

## GEOGRAPHY OF JAMMU & KASHMIR AND LADAKH

The Union Territories of Jammu & Kashmir and Ladakh cover the Northern part of India. These two Union Territories are surrounded by the neighbouring countries of China (Tibet) in East, Afghanistan in North and Pakistan in West. The states of Punjab and Himachal Pradesh form the southern border of the Union Territories.

### (A) PHYSIOGRAPHY

Morphologically, there are three distinct regions i.e. Jammu, Kashmir & Ladakh. Each of these regions has varied physical features of its own. On the basis of physical setting the Union Territory of Jammu & Kashmir and The Union Territory of Ladakh are divided into the following physiographic regions:

- I. The Outer Plains
- II. The Shiwaliks
- III. The Middle Himalayas
- IV. The Valley of Kashmir
- V. The Ladakh Region

#### I. The Outer Plains:

The Southern side of the Union Territory is covered by the alluvial plains of the Chenab, Tawi and Ravi Rivers and their tributaries. The outer plain is an extension of Great Indian Plains which is alluvial in nature. It stretches from River Ravi to River Chenab for a distance of 110 Km. The plains are locally called as *Anderwah* and *Bajwat*. The plain is drained by other streams and tributaries like Basantar, Ujh, Tawi & Manawar Tawi. The plain is dissected by series of deep and shallow *ravines* cut by these streams and rivers. The ravines are locally called as *Khads*. They are usually filled with sand, gravels, boulders and wild growing tall grass (*Khar*). During rainy season these Khads transform into flooded *nallahs*. The productive crop lands of this region are in Kathua, Akhnoor, Hiranagar, Bishnah, R.S Pura and Domana. Parts of Jammu City like Talab Tillo, Gandhi

### Do You Know?

The Union Territory of Jammu & Kashmir and the Union Territory of Ladakh were created on 9<sup>th</sup> August 2019.

Nagar and Satwari belong to the outer plains. The elevation of these fertile plains varies from 330 to 360 meters above mean sea level.

**II. The Shiwaliks:** Towards North of the Outer Plains lie the youngest mountains of the sub-continent called Shiwalik Hills. These mountains are 20-50 Kms wide and 600-1220 meters above the mean sea level. To the north of Siwalik hills lies series of longitudinal valleys called *duns*. The important ones are Basohli, Ramkote, Dansal, Udhampur and Sunderbani.



*Trikuta Hills*

**III. The Middle Himalayas:** (Pir Panjal): The Pir Panjal representing the middle Himalayas varies in elevation from 1800 to 3600 metres. It is characterized by deep cut valleys and gorges. The Middle Himalayas locally known as “**Pahar**” (mountain) in Jammu Division sprawls between the Ravi in the east and the Poonch in the west. The Middle Himalayas have width of about 10-60 kms with an east west orientation. The sacred cave of Shri Mata *Vaishno Devi* is situated on the slope of “*Trikuta Mountain*” in the middle Himalayas. The Jammu Srinagar national highway has been carved out through middle Himalayas

which crosses this route system at Patnitop at an altitude of about 1950 metres.

**IV. The valley of Kashmir:** The beautiful valley of Kashmir nestled in the north western folds of Himalayas is encompassed by Greater Himalayas in the north and middle Himalayas in South. The width of valley varies between to 40-60 kms and its length is approximately between 130-140 km with a varying elevation of 1500-1800m above mean sea level. The valley of Kashmir has been divided into distinct physiographic divisions.

- i. Valley Floor
- ii. The Karewas
- iii. The Side Valleys



**i) The Valley Floor:** The flood plain of Jhelum sprawls from Khanabal in the South-East up to the District Baramulla in North-West. It is fertile



agricultural tract of immense importance and is considered as the 'food bowl' of the valley.

**ii) The Karewas:** The zone of uplands is the peculiar physiographic feature of the valley. *Karewas* are flat topped terrace like features on the both sides of Jhelum flood plain and better developed in the southern section of the valley.

**iii) The Side Valleys:** Side valleys like Sindh, Naranag, Lidder, and Daksum are important centres of tourist attraction and live stock rearing. The Kishenganga Valley in Gurez is one of the famous side valleys of the region.

#### **Do you Know**

The outer plains are highly fertile and cultivation of crops is practiced throughout the year due to the favorable climate.

