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GEOGRAPHY

SOLAR SYSTEM

- Our galaxy is milky way Galaxy (or the *Akash Ganga*). It is spiral in shape.
- The Sun is at the **centre** of the solar system and one of the stars in the milky way galaxy.
- Hydrogen and helium are the main gases present in the Sun and Weighs 2×10^{27} tons.
- It has a surface temperature of about 6000°C .
- Light (at the speed of 300,000 km per second) takes about 8.5 minutes to reach the Earth from the Sun.
- There are eight planets in the Solar system.
- The sequence of planets according to their distance from the Sun is Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune. The sequence of planets according to their size (in descending order i.e., from big to small) is Jupiter, Saturn, Uranus, Neptune, Earth, Venus, Mars, Mercury.

EARTH

Earth is the third planet from the Sun and is the largest of the terrestrial planets. The Earth is the only planet in our solar system not to be named after a Greek or Roman deity. The Earth was formed approximately 4.54 billion years ago and is the only known planet to support life.

Facts about the Earth

Mass: 5,972,190,000,000 billion kg

Equatorial Diameter: 12,756 km

Polar Diameter: 12,714 km

Equatorial Circumference: 40,030 km

Known Moons: 1

Notable Moons: The Moon

Orbit Distance: 149,598,262 km (1 AU)

Orbit Period: 365.26 Earth days

Surface Temperature: -88 to 58°C

Composition and Structure of the Earth

The Earth consists of four concentric layers: inner core, outer core, mantle and crust. The crust is made up of tectonic plates, which are in constant motion. Earthquakes and volcanoes are most likely to occur at plate boundaries.

The Earth is made up of four distinct layers:

1. **The inner core** is in the centre and is the hottest part of the Earth. It is solid and made up of iron and nickel with temperatures of up to $5,500^\circ\text{C}$. With its immense heat energy, the inner core is like the engine room of the Earth.

2. **The outer core** is the layer surrounding the inner core. It is a liquid layer, also made up of iron and nickel. It is still extremely hot, with temperatures similar to the inner core.
3. **The mantle** is the widest section of the Earth. It has a thickness of approximately 2,900 km. The mantle is made up of semi-molten rock called magma. In the upper parts of the mantle the rock is hard, but lower down the rock is soft and beginning to melt.
4. **The crust** is the outer layer of the earth. It is a thin layer between 0-60 km thick. The crust is the solid rock layer upon which we live. There are two different types of crust: continental crust, which carries land, and oceanic crust, which carries water.

Shape: The shape of Earth approximates an oblate spheroid, a sphere flattened along the axis from pole to pole such that there is a bulge around the equator.

Chemical composition: Earth's mass is approximately 5.97×10^{24} kg. It is composed mostly of iron (32.1%), oxygen (30.1%), silicon (15.1%), magnesium (13.9%), sulfur (2.9%), nickel (1.8%), calcium (1.5%), and aluminium (1.4%), with the remaining 1.2% consisting of trace amounts of other elements. Due to mass segregation, the core region is believed to be primarily composed of iron (88.8%), with smaller amounts of nickel (5.8%), sulfur (4.5%), and less than 1% trace elements.

Tectonic plates: The mechanically rigid outer layer of Earth, the lithosphere, is broken into pieces called tectonic plates. These plates are rigid segments that move in relation to one another at one of three types of plate boundaries: convergent boundaries, at which two plates come together, divergent boundaries, at which two plates are pulled apart, and transform boundaries, in which two plates slide past one another laterally. Earthquakes, volcanic activity, mountain-building, and oceanic trench formation can occur along these plate boundaries.

Surface: Earth's terrain varies greatly from place to place. About 70.8% of the surface is covered by water, with much of the continental shelf below sea level. This equates to 361.132 million km^2 (139.43 million sq mi). The submerged surface has mountainous features, including a globe-spanning mid-ocean ridge system, as well as undersea volcanoes, oceanic trenches, submarine canyons, oceanic plateaus and abyssal plains. The remaining 29.2% (148.94 million km^2 , or 57.51 million sq mi) not covered by water consists of mountains, deserts, plains, plateaus, and other landforms.

Magnetic field: The main part of the Earth's magnetic field is generated in the core, the site of a dynamo process that converts kinetic energy of fluid convective motion into electrical and magnetic field energy. The field extends outwards from the core, through the mantle, and up to Earth's surface, where it is, to rough approximation, a dipole.

Magnetosphere: The extent of Earth's magnetic field in space defines the magnetosphere. Ions and electrons of the solar wind are deflected by the magnetosphere; solar wind pressure compresses the dayside of the magnetosphere, to about 10 Earth radii, and extends the night side magnetosphere into a long tail. Since the velocity of the solar wind is greater than the speed at which wave propagate through the solar wind, a supersonic bow shock precedes the dayside magnetosphere within the solar wind

THE CONTINENTS

Continents make up the largest landmasses on the planet earth. A continent is larger than an island and is usually made up of multiple countries. There are seven continents in the world although some people do combine Europe and Asia into the single continent Eurasia and others combine North and South America into the American continent.

Africa : It is second as far as population and size among the Earth's continents. About 1 billion people live in the 54 countries in Africa. This is about 15 percent of the world's population living on 20 percent of the total land area. The equator passes through the center of the continent with largely tropical climates. The northern and southern portion of Africa has more temperate conditions. Africa is also noted as the birthplace of mankind. The oldest fossil evidence of Homo sapiens was found in the eastern part of the continent.

Antarctica : Antarctica holds a number of firsts among the continents of Earth. The continent is the most southern of the seven continents and includes the South Pole. It is also the least populated with less than 5,000 residents. Antarctica is known as the coldest landmass and has few native plants or animals. Much of the landmass is covered with permanent glaciers.

Asia : Asia covers nearly 9 percent of the earth's surface making it the largest of the continents. It is also the home to the most people with an estimated population of 4.3 billion. Asia is defined as the eastern portion of the Eurasia continent with the Ural river and mountains serving as the dividing line with Europe. Asia contains some of the oldest civilizations in the world including the Chinese and Japanese nations. The continent's large population makes it an important part of the world economy. Asia includes the Saudi Arabia peninsula with the oil rich countries including the United Arab Emirates and Kuwait.

Australia : The continent of Australia includes the mainland of the country Australia and the island nations of New Guinea, Tasmania and Seram. During ice ages, when much of the world's water was frozen in glaciers, the Australian mainland was connected by land bridges to these islands. Australia has a wide variety of animals and plants many of which are unique in the world. The continent first was inhabited by man nearly 45,000 years ago. European inhabitants came onto the Australian landmass in the 1700s. Australia is the most isolated and remote of the continents and has been least influenced by migrations of people, plants and animals.

Europe : The western portion of the Eurasian continent is known as Europe. It is noted as one of the smallest of the continents,

with 7 percent of the world's landmass. However, Europe is home to about 11% of Earth's population, and is the second most densely populated continent, with 134 people per square mile, behind Asia's 203 people per square mile. Europe, by definition, includes the continental mainland ending in the east at the Ural Mountains in Russia. Europe also includes islands such as Iceland and Sicily, and the islands of the British Isles. The British Isles consist of the large island that is home to England, Scotland, and Wales, and is called Great Britain; the British Isles also include the small island that contains Northern Ireland and the Republic of Ireland, and several much smaller surrounding islands

North America : The North American continent includes the Latin American regions that serve as a connection between North and South America. North America makes up about 17 percent of the world's landmass and is home to about 8 percent of the people. This population of about 529 million people live in about 23 independent countries. The earliest human inhabitants in North America were from Asia and crossed into Alaska over the Bering land bridge during an ice age. The arrival of Europeans occurred in the mid 1600s. This population is now dominant in North America.

South America : The South American continent is the southern portion of the larger American continent. The equator passes through the continent yielding a tropical climate to much of the landmass with temperate conditions possible in the south. The indigenous people of South America may have migrated south from North America although the majority of its current 371 million residents are of European descent. The population bases are largely along the Pacific and Atlantic coasts with large portions of the inland regions hosting small and widely spread populations. South America includes the Andes Mountains which comprise the longest range of peaks in the world.

THE OCEANS

There are five oceans which cover the surface of our globe. They cover more than 71% of the Earth's surface.

Pacific Ocean : The largest coral reef in the world is located off the Australian coast and is called the Great Barrier Reef. The ring of fire is also located in the Pacific Ocean.

Atlantic Ocean : The Atlantic is the second biggest ocean in the world and is between the continents of America and Europe and Africa. The Atlantic Ocean is about half the size of the Pacific Ocean and covers roughly 20% of the Earth's surface. However it is growing in size as it is spreading along the Mid-Atlantic Coasts. Sharks, such as this Thresher Shark swimming in the gulf stream, are found in the waters of the Atlantic. The Mid-Atlantic Ridge is the longest mountain range on Earth. It spreads from Iceland to Antarctica beneath the Atlantic.

Indian Ocean : The Indian Ocean is located between Africa and Austral-Asia. The waters of the Indian Ocean provide the largest breeding grounds of the world for humpback whales. Also found in the Indian Ocean, a fish which was thought to be extinct was discovered there: the Coelacanth is found in the warm waters off the Comoro islands between Mozambique and Madagascar. The

Northern Indian Ocean also is the most important transport route for oil as it connects the oil-rich countries of the Middle East with Asia. Every day tankers are carrying a cargo of 17 million barrels of crude oil from the Persian Gulf on its waters.

Arctic Ocean : The Arctic Ocean is located around the North Pole across the Arctic circle. There are many polar bears living on the Arctic ice. A jellyfish with the funny name 'Lion's mane jellyfish' can also be found in the Arctic Ocean's waters. It grows up to 2.4m or 8 feet across and lives on plankton and fishes. The Arctic Ocean's ice covers are shrinking by 8% every ten years. Many Arctic ground features are named after early Arctic explorers, like Nansen Basin or Mendeleev Ridge.

Southern Ocean : The Southern Ocean is located around the South Pole across the Antarctic circle in the Southern Hemisphere off Antarctica. The Southern Ocean is the home of Emperor Penguins and Wandering Albatrosses.

MOUNTAIN

A mountain is a geological landform that rises above the surrounding land. Typically a mountain will rise at least 1,000 feet above sea level. Some mountains exceed 10,000 feet above sea level with the highest mountain in the world, Mount Everest, rising 29,036 feet. Small mountains (below 1,000 feet) are usually called hills. They are most often formed by movement of the tectonic plates in the Earth's crust. Great mountain ranges like the Himalayas often form along the boundaries of these plates. Tectonic plates move very slowly. It can take millions and millions of years for mountains to form.

Types of Mountains

There are three main types of mountains: fold mountains, fault-block mountains, and volcanic mountains. They get their names from how they were formed.

Fold mountains : Fold mountains are formed when two plates run into each other or collide. The force of the two plates running into each other causes the Earth's crust to crumple and fold. Many of the world's great mountain ranges are fold mountains including the Andes, Himalayas, and the Rockies.

Fault-block mountains : Fault-block mountains are formed along faults where some large blocks of rock are forced upwards while others are forced down. The higher area is sometimes called a "horst" and the lower a "graben" (see the picture below). The Sierra Nevada Mountains in the western United States are fault-block mountains.

