

# Key to Navjeevan Practice Book

Standard  
**6**

**Teacher's Copy**

## Geography

  
**NAVJEEVAN**  

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## Topic 1 : The Earth and the Graticule

### Class Assignment

- (A) (1) centre (2) parallel (3) 0  
(4) maximum, zero (5) location (6) globe
- (B) (1) (1)-(b), (2)-(c), (3)-(a)  
(2) (1)-(c), (2)-(a), (3)-(b)
- (C) (1) The parallels and meridians on the globe that form a net is called a graticule.  
(2) One meridian is considered to be  $0^\circ$ . This is known as the Prime Meridian.
- (D) (1) We can draw 181 parallels of latitude on the earth at the intervals of  $1^\circ$ .  
(2) The degrees of parallels are measured from the equator.  
(3) The values of parallels are angular measures expressed in degrees.  
(4) The distance between any two adjacent parallels and meridians is the same, which is 111 km.  
(5) Cairo, Harare and Durban in Africa are at an angular distance of  $30^\circ$  from the Prime Meridian.  
(6) We can draw 179 meridians in the Eastern Hemisphere and 179 meridians in the Western Hemisphere. This is not counting the  $0^\circ$  Prime Meridian and the  $180^\circ$  meridian.

### Intext Exercises

#### Make friends with maps!

- (1) Places shown on the map are North America, South America, Africa, Europe, Asia, Australia and Antarctica. Oceans - Arctic Ocean, Southern Ocean, Pacific Ocean, Atlantic Ocean and Indian Ocean.

- (2) The Taj Mahal is located in Agra.  
(3) The Taj Mahal is located in the continent of Asia.  
(4) For Graham, the Taj Mahal is in the South. For Katya, the Taj Mahal is in the North. For Michico, the Taj Mahal is to the West. For Minakshi the Taj Mahal is to the North West.  
(5) According to Shahid, Minakshi is in the East, Graham is to the North; Kimberley is to the South West, Natalia is to the West and Enrika is far West.  
(6) Enrika will say that Natalia lives in the East and Natalia will say that Enrika lives in the West. Yes, they both will be correct.

#### Do it Yourself!

(To be done by students with teacher's help.)

#### Can you tell ?

(To be done by students with teacher's help.)

#### Use your brain power !

The equator is considered as  $0^\circ$  parallel as the degrees of the parallels are measured from the equator. It is the largest parallel and a great circle. The equator divides the earth into two equal parts, the northern hemisphere and the southern hemisphere.

#### Do it Yourself!

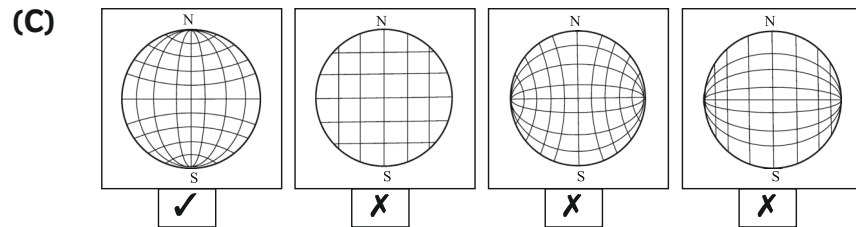
(To be done by students with teacher's help.)

#### Use your brain power !

At an interval of  $10^\circ$ , 36 meridians and 18 parallels can be drawn on a globe.

### Textual Exercises

- (A) (1) Parallels (2) Semicircular (3) Graticule  
 (4) 90 (5) 0° Prime Meridian and 180° meridian  
 (6) North / South Pole (7) Many
- (B) (1) **False.** They lie parallel to the equator.  
 (2) **False.** They are parallel to the equator.  
 (3) **True**  
 (4) **False.** Meridians show east or west.  
 (5) **False.** They meet at the North Pole and South Pole.



- (D) (1) The latitude of the North Pole is shown as 90°. The degrees of the parallels are measured from the equator, hence the equator is 0° and the North Pole is 90°. The meridian at the North Pole is 0°.
- (2) The angular distance between the Tropics is 48°.
- (3) The equator passes through Ecuador, Colombia and Brazil in S. America; Congo, Gabon, Kenya, Uganda in Africa, Sumatra, Borneo Islands in Asia.
- (4) The parallels and meridians on the globe form a net that is called graticule. This facilitates determining the location of a place on the earth.

### (E)

Characteristics	Parallels of latitude	Meridians of longitude
Shape	<b>Parallel lines</b>	<b>Semicircular</b>
Size	Size of each parallel is different.	<b>Equal in size</b>
Distance	<b>Larger at the equator because earth is spherical.</b>	Distance between two meridians is larger on the equator and the same decreases towards the Poles.

### Home Assignment

- (A) (1) graticule (2) longitude, latitude (3) 90  
 (4) 12756 (5) centre
- (B) (1)-(d), (2)-(a), (3)-(b), (4)-(c)
- (C) (1) The Indian Regional Navigation Satellite System (IRNSS) helps us locate any place on the Indian Subcontinent.  
 (2) We can draw 360 meridians on the earth at distance of 1°.  
 (3) We can draw 179 meridians in the Western Hemisphere.  
 (4) The latitudes and longitudes helps us to tell the exact locations of places on the earth.  
 (5) When mentioning the value of a parallel it is necessary for us to remember whether the line is in the Northern or Southern hemisphere.
- (D) (1) Meridians of longitudes are drawn from North to South on the map. They are semi circles joining both poles. One

of these meridians is considered to be  $0^\circ$ . This is the Prime Meridian. The angular distances of the other meridians from the Prime Meridian are measured in degrees. These are known as longitudes.

- (2) The parallels and meridians on the globe form a net that is called graticule. This facilitates determining the location of a place on the earth.

