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Landscape analysis through Maps

1.Topographic Map

***A large scale map**

***minute details of all the natural and manmade features on the earth's surface are depicted.**

***These maps contain the important surface features such as**

the undulations of the terrain, rivers, other water bodies,

forests,agricultural land, barren land, villages, towns, and

transport and telecommunication systems.

***In India, Topographic maps are prepared by Survey of India.**

2.Uses of topographic maps

***Analysis of the physical and the cultural features of the earth surface.**

*** For military operations and the preparation of military maps.**

*** Identification and studying of the natural and the cultural**

resources of a region as part of economic planning.

***For urban planning.**

***to understand land forms**

***to understand land usage of a particular area**

3.number, locational aspects, the conventional signs and symbols,

the elevation and slope of the terrain, and the methods of their

representation etc are given in a topographic map

4.What does the number of a toposheet denote?
***the area it represents**

5.How is the layout and numbering of toposheets?

***unique numbers are given to toposheets covering different regions**

***Toposheets for the whole world have been prepared**

in 2222sheets of same size and shape.

***There are 1800 sheets for regions between 60° North and South latitudes,**

420 sheets for regions between 60° and 88° latitudes in both hemispheres

and 2 sheets for both the poles.

6.India's toposheets are known as million sheets.Why?

The numbering of India's toposheets are done on the basis of

the India and Adjoining Countries Map Series.

As each of the maps in this seriesis in 1:1000000(1:1million) scale,

these are known as million sheets.

7.

Million sheet

***Prepared in 1:1000000 scale**
***The million sheets cover**
4° latitudinal and
4° longitudinal extent
***Million sheet number 55 is devided into16parts from A to P.**
***These are called Degree sheets.**
So there are 16 degree sheets with in a million sheet.

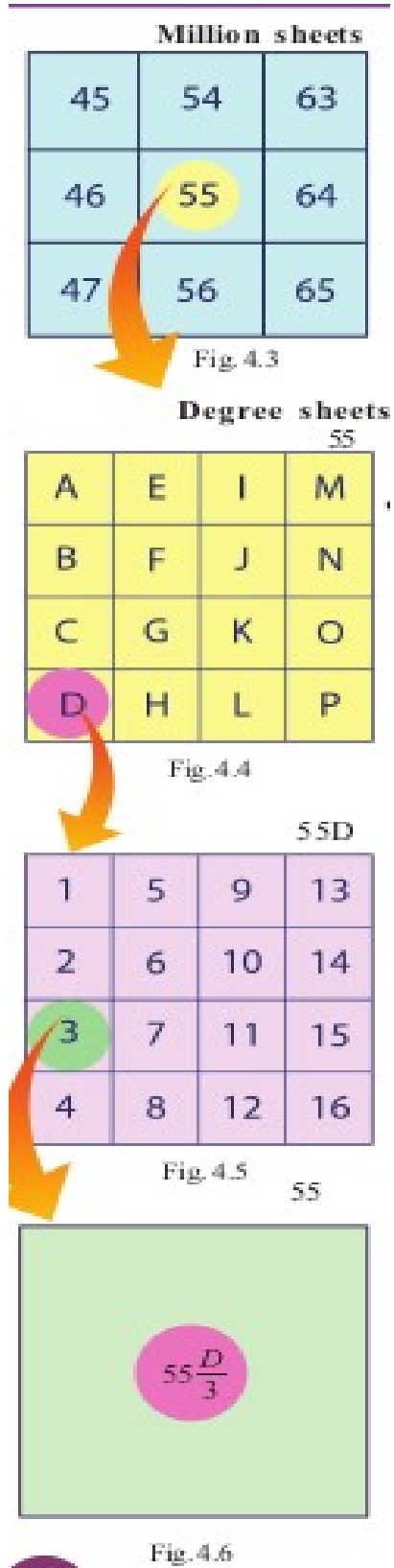


Fig. 4.3
Fig. 4.4
Fig. 4.5
Fig. 4.6

Degree sheet

***prepared in 1:250000 scale.**
***The degree sheets cover**
1° latitudinal and
1° longitudinal extent.
***Degree sheet 55D is devided into16parts from 1 to 16.**

15'latitudinal and 15' longitudinal extented sheets

***Prepared in1:50000 scale**
***Each 15' minute sheet has 15' (15 minutes) latitudinal and 15' longitudinal extent**

6.
Explain the toposheet number $45\frac{D}{10}$

45 is the index number of the toposheet .
This denotes the area it represents which is of 4° latitudinal and 4° longitudinal extent.
This area is devided into 16 equal parts and there are 16 degree sheets of
1° latitudinal and 1° longitudinal extent.
Of that ,D denotes the area represented by the particular degree sheet D .
The degree sheet D is again devided into16 parts and 10 denotes the particular area it represents which is 15' latitudinal and 15' longitudinal extent.

