Practical Work in Geography Class 11 Solutions Chapter 1 Introduction to Maps

Class 11 Practical Work in Geography Chapter 1 NCERT Textbook Questions Solved

1. Choose the right answer from the four alternatives given below:

Question 1(i).
Which one of the following is essential for the network of lines and polygons to be called a map?
(a) Map Legend
(b) Symbols
(c) North Direction
(d) Map Scale.
Answer:
(d) Map Scale.

Question 1(ii).
A map bearing a scale of 1: 4000 and larger is called:
(a) Cadastral map
(b) Topographical map
(c) Wall map
(d) Atlas map.
Answer:
(a) Cadastral map

Question 1(iii).
Which one of the following is NOT an essential element of maps?
(a) Map Projection
(b) Map Generalisation
(c) Map Design
(d) History of Maps
Answer:
(d) History of Maps

2. Answer the following questions in about 30 words:

Question 2(i).
What is map generalisation?
Answer:
As maps are drawn at a reduced scale to serve a definite purpose, it is the job of a cartographer is to generalise the map contents. In doing so, a cartographer must select the data relevant to the selected theme and simplify it as per the needs. It is called map

generalization. Every map is drawn with a definite objective. For example, a general purpose map is drawn to show information of a general nature such as relief, drainage, vegetation, settlements, means of transportation, etc. Similarly, a special purpose map exhibits information pertaining to one or more selected themes like population density, soil types or location of industries. It is, therefore, necessary to carefully plan the map contents while the purpose of the map must be kept in the forefront.

Question 2(ii).
Why is map design important?
Answer:
Map Design is very important as it involves the planning of graphic characteristics of maps including the selection of appropriate symbols, their size and form, style of lettering, specifying the width of lines, selection of colours and shades, arrangement of various elements of map design within a map and design for map legend. The map design is a complex aspect of map-making and requires thorough understanding of the principles that govern the effectiveness of graphic communication.

Question 2(iii).
What are different types of small-scale maps?
Answer:
Small-scale maps are divided into two types:

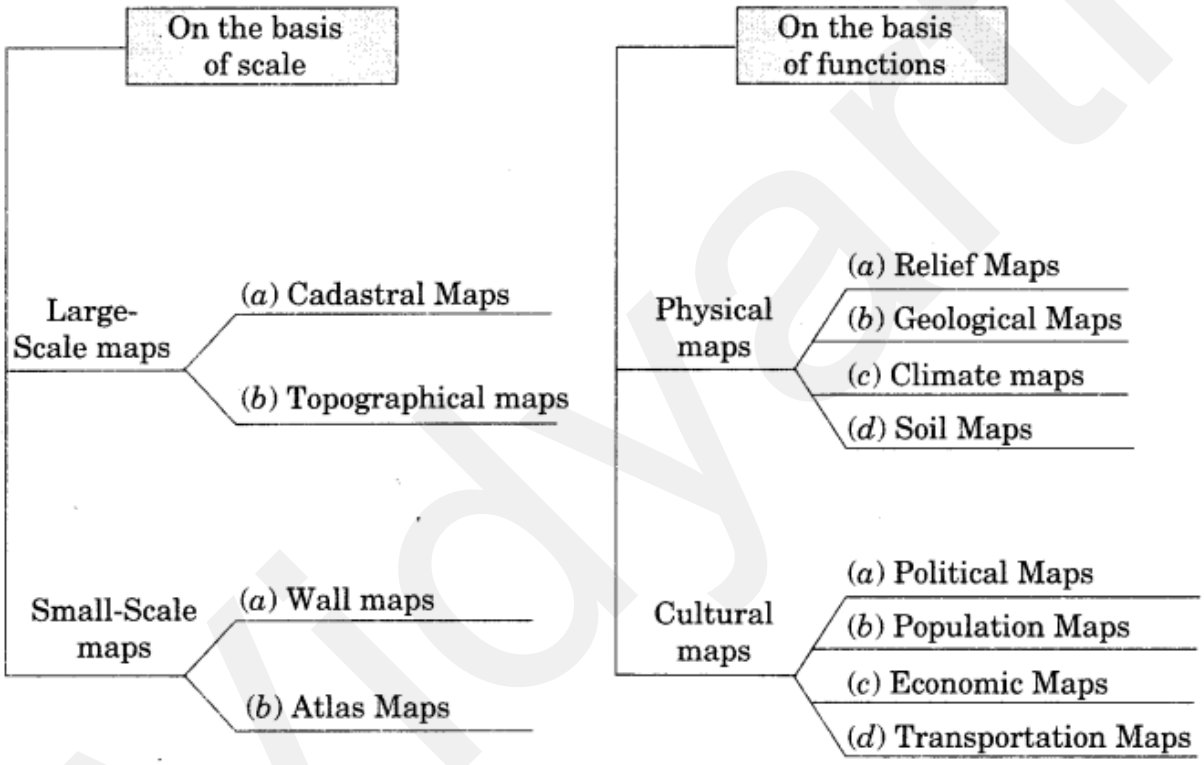
1. Wall Maps: These maps are generally drawn on large size paper or on plastic base for use in classrooms or lecture halls. The scale of wall maps is generally smaller than the scale of topographical maps but larger than atlas maps.
2. Atlas Maps: Atlas maps are very small-scale maps. These maps represent fairly large areas and present highly generalized picture of the physical or cultural features. Even so, an atlas map serves as a graphic encyclopaedia of the geographical information about the world, continents, countries or regions.