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## Topic 2 : Let us use the Graticule

### Class Assignment

- (A) (1) latitudes (2) Vatican City (3) Prime Meridian  
(4) parallel, meridian (5) River Nile
- (B) (1)-(d), (2)-(a), (3)-(b), (4)-(c)
- (C) (1) The important places in the Vatican city are St. Peter's Basilica, St. Peter's Square, Ethiopian College, Vatican Library, Pigna Garden, Vatican Radio, Palace of the Governatorate and the Treasury.  
(2) We use the equator as well as all pairs of opposite meridians from the Great Circles to find the minimum distance.  
(3) Greenwich Meridian is the other name for the Prime Meridian.  
(4) Greenwich Mean Time or GMT is the other name given to Global Standard Time.  
(5) Different temperature zones give rise to pressure belts.

## Intext Questions

### Make friends with the globe!

- (1) They are called parallels of latitudes.  
(2) The equator passes through Africa, South America and islands of Sumatra and Borneo.  
It passes through the Pacific Ocean, Atlantic Ocean and Indian Ocean.  
(3) The Arctic Ocean, the Antarctic Ocean, the Pacific Ocean, the Atlantic Ocean and the Indian Ocean are spread in the four hemispheres.  
(4) The continents spread in all the four hemispheres are North America, South America, Europe, Africa, Asia, Australia and Antarctica.  
(5) All the meridians converge at  $90^\circ$  N and  $90^\circ$  S parallels.
- (1) Latitude  $10^\circ$  S and longitude  $50^\circ$  W.  
(2) It would be approximately  $35^\circ$  W to  $75^\circ$  W.  
(3) It extends in the Southern Hemisphere.  
(4) In the Western Hemisphere.  
(5) The extent is approximately from  $05^\circ$  S latitude,  $35^\circ$  W longitude to  $23^\circ$  S latitude and  $46^\circ$  W longitude.  
(6) The Marajo island is approx. between  $48^\circ$  W longitude and  $0^\circ$  latitude and  $55^\circ$  W longitude and  $0^\circ$  latitude.

### Think a little!

- (1) The Tropic of Cancer.  
(2) Leh and Srinagar do not get perpendicular sunrays.  
(3) Regions in Hyderabad and Chennai receive perpendicular rays.

**Think a little!**

- (1) The meridians opposite to  $90^\circ$  E is  $90^\circ$  W meridian.  
The meridians opposite to  $170^\circ$  W is  $10^\circ$  E meridian.  
The meridians opposite to  $30^\circ$  E is  $150^\circ$  W meridian and the meridians opposite to  $20^\circ$  W is  $160^\circ$  E meridian.
- (2) A pair of opposite meridians make  $360^\circ$ . Thus, all pairs of opposite meridians form Great Circles.

**Use your brain power!**

To cover the shortest distance between Kolkata and Chicago, the aeroplane should move north west via. Delhi.

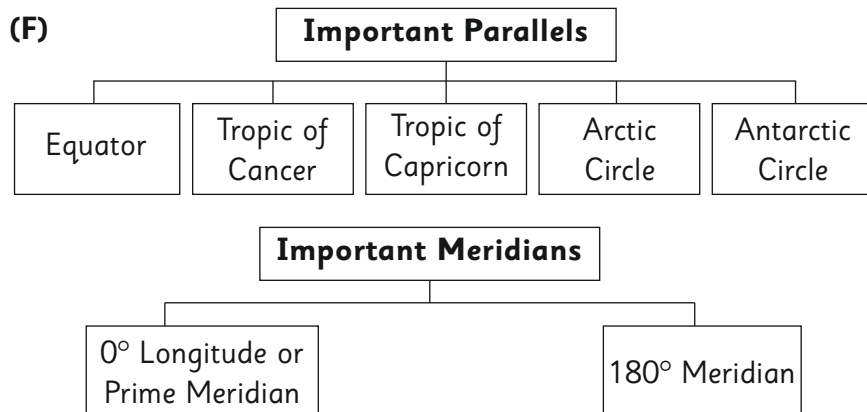
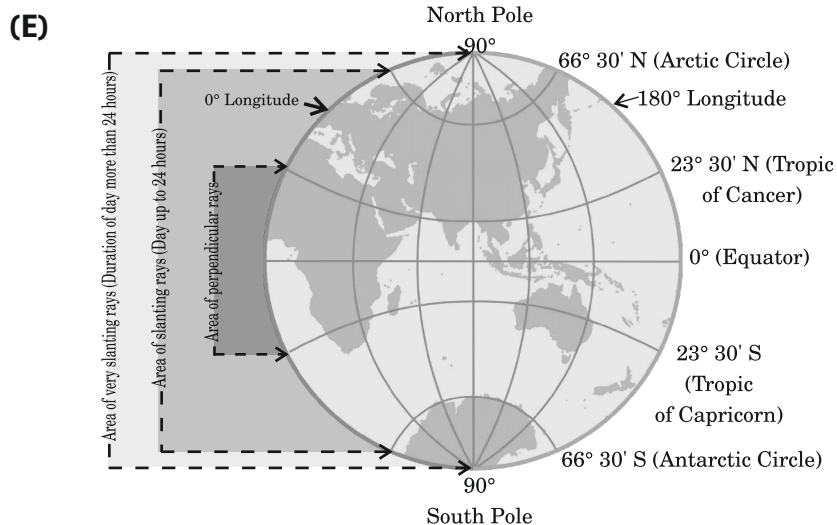
**Textual Exercises**

- (A) (1) Arctic Circle      (2) Equator      (3)  $66^\circ 30'$   
(4) Atlantic Ocean  
(5) Tropic of Cancer and Tropic of Capricorn  
(6)  $90^\circ$  S
- (B) (1) **Wrong** - Both latitude and longitude are necessary.  
(2) **Wrong** - We need to consider two parallels and two meridians at the extreme ends of the region.  
(3) **Right**  
(4) **Wrong** -  $0^\circ$  and  $180^\circ$  have no E or W.  
(5) **Wrong** - We need to consider two parallels and two meridians at the extreme ends of the region.  
(6) **Wrong** - Both parallels as well as meridians are necessary.