7.Conventional signs and symbols used in toposheets.

Signs and symbols	Geographic features	Signs and symbols	Geographic features
	Road		**Boundary**
	Metalled road		International boundary
	Unmetalled road		State boundary
	Footpath		District boundary
	Cart track		Taluk boundary
	Bridge with road		
	Railway		**Waterbodies**
	Railway-broad gauge		Stream
RS	Railway with station		River
	Railway- meter gauge		Tidal river
	Level crossing		Spring
			Well
	Railway with bridge		Tube well

Signs and symbols	Geographic features	Signs and symbols	Geographic features
	Vegetation		Lighthouse
	Grass	DISPENSARY	Health centre
	Palms		Airport
	Coniferous trees		
	Bamboo		
DENSE FOREST	Dense forest	PO	Post office
	Reserve forest	TO	Telegraph office
	Settlements	PTO	Post and telegraph office
	Permanent house	PS	Police station
	Temporary house	IB	Inspection bunglow
	Clustered settlements	RH	Rest house
	Dispersed settlements		
	Linear settlements		
	Monuments and buildings		**Elevation**
	Fort		Contour lines
	Temple		Form line
	Church	• 240	Spot height
	Mosque	200	Triangulated height
	Tomb	• BM215	Benchmark
	Grave		

8. *Find out the conventional colours used to represent different geographic features and complete Table 4.2.*

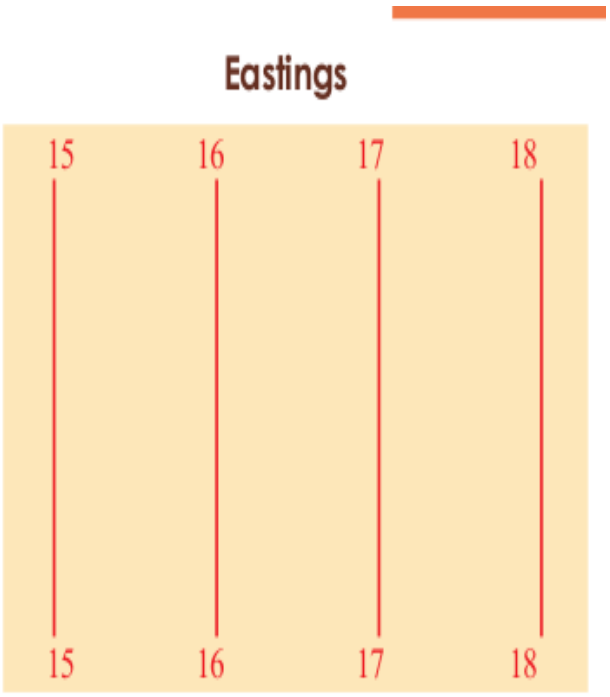
Feature	Colour
• Latitudes and longitudes • Non perennial waterbodies • Railway lines, telephone and telegraph lines • Boundary lines	black
• Oceans, rivers, wells, tube wells…… (perennial waterbodies)	• blue
• Forests • Grasslands • Trees and shrubs • Orchards	• green
• Cultivable land	• yellow
• Barren land	• white
• Settlements, roads, paths	• red
• Grid lines (eastings, northings and their numbers)	• red
• Contour lines and their values	• brown
• Sand dunes and sand hills	• brown

