

Ln 1 Topographical Sheets; colours ,signs and symbols

Extra Questions - Fill in the Blanks:

1. The **topographical** maps are large scale maps.
2. The meter gauge is of **1m** width.
3. The **arrow** in the river or on the banks of the river indicates the direction of the flow of river.
4. **Unmetalled roads** are shown by a set of broken parallel lines in red on the map.
5. The **narrow gauge** is of 0.762 m width between the two tracks.

Name the following:

- a. The spacing of the rails on a railway tracks – **gauge**
- b. The large tracts of land with yellow wash – **Agriculture**
- c. The highest and lowest elevation points in an area – **relief**
- d. The area where two rivers meet –**Confluence**
- e. The mound of sand or sand hills that are formed when sand is deposited by wind.- **Sand dunes**

EXERCISES

A. Fill in the blanks

1. Mountains, hills, rivers, etc. are **natural** features shown on a map.
2. Roads, rail tracks, wells, etc. are **man-made** features on a map.
3. Contour lines on a map join points of equal **height** on the surface or the earth above or below a reference point.
4. The colour **white** is used to show barren land on topographical sheets.
5. The colour yellow is used to show **cultivated land** on topographical sheets.

B. Match the following

Answers

1. 5

2. 3

3. 2

4. 1

5. 4

C. Write True or False. Correct the false statements.

1. The distance between the two tracks in broad gauge is 1 m.

Answer. False.

The distance between the two tracks in broad gauge is 1.67 m.

2. A metalled road is shown by two blue lines.

Answer. False.

A metalled road is shown by two Red parallel lines.

3. Settlements can either be temporary or permanent.

Answer. True.

4. In permanent settlements, houses are build for a short period of time.

Answer. False.

In permanent settlements, houses are build for a long period of time.

5. Terrace farming is undertaken on hilly slopes.

Answer. True.

6. Land use refers to the way a piece of land is used in the area.

Answer. True.

D. Answer the following questions briefly.

Question

If maps were only black and white, will they be difficult to read ?

Answer:

If the maps were only black and white it would be difficult to understand as we would be unable to know the natural and man-made features of the region e.g. the rivers, roads, railways, sand dunes, jungles, etc.

Question 1.

What are topographical maps ?

Answer:

Topographical maps are large-scale maps that show both natural features such as mountains, hills, rivers, lakes, plateaus, cliffs, etc., and man-made features such as settlements, roads, railway tracks, wells, and embankments.

Question 2.

What is a contour line ?

Answer:

A contour line is an imaginary line on a map connecting points at the same height above sea level.

Question 3.

Explain why colours are used in topographical maps.

Answer:

The colours are used to represent certain physical, economic and cultural features. In the absence of colour it would become impossible to interpret the map so colour are integral part of topographical maps.

Question 4.

Name the features shown in blue, green and brown colours on a map.

Answer:

Blue colour depicts all perennial water bodies like rivers, wells, tanks, ponds, lakes,

seas, etc.

Green shows all forests and jungle areas including woodlands are shown in green. All contour lines are brown in colour. The figures denoting the height of the contour line are also in the same colour as the contour lines, eg. Sand hills, sand dunes etc. And shifting sands are also indicated by brown colour

Question 5.

How would you recognize a metalled road and an unmetalled one on a topographical map ?

Answer:

A metalled road means a tarred road. It is shown by two red parallel lines. A metalled road indicates that the region is developed.

Unmetalled roads (or Kutcha roads) are shown by a set of broken parallel lines in red on the map. They indicate that the area is underdeveloped.

Question 6.

What do you understand by settlements?

Answer:

Settlements are groups of houses, usually in villages or towns, where people live. The size of settlements depends on the availability of roads, railways, hospitals, police stations, administrative buildings, rest houses and so on. Settlements grow over a period of time. The location and type of settlements are determined by various factors such as the terrain, presence of water, suitable climate, presence of employment opportunities, etc.

Question 7.

Distinguish between a temporary settlement and a permanent settlement.

Answer:

Temporary Settlement

1. These settlements are built and occupied for a short period of time.
2. People practice hunting, gathering, shifting, cultivation.

3. Due to climatic conditions or circumstances, people need to change their homes.

Permanent Settlement

1. These settlements have permanent houses.
2. People practice manufacture, trading and other services.
3. People build permanent house

E. Answer the following questions in one or two paragraphs.

Question 1.

How can the occupation of people be inferred directly from a topographical sheet ?