**(C)**

			<b>Latitude</b>	<b>Longitude</b>
<b>(1)</b>	Mumbai	–	$19^\circ 07' 60''$ N	$72^\circ 87' 77''$ E
<b>(2)</b>	Guwahati	–	$26^\circ 14' 45''$ N	$91^\circ 73' 62''$ E
<b>(3)</b>	Srinagar	–	$34^\circ 08' 37''$ N	$74^\circ 79' 73''$ E
<b>(4)</b>	Bhopal	–	$23^\circ 25' 99''$ N	$77^\circ 41' 26''$ E
<b>(5)</b>	Chennai	–	$13^\circ 08' 27''$ N	$80^\circ 27' 07''$ E
<b>(6)</b>	Ottawa	–	$45^\circ 42' 15''$ N	$75^\circ 69' 72''$ W
<b>(7)</b>	Tokyo	–	$35^\circ 68' 95''$ N	$139^\circ 69' 17''$ E
<b>(8)</b>	Johannesburg	–	$26^\circ 20' 41''$ S	$28^\circ 04' 73''$ E
<b>(9)</b>	New York	–	$40^\circ 7' 128''$ N	$74^\circ 00' 59''$ W
<b>(10)</b>	London	–	$51^\circ 50' 74''$ N	$0^\circ 12' 78''$ W

- (D) (1) Maharashtra (State) : Latitude  $15^\circ 55'$  N to  $22^\circ$  N, Longitude  $72^\circ 5'$  E to  $80^\circ 9'$  E  
(2) Chile (A country) : Latitude  $17^\circ$  S to  $56^\circ$  S, Longitude  $66^\circ$  W to  $75^\circ$  W  
(3) Australia (A continent) : Latitude  $10^\circ 30'$  S to  $43^\circ 39'$  S, Longitude  $113^\circ 9'$  E to  $153^\circ 38'$  E  
(4) Sri Lanka (An island) : Latitude  $5^\circ$  to  $10^\circ$  N, Longitude  $79^\circ$  to  $82^\circ$  E  
(5) Trans Siberian Railway of Russia : 9,829 km  
Starting point - St. Petersburg : Latitude  $59.93^\circ$  N, Longitude  $30.33^\circ$  E  
Terminal Point - Vladivostok : Latitude  $43.173^\circ$  N, Longitude  $132.0065^\circ$  E



**Home Assignment**

- (A)** (1) Arctic Circle (2) six (3) sunlight
- (B)** (1)-(d), (2)-(c), (3)-(a), (4)-(b)
- (C)** (1) The equator passes through the Pacific Ocean and the Atlantic Ocean.
- (2) In the entire region between the Tropic of Cancer and Tropic of Capricorn, the sun's rays can be perpendicular on two days in a year.

- (3) 0° Meridian is called the Greenwich Meridian.
- (4) The earth's axis is inclined by 23° 30'.

**Topic 3 : Comparing a Globe and a Map : Field Visits**

**Class Assignment**

- (A)** (1) two, three (2) globe  
 (3) Geography (4) graticule
- (B)** (1)-(c), (2)-(a), (3)-(d), (4)-(b)
- (C)** (1) We use maps to study the whole world or regions of limited extent.
- (2) The product of the length and width of the place gives us the area of the place.
- (3) The globe is known as a representative model of the entire earth.

**Intext Questions**

**Do it yourself!**

- (B)** (1) The map is a flat device.
- (2) The globe is a spherical device.
- (3) The map is a device which allows you to see the entire area of the earth at the same time.
- (4) The globe is a device which allows you to see only one side of the earth at a time.
- (5) The map is a device which can be used for studying a particular region in detail.
- (6) The globe is a device which can be called a model of the earth.

### Textual Exercises

- (1) Two dimensional objects are flat while three dimensional objects have got body and weight. Two dimensional objects only have area while three dimensional objects have volume.
- (2) The place along with the parallels of latitudes and the longitudinal lines can be shown. Other details cannot be shown since the space is small.
- (3) The globe.
- (4) The map.
- (5) The map.

### Home Assignment

- (A) (1) three dimensional (2) area (3) map
- (B) (1)-(c), (2)-(a), (3)-(d), (4)-(b)
- (C) (1) The map is flat and the globe is spherical.  
(2) A graticule is absolutely essential for drawing the map of the earth.  
(3) Field visit helps us to understand the geographical and social conditions of a place.  
(4) The EARTHA is housed at Yarmouth in Maine - USA.  
(5) The EARTHA is the largest operational globe in the world.
- (D) (1) A field visit is an important method of studying Geography. Field visit helps us to understand the geographical and social conditions of a place. It provides an opportunity to directly interact with the local people and understand their problems.

### Topic 4 : Weather and Climate

#### Class Assignment

- (A) (1) weather (2) season (3) moisture  
(4) vapour (5) earth's (6) weight, pressure
- (B) (1)-(b), (2)-(a), (3)-(d), (4)-(c)
- (C) **True :** (2) **False :** (1), (3), (4)
- (D) (1) Woollen clothes are used during winter season.  
(2) Latitudinal position, height above sea level, nearness to the ocean, oceanic currents are some factors that influence climate.  
(3) Climate influences the diet, shelter and clothing of living things.  
(4) Climate is expressed as 'cool and dry' or 'hot and humid' or 'hot and dry'.

#### Intext Questions

##### Can you tell?

- (1) (a) In Bhopal the clothes on a clothesline will dry quickly. Due to the hot sun the water in the wet clothes get converted into vapour.  
(b) In Mussoorie the clothes will take a longer time to dry because of the cold weather and mild sun.  
(c) No, the atmospheric conditions at these places will not remain the same but, will change from time-to-time.

##### Use your brain power !

- (1) The occupations practiced in cold regions are lumbering and agriculture.

- (2) The occupations practiced in hot regions are animal husbandry and agriculture.

