

## **“Answer copy for Map G43S10”**

### **PART I**

**[Eastings-47 TO 56 and Northings-12 TO 21]**

#### **ANSWERS OF EXERCISE 1**

- (a) (i) This region receives seasonal rainfall.  
(ii) Presence of lined perennial well and seasonal streams.
- (b) (i) Causeways are written in many places because causeways are raised masonry road across a minor stream or low lying marshy area.  
(ii) These causeways indicate the areas of scanty or seasonal rainfall.
- (c) (i) Rocky knob in G.S. 5412- A grained surface or landscape with the hollows between the ridges occupied with enormous streams or lakes.  
(ii) Sluice in G.S. 5015- A sliding gate for controlling the flow of water.  
(iii) Open mixed jungle in G.S. 5112- Areas where mixed varieties of trees are found scattered all over.  
(iv) Open scrub in G.S. 5317- Xerophytic vegetation which are found in the semi desert region of less than 100 cm rainfall.
- (d) (i) General slope of land is towards North west.  
(ii) 1. The spot height is decreasing 391 to 236  
2. The South east part of the map is a highland.  
(iii) It is 125 metres.
- (e) Agriculture and government service
- (f) Bhatana is the most important settlement in this area.  
It is important because of the presence of hospital and post office.
- (g) (i) The white patches indicate open scrub.  
(ii) The main cause of it is due to seasonal rainfall which is less than 100 cm.
- (h) The drainage pattern in G.S. 5113 is Radial and in G.S. 5215 is Trellis.

#### **ANSWERS OF EXERCISE 2**

- (a) (i) Spot height 236 in NW corner of the map- 484198  
(ii) Temple at Rampura Khera- 527186  
(iii) Surveyed tree 254 in northern part- 526187  
(iv) Dry natural tank at Salotra- 524147

- (b)** Goreli is situated South east of Bherugarh
- (c)** Black line parallel to Northing 16 is the Latitudinal line.
- (d)** (i) Temple at Bherugarh- 473179  
(ii) Chattri near Butri- 497158  
(iii) 3r- 543192  
(iv) A prominent Surveyed tree- 552121
- (e)** Four man made features in G.S. 4713-  
(i) Temple  
(ii) Permanent huts  
(iii) Lined perennial well  
(iv) Embankment
- (f)** Four natural features in G.S. 5315  
(i) Seasonal streams  
(ii) Broken ground  
(iii) Open scrub  
(iv) Trees
- (g)** 3r in G.S. 4713 is the relative depth of the natural dry tank.
- (h)** Each grid = 2cm  
4 grids =  $4 \times 4 = 16$  cms  
Scale given- 2cms = 1km  
4 grids =  $2 \times 2 = 4$  kms<sup>2</sup>

### ANSWERS OF EXERCISE 3

- (a)** Chief occupations are agriculture and government service.  
Reasons- 1. Presence of cultivable land and lined perennial wells  
2. Presence of Post office and Ayurvedic hospital
- (b)** (i) Trellis- 5215  
(ii) Radial- 5113  
(iii) Dendritic- 5316  
(iv) Disappearing river- 5319
- (c)** (i) Sipu nadi is flowing towards West  
(ii) The spot height is decreasing
- (d)** Causeway is a raised masonry road across a minor stream or low lying marshy area.
- (e)** A monthly Fair is held at Marol.
- (f)** (i) R.F. represents Representative Fraction. It is the ratio between the distance on the map and the corresponding distance on the actual ground.

- (ii) The R.F. of the map is 1:50,000
- (g) Pipliya lies South east of Marol.
- (h) The distance between Makawal and Rampurkhera on the map is 5.5 cms  
Scale given 2ms = 1 km  
1 km= 1000 mts  
Therefore,  $\frac{1}{2} \times 5.5 = 2.75$  kms and 2750 mts.
- (i) (i) The white patched areas are not suitable for cultivation.  
(ii) It is so because these areas are infertile due to less rainfall.