Table 4.2 Conventional colours

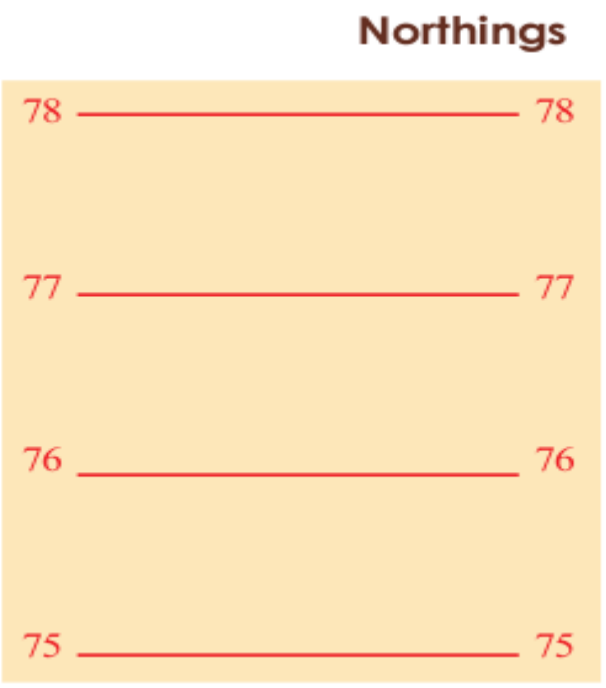
9.What is the importance of grid reference?

places are located on maps and globe with the help of latitudes and longitudes. But it is difficult to show the precise location of minor geographical features in toposheets, which are large scale maps. Grid reference helps to solve this difficulty.

10.what are the salient features of eastings and northings?



.These are north-south lines
• Their value increases towards theEast.
• The value of the eastings immediately left to the geographic features is considered for identifying a location.

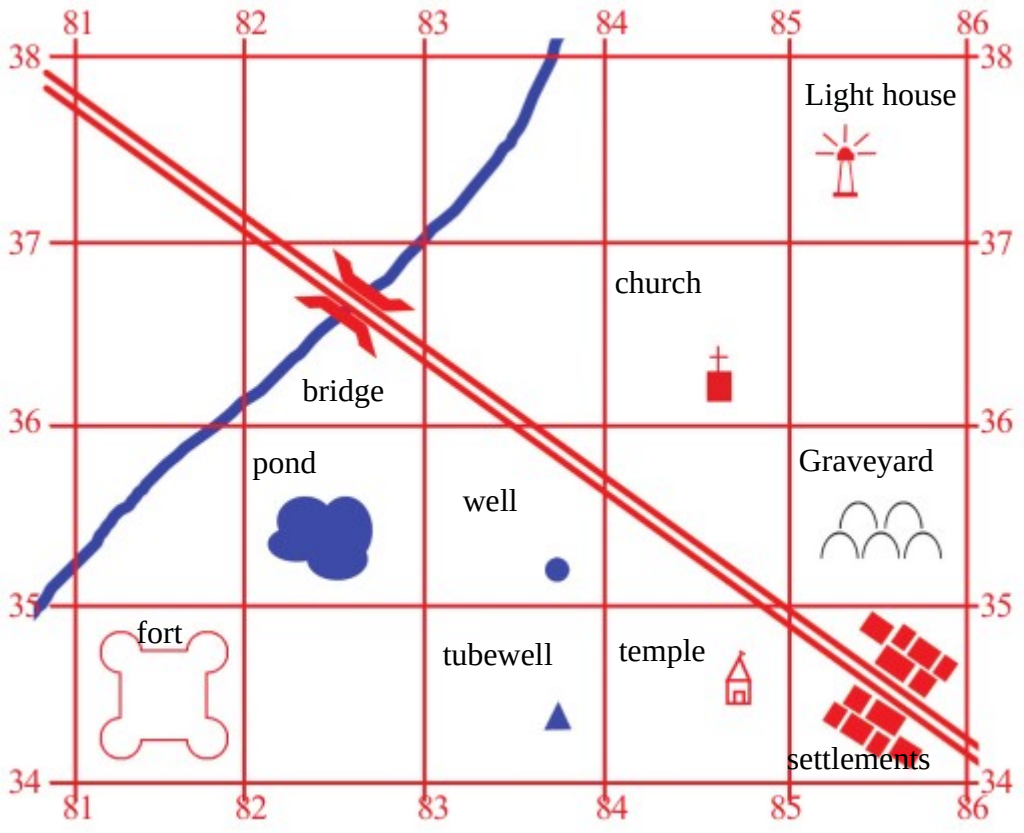


• These are lines drawn in the east-west direction.
• Their value increases towards the north.
• The value of the northings immediately to the south of the feature in the map is considered for identifying a location.

11.What is reference grid ?