### Textual Exercises

- (A) (1) Weather (2) Climate  
(3) Hail stones / snow (4) Moisture
- (B) (1) Mahabaleshwar is situated at a height above sea level where the air is cool, hence the climate is cool.  
(2) The atmosphere near the sea contains a greater amount of water vapour. This is known as moisture. Air that has greater amount of vapour is called humid air.  
(3)

	Weather		Climate
(a)	Weather is described on the basis of the conditions prevailing at the given time.	(a)	Climate is described on the basis of the conditions prevailing over a longer period of time.
(b)	Weather keeps changing frequently.	(b)	Changes take place over a long period of time.
(c)	We can experience the changes easily.	(c)	The changes are not perceived easily.

- (4) The elements of weather are Temperature, Air Pressure, Winds, Moisture and Precipitation.

- (5) Nearness to the sea makes the weather humid since this atmosphere contains a great amount of water vapour or moisture.

Places that are situated above sea level are cooler since the surface layer of air gets heated quickly and as we move upwards from sea level, the temperature of air decreases.

(C)

Hot	<b>Rajasthan</b>
Hot and humid	<b>Mumbai</b>
<b>Cold</b>	<b>Kashmir</b>
<b>Hot and dry</b>	<b>Bhopal</b>
Cold and dry	<b>Mussoorie</b>

(D)

Weather	Climate
Short-lived condition of atmosphere.	<b>Prevailing over a large period</b>
<b>Changes quickly</b>	Does not change quickly
Expressed with respect to a specific place.	<b>Expressed with respect to a state or a country</b>
<b>Temperature, air pressure, winds, moisture, precipitation.</b>	Elements of climate : Temperature, pressure, winds, humidity and precipitation.

### Home Assignment

- (A) (1) air pressure (2) Wind (3) climate  
(4) equator, poles (5) temperature
- (B) (1)-(c), (2)-(a), (3)-(d), (4)-(b)
- (C) (1) Elements of weather are taken into consideration while describing climate.  
(2) The average weather conditions of a place observed over a long period of time is the 'climate' of that region.
- (D) (1) When vapour in the atmosphere condenses into small water droplets or snow particles that fall in form of rain, snow or hail stones is called precipitation.



- (2) Air moves from high pressure towards low pressure in a horizontal direction. This moving air is called winds.
- (E) (1) Air has weight, therefore, it creates pressure. This is known as air pressure. The lowermost layers of air get subjected to the pressure of the upper layers. Hence, the density of the lower layers of air increases.
- (2) The earth's surface gets heat from the sun. This heats up the surface. The air close to the surface starts becoming hot and one by one different layers of air at higher elevations receive heat. Hence, as we move upwards from sea-level, the temperature of air decreases.

### Topic 5 : Temperature

#### Class Assignment

- (A) (1) straight (2) higher (3) coastal, continental  
(4) Greenhouse gases (5) celsius (6) Isotherms
- (B) (1)-(a), (2)-(c), (3)-(b), (4)-(d)
- (C) (1) **False** - The difference is less in the coastal regions and more in the continental areas.  
(2) **True**  
(3) **True**  
(4) **False** - It reduces the temperature of the coasts in the torrid zone.
- (D) (1) Sunrays falling on the earth are straight and parallel to each other.  
(2) Latitude is the main factor that influences the distribution of temperature.

- (3) Between  $0^\circ$  and  $23^\circ 30'$ , the sun's rays will fall almost parallel or direct, making the area very hot.
- (4) It is called diurnal range of temperature.
- (5) Due to temperature differences both upward and horizontal currents develop in the oceans.
- (6) It reduces the temperature of the coasts in the torrid zone and increases the temperature of the coasts in the frigid zone.
- (7) Planktons are the food for fishes.
- (8) Isotherms are lines that connect places with the same temperatures after avoiding the effect of height.

#### Intext Questions

##### Can you tell?

- (1) Perpendicular, Slant, Extreme slant

##### Use your brain power !

The above statement is right.

**Reason :** To understand the climate of a region, the latitudinal extent is more useful because the earth is divided into three temperature zones depending on the heat received from the equator to the North and South Poles.

##### Can you tell ?

- (1) It is fixed on a wooden stand or mount.
- (2) Mercury or alcohol is used in the thermometer tube.
- (3) The figures indicate the temperature.
- (4) The temperature is measured in the Celsius or Fahrenheit scale.
- (5) The temperature in the figure indicates hot weather or summer season.

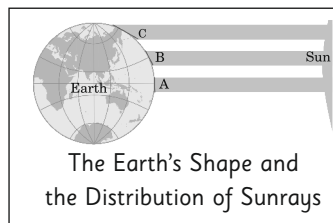
### Think a little !

- (1) Water or oil cannot be used in a thermometer because they have a higher freezing point and lower boiling point. This will make it difficult to measure temperature.
- (2) The temperature of the district headquarters is recorded in the district meteorological department.

### Textual Exercises

- (A) (1) North America, North Asia  
(2) Africa, South America, Asia, Australia  
(3) Europe, Asia, North America
- (B) (1) Isotherm                      (2) Thermometer  
(3) Atmosphere                    (4) Sunrays

- (C) (1) Due to the spherical shape of the earth and the resultant curvature of the surface, the sun's rays occupy a larger or lesser area. This leads to unequal distribution of the heat received from the sun, resulting in decreasing temperature from the equator to the North and South Poles.



The Earth's Shape and the Distribution of Sunrays

- Based on this fact, the earth is divided into torrid, temperate and frigid zones.
- (2) The sun's rays fall directly on the equator and above and below the equator. These areas receive direct strong sunrays. Hence, these areas are very hot. Areas along the Tropics of Cancer and Capricorn receive slanting sunrays. Hence, the heat will be considerably reduced. Therefore,

these areas will not be very hot. Areas below and above 66°30' N and South receive very slanting sunrays. Therefore, here, it will be cold.

- (3) Isotherms are lines that connect places with the same temperatures after avoiding the effect of height. Since the isotherm lines give us the temperatures of places, they deviate because there are places having different temperatures along the latitudes. Where the proportion of land is greater, the temperatures will vary, hence the isotherms will be wavy or zigzag.