#### ANSWERS OF EXERCISE 4

- (a) Features found in the following grid squares-
- (i) 534125- Natural dry tank  
(ii) 513159- Temple  
(iii) 526187- Surveyed Tree  
(iv) 542198- Chattri
- (b) (i) Bhatana is the most important settlement.  
(ii) Facilities like Hospital and Post office.
- (c) State boundary
- (d) (i) Lined perennial well is the chief source of irrigation  
(ii) Seasonal rainfall
- (e) Metalled road and cart track
- (f) (i) Causeway is a raised masonry road across a minor stream or low lying marshy area.  
(ii) Fairly dense scrub- An area of dense xerophytic vegetation scattered in the areas receiving less than 100 cms of rainfall.  
(iii) Open mixed jungle- Areas where mixed varieties of trees are found without any protected boundary.  
(iv) Fair (Monthly)- A social event or fair is organized in villages every month.
- (g) Simple statement
- (h) Representative Fraction and Linear scale

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**PART II**

**[Easting 56-64 and Northing 12-21]**

**ANSWERS OF EXERCISE -1**

- (a) Rocky knob: 6214
- (b) 6017- Trellis. In this type of drainage pattern, the tributaries join the main river at right angles.
- (c) Vajna- Scattered Dhavli- Nucleated
- (d) Triangulated Height is the height of a trigonometrical station in metres above sea level, e.g.  $\Delta 360$ . It is more accurate than Spot Height.
- (e) (i) Black dots along the borders of forest mean District Subdivision.  
(ii) Since it is a mountainous region thus there are many causeways along the metalled road.
- (f) Metalled road and cart track
- (g) Distance along the metalled road between the milestone 16 and 19 is 6 cms on the map  
Scale is 2cm=1km  
 $\frac{1}{2} \times 6 = 3$  kms on the ground
- (h) (i) North West  
(ii) Stream is flowing towards North West
- (i) (i) R.F. indicates Representative Fraction. It is the ratio between the distance on the map and corresponding distance on the actual ground.  
(ii) R.F. is 1:50,000
- (j) (i) Ridge: 5815  
(ii) Cliff: 6118  
(iii) Saddle: 6019

**ANSWERS OF EXERCISE -2**

- (a) Highest peak-  $\Delta 480$ - 592157
- (b) (i) 5618- Man made features-  
Permanent Huts- \*\*  
Lined Perennial Well- ●
- (c) Contours- They are the imaginary lines which indicate the height on topographical maps joining all the places of equal heights.
- (d) (i) 6012- Disappearing pattern  
(ii) 5918- Dendritic  
(iii) 6220- Trellis
- (e) (i) Brackish in G.S. 6317 means salty water which is unfit for drinking and agricultural purposes.  
(ii) 8r in G.S.5912 means the relative height of that particular knoll is 8 metres of the surrounding surface.
- (f) SamrawaKaGoliya is situated North East of ParliKhera.
- (g) Distance between PatlawakaGoliya and Sarliya is 4.8 cms on the map  
Scale given 2cm = 1km. Thus,  $\frac{1}{2} \times 4.8 = 2.4$  kms.on the ground.

- (h) 6013- Ridge
- (i) [DRY TANK WITH EMBANKMENT SYMBOL TO BE DRAWN HERE]
- (j) (i) Prominent Surveyed Tree- 6019
  - (ii) Agriculture
  - (iii) 6014- Black dots are Sediments and silts in the artificial reservoir.