Question 2(iv).
List out two major types of large-scale maps?
Answer:
Large-scale maps are divided into two types:

1. Cadastral maps: The term ‘cadastral’ is derived from the French word ‘cadastre’ meaning ‘register of territorial property’. These maps are drawn to show the ownership of landed property by demarcating field boundaries of agricultural land and the plan of individual houses in urban areas. The cadastral maps are prepared by the government agencies to realise revenue and taxes, along with keeping a record of ownership.
2. Topographical Maps: These maps are also prepared on a fairly large scale. The topographical maps are based on precise surveys and are prepared in the form of series of maps made by the national mapping agencies of almost all countries of the world. These maps follow uniform colours and symbols to show topographic details such as relief, drainage, agricultural land, forest, settlements, means of communication, location of schools, post offices and other services and facilities.

Question 2(v).
Is a map different from a sketch?
Answer:
A simplified map drawn freehand which fails to preserve the true scale or orientation. Map is a part of the earth's surface on a plane surface at a reduced scale. It may also be understood that a simple network of lines and polygons without a scale shall not be called a map. It is only referred to as "the sketch". In simple words, map has a specific scale and sketch does not have a scale. Map is drawn scientifically and sketch is drawn roughly. Sketch drawing is an art while map making is a science and science of maps is called cartography.

3. Write an explanatory account of types of maps.
Answer:



On the basis of scale:
1. Large-scale maps: These maps are drawn to show small areas at a relatively large-scale. For example, the topographical maps drawn at a scale of 1 : 250,000, 1 : 50,000 or 1 : 25,000 and the village maps, the zonal plans of the cities and house plans prepared on a scale of 1: 4,000,1: 2,000 and 1: 500 are large-scale maps. These are of two types:

1. Cadastral Maps
2. Topographical Maps

2. Small-scale maps: These maps are drawn to show large areas. These are of two types:

1. Wall Maps and
2. Atlas Maps

On the basis of functions, maps are of two types:

1. Physical maps: Physical maps show natural features such as relief, geology, soils, drainage, elements of weather, climate and vegetation, etc. Physical maps include relief maps, geological maps and climatic maps.
2. Cultural maps: Cultural maps show man-made features. These include a variety of maps showing population distribution and growth, sex and age, social and religious composition, literacy, levels of educational attainment, occupational structure, location of settlements, facilities and services, transportation lines and production, distribution and flow of different commodities. It includes political maps, population maps, economic maps and transportation maps.