Answer:

OCCUPATIONS — Occupations of people can be inferred directly from a topographical map. The type of settlements in the region as well as the way in which the local people use the land can give you an idea in this regard. Some of the common ways by which the local inhabitants use the land are:

1. **Agriculture:** If large tracts of land indicate cultivation of crops then most of the people are farmers or cultivators.
2. **Mining :** If there are indications of mines and quarries (especially marble and stone quarries) then mining or working in quarries can be inferred as the main occupation.
3. **Fishing:** If a settlement is near a large river or the sea coast, fishing will obviously be the main occupation of the inhabitants.
4. **Manufacturing:** Large settlements such as towns will indicate the presence of factories and hence manufacturing will be the main occupation.
5. **Trading:** A large settlement with many cart tracks, roads and railway lines converging will indicate that the town is a market town with access to trade and commerce.

Question 2.

How can topographical maps help us to know about the transport and communication of an area ?

Answer:— When we look at a topographical map we will notice many different red lines of varying width running all across it There are also some black lines that go across the map. These lines are symbols of roadways and railway tracks. These lines indicate the type of communication present in the area. They also reflect file various modes of transport that are being used in the area.

Question 3.

How does relief of an area affect land use ?

Answer:

Land use refers to the way a piece of land is used in the area. The relief of the land determines the type of activity that takes place on the land. In highlands, such as hills, mountains and plateaus, where the slope of the land is generally steep, the land is used for grazing sheep and goats.

Most of the land is covered by forests which facilitates economic activities such as forest harvesting and lumbering. Terrace farming is also undertaken on hilly slopes to grow crop such as rice, barley and tea. Various agricultural activities take place on lowlands since cultivation of crops is easier on a flat surface than on a sloping surface.

Ln 2 Scales and Distances

Extra Questions - Fill ups:

1. The **scale** is the ratio of distance between two places on a map.
2. **Representative** scale that gives the ratio of distance between two places on the map.
3. The statement of a scale is also known as the **verbal scale**.
4. The distance between two points along straight line can be measured by **ruler**.

EXERCISES

Match the following

Answers:

1. ratio
2. Words
3. Straight line divided into lengths
4. Straight line
5. Curved line

Choose the correct answer.

1. This is the ratio of distance between two places on a map to the actual distance between the same two places on the ground.

1. **scale**
2. map

3. globe

4. atlas

2. This scale is stated in words:

1. Verbal

2. Statement

3. **Both of these**

4. None of these

3. The distance between two points along a straight line can be measured by this method

1. Twine

2. **Ruler**

3. Compass

4. Stick

4. In this fraction, the numerator is always 1.

1. **Representative Fraction**

2. Refractive Fraction

3. Reduction Fraction

4. Reorganization Fraction

D. State whether the following are true or false.

1. Verbal scale is stated in words.

Answer. True.

2. A statement scale consists of a straight line which is divided into lengths.

Answer. False.

Correct : A linear consists of a straight line which is divided into lengths.

3. The numerator in a Representative Fraction expresses the actual distance between two places on the ground.

Answer. False.

Correct : The denominator in a Representative Fraction expresses the actual distance between two places on the ground.

4. The distance along a curved line is measured by a ruler.

Answer. False.

Correct : The Distance along a curved line is measured by a divider.

E. Answer the following questions briefly

Question 1.

What is meant by the scale of a map ?

Answer:

A scale is the ratio of the distance between two places on the map to the actual distance between the same two places on the ground.

Question 2.

Which three ways are used to represent the scale of a map?

Answer:

The three ways used to represent the scale of a map are :

(a) Verbal or statement scale — The scale is stated in words. The units are usually mentioned in this type of scale, for example, 1 cm = 10 km or 1 cm to 10 km. It means that 1 cm on the map is equal to 10 km on the ground.

(b) Graphical or linear scale — This consists of a straight line which is divided into lengths that represent given distances on the earth's surface.

(c) Representative fraction (RF) — This is a fraction in which the numerator expresses the distance on the map and the denominator represents the actual distance on the ground. It must be noted that the numerator is always 1 and both the numerator and the denominator are expressed in the same unit.

Question 4.

What method would you use to measure the length of a river ?

Answer:

The rivers are curved. To measure length of rivers we use either the divider method or the twine methods.

F. Answer the following questions in detail.**Question 1.**

Describe any two ways of representing a map scale.

Answer:

The map scale can be represented as :

(a) Verbal or statement scale — The scale is stated in words. The units are usually mentioned in this type of scale, for example, 1 cm= 10 km or 1 cm to 10 km. It means that 1 cm on the map is equal to 10 km on the ground.