The grids formed jointly by the eastings and the northings are called reference grids. In 1:50000 toposheets each grid with 2 cm width and 2 cm breadth covers an area with 1 kilometre length and 1 kilometre breadth on the earth's suface.

12.Find out the location of geographic features of the model grid given below.



4-figure grid reference

pond----------8235
graveyard----8535
fort-----------8134
settlements---8534

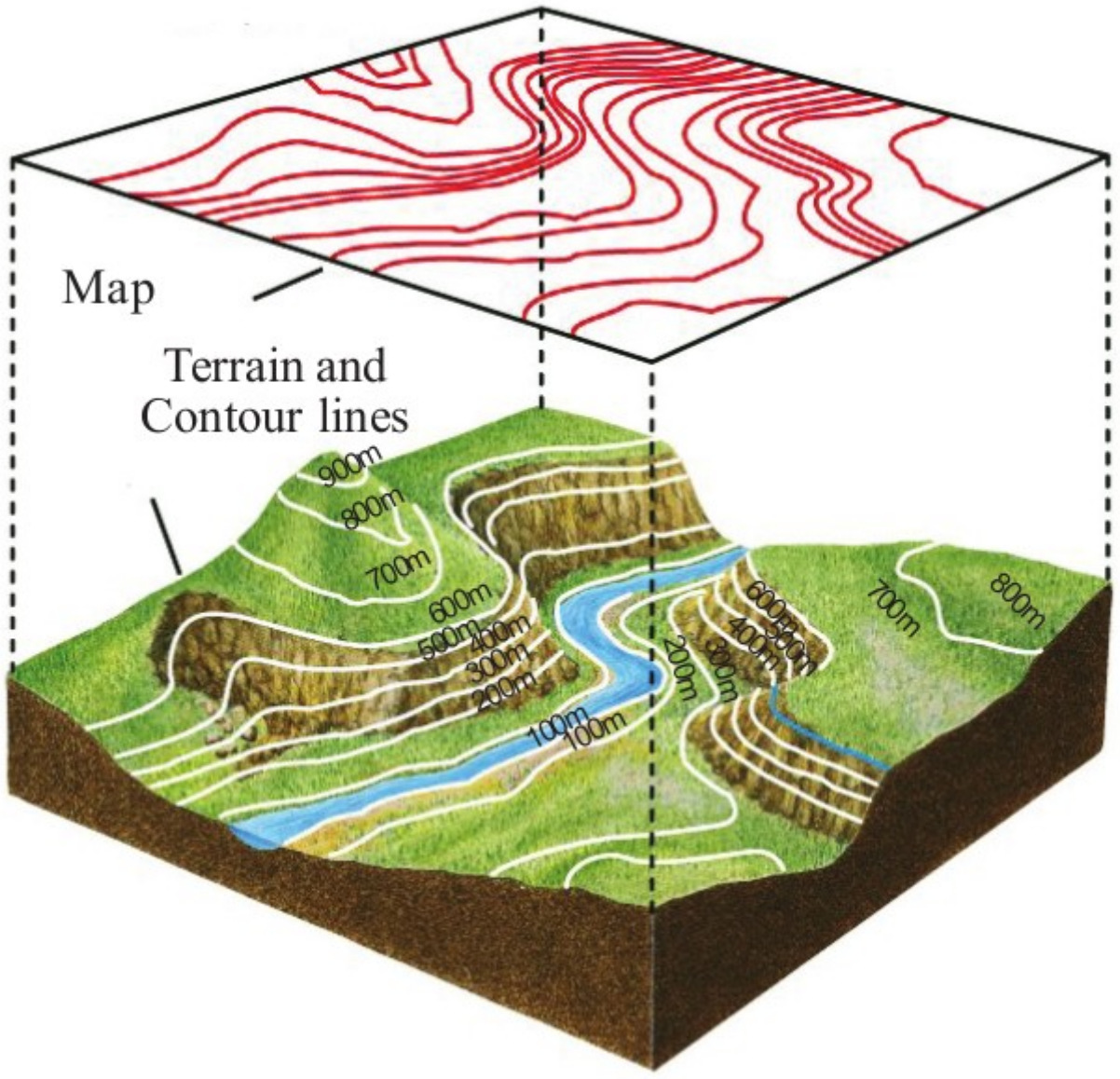
6-figure grid reference

light house---853373
bridge--------823364
church--------846362
well-----------838352
tubewell------838343
temple---------848346

13.Contour Lines

Contours are imaginary lines drawn on maps connecting those places having equal elevation from the sea level.