Class 11 Practical Work in Geography Chapter 1 NCERT Extra Questions

Class 11 Practical Work in Geography Chapter 1 Multiple Choice Questions

Question 1.
Which of the following is not a type of physical map?
(a) Relief Map
(b) Geological Maps
(c) Climate Maps
(d) Transportation Maps
Answer:
(d) transportation Maps

Question 2.
Which of the following is not a type of cultural maps?
(a) Political Maps
(b) Population Maps
(c) Soil Maps
(d) Economic Maps
Answer:
(c) Soil Maps

Question 3.
What is shown under geological maps?
(a) Temperature and rain
(b) Plateaus, plains and mountains
(c) Geological structure, types of rocks
(d) Types of Soils
Answer:
(c) Geological structure, types of rocks

Question 4.
Which of the following is not an essential for map making?
(a) Scale
(b) Map Design

(c) Sketch
(d) Map Generalization
Answer:
(c) Sketch

Question 5.
A system of transformation of the spherical surface to the plane surface is called:
(a) Map projection
(b) Geoid
(c) Map Designing
(d) Sketch
Answer:
(a) Map Projection

Question 6.
An oblate spheroid whose shape resembles the actual shape of the Earth is called:
(a) Map projection
(b) Geoid
(c) Map Designing
(d) Sketch
Answer:
(b) Geoid

Question 7.
Which of the following is not relief map?
(a) Mountain
(b) Plateau
(c) Soil
(d) Plains
Answer:
(c) Soil

Question 8.
When was Survey of India established?
(a) 1767
(b)1772
(c) 1785
(d) 1905
Answer:
(a)T767

Question 9.
When was first map was made by India by Survey of India?
(a) 1767
(b)1772
(c) 1785

(d) 1905
Answer:
(c) 1785

Question 10.
What is not shown under climate maps?
(a) Temperature
(b) Direction of winds
(c) Rain
(d) Ecological System
Answer:
(d) Ecological System

Question 11.
In how many continents have Indian ancient scholars divided the world?
(a) Seven
(b) Five
(c) none
(d) Eleven
Answer:
(a) Seven

Class 11 Practical Work in Geography Chapter 1 Very Short Answer Type Questions

Question 1.
What is a map?
Answer:
A map is a simplified depiction of whole or part of the earth on a piece of paper. In other words, it is a two-dimensional form of the three-dimensional earth.

Question 2.
How is scale expressed on a map?
Answer:
Scale is expressed in three ways on a map:

1. By a statement
2. By graphical or bar scale
3. By representative fraction method

Question 3.
Differentiate between globe and map.
Answer:

S.No.	Globe	Map
1.	Globe is such a model of the earth which gives us the right form of the earth.	A map is a simplified depiction of whole or part of the earth on a piece of paper.

2.	It is more accurate but it is difficult to use it.	It is relatively less accurate but it is easy to be handled.
3.	It is three dimensional.	It is two dimensional.

Question 4.
What are the essentials of map making?
Answer:
There are five essentials of map making. These are: Scale, map projection, map generalisation, map design and map construction and production.

Question 5.
What is the importance of maps for geographers?
Answer:
Maps are extremely important for a geographer. Without maps, a geographer is like armless soldier. Maps provide him extremely important information.

Question 6.
What are two components of a map?
Answer:
Distance and direction are two components of maps.

Question 7.
What are important directions?
Answer:
Important directions are North (N), South (S), East (E) and West (W).

Question 8.
What are the important relationships that we search in maps?
Answer:
We search the following physical relationships in a map:

- Shapes of land forms, oceans and political units;
- their areas;
- distances between the places;
- direction of each place in context of other places;
- location of different places in context of entire earth.

Question 9.
What are the basic limitations of maps?
Answer:
Map is two dimensional. It is impossible to present the accurate shape of the earth with the help of map. Moreover, it can't be accurate in terms of area, volume and distance. Above all, we cannot show the entire earth on a map without disturbing its shape.