Volcanic mountains: Mountains that are caused by volcanic activity are called volcanic mountains. There are two main types of volcanic mountains: volcanoes and dome mountains. Volcanoes are formed when magma erupts all the way to the surface of the Earth. The magma will harden on the Earth's surface, forming a mountain. Dome mountains are formed when a large amount of magma builds up below the Earth's surface. This forces the rock above the magma to bulge out, forming a mountain. Examples of volcanic mountains include Mount Fuji in Japan and Mount Mauna Loa in Hawaii.

Mountain Features

Feature	Description
Arete	A narrow ridge formed when two glaciers erode opposite sides of a mountain.
Cirque	A bowl shaped depression formed by the head of a glacier usually at the foot of a mountain.
Crag	A mass of rock that projects outward from a rock face or cliff.
Face	The side of a mountain that is very steep.
Glacier	A mountain glacier is formed by compacted snow into ice.
Leeward side	The leeward side of a mountain is opposite the windward side. It is protected from the wind and rain by the mountain.
Horn	A horn is a sharp peak formed from multiple glaciers.
Moraine	A collection of rocks and dirt left behind by glaciers.
Pass	A valley or path between mountains.
Peak	The highest point of a mountain.
Ridge	A long narrow top of a mountain or series of mountains.
Slope	The side of a mountain

Mountain ranges found in Continents

Continents	Mountain ranges
Antarctica	Antarctic Peninsula, Trans - Antarctic Mountains
Africa	Atlas, Eastern African Highlands, Ethiopian Highlands
Asia	Hindu Kush, Himalayas, Taurus, Elbrus, Japanese Mountains
Australia	MacDonnell Mountains
Europe	Pyrenees, Alps, Carpathians, Apennines, Urals, Balkan
North America	Appalachians, Sierra Nevada, Rockies, Lauren tides
South America	Andes, Brazilian Highlands

MAJOR RIVERS OF THE WORLD

River	Source	Outflow
Nile	Tributaries of Lake Victoria, Africa	Mediterranean Sea
Amazon	Glacier-fed lakes, Peru	Atlantic Ocean
Mississippi-Missouri- Red Rock	Source of Red Rock, Montana	Gulf of Mexico
Chang Jiang (Yangtze)	Tibetan plateau, China	China Sea
Ob	Altai Mts., Russia	Gulf of Ob
Huang He (Yellow)	Eastern part of Kunlan Mts., West China	Gulf of Chihli
Yenisei	Tannu-Ola Mts., western Tuva, Russia	Arctic Ocean
Paraná	Confluence of Paranaíba and Grande rivers	Río de la Plata
Irtish	Altai Mts., Russia	Ob River
Zaire (Congo)	Confluence of Lualaba and Luapula rivers, Congo	Atlantic Ocean
Heilong (Amur)	Confluence of Shilka (Russia) and Argun (Manchuria) rivers	Tatar Strait
Lena	Baikal Mts., Russia	Arctic Ocean
Mackenzie	Head of Finlay River, British Columbia, Canada	Beaufort Sea (Arctic Ocean)
Niger	Guinea	Gulf of Guinea
Mekong	Tibetan highlands	South China Sea
Mississippi	Lake Itasca, Minnesota	Gulf of Mexico
Missouri	Confluence of Jefferson, Gallatin, and Madison rivers, Montana	Mississippi River
Volga	Valdai plateau, Russia	Caspian Sea
Madeira	Confluence of Beni and Maumore rivers, Bolivia–Brazil	Amazon River
Purus	Peruvian Andes	Amazon River
São Francisco	Southwest Minas Gerais, Brazil	Atlantic Ocean
Yukon	Junction of Lewes and Pelly rivers, Yukon Territory, Canada	Bering Sea
St. Lawrence	Lake Ontario	Gulf of St. Lawrence
Rio Grande	San Juan Mts., Colorado	Gulf of Mexico
Brahmaputra	Himalayas	Ganges River
Indus	Himalayas	Arabian Sea
Danube	Black Forest, Germany	Black Sea
Euphrates	Confluence of Murat Nehri and Kara Su rivers, Turkey	Shatt-al-Arab
Darling	Central part of Eastern Highlands, Australia	Murray River
Zambezi	11°21'S, 24°22'E, Zambia	Mozambique Channel
Tocantins	Goías, Brazil	Pará River
Murray	Australian Alps, New South Wales	Indian Ocean
Nelson	Head of Bow River, western Alberta, Canada	Hudson Bay
Paraguay	Mató Grosso, Brazil	Paraná River
Ural	Southern Ural Mts., Russia	Caspian Sea
Ganges	Himalayas	Bay of Bengal
Amu Darya (Oxus)	Nicholas Range, Pamir Mts., Turkmenistan	Aral Sea
Japurá	Andes, Colombia	Amazon River
Salween	Tibet, south of Kunlun Mts.	Gulf of Martaban
Arkansas	Central Colorado	Mississippi River
Colorado	Grand County, Colorado	Gulf of California
Dnieper	Valdai Hills, Russia	Black Sea
Ohio-Allegheny	Potter County, Pennsylvania	Mississippi River
Irrawaddy	Confluence of Nmai and Mali rivers, northeast Burma	Bay of Bengal
Orange	Lesotho	Atlantic Ocean
Orinoco	Serra Parima Mts., Venezuela	Atlantic Ocean
Pilcomayo	Andes Mts., Bolivia	Paraguay River
Xi Jiang (Si Kiang)	Eastern Yunnan Province, China	China Sea
Columbia	Columbia Lake, British Columbia, Canada	Pacific Ocean
Don	Tula, Russia	Sea of Azov
Sungari	China–North Korea boundary	Amur River
Saskatchewan	Canadian Rocky Mts.	Lake Winnipeg
Peace	Stikine Mts., British Columbia, Canada	Great Slave River
Tigris	Taurus Mts., Turkey	Shatt-al-Arab

DESERTS OF THE WORLD

Desert	Location	Size	Topography
SUBTROPICAL DESERTS			
Sahara	Morocco, Western Sahara, Algeria, Tunisia, Libya, Egypt, Mauritania, Mali, Niger, Chad, Ethiopia, Eritrea, Somalia	3.5 million sq. mi.	70% gravel plains, sand, and dunes. Contrary to popular belief, the desert is only 30% sand. The world's largest nonpolar desert gets its name from
Arabian	Saudi Arabia, Kuwait, Qatar, United Arab Emirates, Oman, Yemen	1 million sq. mi.	Gravel plains, rocky highlands; one-fourth is the Rub al-Khali ("Empty Quarter"), the world's largest expanse of unbroken sand
Kalahari	Botswana, South Africa, Namibia	220,000 sq. mi.	Sand sheets, longitudinal dunes
Gibson	Australia (southern portion of the Western Desert)	120,000 sq. mi.	Sandhills, gravel, grass. These three regions of desert are collectively referred to as the Great Western Desert—otherwise known as "the Outback." Contains Ayers Rock, or Uluru, one of the world's largest monoliths
Great Sandy	Australia (northern portion of the Western Desert)	150,000 sq. mi.	
Great Victoria	Australia (southernmost portion of the Western Desert)	250,000 sq. mi.	
Simpson and sturt stony	Australia (eastern half of the continent)	56,000 sq. mi.	Simpson's straight, parallel sand dunes are the longest in the world—up to 125 mi. Encompasses the Stewart Stony Desert, named for the Australian explorer
Mojave	U.S.: Arizona, Colorado, Nevada, Utah, California	54,000 sq. mi.	Mountain chains, dry alkaline lake beds, calcium carbonate dunes
Sonoran sturt stony	U.S.: Arizona, California; Mexico	120,000 sq. mi.	Basins and plains bordered by mountain ridges; home to the Saguaro cactus
Chihuahuan	Mexico; southwestern U.S.	175,000 sq. mi.	Shrub desert; largest in North America
Thar	India, Pakistan	175,000 sq. mi.	Rocky sand and sand dunes
COOL COASTAL DESERTS			
Namib	Angola, Namibia, South Africa	13,000 sq. mi.	Gravel plains
Atacama	Chile	54,000 sq. mi.	Salt basins, sand, lava; world's driest desert
COLD WINTER DESERTS			
Great Basin	U.S.: Nevada, Oregon, Utah	190,000 sq. mi.	Mountain ridges, valleys, 1% sand dunes
Colorado Plateau	U.S.: Arizona, Colorado, New Mexico, Utah, Wyoming	130,000 sq. mi.	Sedimentary rock, mesas, and plateaus—includes the Grand Canyon and is also called the "Painted Desert" because of the spectacular colors in its
Patagonian	Argentina	260,000 sq. mi.	Gravel plains, plateaus, basalt sheets
Kara-Kum	Uzbekistan, Turkmenistan	135,000 sq. mi.	90% gray layered sand—name means "black sand"
Kyzyl-Kum	Uzbekistan, Turkmenistan, Kazakhstan	115,000 sq. mi.	Sands, rock—name means "red sand"
Iranian	Iran	100,000 sq. mi.	Salt, gravel, rock
Taklamakan	China	105,000 sq. mi.	Sand, dunes, gravel
Gobi	China, Mongolia	500,000 sq. mi.	Stony, sandy soil, steppes (dry grasslands)
POLAR			
Arctic	U.S., Canada, Greenland, Iceland, Norway, Sweden, Finland, Russia	5.4 million sq. mi.	Snow, glaciers, tundra
Antarctic	Antarctica	5.5 million sq. mi.	Ice, snow, bedrock

ATMOSPHERE OF THE EARTH

The atmosphere is a mixture of nitrogen (78%), oxygen (21%), and other gases (1%) that surrounds Earth. High above the planet, the atmosphere becomes thinner until it gradually reaches space. It is divided into five layers.

The Troposphere: It begins at the Earth's surface and extends from 4 to 12 miles (6 to 20 km) high. Its height varies from the equator to the poles. Weather related activities occur in this layer.

The Stratosphere: It extends from 4 to 12 miles (6 to 20 km) to around 31 miles (50 km) above the Earth's surface. This layer holds 19 percent of the atmosphere's gases but very little water vapor. Aircrafts fly in this layer because it is very stable. Also, the ozone layer absorbs harmful rays from the Sun in this layer.

The Mesosphere: This layer extends from around 31 miles (50 km) to 53 miles (85 km) above the Earth's surface. The gases, including the oxygen molecules, continue to become more dense as one descends. Meteors or rock fragments burn up in this layer.

The Thermosphere: This layer lies from 53 miles (85 km) to 375 miles (600 km). High energy ultraviolet and x-ray radiation from the sun begins to be absorbed by the molecules in this layer and causes a large temperature increase.

The Exosphere: This is the outermost layer of the atmosphere. It extends from the top of the thermosphere to 6,200 miles (10,000 km) above the earth. In this layer, atoms and molecules escape into space and satellites orbit the earth. At the bottom of the exosphere is the thermopause located around 375 miles (600 km) above the earth.

VOLCANOES

The word volcano originally comes from the name of the Roman god of fire, Vulcan. A volcano is a mountain that opens downward to a pool of molten rock below the surface of the earth. When pressure builds up, eruptions occur. Hot liquid rock under the Earth's surface is known as magma, it is called lava after it comes out of a volcano. In an eruption, gases and rock shoot up through the opening and spill over or fill the air with lava fragments. Eruptions can cause lava flows, hot ash flows, mudslides, avalanches, falling ash and floods. An erupting volcano can trigger tsunamis, flash floods, earthquakes, mudflows and rockfalls.