**V). The Ladakh Region:-** The Ladakh region (Plateau of Ladakh) constitutes the Northern most region of India. It is a vast arid table land located at a height of 5000 meters. It is cold desert mostly covered with mechanically weathered rock material and granite dust. The area is deprived of vegetation. The mighty Indus River flows through Ladakh. The scanty rains and arid conditions do not favour agricultural activities in Ladakh. It is restricted to the irrigated tracks around Indus River which favours the growth of grim, barley,

some vegetables and fruits like apricots. The Glacier of Siachen, about 72 Km in length on Karakoram range of Himalayas is situated in this region.

The Plateau of Ladakh is comprised of the following ranges

- i. Zaskar Range
- ii. The Ladakh Range
- iii. The Karakoram Range
- iv. The Aksai Chin Region
- v. Gilgit and Baltistan

**i) Zaskar Range:** This range forms the southern flanks of Sindh valley and is drained by Zaskar river. Drass, the world's second most coldest place is also found in this region.

**ii) The Ladakh Range:** This range is situated between the Indus and the Shyok rivers. It forms a prominent range in the Trans Himalayan region. It stretches from the Indus bend sharply and cuts through it separating it from Zaskar range in Rushpu.

**iii) The Karakoram Range:** It extends from the river Hunza in the northwest to the River Shyok in the east. It may aptly be called as the shining crest of the earth. Almost the entire crest line is covered with perpetual snow with number of giant glaciers crawling slowly down the slope.

**iv) The Aksai Chin Region:** The Aksai Chin region situated in the north eastern portion of Ladakh, east of river Shyok is also known as Lingtze Tang Plain.

**v) Gilgit and Baltistan:** - Geographically, Gilgit and Baltistan are situated in the Trans Himalayan region on the north western corridor of Kashmir valley. It is highly mountainous region. The region is home to some

### ***Do You Know***

*Karewas are locally known as Wuddar in Kashmir*

of the world's highest mountainous ranges like Karakoram, Western Himalayas, Pamir Mountains & Hindukush. It has some of the world's highest mountain peaks like the second highest mountain peak of the world K2 or Mt. Godwin Austin (8610 mts above mean sea level). It is the world's most feared mountain peak. Some of the world's important glaciers like Biapo, the Baltora and Batura lie here. This region is drained by river Indus, Gilgit, Hunja, Shyok and other tributaries.

## **B. CLIMATE**

The climate of the Union Territory of Jammu & Kashmir and the Union Territory of Ladakh is controlled by factors like altitude, latitude, distance from the sea, influence of prevailing winds and physiographic conditions. Though the Union Territories of Jammu & Kashmir and Ladakh lie in the Sub tropical belt but owing to varied topographic features, snow clad mountains and on the basis of above mentioned factors they are divided into the following climatic zones:-

- (i) Sub Tropical Jammu**
- (ii) Temperate Kashmir**
- (iii) Arctic Ladakh, Gilgit and Baltistan**

**Jammu Division:** The highland areas experience temperate climate due to high altitude in the area of Baderwah, Kishtwar, Bani, Basohli, Gool, Gulabgarh, Poonch, parts of Rajouri and Banihal; whereas the rest of Jammu Division experiences a sub-tropical type of climate as being close to the plains of Punjab. Jammu has tropical heat characterized with monsoon rains and cool winters.

**Temperate Kashmir:-** The valley of Kashmir along with some hilly areas of Jammu experience temperate climate. The distinctive features of climate of Kashmir are mild summers, vigorous and severe winters with snow and

### ***Do You Know***

*Karakoram Range is called the shining crest of the earth because almost the entire crest line is covered with perpetual snow*

rain, a muggy and oppressive weather in July & August, with pleasant spring. July and August are the hottest months. Kashmir receives moderate rainfall which mostly occurs during winter months and summer usually remains dry due to absence of monsoon.

**Arctic Ladakh:-** Ladakh experiences a very cold and very dry climate. A cold desert condition prevails in this region. The climate is often characterized by great extremes of heat and cold, with excessive dryness. Ladakh receives a little amount of precipitation throughout the year. Precipitation is mainly in the form of snow. There prevails a great difference in sun and shade temperature in Ladakh region. Summers are short and oppressive and winters are long and extremely cold.