Question 10.
When was oldest map drawn?
Answer:
The oldest map was found in Mesopotamia drawn on a clay tablet that belongs to 2,500 B.C.

Class 11 Practical Work in Geography Chapter 1 Short Answer Type Questions

Question 1.
Why are maps considered an important tool for geography?
Answer:
Geographers need maps for following purposes:

- To get information about resources, their development and planning for their utilization;
- To study changes that are taking place on the earth;
- To understand various physical factors;
- To understand the inter-relationship between physical and human resources;
- To make a comparative analysis and
- To present facts in a way that has a memorizing effect.

Question 2.
How is area of map measured using a planimeter?
Answer:
The area calculation is also carried out using Polar Planimeter. In this instrument, a measure is made of the movement of a rod whose locus is constrained by having one end fixed to a radial arc. The area to be measured is traced along its perimeter in a clockwise direction with an index mark, starting from one convenient point to which the index of the tracing arm must exactly return. Reading on the dial, before and after the tracing of area's perimeter, will give a value in instrumental units. These readings are multiplied by the same constant for the particular instrument to convert into areas in square inches or centimetres.

Question 3.
How is direction of map measured?
Answer:
Direction is defined as an imaginary straight line on the map showing the angular position to a common base direction. The line pointing to the north is zero direction or the base direction line. A map always shows the north direction. All other directions are determined in to this relation. The north direction enables the map- user to locate different features with respect to each other. The four commonly known directions are North, South, East and West. These are also called the cardinal points. In between the cardinal points, one may have several intermediate directions.

Question 4.
How is distance between maps measured by geographer, planner and other resource researcher?

Answer:
The linear features shown on the maps fall into two broad categories, i. e. straight lines and erratic or zigzag lines. The measurement of straight line features like roads, railway lines and canals is simple. It can be taken directly with a pair of dividers or a scale placed on the map surface. However, distances are required, more often, along erratic paths, i.e. the coastlines, rivers and streams. The distances along all such features can be measured by placing a thread at the starting point and carrying it along the line up to the end point. The thread is then stretched and measured to determine the distance. It can also be measured by using a simple instrument called Rotameter. The wheel of the 'rotameter' is moved along the route to measure the distance.

Question 5.
Explain in detail about physical maps.
Answer:
Physical maps: Physical maps show- natural features such as relief, geology, soils, drainage, elements of weather, climate and vegetation, etc. These are of following types:

1. Relief Maps: Relief maps show general topography of an area like mountains and valleys, plains, plateaus and drainage.
2. Geological maps: Geological Maps are drawn to show geological structures, rock types, etc.
3. Climatic Maps: Climatic Maps depict climatic regions of an area. Besides, maps are also drawn to show the distribution of temperature.

Class 11 Practical Work in Geography Chapter 1 Long Answer Type Questions

Question 1.
Explain the essentials of map making.
Answer:
There are five essentials of map making. These are: Scale, map projection, map generalisation, map design and map construction and production.

1. Scale: All maps are reductions. The first decision that a map-maker has to take is about the scale of the map. The choice of scale is of utmost importance. The scale of a map sets limits of information contents and the degree of reality with which it can be delineated on the map.

2. Projection: Maps are a simplified representation of the three-dimensional surface of the earth on a plane sheet of paper. The transformation of all-side- curved-geoidal surface into a plane surface is another important aspect of the cartographic process. Such a radical transformation introduces some unavoidable changes in directions, distances, areas and shapes from the way they appear on a geoid. A system of transformation of the spherical surface to the plane surface is called a map projection. Hence, the choice, utilisation and construction of projections is of prime importance in map-making.

3. Generalisation: Every map is drawn with a definite objective. For example, a general purpose map is drawn to show information of a general nature such as relief, drainage, vegetation, settlements, means of transportation, etc. Similarly, a special purpose map exhibits information pertaining to one or more selected themes like population density, soil types or location of industries. It is, therefore, necessary to carefully plan the map contents while the purpose of the map must be kept in the forefront.