More than 80% of the earth's surface is volcanic in origin. The sea floor and some mountains were formed by countless volcanic eruptions. There are more than 500 active volcanoes in the world. More than half of these volcanoes are part of the "Ring of Fire," a region that encircles the Pacific Ocean. Some famous volcanic eruptions of modern times include Mount Krakatoa in 1883, Novarupta in 1912, Mount St Helens in 1980 and Mt Pinatubo in 1991. Many volcanoes have been in continuous eruption for decades. Etna, Stromboli, and Yasur have been erupting for hundreds or thousands of years. The four volcanoes, Kilauea (Hawaii), Mt Etna (Italy), Piton de la Fournaise (Réunion), Nyamuragira, (D.R. Congo), emit the most lava.

World's Most Active Volcanoes

Volcano Name	Location
Etna	Italy
Stromboli	Italy
Yasur	Vanuatu
Ambrym	Vanuatu
Tinakula	Solomon Islands
Erta Ale	Ethiopia
Manam	Papua New Guinea
Langila	Papua New Guinea
Bagana	Papua New Guinea
Semeru	Indonesia
Merapi	Indonesia
Dukono	Indonesia
Sakura-jima	Japan
Suwanose-jima	Japan
Santa Maria	Guatemala
Pacaya	Guatemala
Sangay	Ecuador
Erebus	Antarctica
Piton de la Fournaise	Reunion
Kilauea	Hawaii

OCEAN CURRENTS

An ocean current is a continuous movement of ocean water from one place to another. Ocean currents are created by wind, water temperature, salt content, and the gravity of the moon. The current's direction and speed depend on the shoreline and the ocean floor. They can flow for thousands of miles and are found in all the major oceans of the world.

MAJOR SURFACE OCEAN CURRENTS

Name	Ocean	Type
Agulhas Current	Indian	Warm
Alaska Current	North Pacific	Warm
Benguela Current	South Atlantic	Warm/Cool
Brazil Current	South Atlantic	Warm
California Current	North Pacific	Cool
Canaries Current	North Atlantic	Cool
East Australian Current	South Pacific	Warm
Equatorial Current	Pacific	Warm
Gulf Stream	North Atlantic	Warm
Humboldt (Peru) Current	South Pacific	Cool
Kuroshio (Japan) Current	North Pacific	Warm
Labrador Current	North Atlantic	Cool
North Atlantic Drift	North Atlantic	Warm
North Pacific Drift	North Pacific	Warm
Oyashio (Kamchatka) Current	North Pacific	Cool
West Australian Current	Indian	Cool
West Wind Drift	South Pacific	Cool

GEOGRAPHY OF INDIA

Location

- India lies in the northern and eastern hemispheres of the globe between 8° 4' N and 37° 6' N latitudes and 68° 7' E and 97° 25' E longitudes.
- The southern most point extent upto 6° 45' N latitude to cover the last island of the Nicobar group of islands. The southern extreme is called **Pygmalion Point** or **Indira Point**.
- The **tropic of cancer** passes through the middle part of India and crosses the states of Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura and Mizoram.

Size and Shape

- India commands a total geographical area of **32,87,263 sq. km** which is- roughly 0.57% of the area of the earth and 2.4% of the total area of the land hemisphere.
- The Indian states on international boundaries (other country/ countries within brackets) are: Gujarat (Pakistan), Rajasthan (Pakistan), Punjab (Pakistan), Jammu and Kashmir (China and Pakistan), Himachal Pradesh (China), Bihar (Nepal), Uttarakhand (China and Nepal), Uttar Pradesh (Nepal), West Bengal (Bhutan and Bangladesh), Sikkim (China, Bhutan and Nepal), Arunachal Pradesh (Bhutan, China and Myanmar), Nagaland (Myanmar), Manipur (Myanmar), Mizoram (Bangladesh and Myanmar),

Meghalaya (Bangladesh), Tripura (Bangladesh) and Assam (Bhutan, Bangladesh and Myanmar).

- The states of Haryana, Madhya Pradesh, Chhattishgarh and Jharkhand are the only land-locked states which are neither on the coast or on an international border.

Physical Features

- Out of the total area of the country, about 10.6% is occupied by mountains, 18.5% by hills, 27.7% by plateaus and 43.2% by the plains.
- India may be divided into four major physiographic regions, viz, 1. The Northern Mountains, 2. The Great Plains, 3. The Peninsular Uplands, and 4. The Indian Coasts and Islands.

The Northern Mountains

Himalayas represent the youngest and the highest folded mountains of the earth, rising to over 8000 m above sea level and consisting of three parallel ranges : (a) Himadri (Greater Himalaya), (b) Himachal (Lesser Himalaya), and (c) the Shiwaliks (Outer Himalayas).

Principal Peaks of India		
Peak	Height (Mtrs)	Location
1. Mt. Everest	8848	Nepal-Tibet
2. Mt. K ²	8611	India
3. Kanchenjunga	8597	Nepal-India
4. Dhaulagiri	8172	Nepal
5. Nanga Parbat	8126	India
6. Annapurna	8078	Nepal
7. Gasherbrum	8068	India
8. Nanda Devi	7817	India
9. Mt. Kamet	7756	India
10. Gurla Mandhata	7728	Tibet

Valleys and its locations		
• Araku Valley	:	Andhra Pradesh
• Damodar Valley	:	Jharkhand and West Bengal
• Darma Valley	:	Uttarakhand
• Dzukou Valley	:	North-eastern part
• Johar Valley	:	Uttarakhand
• Markha Valley	:	Ladakh
• Nubra Valley	:	Ladakh
• Sangla Valley	:	Himachal pradesh
• Saur Valley	:	Uttarakhand
• Suru Valley	:	Ladakh
• Tons Valley	:	Uttarakhand
• Yumthang Valley	:	Sikkim

Trans Himalayas

- The Trans-Himalayan Zone with a width of 40 km in its eastern and western ends and a width of 222 km in its central part, it has important ranges such as the Zaskar Range and the Great Karakoram range. The karakoram extends towards the south-east to form the Kailash Range (Tibet). The highest peak in the Karakoram range is K2 (8,611 m). The longest glacier is Siachen in the Nubra Valley which is more than 72 km long.

MAJOR MOUNTAIN RANGES IN INDIA

The Himalayan Range: This is the world's highest mountain range and the tallest peak of the world, Mt. Everest, is also a part of it.

It acts as a barrier against the frigid katabatic winds which flow down from Central Asia and protects India from its effects.

Patkai Range: Patkai or Purvanchal lies on the east of India-Burma border. It comprises three hill ranges- Garo-Khasi-Jaintia in Meghalaya, Lushai hills and Patkai-Bum.

Karakoram Range: It lies in the disputed areas of Jammu and Kashmir and comprises more than 60 peaks. K2, the second highest peak of the world, is also a part of this range. Besides, the Hindu Kush range, Siachen and Biafo Glacier also a part of this range.

Shivalik Hills: The literal meaning of Shivalik is 'tresses of India'. It extends from Arunachal Pradesh to West Bengal and from Uttarakhand to Kashmir and Himachal Pradesh. Jammu, Kangra and Vaishno Devi are a part of this range.

Vindhya Range: This range spreads across central India and extends across 1,050 km. It is believed to be formed from the Aravalli Mountains. Due to its geographical location in central India, it separates Northern and Southern India.

Aravalli Range: This is India's oldest mountain range and spreads across the parts of Rajasthan, Delhi and Haryana. Guru Shikhar in Mount Abu is the highest peak of this range, which rise to 1,722m.

Satpura Range: This range stretches from Gujarat and runs to Maharashtra, Madhya Pradesh and Chhattisgarh.

Western and Eastern Ghats: Western Ghats are also known as Sahyadri Mountains and runs parallel to Indian peninsula's western coast. Eastern Ghats or Purva Ghat is a discontinuous range of mountains which runs along the eastern coast of India.

POLITICAL BOUNDARIES OF INDIA

- India shares its international boundaries with Pakistan in the West, Nepal, China and Bhutan in the North-East. It is surrounded by Burma and Bangladesh to the East. Sri Lanka is located in the South of India and Union territory of Andaman and Nicobar Islands are located close to Thailand and Indonesia.
- Political borders of Pakistan and Bangladesh with India can be traced according to the Radcliffe line.
- The line of control (LoC) defines the borders of India and Pakistan and serves as a boundary between the administered areas of Kashmir in both countries.
- The Macmohan line is the border that separates India and China and runs along the States of Arunachal Pradesh, Himachal Pradesh, Uttarakhand, Jammu and Kashmir and Sikkim.
- India-Bangladesh border is one of the longest borders in the world and concerns of the Indian States like Assam, Meghalaya, Manipur, Tripura and Arunachal Pradesh.

INDO-GANGETIC PLAIN

The Indo-Gangetic plain also known as the Great Plains and is dominated by three major rivers - the Ganges, Indus and Brahmaputra. It covers a large area, about 7,00,000 sq km in Northern and Eastern India. The plain consists of four divisions:

The Bhabar Belt: It is a narrow belt, which is located in the foothills of the Himalayas and consists of pebbles and rocks stones brought by the streams.

The Terai Belt: It is located in the southern part of the Bhabar region and made up of newer alluvium.

The Bangar Belt: It includes older alluvium and has a low hill in the Gangetic plain, which is covered by the laterite deposits.

The Khader Belt: It is located on the lower side of the Bhabar belt and made up of new alluvium, which is brought by the rivers which flow down the plain.

THE PENINSULAR PLATEAU

Peninsula plateau-plateau with its characteristic features include shallow valleys and rounded hills. It is divided into three different plateaus:

The Deccan Plateau: The plateau area is triangular in shape and surrounded by the Vindhyas and the Western and Eastern Ghats. It stretches up to eight States of India and occupies a total area of 1.9 million square kilometers

The Malwa Plateau: Malwa plateau is distributed in parts of Gujarat, Rajasthan and Madhya Pradesh. Chambal and its tributaries to find your way in this plateau and Mahi rivers also flow through its Western region.

The Chota Nagpur plateau: It is located in Eastern India, Chota Nagpur plateau covers part of Jharkhand, Bihar, Odisha and Chhattisgarh.

THE COASTAL PLAINS

The Eastern coastal plains: It is lying between the Eastern Ghats and the Bay of Bengal; and extends from Tamil Nadu to West Bengal. Rivers which flow through it are Krishna, Kavery, Godavari and Mahanadi. It is divided into six different areas - the southern state of Andhra Pradesh, Kanyakumari coast, Mahanadi Delta, Coromandel coast and the sandy shores.

The Western coastal plains: It is sandwiched between the Western Ghats and the Arabian sea and stretches from Gujarat in the North and covers the regions of Maharashtra, Goa, Kerala and Karnataka. There are numerous rivers and creeks in this region. It is divided into two parts - on the Malabar coast and Konkan.