### **C. DRAINAGE SYSTEM OF JAMMU KASHMIR AND LADAKH.**

The Union Territories of Jammu & Kashmir and Ladakh are drained by the mighty Indus river system and its tributaries. The valley of Kashmir is drained by Jhelum, Kishenganga rivers and their tributaries. Romushi, Doodh Ganga, Sukhnag, Lidder, Sindh Nallah, Madhumati and Phuru are important tributaries of Jhelum. The Jammu region is mostly drained by river Chenab, Ravi, Tawi and their tributaries. The river Chenab is formed of two main streams-The Chandra and The Bhaga which arises in Lahul-Spiti in Himachal Pradesh and enters Jammu and Kashmir in Padder area of Kishtwar. The Union Territory of Ladakh is mainly drained by Indus River and its tributaries. Zaskar, Suru and Shyok are important tributaries in eastern Ladakh where as Gilgit, Hunza, Gomol are important tributaries of this river in Gilgit Baltistan area.

#### **Do you know?**

Lake is a natural depression filled with water and surrounded on all sides by land.

#### **Let's Do**

Find out the important hydroelectricity power project on river Chenab.



## D. SOILS

The top most layer of the earth's crust composed of weathered rock material and organic content which supports the plant life is termed as soil. Owing to the varied geo environmental and climatic conditions the Union Territories of Jammu & Kashmir and Ladakh are blessed with varied soil groups. River valleys are dominant with alluvial soils, brown forest soil and mountainous soil are also found in different regions. Major soil groups are discussed below.

**1. Alluvial Soil:** The Jammu plains are predominantly covered with alluvial soil. In Jammu region the alluvial soils have two variants

- i) Old alluvium (Bhangar): lie above the banks of the river and are generally free from floods
- ii) New alluvium (Khaddar): are frequently inundated as they lie in the flood plains of rivers

**2. Karewas Soil:** Karewas are lacustrine deposits found as low flat mounds or elevated plateaus in the valley of Kashmir and Kishtwar and Bhaderwah tracts of Jammu Division. Karewas soils are coarse in the flanks of Jhelum and finer towards the central part. Due to the presence of proper irrigation facilities, this soil is highly productive for horticulture crops especially apple almond and saffron.

Ladakh region being a cold desert, lacks well developed soil profile. However, some alluvial tracks are found on the banks of Sindh river and its tributaries. Mountainous soil are predominantly seen in various areas of Ladakh region.



## EXERCISE

### 1. Answer the following questions :-

- i. Explain the major physical divisions of Jammu, Kashmir and Ladakh?
- ii. Name the areas of Jammu Division which are covered by the alluvial plains?
- iii. Discuss the main features of climate of Ladakh.
- iv. Name the main tributaries of River Jhelum?
- v. Which mountain ranges of Himalayas surround the valley of Kashmir?
- vi. Name the main rivers and tributaries which flow through the outer plains of Jammu?
- vii. Give a brief account of the soils found in Jammu, Kashmir and Ladakh.

### 1. Write short notes on

- a. Alluvial soil
- b. Side Valleys
- c. Plateau of Ladakh

### 2. Choose the right answer from the four alternatives given below:-

- (i) The outer plains of the Union Territory of Jammu & Kashmir are locally called as
  - a. Wuddars
  - b. Pahars
  - c. Khads
  - d. Andarwah and Bajwat
- (ii) Saffron is cultivated in the
  - a. Middle Mountains
  - b. Karewas of Kashmir
  - c. Outer Plains
  - d. Plateau of Ladakh
- (iii) Karewas is formed of which kind of deposits
  - a. Lacustrine
  - b. Calcareous
  - c. Argillaceous
  - d. Fluvial

### 3. Activity

Collect different types of soil found in your region and identify them.