4. Map Design: It involves the planning of graphic characteristics of maps including the selection of appropriate symbols, their size and form, style of lettering, specifying the width of lines, selection of colours and shades, arrangement of various elements of map design within a map and design for map legend.

5. Map Construction and Production: The drawing of maps and their reproduction is the fifth major task in the cartographic process. It can be manual or computerised method.

Question 2.
How does a geographer measure the distance?
Answer:
The measurement of area of features like that of administrative and geographic units is also carried out over the surface of the map by map-users. There are different methods in which areas can be determined.

1. By means of regular pattern of squares: In this method, the area to be measured is covered by squares by
placing a sheet of graph paper beneath the map on an illuminated tracing table or by tracing the area onto the square sheet. The total number of 'whole squares' are summed up, together with 'partial squares'. The area is then determined by a simple equation:

$$\text{Area} = \text{Sum of whole square} + \left(\frac{\text{Sum of partial squares}}{2}\right) \times \text{Map Scale}$$

2. By using Polar Planimeter: In this instrument, a measure is made of the movement of a rod whose locus is constrained by having one end fixed to a radial arc. The area to be measured is traced along its perimeter in a clockwise direction with an index mark, starting from one convenient point to which the index of the tracing arm must exactly return. Reading on the dial, before and after the tracing of area's perimeter, will give a value in instrumental units. These readings are multiplied by the same constant for the particular instrument to convert into areas in square inches or centimetres.

Question 3.
Explain in detail about cultural maps.
Answer:
Cultural Maps: Cultural maps show man-made features. These include a variety of maps showing population distribution and growth, sex and age, social and religious composition, literacy, levels of educational attainment, occupational structure, location of settlements, facilities and services, transportation lines and production, distribution and flow of different commodities.

- Political Maps: These maps show the administrative divisions of an area such as country, state or district. These maps facilitate the administrative machinery in planning and management of the concerned administrative unit.
- Population Maps: The population maps are drawn to show the distribution, density and growth of population, age and sex composition, distribution of religious, linguistic and social groups, occupational structure of the population, etc.
- Economic Maps: Economic maps depict production and distribution of different types of crops and minerals, location of industries and markets, routes for trade and flow of commodities.
- Transportation Maps: These maps show roads, railway lines and the location of railway stations and airports.

Class 11 Practical Work in Geography Chapter 1 Viva Questions

Question 1.
Why is Ratometer used?
Answer:
Ratometer is an instrument used to measure distance on a map.

Question 2.
Why is Planimeter used?
Answer:
Planimeter is an instrument used to measure area on a map.

Question 3.
Where was oldest map found?
Answer:
The oldest map was found in Mesopotamia drawn on a clay tablet that belongs to 2,500 B.C.

Question 4.
Which maps are generally drawn on large size paper or on plastic base for use in classrooms or lecture halls?
Answer:
Wall maps are generally drawn on large size paper or on plastic base for use in classrooms or lecture halls.

Question 5.
Give formula for measuring distance used by geographers.
Answer:

Question 6.
What do we call a system of transformation of the spherical surface to the plane surface?
Answer:
Map Projection.

$$\text{Area} = \text{Sum of whole squares} + \left(\frac{\text{Sum of partial squares}}{2}\right) \times \text{Map scale}$$

Question 7.
What do we call an oblate spheroid whose shape resembles the actual shape of the Earth?
Answer:
Geoid.

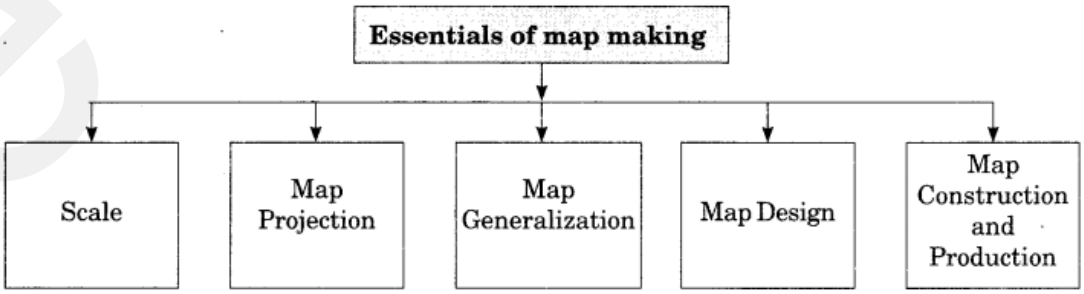
Question 8.
When was Survey of India established?
Answer:
1767.