THE THAR DESERT

- The Thar desert extends across Gujarat, Haryana and Punjab and covers more than 60% of the geographical area of Rajasthan. It also applies to Pakistan and is known as the Cholistan desert.
- Luni is the only river in the desert, and it gets very little rainfall.
- Most of this desert consists of cliffs, sand dunes and compacted salt lake-bottoms.
- It has an arid climate and vegetation is sparse.

ISLANDS

Islands India has a number of islands (247) both in the Bay of Bengal, (204 islands) and the Arabian Sea (43 islands). The Andaman and Nicobar Islands in the Bay of Bengal represent the elevated portions of submarine mountains. Mount Harriet (460 m) in the South Andaman Island is the highest point.

States with the Longest Coastline	
State/UT	Length of coastline (km)
1. Andaman & Nicobar Islands	1,962
2. Gujarat	1,215
3. Andhra Pradesh	974
4. Tamil Nadu	907
5. Maharashtra	653

The Ganga Drainage System

Name of the river	Source	Length (in km)	Area drained (sq km)
Ganga	Gangotri Glacier at 7,010 m	2,525	861,404
Yamuna	Yamnotri Glacier at 6,330	1,376	366,223
Chambal	Near Mhow	1,050	139,468
Ramganga	Garhwal district at 3,110 m	596	32,493
Ghaghra	Near Gurla Mandhota peak	1,080	127,950
Gandak	South of Manasarovar	425 in India	46,300 (7,620 in India)
Kosi	Tibet-Nepal border at 7,620 Sikkim Nepal-Tibet Himalaya	730 in India	86,900 (21,500 in India)

Lakes of India

Wular Lake	Jammu & Kashmir
Lonar	Maharashtra
Kolleru	Andhra Pradesh
Loktak	Manipur
Dal Lake	Jammu & Kashmir
Naini Tal	Uttarakhand
Salt Lake	Kolkata
Chilka	Orissa
Pulicut	Andhra Pradesh
Vembanad Kayal	Kerala
Ashtamudi	Kerala

Political Divisions of India

India is divided into 29 States and 7 Union Territories.

States and Union Territories of India

State	Capital
Andhra Pradesh	Hyderabad
Arunachal Pradesh	Itanagar
Assam	Dispur
Bihar	Patna
Chhattisgarh	Raipur
Goa	Panaji
Gujarat	Gandhi Nagar
Haryana	Chandigarh
Himachal Pradesh	Shimla
Jammu and Kashmir	Srinagar
Jharkhand	Ranchi
Karnataka	Bangalore
Kerala	Tiruvananthapuram
Madhya Pradesh	Bhopal
Mahrashtra	Mumbai
Manipur	Imphal
Mehghalaya	Shillong

Mizoram	Aizawl
Nagaland	Kohima
Orissa	Bhubaneswar
Punjab	Chandigarh
Rajasthan	Jaipur
Sikkim	Gangtok
Tamil Nadu	Chennai
Telangana	Hyderabad
Uttaranchal	Dehradun
Uttar Pradesh	Lucknow
Tripura	Agartala
West Bengal	Kolkata

Union Territory	Capital
Andaman and Nicobar Islands	Port Blair
Chandigarh	Chandigarh
Dadra & Nagar Haveli	Silvassa
Daman and Diu	Daman
Lakshadweep	Kavaratti
Puducherry	Puducherry
National Capital Territory	Delhi

AGRICULTURE OF INDIA

- Within total available area of 328.726 million hectares the net sown area occupies 132.80 million hectares (43.56%) during 2002-03, followed by forests 69.47 million ha. (22.79%), area put to non-agricultural uses 23.01 million ha. (7.55%), barren and uncultivable land 19.03 million ha. (6.2%), permanent pastures and grazing land 10.50 million ha (3.45%).

Indian crops can be divided into following categories

- **Food crops** : Rice, wheat, maize, millets-jowar, bajra, etc.
- **Cash crops** : Cotton, jute, sugarcane, tobacco, groundnut, etc.
- **Plantation crops** : Tea, Coffee, spices, coconut, rubber, etc.
- **Horticulture crops** : Apple, mango, banana, citrus, etc.

Important Crops of India

Food Grains

Rice	In West Bengal, Punjab, U.P.
Wheat	In U.P., Punjab, Haryana
Maize	In Madhya Pradesh, Andhra Pradesh, Karnataka
Bajra	In Rajasthan, Gujarat, Maharashtra
Jowar	In Maharashtra, Karnataka, M.P., A.P.
Total Pulses	In U.P., M.P., Punjab
Total Food Grains	In U.P., Punjab, West Bengal

Oilseeds

Groundnut	In Gujarat, Tamil Nadu, Andhra Pradesh
Repeseed & Mustard	In Rajasthan, U.P., Haryana
Soyabean	In Madhya Pradesh, Maharashtra, Rajasthan
Sunflower	In Karnataka, Andhra Pradesh, Maharashtra
Total Oil Seeds	In M.P., Maharashtra, Rajasthan

Distribution of Minerals resources in India

- **Iron**: India has deposits of high grade iron ore. The mineral is found mainly in Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Goa, Maharashtra and Karnataka.

- **Bauxite**: Major bauxite producing areas are Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Gujarat, Maharashtra and Tamil Nadu.
- **Mica**: Mica deposits mainly occur in Jharkhand, Bihar, Andhra Pradesh and Rajasthan. India is the largest producer and exporter of mica in the world.
- **Copper**: It is mainly produced in Rajasthan, Madhya Pradesh, Jharkhand, Karnataka and Andhra Pradesh.
- **Manganese**: India's manganese deposits lies in Maharashtra, Madhya Pradesh, Chhattisgarh, Orissa, Karnataka and Andhra Pradesh.
- **Limestone**: Major limestone producing states in India are Bihar, Jharkhand, Orissa, Madhya Pradesh, Chhattisgarh, Rajasthan, Gujarat and Tamil Nadu.
- **Gold**: Kolar in Karnataka has deposits of gold in India. These mines are among the deepest in the world which makes mining of this ore a very expensive process.
- **Salt**: It is obtained from seas, lakes and rocks. India is one of the world's leading producers and exporters of salt.

INDUSTRY IN INDIA

Agro-Based Industry

- This group of industries depend on the raw material produced by agricultural sector. The products comprise mostly of the consumer goods.

Cotton Textiles Industry

- Cotton accounts for 70% of the total fabric produced.

Geographical distribution

Mumbai, Ahmedabad, Surat, Solapur, Pune, Nagpur (Maharashtra and Gujarat). Coimbatore, Madurai and Chennai (Tamil Nadu), Ludhiana (Punjab), Bangalore (Karnataka), Kolkata (West Bengal), Kanpur (Uttar Pradesh).

Woolen Textile Industry

- The first woolen textiles mill was set up in 1876 at Kanpur, because Kanpur was the principal depot for the British Indian Army.
- The woolen textiles industry in India is partly a cottage industry and partly, a factory industry.

Geographical Spread

Kanpur (Uttar Pradesh), Dhariwal and Ludhiana (Punjab), Mumbai (Maharashtra), Bangalore (Karnataka), Jamnagar (Gujarat), Srinagar (Jammu and Kashmir).

Jute Textiles Industry

- The first modern jute mill was set up at Rishra near Calcutta in 1855.
- After independence, this sector made rapid progress as an export-oriented industry.

Geographical Location

- Nearly 90% of the manufacturing capacity is located in a narrow belt about 100 km long and 3 km wide along river Hooghly.

Sugar Industry

- Indian sugar industry is the second largest agro-based industry in India.

Geographical Distribution

Uttar Pradesh and Bihar alone account for 70% of the productive capacity and 75% of the total employment of 30 lakh.

Silk Industry

- India is the only country producing all the five known commercial varieties of silk, viz. Mulberry, Tasar (Tropical), Oak Tasar, Eri and Muga.
- India is the second largest producer of raw silk, accounting for 20% of the world production, next to China.
- Karnataka is the foremost silk producing state in India, which accounts for 50% of Mulberry silk of the country.

Metallurgical Industries

- These industries form the economic backbone of a developing country.

Iron and Steel Industry

- The first iron and steel unit on modern lines was established in 1830 at Porto Novo in Tamil Nadu.
- But the real beginning of modern iron and steel industry was made in 1907 when TISCO was set up at Sakchi, Jamshedpur.
- IISCO was set up in 1919 at Burnpur.
- Mysore steel works at Bhadravati came into existence in 1923.
- Sail was established in 1973.
- India is now the eighth largest producer of steel in the world.
- The first on-shore steel plant in India was set up at Vishakhapatnam (Andhra Pradesh)
- India is the leading country in the production of sponge iron.
- Steel Authority of India Ltd (SAIL) has the highest sales followed by Tata Steel Ltd (2004-05).

Different steel plants and their location

TISCO	(Jharkhand)
IISCO	(West Bengal)
Visweswaraya Steel Plant	(Karnataka)
Bhilai Steel Plant	(Chhattisgarh)
Bokaro Steel Plant	(Jharkhand)
Rourkela Steel Plant	(Orissa)
Durgapur Steel Plant	(West Bengal)

River Valley Projects

Bhakra Nangal Project	On Sutlej in Punjab, Highest in India. Ht 226 m. Reservoir is called Gobind Sagar Lake.
Mandi Project	On Beas in HP.
Chambal Valley Project	On Chambal in M.P. & Rajasthan 3 dams are there : Gandhi Sagar Dam, Rana Pratap Sagar Dam and Jawahar Sagar Dam.
Damodar Valley Project	On Damodar in Bihar. Based on Tennessee Valley Project, USA
Hirakud Project	On Mahanadi in Orissa. World's longest dam : 4801 m.
Rihand Project	On Son in Mirzapur. Reservoir is called Govind Vallabh Pant reservoir.
Kosi Project	On Kosi in Bihar.
Mayurkashi Project	On Mayurkashi in WB.

Kakrapara Project	On Tapti in Gujarat.
Nizamsagar Project	On Manjra in AP.
Nagarjuna Sagar Project	On Krishna in AP.
Tungabhadra Project	On Tungabhadra in AP & Karnataka
Shivasamudram Project	On Kavery in Karnataka. It is the oldest river valley project of India
Tata Hydrel Scheme	On Bhima in Maharashtra
Sharavathi Hydrel Project	On Jog Falls in Karnataka
Kundah & Periyar Project	In Tamil Nadu
Farakka Project	On Ganga in WB. Apart from power and irrigation it helps to remove silt for easy navigation.
Ukai Project	On Tapti in Gujarat.
Mahi Project	On Mahi in Gujarat.
Salal Project	On Chenab in J & K.
Mata Tila Multipurpose Project	On Betwa in UP & MP.
Thein Project	On Ravi, Punjab.
Pong Dam	On Beas, Punjab.
Tehri Project	On Bhagirathi, Uttaranchal.
Sardar Sarovar Project	On Narmada, Gujarat/MP.