### Home Assignment

- (A) (1) frigid zones, torrid zones                      (2) latitudinal  
(3) Isolines                      (4) Isotherms                      (5) planktons
- (B) (1)-(d), (2)-(c), (3)-(b), (4)-(a)
- (C) (1) **True**  
(2) **False** - The earth is divided into torrid, temperate and frigid zones.  
(3) **False** - Land cools faster than water.  
(4) **True**
- (B) (1) Sunrays falling on the earth are straight and parallel to each other. However, due to the spherical shape of the earth and the resultant curvature of the surface, they occupy a larger or lesser area. This leads to unequal distribution of the heat received from the sun, resulting in decreasing temperatures from Equator to the Poles.  
(2) In coastal areas because of the heating of sea water, water vapour gets mixed with the air. This water vapour, holds the heat in the air, as a result the air in the coastal areas remains moist and warm.

- (3) As water vapour is absent in the continental areas, the air remains dry. This leads to sharp differences in the day and night temperatures.
- (4) Regions of warm and cold currents converge are favourable for the growth of planktons. Planktons are food for fishes. Fish from other areas travel to these areas in large numbers. Due to high concentration of fish population, fisheries thrive well in these areas.

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### Topic 6 : Importance of Oceans

#### Class Assignment

- (A) (1) hydrosphere (2) Salinity (3) coastal  
(4) oceans (5) water (6) Ocean currents
- (B) (1)-(c), (2)-(a), (3)-(d), (4)-(b)
- (C) (1) True  
(2) False - These rivers flow into the seas and oceans.  
(3) False - They get more heat from the sun since the sun shines perpendicular on these areas.  
(4) True
- (D) (1) Hydrosphere (2) Salty (3) Volcanic  
(4) Ocean (5) Mangrove (6) International
- (E) (1) The aquatic life we find in the oceans range from the microscopic planktons to huge whales.  
(2) Dead remains decompose and release various minerals and salts in the sea water.  
(3) The maximum salinity of the Dead Sea is 332%.

- (4) Besides food, marine animals are used for the production of fertilizers, pharmaceuticals and in research.
  - (5) The water body that extends from 60° S parallel to the coast of the Antarctic Continent is named as the Southern Ocean.
  - (6) Oceans have provided us with the most economic option of transportation.
- (F) (1) Oil spills, release of waste products into the sea, exploitative fishing, cutting of mangrove forests, release of sewage by industries and cities and excavations carried out in the seas have polluted oceanic waters. Hence, coastal regions are turning into death traps for aquatic animals. Many aquatic animals like the blue whale, types of turtles, dolphins, etc., are under threat of being extinct.

#### Intext Questions

##### Think a little!

- (1) The water flowing through the rivers go into bigger bodies like oceans, seas, etc. These are called as the 'mouth' of the river.
- (2) Yes, there are volcanic eruptions in the seas. 70% of all volcanic eruptions occur underwater.

##### Use your brain power!

- (1) The earth's water came from rocky materials, such as asteroids and clouds of dust and gas that came after the sun formed.

##### Think a little!

- (1) If man had not discovered sea routes then we would have lost the most economic option of transportation.

### Textual Exercises

- (A) (1) ship (2) Dead Sea (3) Peru  
(4) Bay of Bengal (5) gold
- (B) (1) Man gets salt, fish, shells, minerals like iron, lead, cobalt, sodium, manganese, chromium, zinc, etc., mineral oil, natural gas, pearls, corals and some medicinal plants from the ocean.  
(2) Transportation of bulky materials like coal, crude oil, raw materials, metallic minerals, food grains prefer water transportation because the ocean currents accelerate the speed of ships with ease. This also saves fuel to a considerable extent. Hence, it is economic to carry out transport by waterways.  
(3) In regions close to the oceans, the water vapour released from water bodies, absorbs and stores heat released from land. This keeps the temperature of the coastal areas equal. Whereas, regions far from the sea get less heat due to little water vapour because of absence of water bodies. Therefore, there is a difference in the climates of regions close to the oceans and regions far away from the oceans.  
(4) The continents located along the coasts of the Pacific ocean are North America, South America, Australia and Asia.

### Home Assignment

- (A) (1) Volcanic (2) 35% (3) marine (4) fish  
(B) (1)-(d), (2)-(c), (3)-(a), (4)-(b)  
(C) True : 1, 4 False : 2, 3  
(D) (1) In drinking water, the proportion of salts is quite low.

- (2) Salt is obtained by constructing salt pans in coastal areas.  
(3) Marine animals are used for food, for the production of fertilizers, pharmaceuticals and also in research.  
(4) The earth is the only planet that has a living world.  
(5) The Southern Ocean extends from 60°S and it is located parallel to the coast of the Antarctic Continent.  
(6) Water transport carried out along ocean currents help to accelerate the speed of ships and saves fuel.  
(7) About 70.8% of the earth's surface is occupied by water.  
(8) Pollution of oceanic waters is a major issue developed in recent times.  
(9) Water transport is given preference during transportation of bulky materials such as coal, crude oil, raw materials, metallic minerals, food grains, etc.
- (E) (1) There are several ways in which oceans are being polluted. We are using the oceans for oil spills of big factories. Waste products are being released in seas, materials are being thrown from ships, there is exploitative fishing, we are cutting our mangrove forests in coastal areas, water mines are causing disasters, sewage is being released by industries and cities and excavations are being carried out in the seas.

All the above factors are leading to large scale oceanic pollution.

- (F) (1) The wood of mangrove trees is light and oily. These forests protect coastal areas from huge waves. These forests also protect the biodiversity in the coastal areas, hence they are called lungs of the towns near which they are located.

- (2) Regions close to the sea have equable climate. Coastal regions have always attracted man due to the climate, abundance of food and various products obtained from the sea.