(b) Graphical or linear scale — This consists of a straight line which is divided into lengths that represent given distances on the earth's surface.

Question 2.

Describe the method by which the distance on a curved line is measured.

Answer:

The distance on a curved line is measured using a piece of twine or a divider.

In divider method, a divider whose pointed ends are 1 or 2 cm apart is used.

Beginning at one end of the feature to be measured, the divider is turned continuously till the other end is reached. The number of turns are counted and then using the scale of the map, the actual distance on the ground calculated.

In the twine method, a twine is placed along the feature to be measured from one end to other. The length of the twine is then measured in cm or inches using a ruler or linear scale and then converted into km or miles using the scale of the given map.

Question 3.

How is distance on a map measured by a piece of twine?

Answer:

Take the piece of the twine, make a knot at one end and place the knotted end on the starting point of the distance to be measured. Now move the twine along the object to be measured by slowly placing the twine bit by bit along the route following each bend or curve as closely as possible. When you reach the end of the route you are measuring, mark that end with ink. Now place the twine on the scale with the knotted end at 0 and see how far the ink-marked end reaches on the scale. Measure the length and convert into kilometres. If the distance to be measured is longer than the printed scale on the map, place the twine on the ruler in the same way, calculate the number of centimetres it covers and convert that into kilometres.

G Picture study

Look at the picture and answer the questions

Question 1.

What type of scale is shown alongside ?

Answer:

A graphic scale or linear scale.

Question 2.

State a feature of this scale.

Answer:

This consists of a straight line which is divided into lengths that represent given distances on the earth's surface. It is usually drawn near the lower portion of the map.

Ln 3 Composition and Structure of the Earth

Extra Questions: Name the following:

- a. The gas that is present abundantly in the atmosphere is - **nitrogen**
- b. The layer that has ozone - **stratosphere**
- c. The layer that lies between troposphere and mesosphere is – **stratosphere**
- d. The layer on which solar radiation can exceed 4,000 degree C – **Exosphere**
- e. The layer on which contains electrically charged particles – **Thermosphere**
- f. The presence of hydrogen and helium in exosphere is because of – **gravity**
- g. The upper part of the thermosphere is called as – **Ionsphere**

EXERCISES

A. Fill in the blanks.

1. **78%** per cent of the atmosphere is made of nitrogen.
2. Along with carbon dioxide and methane, **water vapour** is a potent greenhouse gas.
3. The rate at which the temperature drops in the **troposphere** is 1°C per 165 metres.
4. The **thermosphere** is the layer of the atmosphere that help in radio transmission.
5. The upper part of the thermosphere is called the **ionsphere**.

B. Match the following.

- 1) Densest layer of atmosphere
- 2) ozone
- 3) ions
- 4) outer space
- 5) lowest temperature

C. Choose the correct answer.

1. This per cent of the atmosphere is composed of nitrogen.

1. 99
2. **78**
3. 21
4. 76

2. 21 per cent of the atmosphere is composed of

1. Helium
2. **Oxygen**
3. Nitrogen
4. Hydrogen

3. This gas protects us from the harmful ultraviolet radiation.

1. Oxygen
2. **Ozone**
3. Helium
4. Hydrogen

4. The rate at which the temperature drops in the troposphere is called

1. **lapse rate**
2. loss rate
3. less rate
4. drop rate

5. This layer of the atmosphere has the lowest temperature.

1. **Mesosphere**
2. Thermosphere
3. Tropopause

4. Stratosphere

D. State whether the following are true or false.

1. The earth's atmosphere contains 99 per cent oxygen, which is essential for life.

Answer. False.

Correct : The earth's atmosphere contains 21% per cent oxygen, which is essential for life.

2. The stratosphere is the lowest layer of the atmosphere.

Answer. False.

Correct : The troposphere is the lowest layer of the atmosphere.

3. The temperature drops at the rate of 1°C per 185 metres in the atmosphere.

Answer. False.

Correct : The temperature drops at the rate of 1°C per 165 metres in the atmosphere.

4. The stratosphere extends from the top of the troposphere up to 80 km above the surface of the earth.

Answer. False.

Correct : The stratosphere extends from the top of the troposphere up to 50 km above the surface of the earth.

5. Communication satellites orbit in thermosphere.

Answer. True.