Indian Towns on Rivers

Town	River
Allahabad	At the confluence of the Ganga and Yamuna
Patna	Ganga
Varansi	Ganga
Kanpur	Ganga
Haridwar	Ganga
Badrinath	Alaknanda
Agra	Yamuna
Delhi	Yamuna
Mathura	Yamuna
Ferozpur	Satluj
Ludhiana	Satluj
Srinagar	Jhelum
Lucknow	Gomti
Jaunpur	Gomti
Ayodhya	Saryu
Bareilly	Ram Ganga
Ahmedabad	Sabarmati
Kota	Chambal
Jabalpur	Narmada
Panji	Mandavi
Ujjain	Kashipra
Surat	Tapti
Jamshedpur	Swarnarekha
Dibrugarh	Brahmaputra
Guwahati	Brahmaputra
Kolkata	Hooghly
Sambalpur	Mahanadi
Cuttack	Mahanadi
Serirangapatnam	Cauvery
Hyderabad	Musi

Nasik	Godavari
Vijayawada	Krishna
Curnool	Tungabhadra
Tiruchirapalli	Kaveri

Nick Name of Indian Places

Nick Name	Place
Golden City	Amritsar
Manchester of India	Ahmedabad
Twin City	Hyderabad-Sikandarabad
City of festivals	Mudurai
Deccan Queen	Pune
City of Buildings	Kolkata
Dakshin Ganga	Godavari
Old Ganga	Godavari
Egg bowls of Asia	Andhra Pradesh
Soya region	Madhya Pradesh
Manchester of the South	Coimbatore
City of Nawabs	Lucknow
Venice of the east	Kochi
Queen of the Mountains	Mussoorie (Uttarkhand)
Sacred river	Ganga
Hollywood of India	Mumbai
City of Castles	Kolkata
State of five rivers	Punjab
City of weavers	Panipat
City of lakes	Srinagar
Steel city of India	Jamshedpur (called Tatanagar)
City of Temples	Varanasi
Manchester of the north	Kanpur
City of Rallies	New Delhi
Heaven of India	Jammu & Kashmir
Boston of India	Ahmedabad
Garden of spices of India	Kerala
Switzerland of India	Kashmir
Abode of the God	Prayag (Allahabad)
Pittsburg of India	Jamshedpur
City of seven islands	Mumbai
Blue Mountains	Nilgiri
Queen of Arabian Sea	Kochi
Space City	Bengaluru
Garden City of India	Bengaluru
Silicon valley of India	Bengaluru
Electronic City of India	Bengaluru
Pink City	Jaipur
Gateway of India	Mumbai

Longest, Largest, Biggest, Smallest, Tallest and Highest

Longest river (India)	Ganges
Longest river (World)	Nile
The longest tributary river of India	Yamuna
The longest river of the south	Godavari
Highest mountain peak	Godwin Austin (K2)
Largest lake (Fresh water)	Wular lake (Kashmir)
Highest Dam	Tehri Dam on Bhagirathi River
Largest Mosque	Jama Masjid, Delhi
Longest Road	Grand Trunk Road
State with longest coastline	Gujarat
Largest railway route	Dibrugarh in Assam to Kanyakumari in Tamil Nadu

Longest Tunnel	Jawahar tunnel (Jammu & Kashmir)
Longest National Highway	NH-7 which runs from Varanasi to Kanyakumari
Longest Dam	Hirakod Dam (Orissa)
Longest River Bridge	Mahatma Gandhi Setu, Patna
Longest Populated City	Mumbai (1.60 crore)
Largest Museum	National Museum, Kolkata
Largest Delta	Sunderban Delta, W. Bengal
Largest Dome	Gol Gumbaz, Bijapur (Karnataka)
Largest Zoo	Zoological Gardens, Alipur, Kolkata
Largest man-made Lake	Govind Vallabh Pant Sagar (Rihand Dam)
Largest Desert	Thar (Rajasthan)
Highest Tower	Pitampura Tower, Delhi
Smallest State (Area)	Goa
Smallest State (Population)	Sikkim
Highest Waterfall	Gersoppa waterfall (Karnataka)
Longest Electric Railway Line	From Delhi to Kolkata via Patna
Densest Populated State	West Bengal
Largest cave temple	Kailash temple, Ellora (Maharashtra)
Largest Animal Fair	Sonepur (Bihar)
Highest Gateway	Buland Darwaza, Fatehpur Sikri (Agra)
Biggest Hotel	Oberoi -Sharaton (Mumbai)
Largest State (Area)	Rajasthan
Largest State (Population)	Uttar Pradesh
Place of Heaviest Rainfall	Mausinram (Meghalaya)
Largest Corridor	Rameshwaram temple corridor (Tamil Nadu)
Largest Cantilever Span Bridge	Howrah Bridge (Kolkata)
Largest Forest State	M.P.
Highest Straight Gravity Dam	Bhakra Dam
Longest Railway Platform	Kharagpur (W. Bengal)
Largest Stadium	Salt lake (Yuva Bharti), Kolkata
Largest Port	Mumbai
Highest Lake	Devatal (Garhwal)
Largest Lake (Saline water)	Chika lake, Orissa
Highest Award	Bharat Ratna
Highest Gallantry Award	Paramveer Chakra
Largest Gurudwara	Golden Temple, Amritsar
Deepest River Valley	Bhagirathi & Alaknanda
State with longest coastline of South India	Andhra Pradesh
Longest river which forms estuary	Narmada
Largest Church	Saint Cathedral (Goa)
Longest Beach	Marina Beach, Chennai
Highest Battle field	Siachin Glacier
Highest Airport	Leh (Ladakh)
Largest river island	Majuli (Brahmaputra river, Assam)
Largest Planetarium	Birla Planetarium (Kolkata)

Distribution of Rainfall in India

More than 80% of annual rainfall received in the four rainy months, from June to September. The average annual rainfall is about 125 cm, but it has large spatial variations. Rainfall decreases westwards in the north India and decreases eastward in the Peninsular India.

Type of Rainfall Areas of Rainfall

Heavy Rainfall (Over 200cm)	The western Ghats, the Sub-Himalayan areas in North East and Meghalaya Hills. Assam, West Bengal and Southern slopes of eastern Himalayas.
Moderately Heavy Rainfall (100-200 cm)	Southern Parts of Gujarat, East Tamil Nadu, North-eastern Peninsular, Western Ghats, eastern Maharashtra,

Madhya Pradesh, Orrisa and the middle Ganga valley.

Less Rainfall
(50-100 cm)

Upper Ganga valley, eastern Rajasthan, Punjab, Southern Plateau of Karnataka, Andhra Pradesh and Tamil Nadu.

Scanty Rainfall
(Less than 50 cm)

Northern part of Kashmir, Western Rajasthan, Punjab and Deccan Plateau.

BIOSPHERE RESERVE OF INDIA

The Government of India constituted a committee of experts to identify the potential areas for recognition as Biosphere Reserves as per the guidelines of UNESCO's Man and Biosphere (MAB) programme. 18 sites have been declared as Biosphere Reserves in India

Name of Reserve	Year of Establishment	Area (in Sq.hm)	State	Endemic Flora	Endemic Fauna
Nilgiri	1986	5,520	Karnataka, Kerala & Tamil Nadu	Vanda, Liparis, Bulbophyllum, Spiranthes, Thrixpermum	Nilgiri tahr, Nilgiri langur, Lion-tailed macaque
Nanda Devi	1988	5,860	Uttaranchal	Salep Orchid, Silver weed, Fairy candelabra, Fairy Primrose	Himalayan tahr, Brown bear, Koklas pheasant
Nokrek	1988	80	Meghalaya	Grand rasamala, White meranti, Lali, Chempaka, Wild lemon	Stump tailed macaque, Pig tailed macaque, Giant flying squirrel
Great Nicobar Islands	1989	885	Andaman & Nicobar Islands	Screw pine, Nipa palm, Ceylon iron wood	Crab eating macaque, Nicobar megapode, Giant robber crab, Nicobar serpent eagle
Gulf of Mannar	1989	10,500	Tamil Nadu	Morning glory, Jatropha, Halophila grass	: Sea Cow, Sea Anemone, Sea fans
Manas	1989	2,837	Assam	Catechu tree, Sissoo, White siris	Pygmy hog, Golden langur, Assam roofed turtle
Sunderbans	1989	9,630	West Bengal	Sundari, Passur, Nypa	Bengal tiger, Bengal monitor lizard, Salvator lizard
Simlipal	1994	4,374	Orissa	Coix grass	Red breasted falconet, Slender billed scimitar babbler, Ruddy mongoose
Dibru-Saikhowa	1997	765	Assam	Rauvolfia (Sarpagandhi), Benteak, Livistona (orchid)	White winged wood duck, Hollock-gibbon, Wild buffalo
Dehang-Debang	1998	5,111	Arunachal Pradesh	Cyathea (tree fern), Begonia, Lady's slipper orchid	Red panda, Himalayan black bear, Green pit viper, Takin
Pachmarhi	1999	4,926	Madhya Pradesh	Sal tree, Selaginella fern, Palimorpha bamboo	Barasinga, Wild buffalo, Red jungle fowl
Khangchendzonga	2000	2,619	Sikkim	Anemone, Uvaria, Sikkim Rhododendron, Sikkim Mahonia	Tibetan sheep, Musk deer, Monal pheasant, Snow partridge
Agasthyamalai	2001	1,701	Kerala	Rudraksha tree, Black plums, Gaub tree, Wild dhaman	Lion-tailed macaque, Slender loris, Great pied hornbill

Name of Reserve	Year of Establishment	Area (in Sq.hm)	State	Endemic Flora	Endemic Fauna
Great Rann of Kutch	2008	12,454	Gujarat	NA	Indian Wild Ass
Achanakamar – A markantak	2005	3,835	Madhya Pradesh, Chhattisgarh	Cupressus torulosa, Thuja reintalis, Araucaria bidwillii,	Tigers, panthers, sambars, barking deer and bison
Cold Desert	2009	7,770	Himachal Pradesh	juniper, hippophae, myricaria, caragna, rosa, lonicera and ephedra.	Snow Leopard, wild cat, wolf, brown and black bear
Seshachalam Hills	2010	4,755	Andhra Pradesh	Golden lizard, civet cat, Jerdon's Courser, Yellow-browed bulbul, Indian	Cycas beddomei and Red Sanders
Panna	2011	543	Madhya Pradesh	Tectona grandis, Diospyros melanoxyton, Madhuca indica,	Tiger, Chital, Chinkara, Sambhar and Sloth bear

MONUMENTS IN INDIA

Name	Place	Built by
Ajanta Ellora Caves	Aurangabad (Mah.)	Gupta rulers
Aram Bagh	Agra (UP)	Babur
Agra Fort	Agra (UP)	Akbar
Akbar's Mausoleum	Sikandra (UP)	Akbar
Itmodud daula Fort	Agra (UP)	Noorjahan
Anand Bhawan	Allahabad (UP)	Motilal Nehru
BadaImambara	Lucknow (UP)	Asafud daula
Bharatpur Fort	Bharatpur (Raj.)	Raja Surajmal Singh
Bibi Ka Maqbara	Aurangabad (Mah .)	Aurongzeb
Char Minor	Hyderabad (AP)	Quli Qutub Shah
Charare Sharif	Jammu & Kashmir	Zainul Abedin
Chhota Imambara	Lucknow (UP)	Muhammad Ali Shah
Dargah Ajmer Sharif	Ajmer (Raj.)	Sultan Shyasuddin
Dilwara's Jain Temple	Mount Abu (Raj.)	Siddharaja
Deewane Khas	Agra Fort (UP)	Shahjahan
Adhai Din Ka Jhopra	Ajmer (Raj.)	Qutubuddin Aibak
Elephanfa's cave	Mumbai (Mah.)	Rashtrakuta rulers
Fatehpur Sikri	Agra (UP)	Akbar
Ferozshah Kotla	Delhi	Ferozshah
Tughlaq Golghar	Patna (Bih.)	British Government
Gateway of India	Mumbai (Mah.)	British Government
Hauz Khas	Delhi	Alauddin Khilji
Hawa Mahal	Jaipur (Raj.)	Maharaja Pratapb Singh
Humayun's Tomb	Delhi	Hymayun's wife
Jama Masjid	Agra (UP)	Shahjahan
Jama Masjid	Delhi	Shahjahan
Jagannath Temple	Puri (Ori.)	Anantvarmun Ganga
Jantar Mantar	Delhi	Sawai Jai Singh
Jaigarh Fort	Jaipur (Raj.)	Sawai Jai Singh
Jim Corbett Park	Nainital (Uttar.)	Sir Malcom Hqilley
Jodhpur Fort	Jodhpur (Raj.)	Rao Jodhoji