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## Topic 7 : Rocks and Rock Types

### Class Assignment

- (A) (1) minerals (2) primary (3) porous  
(4) Laterite (5) diamond (6) fossils
- (B) (1)-(c), (2)-(a), (3)-(d), (4)-(b)
- (C) (1) True  
(2) False - They are generally brittle and lightweight.  
(3) True  
(4) False - It provides information about life in that period.
- (D) (1) Rocks are a mixture of different minerals formed by natural processes in the lithosphere.  
(2) Silica, aluminium, magnesium and iron are the major rock forming minerals.  
(3) Lava, gases, dust, ashes, etc., are thrown out during volcanic eruptions.  
(4) It is easy to carve on sandstone because it is relatively soft.
- (E) (1) Due to thick and extensive layer of basalt, Maharashtra does not have large reserves of mineral wealth. Therefore, mining activity is concentrated in South Konkan and eastern Maharashtra.

- (2) Due to continuous variations in the temperature, rocks develop cracks. Similarly, the water percolating through rocks dissolves the soluble minerals. This leads to the weathering of rocks. This makes the rocks disintegrate or decompose and they get reduced to pieces.

### Intext Questions

#### Do it yourself!

- (1) Hill in A is made up of soils and rocks.  
(2) The land is being dugged and the rocks and soil extracted is loaded into a truck.  
(3) In C we see pebbles and rocks of different shape and colour.  
(4) Yes, all are naturally occurring processes on land leading to rock and soil formation.  
(5) Construction and coloured pebbles for decoration.

#### Use your brain power!

- (1) Igneous rocks were used for building the forts in Maharashtra as these rocks are hard, homogeneous and heavy.

#### What will you do?

- (1) I would advice him to use metamorphic rock i.e. marble. Marble will give the sculpture a glow due to its translucent nature. These rocks are heavy and hard and hence, are ideal for making sculptures.

### Textual Exercises

- (A) Sand is made from tiny grains of rocks and minerals. It can also be tiny particles of the shells of sea creatures. Some sand comes from the calcium (a mineral) in seaweed. Sand can be of different colours. That's because shells, rocks and minerals are

of different colours. Sand on beaches can be black, white, brown, green, yellow or even pink!

Sand is formed when rocks or shells break into tiny pieces. Over time, rock is broken down by water, wind and ice. It takes thousands or millions of years to create sand. Wind, water (rain), ice, and even the processes of freezing and thawing take place on mountains. Pieces of rocks break off from the mountain. These pieces fall because of gravity. Water and wind may carry them far away.

**(B)** Fort Raigad and Ellora Sculptures.

**(C)** (1)

	<b>Igneous rocks</b>		<b>Sedimentary rocks</b>
<b>(a)</b>	They are formed when the molten material such as magma and lava cool down and solidify.	<b>(a)</b>	Rocks break up and get disintegrated due to the variations in the temperature. These particles get transported by rivers, glaciers, wind, etc., and get deposited in layers. One layer forms over the other forming sedimentary rocks.
<b>(b)</b>	These rocks are formed out of material from the interior of the earth.	<b>(b)</b>	These rocks are formed from disintegrated or decomposed pieces of rocks.
<b>(c)</b>	These rocks are hard and heavy.	<b>(c)</b>	These rocks are brittle, lightweight and porous.

**(2)**

	<b>Igneous rocks</b>		<b>Metamorphic rocks</b>
<b>(a)</b>	They are formed when the molten material such as magma and lava cool down and solidify.	<b>(a)</b>	Due to volcanic activity and other earth movements, igneous or sedimentary rocks are subjected to tremendous pressure and heat, which change the nature as well as the composition of the original rocks.
<b>(b)</b>	These rocks are formed out of material from the interior of the earth.	<b>(b)</b>	The rocks get metamorphosed.
<b>(c)</b>	These rocks are hard and heavy.	<b>(c)</b>	These rocks are heavy and hard.
<b>(d)</b>	We do not get fossils in these rocks.	<b>(d)</b>	They do not contain fossils.

**(3)**

	<b>Sedimentary rocks</b>		<b>Metamorphic rocks</b>
<b>(a)</b>	Rocks break up and get disintegrated due to variations in temperature. These particles get transported by rivers, glaciers, wind, etc., and get deposited in layers. One layer forms over the other forming sedimentary rocks.	<b>(a)</b>	Due to volcanic activity and other earth movements, igneous or sedimentary rocks are subjected to tremendous pressure and heat, which change the nature as well as the composition of the original rocks.

<b>(b)</b>	These rocks are formed from disintegrated or decomposed pieces of rocks.	<b>(b)</b>	The rocks get metamorphosed.
<b>(c)</b>	These rocks are brittle, lightweight and porous.	<b>(c)</b>	These rocks are heavy and hard.
<b>(d)</b>	We find fossils in these rocks.	<b>(d)</b>	They do not contain fossils.

**(D)** (1) Basalt (2) Laterite and Basalt (3) Granite

### Home Assignment

**(A)** (1) soil, rocks (2) fossils (3) sedimentary  
(4) Laterite (5) granite (6) lava

**(B)** (1)-(c), (2)-(a), (3)-(d), (4)-(b)

**(C)** (1) They are Igneous rocks, Sedimentary rocks and Metamorphic rocks.

(2) As igneous rocks are formed out of material from the interior of the earth, they are referred to as primary rocks.

(3) Rocks develop cracks due to continuous variation in the temperature.

(4) They are called elephant yards or lakes.

(5) It is an igneous rock, formed out of volcanic froth.

(6) The molten material within the earth's crust is known as Magma.

**(D)** (1) Properties of rocks depend on the constituent minerals and their proportion, as well as on the formation process. Silica, aluminium, magnesium and iron are the major rock forming minerals.

(2) When the molten material, known as magma within the crust and lava on the surface, cools down, it solidifies, giving rise to rocks. These rocks are known as igneous rocks. These rocks appear hard, homogenous and heavy too. We do not get fossils in these rocks. Basalt is a major example of igneous rocks.