E. Answer the following questions in brief.

1. What is the importance of the different layers of the atmosphere ?

Answer:

The earth is the only planet in the universe that has life. One of the reasons why life exists on this planet is an encompassing blanket of gases called the atmosphere. It is like a blanket of air that protects the earth from the harmful rays of the sun. It also

controls the temperature and, most important of all, it contains oxygen, which is essential for every form of life. This almost invisible blanket is

Question

2. What would happen to the earth if the atmosphere disappeared ?

Answer:

If you would like to see what the earth would look like, take a look at the moon, with all its craters. Another thing that would happen if the earth had no atmosphere is the oceans would boil away, leaving no water here on earth because there is not atmosphere to help complete the water cycle.

Question

3.How is the atmosphere kept in place around the earth?

Answer:

The atmosphere is kept in place around the planet by another invisible entity called gravity.

Question 4

Name the important gases that are found in the atmosphere.

Answer:

The important gases that are found in atmosphere are nitrogen, oxygen, carbon-dioxide, hydrogen, helium and argon.

Question 5

How is carbon dioxide a useful gas for life on earth?

Answer:

Carbon dioxide exists in the earth's atmosphere as a colourless and odourless gas. Carbon dioxide is produced by all animals, fungi and microorganisms during respiration and is used by plants during photosynthesis. It is also useful gas as it creates the greenhouse effect. It would have been too cold for life to exist on this planet without greenhouse effect.

Question 6

What is the troposphere?

Answer:

Troposphere is the lowest layer of the atmosphere. It protects us from the heat of sun during day and keeps the earth warm at night ozone. This is the densest layer of the atmosphere and its thickness varies from 8 km over the poles to 18 km over the equator.

Question 7

What is the difference between the troposphere and the tropopause?

Answer:

The lowest layer of atmosphere is called troposphere where as the boundary between the troposphere and the stratosphere is called tropopause.

F. Answer the following questions in one or two paragraphs.

Question 1.

Write briefly about the layers of the atmosphere.

Answer:

The atmosphere is divided into five layers starting from the Earth's surface

1. **Troposphere** — Its average height is 13 km. The air we breathe exists here. Almost all the weather phenomena like rainfall, fog and hailstorm occur in this layer.
2. **Stratosphere** — It lies above the troposphere which extends up to a height of 50 km. This layer is almost free from clouds and associated weather phenomenon, making conditions most ideal for flying aeroplanes. It contains a layer of ozone gas.
3. **Mesosphere** — It lies above the stratosphere. It extends up to the height of 80 km. Meteorites bum up in this layer on entering from the space.
4. **Thermosphere** — In thermosphere, temperature rises very rapidly with increasing height. Ionosphere is a part of this layer. It extends between 80-

400 km. This layer helps in radio transmission. In fact, radio waves transmitted from the Earth are reflected back to the Earth by this layer.

5. **Exosphere** — This upper most layer. This layer has very thin air. Light gases like helium and hydrogen float into the space from here.

Question 2.

State any three characteristics of the stratosphere.

Answer:

The main characteristics of stratosphere are:

- (a) There are no clouds or weather changes so it is safe for air travel.
- (b) It extends from the top of troposphere up to 50 km above the surface of earth.
- (c) This layer has a band of ozone gas which protects us from sun's harmful ultraviolet rays.

Question 3.

What is ozone? What is the ozone layer? How is the presence of ozone layer essential to preserve life on earth?

Answer:

(O₃) is present in the earth's atmosphere in stratosphere and helps to protect the earth from the ultraviolet radiation from the sun.

Question 4.

State any three characteristics of the mesosphere.

Answer:

The main characteristics of mesosphere are :

- 1. It extends from the top of stratosphere upto a height of 80 km above the earth.
- 2. This layer has lowest temperature in the atmosphere reaches -100°C at its end.
- 3. Most meteors from space burn up in this layer.

Question 5.

Why is the thermosphere important ?

Answer:

The upper part of the thermosphere is called the ionosphere. The ionosphere contains electrically charged particles called ions, which help in transmitting communication signals.

Question 6.

Explain the significance of the earth's atmosphere.

Answer:

Significance of the Atmosphere :

1. It gives us air to breathe.
2. It forms a protective shield against extreme heat.
3. It also protects us against falling debris from space.
4. It supports the formation of clouds and rain.

G Picture study :

This is a picture of a supersonic aircraft.

Question 1.

In which layer of the atmosphere does this airplane normally fly?

Answer:

A supersonic aircraft fly in stratosphere.

Question 2.

This layer of the atmosphere is also known to protect living beings from the harmful rays of the sun. How?

Answer:

It has a band of ozone gas which protects the sun's harmful U.V. rays to reach the living beings.