Question 9.
When was first map made by Survey of India?
Answer:
1785.

Question 10.
In how many continents have Indian ancient scholars divided the world?
Answer:
Seven.

Introduction to Maps Notes

- The history of map making is as old as the history of mankind itself. The oldest map was found in Mesopotamia drawn on a clay tablet that belongs to 2,500 B.C.
- Greek and Arab geographers laid the foundation of modern cartography. The measurement of the circumference of the Earth and the use of the system of geographical coordinates in map-making are some of the significant contributions of the Greeks and the Arabs.
- The art and science of map making was revitalised in early modern period, with extensive efforts made to minimise the effects of the transformation of the geoid onto a plane surface.
- The maps were drawn on different projections to obtain true directions, correct distances and to measure area accurately. The aerial photography supplemented the ground method of survey and the uses of aerial photographs stimulated map-making in the nineteenth and twentieth centuries.



- The foundation of map-making in India was laid during the Vedic period when the expressions of astronomical truths and cosmological revelations were made. The expressions were crystallised into 'sidhantas' or laws in classical treaties of Arya Bhatta, Varahamihira and Bhaskara, and others. Ancient Indian scholars divided the known world into seven 'dwipas'. Mahabharata conceived a round world surrounded by water.
- Todarmal pioneered land surveying and map-making as an integral part of the revenue collection procedure. Besides, Sher Shah Suri's revenue maps further enriched the mapping techniques during the medieval period.
- The intensive topographical surveys for the preparation of up-to-date maps of the entire country, were taken up with the setting up of the Survey of India in 1767, which culminated with the map of Hindustan in 1785. Today, the Survey of India produces maps at different scales for the entire country.
- On the basis of scale, maps may be classified into large-scale and small-scale.
- Large scale maps are drawn to show small areas at a relatively large-scale. For example, the topographical maps drawn at a scale of 1: 250,000,1:50,000 or 1:25,000 and the village maps, the zonal plans of the cities and house plans prepared on a scale of 1:4,000, 1:2,000 and 1:500 are large scale maps.
- On the contrary, small-scale maps are drawn to show large areas. For example, atlas maps, wall maps, etc.
- Large-scale maps may be shown as Cadastral maps and Topographical maps
- The cadastral maps are prepared by the government agencies to realise revenue and taxes, along with keeping a record of ownership. These maps are drawn on a very large scale, such as the cadastral maps of villages at 1: 4,000 scale and the city plans at a scale of 1: 2,000 and larger.
- Topographical Maps are also prepared on a fairly large scale. The topographical maps are based on precise surveys and are prepared in the form of series of maps made by the national mapping agencies of almost all countries of the world.
- Small-scale maps are further divided into Wall Maps and Atlas Maps.
- Wall Maps are generally drawn on large size paper or on plastic base for use in classrooms or lecture halls. The scale of wall maps is generally smaller than the scale of topographical maps but larger than atlas maps.
- Atlas Maps are very small-scale maps. These maps represent fairly large areas and present highly generalised picture of the physical or cultural features.
- Broadly, maps based on their functions may be classified into physical maps and cultural maps. Physical maps show natural features such as relief, geology, soils, drainage, elements of weather, climate and vegetation, etc.
- Relief maps show general topography of an area like mountains and valleys, plains, plateaus and drainage. Geological Maps are drawn to show geological structures, rock types, etc.
- Climatic Maps depict climatic regions of an area. Besides, maps are also drawn to show the distribution of temperature.
- Ratometer is an instrument used to measure distance on a map and planimetre is an instrument used to measure area on a map.