Kanheri's Fort	Mumbai (Mah.)	Buddhists
Khirki Masjid	Delhi	Ghyasuddin Tughlaq
Lai Bagh	Bangalore (Kar.)	Hyder Ali
Lakshmi Narayan Temple	Delhi	Birla Family
Makka Masjid	Hyderabad (AP)	Quli Qutub Shah
Moti Masjid	Agra Fort (UP)	Shahjahan
Moti Masjid	Delhi Fort	Aurangzeb
Nahargarh Fort	Jaipur (Raj.)	Sawai Jai Sing h
Nishat Garden	Srinagar (J & K)	Asaf Ali
Parana Qila	Delhi	Shershah Suri
Pathar Ki Masjid	Patna (Bih.)	Pervez Shah
President House	Delhi	British Government
Qutub Minar	Delhi	Qutubuddin Aibak
Red Fort	Delhi	Shahjahan
Safdar Jung Tomb	Delhi	Shujaudaula
Sabarmati Ashram	Ahmadabad (Guj.)	Mahatma Gandhi
Shantiniketan	West Bengal	Rabindra Nath Tagore
Shish Mahal	Agra (UP)	Shahjahan
Shalimar Garden	Srinagar (J & K)	Jahangir
Shershah's Tomb	Sasaram (Bih.)	Shershah's son
Saint George Fort	Chennai (TN)	East India Company
Sati Burj	Mathura (UP)	Raja Bhagwan Das
Sun Temple	Konark (Ori.)	Narsimhadeva
Swarna Mandir (Golden Temple)	Amritsar (Pun.)	Guru Ramdas
Taj Mahal	Agra (UP)	Shahjahan
Vellure Math	Kolkata (WB)	Swami Vivekanand
Victoria Memorial	Kolkata (WB)	British Government
Vishnupad Temple	Gaya (Bihar)	Rani Ahiliabai
Viiaya Stambha	Chittorgarh (Raj.)	Maharana Kumbha



EXERCISE



1. The Indian subcontinent was originally part of a huge mass called
(a) Indian (b) Aryavarta
(c) Angaraland (d) Gondwana land
2. Which one of the following is the dominant element of the earth crust?
(a) Aluminium (b) Iron
(c) Oxygen (d) Silicon
3. The highest salinity is found in which of the following lakes?
(a) Van Lake (b) Dead sea
(c) Balkash lake (d) Baikal lake
4. The deepest lake of the world is
(a) Baikal (b) Crater
(c) Nyasa (d) Tanganyika
5. Which one of the following sea is the largest in area?
(a) Sea of Okhotsk (b) Sea of Japan
(c) Sea of China (d) Bering Sea
6. The biggest island of the Indian Ocean is
(a) Maldives (b) Madagascar
(c) Lakshadweep (d) Sumatra
7. Which one of the following ocean currents is different from others?
(a) Gulfstream (b) Kuroshivo
(c) North Atlantic Drift (d) Labrador
8. Earth's Albedo is largely affected by
(a) Cloudiness
(b) Dust particles in atmosphere
(c) Atmospheric layer
(d) Nature of the earth's surface
9. The largest volume and mass of the earth is found in
(a) Crust (b) Mantle
(c) Outer core (d) Inner core
10. The clockwise movement of winds in the cyclones of southern hemisphere is mainly caused by
(a) Centrifugal force (b) Deflective force
(c) Frictional force (d) Pressure force
11. Which one of the following currents has a warming influence on the neighbouring coast?
(a) Benguela (b) Agulhas
(c) Canaries (d) Oyasio
12. Which one of the following local winds is different from the other three?
(a) Khamsin (b) Foehn
(c) Sirocco (d) Mistral
13. Atmospheric layer which reflects radio waves is called
(a) Exosphere (b) Ionosphere
(c) Stratosphere (d) Troposphere
14. The layer of the atmosphere which contains dust particles and water vapour is called
(a) Stratosphere (b) Troposphere
(c) Ionosphere (d) Mesosphere
15. Gulfstream is
(a) A river in the Gulf
(b) An ocean current
(c) A second name of jet stream
(d) A local wind
16. Which of the following is not igneous rock?
(a) Granite (b) Conglomerate
(c) Basalt (d) Rhyolite
17. Jet stream is
(a) Fast blowing westerlies in upper part of Troposphere.
(b) Ocean current
(c) Monsoon winds
(d) None of these
18. Peanuts are the main crop of
(a) Georgia (b) Gambia
(c) Ghana (d) Guatemala
19. The leading producer of both rice and wheat in the world is
(a) China (b) India
(c) Russia (d) U.S.A.
20. Which one of the following is a fossil source of energy?
(a) Wood (b) Solar radiation
(c) Tidal waves (d) Petroleum
21. The largest exporter of steel in the world is
(a) China (b) Japan
(c) Russia (d) Ukraine
22. In which of the following crops the international trade is low in comparison to total produce?
(a) Coffee (b) Rice
(c) Rubber (d) Wheat
23. Which of the following countries is the greatest producer of bauxite in the world?
(a) Argentina (b) India
(c) South Africa (d) Brazil
24. The neighbouring country of India which has the largest area is
(a) Bangladesh (b) China
(c) Pakistan (d) Nepal
25. Which one of the following countries has the longest international boundary with India?
(a) China (b) Pakistan
(c) Bangladesh (d) Myanmar
26. The Eastern Ghats and the Western Ghats meet at the
(a) Cardamom Hills (b) Anaimalai Hills
(c) Nilgiri Hills (d) Palani Hills
27. The coast that belongs to Tamilnadu is known as
(a) Konkan coast (b) Malabar coast
(c) Coromandel coast (d) Canara coast
28. Which of the following latitudes passes through India?
(a) Arctic circle (b) Tropic of Capricorn
(c) Tropic of Cancer (d) Equator
29. Nathula Pass is in
(a) Arunachal Pradesh (b) Nagaland
(c) Sikkim (d) Manipur
30. Which of the following rivers flows from south to north?
(a) Son (b) Krishna
(c) Mahanadi (d) Ganga
31. Which of the following rivers is not the tributary of Yamuna?
(a) Chambal (b) Betwa
(c) Ken (d) Gandak
32. The river also known as Tsangpo in Tibet is
(a) Brahmaputra (b) Indus
(c) Sutlej (d) Teesta

33. The term 'Regur' is used for
 (a) Alluvial soil (b) Black soil
 (c) Laterite soil (d) Yellow soil
34. Kaziranga Wildlife Sanctuary is in the state of
 (a) Assam (b) Tamilnadu
 (c) Uttar Pradesh (d) Kerala
35. The only sanctuary where Kashmir stag is found is
 (a) Kanha (b) Dachigam
 (c) Manas (d) Nanda devi
36. Project Tiger was launched in
 (a) 1973 (b) 1980
 (c) 1982 (d) 1984
37. 'Kal Baisakhi' gives rainfall to
 (a) Rajasthan (b) West Bengal
 (c) Punjab (d) Goa
38. Which one of the following is the wettest place in India?
 (a) Udhagamandalam (b) Mahabaleshwar
 (c) Cherrapunji (d) Mawsynram
39. India is the largest world producer of
 (a) Cotton (b) Milk
 (c) Wheat (d) Rice
40. The ore of Aluminium is
 (a) Bauxite (b) Chromium
 (c) Mica (d) Manganese
41. Which one of the following is known as the 'Pearl city'?
 (a) Kandla (b) Tuticorin
 (c) Hyderabad (d) Kochi
42. What is Khetri in Rajasthan famous for?
 (a) Copper (b) Mica
 (c) Bauxite (d) Limestone
43. The Deccan trap was formed by the
 (a) Dharwar Vulcanicity
 (b) Mesozoic Vulcanicity
 (c) Cretaceous Vulcanicity
 (d) Paleozoic Vulcanicity
44. 'Jhum' is
 (a) A tribe in the North-East of India
 (b) The type of cultivation
 (c) A Folk dance
 (d) The name of a river
45. Bhakhara dam is situated on which river?
 (a) Ravi (b) Chenab
 (c) Jhelum (d) Sutlej
46. Which state of India shares its boundaries with six other states?
 (a) Madhya Pradesh (b) Jharkhand
 (c) Chhattisgarh (d) Karnataka
47. Which one of the Indians state/union Territories is having lowest sex ratio in 2011?
 (a) Haryana (b) Daman and Diu
 (c) Punjab (d) Dadar and Nagar Haveli
48. As per 2011 census data, the child sex ratio has come down from 927 to
 (a) 904 (b) 919
 (c) 922 (d) 925
49. As per 2011 census data, the sex ratio is
 (a) 943 (b) 940
 (c) 925 (d) 920
50. Which state of India tops in literacy?
 (a) Kerala (b) Tamil Nadu
 (c) Delhi (d) Uttar Pradesh
51. Name the state where density of population is the lowest
 (a) Meghalaya
 (b) Mizoram
 (c) Arunachal Pradesh
 (d) Sikkim
52. What is the percentage of literacy in India, as per 2011 census data:
 (a) 73% (b) 78%
 (c) 70% (d) 68%
53. The group of stars arranged in a definite pattern is called
 (a) Milky way (b) Constellation
 (c) Andromeda (d) Solar system
54. The principle of Black hole was enunciated by
 (a) C.V.Raman
 (b) H.J. Bhabha
 (c) S. Chandrashekar
 (d) H. Khurana
55. The planet which is called twin sister of the Earth is
 (a) Mercury (b) Venus
 (c) Mars (d) Uranus
56. Which planet was named after the Roman God Zeus?
 (a) Earth (b) Mars
 (c) Venus (d) Jupiter
57. Which one of the following is called terrestrial planet?
 (a) Mercury (b) Earth
 (c) Mars (d) Saturn
58. The mean radius of the Earth is
 (a) 3200 km (b) 6400 km
 (c) 8400 km (d) 12800 km
59. The energy of sun is produced by
 (a) Nuclear fission (b) Ionisation
 (c) Nuclear fusion (d) Oxidation
60. Cycle of sun spots is
 (a) 9 years (b) 10 years
 (c) 11 years (d) 12 years
61. Which planet is called "Evening star"?
 (a) Mars (b) Jupiter
 (c) Venus (d) Saturn
62. Lunar eclipse occurs
 (a) When moon lies between earth and sun
 (b) When earth lies between sun and moon
 (c) When sun lies between earth and moon
 (d) None of these
63. The Astronaut looks the sky in the space
 (a) Blue (b) Black
 (c) Red (d) White
64. Which one of the following is not a tropical desert?
 (a) Atacama (b) Arabia
 (c) Gobi (d) Kalahari
65. Which one of the following is a warm ocean current?
 (a) East Australian current
 (b) West Australian current
 (c) Benguela current
 (d) Peru current
66. Rift valley is formed by
 (a) Earthquake (b) Folding
 (c) Faulting (d) All of these
67. Which is the capital of Mali ?
 (a) Mopti (b) Barmako
 (c) Cairo (d) Nairobi