## GLOSSARY

<b>Adolescence</b>	: Adolescence is a period in which a person is no longer a child and not yet an adult. Such persons are grouped in the age group of 10 to 19 years.
<b>Alluvial plain</b>	: A level tract of land made up of alluvium or fine rock material brought down by a river.
<b>Base population</b>	: The total population of an area at the beginning of a given time period.
<b>Biome</b>	: Plant communities occurring in distinct groups in areas having similar climatic conditions.
<b>Birth rate</b>	: The number of live births for every 1000 persons in a year.
<b>Depression</b>	: In meteorology; it denotes an area of relatively low atmospheric pressure, which is found mainly in temperate regions. In geology, it refers to a hollow sunken area of the earth's surface.
<b>Death rate</b>	: The number of deaths per 1000 persons in year.
<b>Density of population</b>	: The average number of persons per unit area, such as a square kilometre.
<b>Dependency ratio</b>	: The ratio of people of dependent age (below 15 and above 60 years) to people of economically active ages (15-59 years).
<b>Ecosystem</b>	: A system which comprises the physical environment and the organisms living therein.
<b>Environment</b>	: Surroundings or the conditions under which a person or thing exists and develops his or its character. It covers both physical and cultural elements.
<b>Fault</b>	: A linear break in rocks of the earth's crust along which there has been displacement in a horizontal, vertical or oblique direction.
<b>Fauna</b>	: The animal life of a given area.
<b>Flora</b>	: The total vegetation or plant cover of a region.
<b>Fold</b>	: A bend in the rock strata resulting from compression of an area of the earth's crust.
<b>Geosyncline</b>	: A narrow, shallow, elongated basin with a sinking bottom in which a considerable thickness of sediments was deposited by the rivers coming from Angara and Gondwanaland.
<b>Glacier</b>	: A mass of snow and ice that moves slowly under the influence of gravity along a confined course away from its place of accumulation.
<b>Growth rate of population</b>	: The growth rate of population indicates the rate at which the population is growing. In estimating the growth rate the increase in population is compared with the base population. It can be measured annually or over a decade.
<b>Indian mainland</b>	: It refers to the contiguous stretch of landmass from Jammu and Kashmir to Kanniyakumari and from Gujarat to Arunachal Pradesh.
<b>Indian Standard Time</b>	: The local time along the Standard Meridian of India (82°30'E).
<b>Inland drainage</b>	: A drainage system in which the waters of the rivers do not reach the oceans but fall into an inland sea or lake.

<b>Igneous rocks</b>	: Rocks formed as a result of solidification of magma either below the earth's surface or above it.
<b>Lagoon</b>	: A salt-water lake separated from the sea by the sandbars and spits.
<b>Lake</b>	: A body of water that lies in a hollow in the earth's surface and is entirely surrounded by land.
<b>Lithospheric plates</b>	: Large segments of the earth's crust composed of continental and oceanic lithospheric parts, floating above the asthenosphere.
<b>Life expectancy</b>	: The average number of years one is expected to live.
<b>Local time</b>	: The time of a place determined by the midday sun is called the local time.
<b>Metamorphic rocks</b>	: Deformation and alteration of pre-existing igneous and sedimentary rocks as a result of changes in physical and chemical conditions due to intense heat or pressure.
<b>Migration</b>	: Movement of people from one place to another. Internal migration means movement of people within a country and external migration means movement of people between countries. When people come to a country from another country, it is called immigration and when they leave that country, it is called emigration.
<b>Million plus cities</b>	: Cities with a population of more than one million or 10 lakh.
<b>Monsoon</b>	: A complete reversal of winds over a large area leading to a change of seasons.
<b>Mountain</b>	: An upward projected features of the earth's surface that rises to high altitude and usually possesses steep slopes.
<b>National park</b>	: A reserved area for preserving its natural vegetation, wildlife and the natural environment.
<b>Plain</b>	: An extensive area of flat or gently undulating land.
<b>Plateau</b>	: An extensive elevated area of relatively flat land.
<b>Plate tectonics</b>	: The scientific concept that explains the movements of the crustal plates.
<b>Relief</b>	: The differences in elevation or the physical outline of the land surface or ocean floor.
<b>Subsidence</b>	: In meteorology, it is the downward movement of the air. In geology, it refers to the sinking of a portion of the earth's surface.
<b>Sedimentary rocks</b>	: Rocks composed of sediments and generally having a layered structure.
<b>Sex-ratio</b>	: Sex-ratio is defined as the number of females per thousand males.
<b>Subcontinent</b>	: A big landmass, which stands out as a distinct geographical unit from the rest of the continent.
<b>Tectonic</b>	: Forces originating within the earth and responsible for bringing widespread changes in the landform features.
<b>Young mountains</b>	: The fold mountains formed during the most recent major phase of folding in the earth's crust.