- The linear features shown on the maps fall into two broad categories, i.e. straight lines and erratic or zigzag lines. The measurement of straight line features like roads, railway lines and canals is simple. It can be taken directly with a pair of dividers or a scale placed on the map surface.
- The processes that may also be referred to as essentials of maps are:
    - Scale
    - Map Projection
    - Map Generalisation
    - Map Design
    - Map Construction and Production

Introduction to Maps Important Terms

- Maps: A map is a simplified depiction of whole or part of the earth on a piece of paper. In other words, it is a two-dimensional form of the three-dimensional earth.
- Geoid: An oblate spheroid whose shape resembles the actual shape of the Earth.
- Cadastral map: It is a large-scale map drawn at a scale of 1: 500 to 1: 4000 to show property boundaries, designating each parcel of land with a number.
- Cardinal points: North (N), South (S), East (E) and West (W) are called cardinal points.
- Cartography: It is an art, science and technology of making maps, charts, plans and other modes of graphical expression as well as their study and use.
- Map series: It is a group of maps produced at same scale, style and specifications for a country or a region.
- Map projection: The system of the transformation of the spherical surface onto a plane surface is called map projection.
- Scale: The ratio between the distances of two points on the map, plan or photograph and the actual distance between the same two points on the ground is called scale.
- Direction: Direction is defined as an imaginary straight line on the map showing the angular position to a common base direction.
- Zero direction or the base direction line: The line pointing to the north is zero direction or the base direction line.
- Ratometer: It is an instrument used to measure distance on a map.
- Sketch map: It is a simplified map drawn freehand which fails to preserve the true scale or orientation.
- Large-scale maps: These maps are drawn to show small areas at a relatively large-scale. For example, the topographical maps drawn at a scale of 1: 250,000,1: 50,000 or 1: 25,000 and the village maps, the zonal plans of the cities and house plans prepared on a scale of 1 : 4,000, 1 : 2,000 and 1 : 500 are large scale maps.
- Small-scale maps: These maps are drawn to show large areas. For example, atlas maps, wall maps, etc.
- The cadastral maps: These maps are prepared by the government agencies to realise revenue and taxes, along with keeping a record of ownership. These maps are drawn on a very large scale, such as the cadastral maps of villages at 1: 4,000 scale and the city plans at a scale of 1 : 2,000 and larger.

- Topographical maps: The topographical maps are based on precise surveys and are prepared in the form of series of maps made by the national mapping agencies of almost all countries of the world. These maps are also prepared on a fairly large scale.
- Wall maps: These maps are generally drawn on large size paper or on plastic base for use in classrooms or lecture halls. The scale of wall maps is generally smaller than the scale of topographical maps but larger than atlas maps.
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- Relief maps: Relief maps show general topography of an area like mountains and valleys, plains, plateaus and drainage.
- Geological maps: Geological Maps are drawn to show geological structures, rock types, etc.
- Climatic Maps: Climatic Maps depict climatic regions of an area. Besides, maps are also drawn to show the distribution of temperature.
- Cultural maps: Cultural maps show man-made features. These include a variety of maps showing population distribution and growth, sex and age, social and religious composition, literacy, levels of educational attainment, occupational structure, location of settlements, facilities and services, transportation lines and production, distribution and flow of different commodities.
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- Population maps: The population maps are drawn to show the distribution, density and growth of population, age and sex composition, distribution of religious, linguistic and social groups, occupational structure of the population, etc.
- Economic maps: Economic maps depict production and distribution of different types of crops and minerals, location of industries and markets, routes for trade and flow of commodities.
- Transportation maps: These maps show roads, railway lines and the location of railway stations and airports.
- Planimeter: It is an instrument used to measure area on a map.
- Generalisation map: It is a simplified representation of the features on the map, appropriate to its scale or purpose, without affecting their visual form. A selective, symbolised and generalised representation of the whole or part of the earth at a reduced scale.