### ANSWERS OF EXERCISE 3

- (a) Prominent Surveyed Tree- 602198
- (b) (i) Agriculture is the occupation of the people of North western part whereas Forestry is the occupation of the people of the North eastern part.
  - (ii) Scattered pattern of settlement
- (d) Various types of jungles- Fairly mixed jungle and Open mixed jungle.
- (e) Eastings are the vertical grid lines drawn on the topographical map from the NGR, which are numbered from West to East.  
Northings are the horizontal grid lines drawn on the topographical map from the NGR, which are numbered from South to North.
- (f) 5715- Trees
- (g) Seasonal rainfall. Reasons- Presence of lined perennial wells, seasonal streams, artificial reservoir and seasonal tanks.
- (h) (i) PalriKhera, Dhavli and Devkawas
  - (ii) Number 20 in G.S. 5714 indicates relative height of lined perennial well.
- (i) (i) 6215- Dendritic drainage pattern
  - (ii) District forest division
  - (iii) 2r in G.S. 5817- relative depth of dry tank
- (j) Rock outcrop- It is an open scanty semi-xerophytic type of vegetation where rocks cropped out.  
Open scrub- It is a xerophytic type of vegetation grown in the areas of seasonal rainfall.

### ANSWERS OF EXERCISE 4

- (a) (i) 591157- Triangulated height  $\Delta$ 
  - (ii) 583174- Dry man made tank
  - (iii) 579146- Milestone 22
- (b) 6217- Concave slope
- (c) Eastings 58 to 60- 2 grids  
Northings 18 to 20- 2 grids  
Since each square is 2cm x 2cm and the scale is 2 cm=1km  
Therefore, Area of each square is 1km<sup>2</sup>  
Thus, Area of forested region is 2km x 2km = 4km<sup>2</sup>
- (d) (i) 5915- Contour value is 280

(ii) C.I. is Contour Interval. It is the vertical difference between the two contour lines which remain constant throughout the map.

The C.I of the map is 20 metres

- (e) Towards South
- (f) Cart track and pack track. Due to steep highland, metalled has not been built.
- (g) (i) Agriculture  
(ii) Forestry and quarrying
- (h) (i) A raised masonry road across a minor stream or low lying marshy area but is not a bridge.  
(ii) 599145- Causeway
- (i) KaliaDungar is situated at a height of 638 metres.
- (j) Brackish means salty water which is unfit for drinking and agriculture.

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### PART III [Easting 64-72 and Northing 12-21]

#### ANSWERS OF EXERCISE 1

- (a) (i) 697132 – Relative height of lined perennial well  
(ii) 678196- Temple  
(iii) 689133- Prominent Surveyed Tree  
(iv) 657173- Spot height 854
- (b) North East
- (c) Cart track and footpath
- (d) (i) Falls means waterfall which is falling from a height of 12m.  
(ii) Waterfalls are formed when the streams flow from soft rock to hard rock and the soft rock erodes leaving a hard ledge over which the stream falls.
- (e) The northern part of the map is a mountainous region whereas the southern part of the map is a flat level land.
- (f) Concave Slope- 6814  
Ridge- 7014
- (g) Nature of well in G.S 6614 is perennial
- (h) Eastings 66 to 69- 3 grids  
Northings 14 to 17- 3 grids  
Since each square is 2cm x 2cm and the scale is 2 cm=1km  
Therefore, Area of each square is 1km<sup>2</sup>  
Thus, Area of forested region is 3km x 3km = 9km<sup>2</sup>
- (i) (i) 7017- Trellis  
(ii) 6613- Dendritic  
(iii) 6714- Radial
- (j) 6612- Unlined perennial well