68. Which one of the following atmospheric layers absorb ultraviolet rays of the sun?
 (a) Troposphere (b) Stratosphere
 (c) Ionosphere (d) Ozonosphere
69. The drainage pattern developed on folded sedimentary rock is termed as
 (a) Trellis (b) Dendritic
 (c) Radial (d) Deranged
70. Which one of the following is not correctly matched?
 (a) Darjeeling - West Bengal
 (b) Mount Abu - Rajasthan
 (c) Kodaikanal - Tamil Nadu
 (d) Simla - Uttar Pradesh
71. The earth is at its maximum distance from the Sun on
 (a) January 30th (b) December 22nd
 (c) September 22nd (d) July 4th
72. Consider the following pairs:

Tributary	Main River
1. Chambal	: Yamuna
2. Sone	: Narmada
3. Manas	: Brahmaputra

 Which one of the pairs given above is/are correctly matched?
 (a) 1, 2 and 3 (b) 1 and 2
 (c) 2 and 3 (d) 3 only
73. The total population divided by available arable land area is referred to as
 (a) Population density
 (b) Nutritional density
 (c) Agricultural density (d) Industrial density
74. The first short based integrated steel plant in the country is
 (a) Vijaynagar (b) Salem
 (c) Vishakapatnam (d) Bhadravati
75. Name the condition which influences the development of plants into distinctive forms.
 (a) Climatic conditions
 (b) Soil conditions
 (c) Environmental conditions
 (d) Social conditions
76. Celestial bodies are
 (a) Sun (b) Moon
 (c) Stars (d) All the above
77. Which one is a star?
 (a) Moon (b) Sun
 (c) Earth (d) All the above
78. Constellations are :
 (a) path traced by moon
 (b) path traced by star
 (c) various patterns formed by different group of stars
 (d) All above are incorrect.
79. Small bear or Saptarishi group consists of
 (a) 5 stars (b) 3 stars
 (c) 9 stars (d) 7 stars
80. Nearest star to earth is
 (a) Moon (b) Pole star
 (c) Sun (d) Mars
81. Solar system consists of :
 (a) Sun (b) Nine planets
 (c) Satellites and asteroids (d) All the above
82. Which planet is nearest from the sun?
 (a) Earth (b) Venus
 (c) Mercury (d) Mars
83. Which planet is farthest from sun?
 (a) Jupiter (b) Mars
 (c) Uranus (d) Neptune
84. The nearest planet to earth is
 (a) Mercury (b) Venus
 (c) Mars (d) Jupiter
85. Why is Aryabhata famous?
 (a) He was a writer
 (b) Poet
 (c) He was an ancient mathematician and astronomer
 (d) He was a famous artist
86. Choose the correct statement(s)?
 (a) Moon does not have life because it does not have atmosphere
 (b) Asteroids are those celestial bodies which are found between orbits of Mars and Jupiter
 (c) Meteoroids are pieces of rock which move around the sun
 (d) All the above are correct
87. Which one of the following planets has the largest number of natural satellites or moons?
 (a) Jupiter (b) Mars
 (c) Saturn (d) Venus
88. Which of the following planets is known as the Earth's twin?
 (a) Saturn (b) Jupiter
 (c) Venus (d) Mercury
89. Which planets are known as the 'big four'?
 (a) Saturn, Uranus, Neptune and Mercury
 (b) Jupiter, Saturn, Neptune and Uranus
 (c) Earth, Venus, Mars and Jupiter
 (d) Venus, Mercury, Mars and Saturn
90. Asteroids revolve around the sun in the space between
 (a) Jupiter and Saturn (b) Uranus and Neptune
 (c) Mars and Jupiter (d) Mercury and Venus
91. Greenwich line passes through which country?
 (a) England (b) U.S.A
 (c) India (d) China
92. Frigid Zones are very cold because
 (a) They lie close to poles
 (b) In these zones the sun does not rise much above the horizon so its rays are always slanting and provide less heat
 (c) (a) and (b) both are correct
 (d) All the above are incorrect
93. Which one of the following straits is nearest to the International Date Line?
 (a) Malacca Strait (b) Bering Strait
 (c) Strait of Florida (d) Strait of Gibraltar
94. Which of the following statements is not correct?
 (a) The real earth has a needle that passes through earth's centre
 (b) Axis is an imaginary line
 (c) The earth moves around its axis.
 (d) The north and south end of the earth's axis are called north and south pole respectively.
95. Which of the following statements in regard to the motion of the earth is correct?
 (a) The day and night are caused due to the earth's rotation.
 (b) The earth takes about 365 days to complete one rotation
 (c) The earth rotates from east to west
 (d) Rotation of the earth causes seasons
96. Which of the following pairs is not correctly matched?
 (a) An imaginary line (i) Equator that divides the earth into two equal halves
 (b) These are measured in (ii) Parallels of latitudes and percentage longitudes
 (c) 0° longitude (iii) Prime meridian
 (d) $66\frac{1}{2}^{\circ}\text{S}$ (iv) Antarctic circle
97. The movement of earth around the sun in a fixed path is called
 (a) spinning (b) revolution
 (c) rotation (d) None of these

98. The fact that only half of the earth gets light from the sun at a time is due to the reason.
 (a) Spherical shape of the earth
 (b) Motion of the earth
 (c) Revolution of the earth
 (d) None of these
99. The world's largest chain of mountains above sea level is:
 (a) The Andes. (b) The Alps
 (c) The Himalayas. (d) The Rockies
100. How many countries share land boundaries with India?
 (a) Five (b) Six
 (c) Seven (d) Nine
101. Which is the world's largest delta?
 (a) Sunderbans delta (b) Ganga-Brahmaputra delta
 (c) Beas-Chenab delta (d) Godavari delta
102. In which part of India does the Great Indian Desert lie?
 (a) Western (b) Eastern
 (c) Northern (d) Southern
103. Lakshadweep Islands are _____ Islands located in the Arabian Sea
 (a) Coral (b) Maldives
 (c) Both 'a' and 'b' (d) None of them
104. Which of the following is the largest state of India?
 (a) Bihar (b) Rajasthan
 (c) Madhya Pradesh (d) None of these
105. Which of the following rivers does not drain into the Bay of Bengal?
 (a) Mahanadi (b) Krishna
 (c) Yamuna (d) Ganga
106. Which is the coldest inhabited place of the world?
 (a) Kargil (b) Srinagar
 (c) Leh (d) Drass
107. What do you call the hot and dry winds?
 (a) Hawa (b) Zoo
 (c) Loo (d) None of them
108. What do you mean by Natural Vegetation?
 (a) Small plants
 (b) Plants which grow on their own without interference or help from human beings
 (c) Forests
 (d) None of them
109. Which are the monsoon forests?
 (a) Tropical evergreen forests
 (b) Tropical deciduous forests
 (c) Tropical rain forests
 (d) None of them
110. In Brazil, Tropical Grasslands are called
 (a) Savannah (b) Campos
 (c) Llanos (d) Pampas
111. Tafilalet Oasis is found in
 (a) Morocco (b) Libya
 (c) Egypt (d) Algeria
112. Where is the Ganga-Brahmaputra basin situated?
 (a) It lies in the sub-tropical region
 (b) It lies in the north-temperate region
 (c) It lies beside the Nile river
 (d) None of them
113. Name one of the important rivers which flows through Ladakh?
 (a) Ganga (b) Yamuna
 (c) Brahmaputra (d) Indus
114. In which continent is the world's largest desert situated?
 (a) Asia (b) Africa
 (c) Australia (d) South America
115. How many countries does the Sahara desert touch?
 (a) 10 (b) 8
 (c) 11 (d) 5
116. Which of the following is the largest river basin in the world?
 (a) Nile basin (b) Yamuna basin
 (c) Amazon basin (d) Hwang-Ho basin
117. Which of the following is known as the gold capital of the world?
 (a) Egypt (b) South Africa
 (c) Kimberley (d) Johannesburg
118. Merino is a species of
 (a) sheep (b) elephant
 (c) fish (d) cow
119. How many layers does the earth have?
 (a) 5 layers (b) 3 layers
 (c) 2 layers (d) 1 layer
120. The continental masses are mainly composed of
 (a) silica (b) alumina
 (c) (a) and (b) both (d) None of these
121. The oceanic crust is mainly composed of :
 (a) silica (b) magnesium
 (c) (a) and (b) both (d) None of these
122. Mantle extends up to a depth of :
 (a) 1900 km (b) 2900 km
 (c) 3900 km (d) 4900 km
123. What are fossils?
 (a) The remains of the dead plants and animals
 (b) Molten magma
 (c) Igneous rocks
 (d) All the above
124. The movement of earth plates occurs due to :
 (a) molten magma (b) crust
 (c) mantle (d) None of these
125. Earthquake occurs because
 (a) When magma inside earth comes out
 (b) High pressure wind blows
 (c) Lithosphere plates move, causing the earth's surface to vibrate.
 (d) None of these
126. The radius of the earth is _____ km.
 (a) 6000 (b) 6371
 (c) 6800 (d) 7000
127. Igneous rocks are characterised by
 (a) full of fossils and fauna
 (b) stratification
 (c) deposition of sediments
 (d) None of these
128. A volcano is a
 (a) vent in the earth's crust through which molten material erupts suddenly.
 (b) opening in the earth's surface through which water comes out.
 (c) force that works on the surface of the earth.
 (d) None of these
129. Which of the following is a cold desert ?
 (a) Thar (b) Sahara
 (c) Ladakh (d) None of these
130. What does Khapa-Chan mean ?
 (a) Sand land (b) Snow land
 (c) Water area (d) All of these
131. What do you mean by a 'reserve'?
 (a) It is that portion of the actual resource, which can be developed profitably with the available technology
 (b) This is a resource that cannot be developed further
 (c) It requires a lot of time and energy of human beings
 (d) None of them
132. Physical factors responsible for soil erosion is /are
 (a) slope of the land
 (b) intensity of rainfall
 (c) velocity of wind blowing in that area
 (d) All of them
133. Bauxite is an ore of _____
 (a) aluminum (b) iron
 (c) gold (d) copper