14. A contour line joins points of equal elevation above a given level such as mean sea level. The respective altitude will be marked with each contour line. These are called contour values. With the help of contour values we can find out the altitude of the places shown in maps.



The closely spaced contours represent steep slopes and the widely spaced contours represent gentle slopes.

15.What is the importance of the contour lines in topographic maps?

contour lines are useful to assess the following

1• Altitude of the place
2• Nature of the slope
3• Shape of the landform

16.Intervisibility

If any two places are mutually visible, then we can establish that these places are intervisible.

Intervisibility assessment is being applied for erecting

a) electric posts,
b)mobile towers and
c) wireless transmission towers

17.complete Table 4 by checking the intervisibility between the places M, N, O and P.

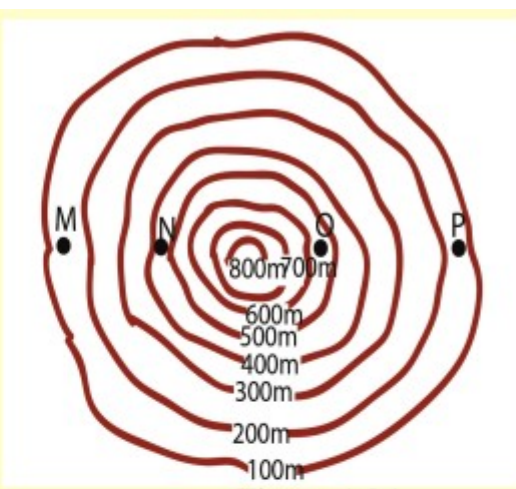


Figure 4.24

Places	Intervisible/ Not intervisible
• Between M and N	• yes
• Between N and O	• no
• Between O and P	• yes
• Between M and O	• no
• Between M and P	• no
• Between N and P	• no

18.What is Primary information about a topographic map?

The general information given outside the margins in topographic maps is known as marginal/primary information. The toposheet number, name of the area, latitudes and longitudes, values of northings and eastings, scale of the map, contour interval, years of survey and publication and the agency in charge of the survey are the marginal information in the toposheet.

19. Physical features

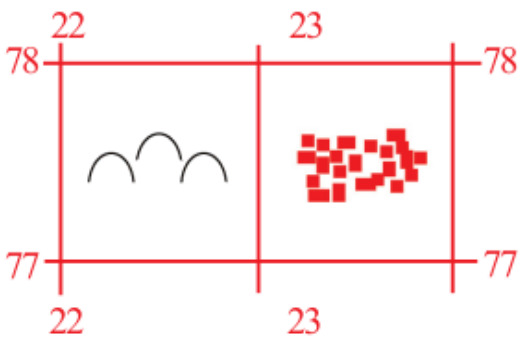
Water bodies such as rivers, streams, springs, etc. as well as the different landforms are the physical features in topographic maps. Their locations are to be found by direction or the grid reference method.

20. Cultural features

Settlements, different types of roads, boundaries, places of worship, agricultural lands, post office, police station, bridges, wells and tube wells are a few cultural features shown in toposheets. Their location can also be found based on direction or the grid reference method.

21.

Find out the location of settlements and graveyard in the given grid, using the 4-figure grid reference method.

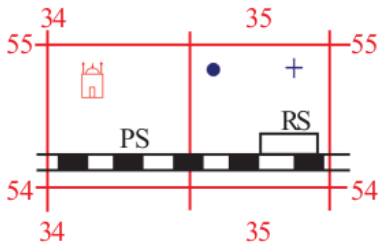


settlements -----2377

graveyard------2277

22.

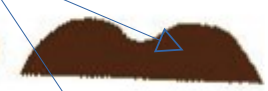
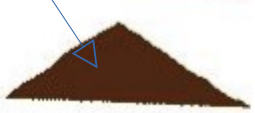
Find out the location of spring, mosque, railway station, police station, and well in the given grid, using the 6-figure grid reference method.



Spring +	35 8 54 8
Mosque	34 3 54 7
Railway station	35 6 54 2
Police station	34 6 54 3
Well	35 2 54 9

23.

Match the contour in Column A with the shape of landforms in Column B.

Contour A	Shape of landform B
1 	A 
2 	B 
3 	C 
4 	D 
5 	E 
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