**6912- Lined Perennial well**

**ANSWERS OF EXERCISE 2**

- (a)  $\Delta 1401$ - 668200
- (b) Towards South West. The streams are flowing from a highland and the spot height is decreasing from 264 to 244.
- (c) (i) Sluice means an artificial channel controlled by a gate to regulate the flow of water and to control water levels.  
(ii) 6r in G.S. 6514 is the relative height of embankment which is 6 metres high.
- (d) (i) 12r in G.S. 6913- Relative depth of lined perennial well  
(ii) Falls 15m in G.S. 6718- Falls means waterfall which is falling from a height of 15 metres  
(iii) Rocky knob in G.S. 6816- A grained surface or landscape with the hollows between the ridges occupied with enormous streams or lakes.  
(iv)  $\Delta 1352$  in G.S. 6918- Triangulated height or trigonometrical station at a height of 1352 metres.
- (e) Distance covered by pack track in the SE part on the map is 3.2 cms.  
Scale given 2cms=1km  
Thus,  $\frac{1}{2} \times 3.2 = 1.6$  kms = 1600 metres
- (f) The reservoir supplies water to the nearby areas since in the hills there is scarcity of water.
- (g) Forestry is the main occupation. Presence of large tracts of forests.
- (h) (i) Ridge- 6815  
(ii) Cliff- 6817  
(iii) Concave slope- 6715
- (i) North East
- (j) Representative fraction- It is represented with R.F. It means the ratio between the distance on the map and the corresponding distance on the ground.  
 $R.F = \frac{\text{Distance on the map}}{\text{Distance on the ground}}$   
Verbal Scale- It is also known as Simple statement. It is stated in words on the topographical sheet such as 2 cm= 1km or 1 cm= 500 metres

**ANSWERS OF EXERCISE 3**

- (a) Temporary Hut- 6920  
Permanent Hut- 7012
- (b) General direction of slope is South West. Spot heights are decreasing from 1336 and 1347 to 244 and 310.
- (c) No, causeway is not a bridge. It is a raised masonry road across a minor stream or low lying marshy area.
- (d) Slope in G.S.6916- Convex slope
- (e) White patch in G.S.6912 indicates island.

- (f) Red dotted lines in G.S. 6615 is Foot path and in G.S. 6913 it is Pack track.
- (g) The south western part of the map has less lined perennial wells because of the absence of dense population.
- (h) .501- 706147  
Δ1401- 667200
- (i) (i) Falls- It means waterfalls which are formed when the streams flow from soft rock to hard rock and the soft rock erodes leaving a hard ledge over which the stream falls.  
(ii) Sluice- It means an artificial channel controlled by a gate to regulate the flow of water and to control water levels.  
(iii) Causeway- It is a raised masonry road across a minor stream or low lying marshy area.  
(iv) Rocky Knob- A grained surface or landscape with the hollows between the ridges occupied with enormous streams or lakes.
- (j) Blue circle in G.S. 6612- Unlined perennial well  
In 6912, the blue dots are lined perennial well

#### ANSWERS OF EXERCISE 4

- (a) Palm trees- 6414
- (b) Area covered by G.S. 6715 in kilometres is 2cm x 2m  
Scale given 2cm = 1km  
Therefore, area of square is 1km<sup>2</sup>
- (c) 689133- Prominent surveyed tree
- (d) Highest contour value is 900metres and lowest contour value is 280 metres.
- (e) (i) Left bank  
(ii) 6514- Embankment
- (f) 7014- Ridge and the Spot height is .501
- (g) (i) Graves  
(ii) Protected forest means reserved forest which is owned and controlled by the government.
- (h) Distance in kilometres from Hanumanji ka Mandir to Mohanpura on the map is 3.6cms  
Scale given 2cms=1km  
Thus,  $\frac{1}{2} \times 3.6 = 1.3$  kms and 1300 metres.
- (i) Hetamji and Jhamar has scattered type of settlement.
- (j) (i) Saddle- 7014  
(ii) Embankment- 6514  
(iii) Canal- 6413

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**PART IV**  
**[Easting 47-56 and Northing 21-31]**