(3) Due to variations in the temperature and the water percolating through rocks, they get disintegrated and are reduced to pieces. These pieces get transported by rivers, glaciers, wind, etc., towards low lying areas and get deposited there. Sediments after sediments get deposited. The upper layers exert heavy pressure on the lower layers leading to the development of sedimentary rocks.

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### Topic 8 : Natural Resources

#### Class Assignment

**(A)** (1) Air (2) agriculture (3) water  
(4) animals (5) 29.20% (6) natural

**(B)** (1)-(c), (2)-(d), (3)-(b), (4)-(a)

**(C)** (1) **False** - Some chemicals are used to make medicines.

(2) **True**

(3) **False** - It is collected from trees.

(4) **True**

**(D)** (1) Air, water, soil, land, minerals, plants and animals are all natural resources.

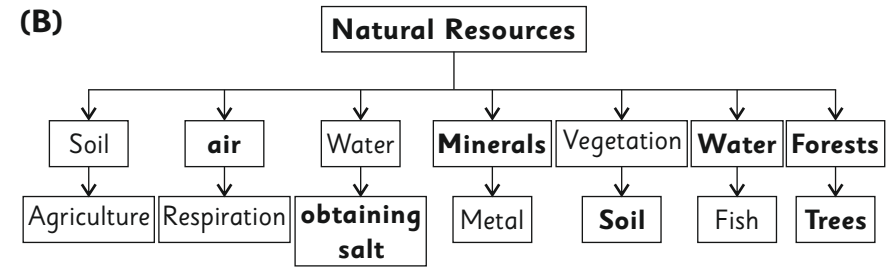
(2) Soil is an important resource for agriculture because it gives nutrients to support the growth of plants and crops.



- (3) Plants are broadly classified as grass, herbs, shrubs and trees.
- (4) Settled life sprang up in the basins of Huang He, Sindhu (Indus), Nile and Euphrates.
- (5) Minerals are classified as metallic and non-metallic minerals.
- (6) The increase in population and the greed of humans led to exploitative use of resources.

### Textual Exercises

- (A)
- (1) The entire living world depends on water. Water is used for drinking, cleaning, washing, bathing, agriculture and industrial purposes.
  - (2) Forests are habitats for many animals. We obtain wood, honey, rubber latex, medicinal plants, herbs and shrubs from trees in forests.
  - (3) Animals such as horses, oxen, camel, asses, etc., are used for ploughing, riding, transporting goods, etc. Goats, cows, buffaloes are used to get milk. We also get meat, eggs, wool, etc., from animals.
  - (4) We get different metals and chemicals from minerals. Chemicals are used for preparing medicines. Metallic minerals are used for obtaining iron, bauxite, etc. Non-metallic minerals are used for obtaining gypsum, rock salt, calcite, etc.
  - (5) Land is used for construction and trade. It is used to build roads, railways, for agricultural purposes and for settlements.



- (C)
- (1) Soil formation mainly depends on the original rock, climate, organic components, slope of the land and time. According to the types of rocks and climates in different regions, different types of soils are formed. A long period is required for the formation of mature soil.
  - (2) We obtain products such as wood, fruits, honey, resin, rubber, latex, etc. from forests. Forests give us plants such as grass, herbs, shrubs, etc. We also get medicinal plants from forests.
  - (3) We get different metals and chemicals from minerals. Chemicals are used for preparing medicines. Metallic minerals are used for obtaining iron, bauxite, etc. Non-metallic minerals are used for obtaining gypsum, rock salt, calcite, etc.
  - (4) Land is used for construction and trade. It is used to build roads, railways, for agricultural purposes and for settlements.
  - (5) Man has to depend on nature for many things. Most of the natural resources are limited in nature, therefore they are invaluable. Man fulfills his needs using the natural resources such as air, water, soil, land, minerals and animals. Man must realise that nature is not for man alone. It belongs to other living things too, therefore we must always use natural resources judiciously.



### Home Assignment

- (A) (1) depletes (2) cultivable (3) mature soil  
(4) water (5) Rock
- (B) (1)-(d), (2)-(c), (3)-(a), (4)-(b)
- (C) (1) Equatorial evergreen forests are found near the equator.  
(2) Land is sold or bought because it is an invaluable resource.  
(3) Goats, cows and buffaloes are some milch animals.  
(4) Metallic minerals are used for obtaining metals such as iron, bauxite, etc.  
(5) Non-metallic minerals are used for obtaining various chemicals like gypsum, rocksalt, calcite, etc.  
(6) Land being used for different purposes depends on the characteristics like physiography, soil, climate, minerals and availability of water in different regions of the world.

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### Topic 9 : Energy Resources

#### Class Assignment

- (A) (1) cheap (2) electricity (3) energy  
(4) black gold (5) Kinetic (6) 32 metres
- (B) (1)-(a), (2)-(c), (3)-(d), (4)-(b)
- (C) (1) True  
(2) False - because they are inflammable, they cause damage to the environment  
(3) False - They are found in some places in Jharkhand  
(4) False - It is obtained from water

- (D) (1) Hydel (2) 4000°C
- (E) (1) The demand for energy is increasing due to growing population, urbanization and growing needs of man.  
(2) Unapdeo, Vajreshwari and Manikaran are places we can find hot water springs.  
(3) Intensity of solar energy is maximum in the torrid zone.  
(4) For generating wind energy a wind speed of 40 to 50 kmph is required.  
(5) Kinetic energy is used for agriculture, domestic purposes and industries.  
(6) The different types of power generations are hydel, thermal, atomic, geo-thermal, etc.  
(7) To generate electricity it is necessary to burn the energy resources directly.
- (F) (1) Mineral oil is called 'black gold' because of its blackish colour. Its cost is very high. Mineral oil is limited in nature and in great demand.

