental	Df	No dry season, severe winter
	Subarctic	Dw	Winter dry and very severe
E-Cold Climates	Tundra	ET	No true summer
	Polar ice cap	EF	Perennial ice
H-Highland	Highland	H	Highland with snow cover

**Source:- table -12.1 & 12.2 NCERT Class –XI &XII**



**MAP SHOWING KOEPPEN'S CLASSIFICATION OF CLIMATIC REGIONS  
OF INDIA**

- Koeppen divided India into nine climatic regions making use of the above scheme.

<b>Koeppen's Scheme – Climatic Regions of India</b>		
<b>Climate type</b>	<b>Region</b>	<b>Annual rainfall</b>
<b>Amw</b> (Monsoon type with short dry winter season)	Western coastal region, south of Mumbai	over 300 cm
<b>As</b>	Coromandel coast = Coastal Tamil Nadu	75 – 100 cm

<b>(Monsoon type with dry season in high sun period)</b>	and adjoining areas of Andhra Pradesh	[wet winters, dry summers]
<b>Aw (Tropical Savannah type)</b>	Most parts of the peninsular plateau barring Coromandel and Malabar coastal strips	75 cm
<b>BShw (Semi-arid Steppe type)</b>	Some rain shadow areas of Western Ghats, large part of Rajasthan and contiguous areas of Haryana and Gujarat	12 to 25 cm
<b>BWhw (Hot desert type)</b>	Most of western Rajasthan	less than 12 cm
<b>Cwg (Monsoon type with dry winters)</b>	Most parts of the Ganga Plain, eastern Rajasthan, Assam and in Malwa Plateau	100 – 200 cm
<b>Dfc (Cold, Humid winters type with shorter summer)</b>	Sikkim, Arunachal Pradesh and parts of Assam	~200 cm
<b>Et (Tundra Type)</b>	Mountain areas of Uttarakhand The average temperature varies from 0 to 10°C	Rainfall varies from year to year.
<b>E (Polar Type)</b>	Higher areas of Jammu & Kashmir and Himachal Pradesh in which the temperature of the warmest month varies from 0° to 10°C	Precipitation occurs in the form of snow



**Types of questions may be asked in your exams**

1. **Divide India into different climatic regions?**
2. **Give a broad classification of climatic regions found in India?**
3. **What are the climatic types found in India? Illustrate with their characteristics.**
4. **Divide India as per L.D.Stamp's or Koeppen's classification of climatic regions.**

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