134. What is Geothermal Energy?
 (a) It is muscular energy
 (b) It is energy produced by human beings
 (c) It is the natural heat found in the interiors of the earth
 (d) None of them
135. Atmospheric pressure depends on
 1. Altitude 2. Temperature
 3. Earth rotation 4. Moon's pull
 (a) 1, 2 and 3 (b) 2 and 3
 (c) 1 and 2 (d) 1, 2, 3 and 4
136. Which of the following is a non-metallic mineral?
 (a) Silver (b) Copper
 (c) Gold (d) Petroleum
137. Which of the following are the world's largest producers of tin?
 (a) India (b) Bolivia
 (c) Brazil (d) Both (b) and (c)
138. Which of the following is a greenhouse gas?
 (a) Oxygen (b) Nitrogen
 (c) Argon (d) Carbon dioxide
139. Jute is obtained from _____
 (a) the leaves of jute plant (b) the roots of jute plant
 (c) the bark of jute plant (d) None of them
140. Which crop is used both as foodgrain and as fodder?
 (a) Pulses (b) Wheat
 (c) Maize (d) Rice
141. Which of the following is known as the Golden fibre?
 (a) Cotton (b) Coffee
 (c) Silk (d) Jute
142. Which of these methods would be generally used for mining limestone and iron ore?
 (a) Alluvial (b) Underground
 (c) Opencast (d) One of these
143. Which of the following is the Manchester of India?
 (a) Mumbai (b) Kanpur
 (c) Delhi (d) Ahmedabad
144. Which of the following is the Silicon Valley of India?
 (a) Kolkata (b) Bangalore
 (c) Patna (d) Chandigarh
145. One of the states through which the Tropic of Cancer passes is
 (a) Jammu and Kashmir (b) Himachal Pradesh
 (c) Bihar (d) Jharkhand
146. The Shiwaliks stretch between
 (a) Indus and Sutlej (b) Potwar Basin and Teesta
 (c) Sutlej and Kali (d) Sutlej and Teesta
147. The highest peak in Indian territory is K². In which range is it located?
 (a) Central Himalayas (b) Trans-Himalayas
 (c) Karakoram Range (d) Kumaun Himalayas
148. Which of the following rivers flows through a rift valley?
 (a) Ganga (b) Narmada
 (c) Brahmaputra (d) Krishna
149. Which of the following are believed to be older than the Himalayas?
 (i) Indus (ii) Ganga
 (iii) Brahmaputra (iv) Sutlej
 (a) i, ii and iii (b) ii, iii and iv
 (c) i, ii and iv (d) i, iii and iv
150. Which area in India gets the summer monsoon first?
 (a) The Himalayas (b) The Eastern Ghats
 (c) The Western Ghats (d) The Indo-Gangetic plains
151. Which place receives the maximum solar energy in December?
 (a) Kolkata (b) Delhi
 (c) Amritsar (d) Chennai
152. The maximum daily range of temperature is likely to be observed at
 (a) Chennai (b) Thiruvananthapuram
 (c) Delhi (d) Mumbai
153. Which soil swells when wet and develops cracks when dry?
 (a) Alluvial (b) Red
 (c) Black (d) Laterite
154. Alluvial soils are usually
 (i) rich in nitrogen (ii) poor in humus
 (iii) highly fertile (iv) easy to plough
 (a) i, ii and iv (b) ii, iii and iv
 (c) i, iii and iv (d) i, ii and iii
155. One area in which peaty soil is found is
 (a) the Kashmir valley (b) Madhya Pradesh
 (c) Uttaranchal (d) Rajasthan
156. Name the macro plant nutrients
 (i) Phosphorous (ii) Iron
 (iii) Carbon (iv) Nitrogen
 (a) i and iv (b) i, ii and iii
 (c) i, iii and iv (d) All of these
157. The disease called 'black arm' affects
 (a) bajra (b) sugarcane
 (c) cotton (d) rice
158. The disease, 'green ear', affects
 (a) coffee (b) bajra
 (c) wheat (d) rice
159. Which of the following are wrongly matched?
 (i). Planet nearest to the earth - Mercury.
 (ii). Planet farthest from the earth - Pluto
 (iii). Planet with the most elliptical orbit - Uranus
 (iv). Planet with the slowest rotation - Neptune
 (a) i, ii and iii (b) i, iii and iv
 (c) ii, iii and iv (d) i, ii and iv
160. The minimum distance between the sun and the earth occurs on
 (a) December 22 (b) June 21
 (c) September 22 (d) January 3
161. The earth is at its maximum distance from the sun on
 (a) July 4 (b) January 30
 (c) September 22 (d) December 22
162. What is the International Date Line?
 (a) It is the equator.
 (b) It is the 0° longitude.
 (c) It is the 90° east longitude.
 (d) It is the 180° longitude.
163. How much of the surface of the moon is visible from the earth?
 (a) more than 75% (b) only about 40%
 (c) about 59% (d) about 65%
164. On the surface of the moon, the
 (a) mass and weight become lesser
 (b) mass remains constant and only the weight is lesser
 (c) only the mass is lesser
 (d) mass and weight both remain unchanged.
165. Which comet appears every 76 years?
 (a) Hailey's (b) Holme's
 (c) Donati's (d) Alpha Centauri
166. What is a tidal bore?
 (a) a tidal wave resulting from seismic activity
 (b) a deposit of sand in coastal areas
 (c) a formation of polyps just above high tide level
 (d) a high tidal wave moving upstream in the mouth of a river
167. Which place will experience sunlight for the longest period in summer?
 (a) Mumbai (b) Srinagar
 (c) Chennai (d) Kolkata
168. A day is added when one crosses
 (a) The equator from north to south
 (b) 180° longitude from west to east
 (c) 180° longitude from east to west
 (d) the equator from south to north.
169. The most prominent gases in the atmosphere, in terms of volume, are
 (a) nitrogen and methane
 (b) nitrogen and oxygen
 (c) oxygen and carbon dioxide
 (d) hydrogen and nitrogen.

170. Which gas in the atmosphere absorbs ultraviolet rays
 (a) Methane (b) Nitrogen
 (c) Ozone (d) Helium
171. 'Horse latitudes' is the term applied to the
 (a) $0^\circ - 5^\circ$ N and S latitudes
 (b) polar circles
 (c) $30^\circ - 40^\circ$ N and S latitudes
 (d) $40^\circ - 60^\circ$ N and S latitudes
172. The velocity of winds is governed by
 (a) pressure gradient (b) Farrel's Law
 (c) rotation of the earth (d) temperature
173. Which one of the following is a great circle?
 (a) Tropic of Cancer (b) Tropic of Capricorn
 (c) Equator (d) Arctic circle
174. What is the importance of ozone in the atmosphere?
 (a) It provides protection against ultraviolet radiation.
 (b) It provides condensation nuclei.
 (c) It creates the greenhouse effect on earth.
 (d) It helps scatter blue light.
175. Which one is an anticyclone?
 (a) Low pressure system with clockwise winds in the northern hemisphere
 (b) High pressure system with clockwise winds in the northern hemisphere
 (c) Low pressure system with clockwise winds in southern hemisphere
 (d) High pressure system with clockwise winds in southern hemisphere
176. What is a tornado?
 (a) A very high pressure centre
 (b) A very low pressure centre
 (c) A very high ocean wave
 (d) A planetary wind
177. What is the vapour pressure?
 (a) The presence of vapour in air
 (b) Barometric pressure
 (c) Pressure only due to vapour in the air
 (d) Pressure in the clouds
178. Rainfall caused due to the presence of mountains in the way of winds is called
 (a) orographic rain (b) cyclonic rain
 (c) convectional rain (d) advective rain
179. What is Gulf Stream?
 (a) A cold current in the Atlantic Ocean
 (b) A cold current in the Pacific Ocean
 (c) A warm current in the Atlantic Ocean
 (d) A warm current in the Pacific Ocean
180. What does the term 'lithosphere' refer to?
 (a) Plants and animals (b) Interior of the earth
 (c) Crust of the earth (d) None of these
181. The crustal layer of the earth is also called
 (a) sial (b) sima
 (c) moho (d) nife
182. Plains formed due to the filling up of lakes are called
 (a) delta plains (b) flood plains
 (c) till plains (d) lacustrine plains
183. Metamorphic rocks originate from
 (a) igneous rocks
 (b) sedimentary rocks
 (c) both igneous and sedimentary rocks
 (d) none of these
184. The layers in soil are referred to as
 (a) horizons (b) profile
 (c) hard pans (d) pedocals
185. What is peninsula?
 (a) A narrow bit of land
 (b) A mountainous island
 (c) A piece of land surrounded by water
 (d) A range of hills
186. Which is the largest ocean ?
 (a) Indian (b) Pacific
 (c) Atlantic (d) Arctic

ANSWER KEY

1	(d)	26	(c)	51	(c)	76	(d)	101	(b)	126	(b)	151	(d)	176	(b)
2	(c)	27	(c)	52	(a)	77	(b)	102	(a)	127	(b)	152	(c)	177	(c)
3	(a)	28	(c)	53	(b)	78	(c)	103	(a)	128	(a)	153	(c)	178	(a)
4	(a)	29	(c)	54	(c)	79	(d)	104	(b)	129	(c)	154	(b)	179	(c)
5	(a)	30	(a)	55	(b)	80	(c)	105	(c)	130	(b)	155	(c)	180	(c)
6	(b)	31	(d)	56	(d)	81	(d)	106	(d)	131	(a)	156	(c)	181	(a)
7	(d)	32	(a)	57	(a)	82	(c)	107	(c)	132	(d)	157	(c)	182	(d)
8	(a)	33	(b)	58	(b)	83	(d)	108	(b)	133	(a)	158	(b)	183	(c)
9	(b)	34	(a)	59	(c)	84	(b)	109	(b)	134	(c)	159	(b)	184	(a)
10	(b)	35	(b)	60	(c)	85	(c)	110	(b)	135	(a)	160	(d)	185	(c)
11	(b)	36	(a)	61	(c)	86	(d)	111	(a)	136	(d)	161	(a)	186	(b)
12	(d)	37	(b)	62	(b)	87	(a)	112	(a)	137	(d)	162	(d)		
13	(b)	38	(d)	63	(b)	88	(c)	113	(d)	138	(d)	163	(c)		
14	(b)	39	(b)	64	(c)	89	(b)	114	(b)	139	(c)	164	(b)		
15	(b)	40	(a)	65	(a)	90	(c)	115	(c)	140	(c)	165	(a)		
16	(b)	41	(b)	66	(c)	91	(a)	116	(c)	141	(d)	166	(d)		
17	(a)	42	(a)	67	(b)	92	(c)	117	(d)	142	(c)	167	(b)		
18	(b)	43	(c)	68	(d)	93	(b)	118	(a)	143	(d)	168	(c)		
19	(a)	44	(b)	69	(b)	94	(a)	119	(b)	144	(b)	169	(b)		
20	(d)	45	(d)	70	(d)	95	(a)	120	(c)	145	(d)	170	(c)		
21	(a)	46	(c)	71	(d)	96	(b)	121	(c)	146	(b)	171	(c)		
22	(b)	47	(b)	72	(c)	97	(b)	122	(b)	147	(c)	172	(a)		
23	(d)	48	(b)	73	(a)	98	(a)	123	(a)	148	(b)	173	(c)		
24	(b)	49	(b)	74	(c)	99	(a)	124	(a)	149	(d)	174	(a)		
25	(c)	50	(a)	75	(c)	100	(c)	125	(c)	150	(c)	175	(b)		