#### Intext Question

#### Make friends with maps!

- (A) (1) W.Bengal, Odisha, Jharkhand Bihar, Chhattisgarh.  
(2) Mumbai high.  
(3) Chhattisgarh and Jharkhand.  
(4) Digboi, Lakhani, Makum, Nanakitiya.  
(5) Coal.  
(6) Telangana , Chhattisgarh, Odisha, A. Pradesh.
- (1) Koyna Hydroelectric Project
  - (2) Bandhardhara Hydroelectric Project (Ahmadnagar)

(3) Bhatgarh Hydroelectric Project (Pune)

(4) Bhatsa Hydroelectric Project (Thane)

### Textual Exercises

- (A) (1) wind (2) wood, fire (3) wood, fire  
(4) coal (5) water, coal (6) kerosene, gas, wood  
(7) candle

- (B) (1) Man uses substance-based Energy Resources the most. These resources are wood, coal, mineral oil, natural gas, waste matter etc. The generation of this type of energy is relatively cheap. Wood, coal, kerosene and gas are used very commonly.
- (2) We engage ourselves in various activities to fulfill our needs. For this we need energy. The demand for energy is constantly on the rise due to the growing needs of human beings.
- (3) We need to use environment friendly resources like sun, wind, tides and heat from the earth's interior because these are pollution free and always available. These resources are process-based and unlimited. It is possible to reuse these resources.

(C) (a)

	Mineral Oil		Solar Energy
(i)	Found under the land surface and below the ocean floor.	(i)	Light and heat from the sun.
(ii)	Generation of energy leads to pollution.	(ii)	Eco friendly.

(iii)	Mineral oil reserves are limited and the mineral oil is very costly.	(iii)	There is a lot of scope for using this energy.
(iv)	Oil rigs can be constructed in the sea far from land.	(iv)	The generation of solar power depends on intensity of sunlight and duration of sunshine.

(b)

	Hydel Power		Geo-thermal Power
(i)	Obtained from kinetic energy of running water.	(i)	Underground heat is used to generate power.
(ii)	Does not cause any degradation of the environment.	(ii)	They cause minimum pollution.
(iii)	The water used can be used again.	(iii)	All energy resources are abiotic. They are inexhaustible energy resources.
(iv)	Can be used only in places near rivers, oceans and seas.	(iv)	Can be used only when the under -ground heat is very high.

### Home Assignment

- (A) (1) Splitting (2) running water (3) Biogas
- (B) (1)-(b), (2)-(c), (3)-(d), (4)-(a)
- (C) (1) Geo-thermal energy resources are known as inexhaustible energy resources.

- (2) Cookers, lamps, heaters, vehicles, etc. are some devices that run on solar power.
- (3) Tamil Nadu and Maharashtra are two states in India where windmills have been erected to get wind energy.
- (4) Coke and high quality coal is used in industries and thermal power stations.
- (5) Biogas is generated from biotic waste material such as faeces of animals, dead, leaves, shells, etc.
- (D) (1) Long ago, plant and animal remains got buried due to earth movements. They were then decomposed due to the pressure and heat leaving behind the element carbon. That is how coal was formed.
- (2) Energy resources can be classified as conventional - non-conventional; biotic-abiotic; renewable - non-renewable; substance-based and process-based.
- (3) Biogas can be used for domestic needs such as cooking, heating water, lighting lamps, etc.
- (4)

	<b>Substance - based Energy Resources</b>		<b>Process - based Energy Resources</b>
(1)	<b>Examples :</b> Wood, coal, mineral oil, natural gas, waste matter, atoms.	(1)	<b>Examples :</b> Sun, wind, water, tides, heat from earth's interior.
(2)	Do not last forever	(2)	Last forever
(3)	Substances get used up	(3)	Always available
(4)	Reuse not possible	(4)	Reuse is possible.
(5)	Availability is limited	(5)	Availability is unlimited

(6)	Takes thousands of years to replenish	(6)	Easily available in nature.
(7)	Except atomic energy, the other resources are biotic.	(7)	All processes are natural.
(8)	Leads to pollution.	(8)	Pollution free
(9)	Except atomic energy, all resources are conventional.	(9)	Non conventional
(10)	Generation of energy is cheap	(10)	Expensive
(11)	Cause damage to environment	(11)	Environment - friendly
(12)	Types - Thermal, Atomic	(12)	Thermal, kinetic.

## Topic 10 : Human Occupations

### Class Assignment

- (A) (1) primary occupations (2) milk  
(3) tertiary (4) doctor
- (B) (1)-(c), (2)-(d), (3)-(a), (4)-(b)
- (C) (1) **True**  
(2) **False** - Occupations that provide complementary services to other occupations are called tertiary occupations.  
(3) **True**
- (D) (1) The occupations dependent on nature are known as primary occupations.  
(2) The occupations dependent on primary occupation are known as secondary occupations.  
(3) Human and natural factors affect occupations.

- (4) The country's economic transactions are decided on the production of various goods and their annual income.

### Intext Question

#### Use your brain power!

- (1) Milk is obtained naturally and processed into different products. These products are durable and of an enhanced quality. Therefore, there is a difference in their prices.

### Textual Exercises

- (A) (1) brick kiln worker (2) primary (3) Primary
- (B) (1) Different occupations are practised in different countries of the world. Through these occupations, economic transactions occur within the country and between several countries. The countries associated with primary occupations that depend on nature will not be associated with many occupations. Those countries that have tertiary occupations do very well since tertiary occupations provide complementary services to both primary as well as secondary services.
- (2) People involved with primary occupations that are done on the basis of nature and the products that it yields do not have high income. One example is getting milk from domesticated animals. Animal husbandry, fishing etc. are examples of primary occupations. Those who are associated with processed products do well because these products are more durable, their quality is enhanced and their prices are high.
- (3) To test the quality of products, a person must have some special skills. This is not an ordinary service. It requires

special expertise. These are called quaternary occupations. Since we have few people really qualified for this work, we notice that quaternary occupations are not commonly seen.

### Home Assignment

- (A) (1) developed (2) industrial
- (B) (1)-(c), (2)-(a), (3)-(b)
- (C) (1) Activities are classified on the basis of their nature and the products that they yield.
- (2) Some occupations and industries are directly dependent on nature.