**ANSWERS OF EXERCISE 1**

- (a) (i)  $\Delta$ 413- 544274  
(ii) Dry tank at Warka- 533280  
(iii) Temple near Rampura- 525286  
(iv) Settlement Serua- 543246
- (b) (i) Broken ground  
(ii) It is formed in arid regions where the soil gets easily eroded due to flooding during the rains.
- (c) Blue line indicates water channel.
- (d) Mitan is situated South West of Rajgarh
- (e) The people are engaged in Limestone quarrying
- (f) (i) Revdar  
(ii) (1) It is well connected with other towns through metalled roads.  
(2) It has the facility of Post office, police *chauki* and hospital.
- (g) 5224- Trellis drainage pattern
- (h) (i) Yellow- It stands for cultivable land  
(ii) White- It stands for open scrub, island  
(iii) Brown- It stands for contour lines
- (i) (1) Permanent hut- ---  
(2) Lined perennial well- ●  
(3) Unlined perennial well – O  
(4) Broken ground-~~~~~
- (j) Distance between Want and Mitan on the map is 4 cms.  
Scale given 2cms = 1km  
Therefore,  $\frac{1}{2} \times 4 = 2$  kms  
Thus, distance between Want and Mitan on the ground is 2 kms.

**ANSWERS OF EXERCISE 2**

- (a) Devka- 4730
- (b) (i) The brown shades indicate Sand dunes.  
(ii) They are formed in arid regions when strong winds blow over the sands, a mound of sand is formed called sand dunes.
- (c) (i) Yes, telegram and a letter can be sent from Revdar.  
(ii) There is a post box.
- (d) The occupation that is carried out by the people of Serua is kilning and quarrying.
- (e) (i) Causeway: A raised masonry road over a small stream, but it is not a bridge.  
(ii) Brick kiln: It is a furnace for baking bricks.

- (iii) Open scrub: A xerophytic vegetation which are found in the semi desert region of less than 100 cm rainfall.
- (f) Red line in G.S. 5024 is National Highway (NH 168) and red line in G.S. 4923 is metalled road.
- (g) Roads converge at Karaunti- 533218
- (h) (i) 5r is the relative depth of a lined perennial well.  
(ii) G.S. 4923- Disappearing drainage pattern
- (i) 260 in G.S. 5025- contour value  
(ii) 268 in G.S. 5026- Dendritic
- (j) (i) Seasonal rainfall. Presence of broken ground, open scrub and line perennial well.  
(ii) Black curve lines in G.S. 4828 are broken grounds.

### ANSWERS OF EXERCISE 3

- (a) (i) Brick kiln- 544245  
(ii) Temple near .204- 480224  
(iii) Prominent Surveyed Tree- 495237
- (b) Distance between milestone 246 and the road converging at Karaunti on the map is 4.5 cms.  
Scale given 2 cms = 1km  
Therefore,  $\frac{1}{2} \times 4.5 = 2.25$  kms  
Distance between milestone 246 and the road converging at Karaunti on the ground is 2.25 kms.
- (c) 5225- Dendritic drainage pattern
- (d) (i) Open scrub  
(ii) G.S. 5427- Landform is Col
- (e) (i) Marblestone Quarries means quarries from where marblestones are dug out.  
(ii) 3r in G.S. 5229 relative depth of dry tank.  
(iii) Blue dot in G.S. 5328- Lined perennial well
- (f) Temple. 544274
- (g) The natural features are broken grounds. Disadvantage- the soil gets easily eroded due to floods.
- (h) Occupation of the people of Revdar is Government service and agriculture.  
Evidence- Presence of PWD, veterinary hospital, Post office and lined perennial well.
- (i) The difference in height between G.S. 5325 and G.S. 4822 is 20 metres.
- (j) G.S. 5226 – Knolls

### ANSWERS OF EXERCISE 4

- (a) Revdar is the most important settlement because-
- (i) National highway (NH168) passes through Revdar and it is linked with other towns with metalled road.
- (ii) Revdar has privilege of post office, police *chauki* and veterinary hospital.

- (b) Radial drainage pattern
- (c) (i) Brick kiln- It is a furnace for baking bricks.  
(ii) Causeway- It is a raised masonry road across a minor stream or low lying marshy area.
- (d) (i) Blue cross in G.S. 4924- Veterinary hospital  
(ii) Marble stone Quarries in G.S. 0918- means quarries from where marble stones are dug out.  
(iii) Red Box in G.S. 4925- It represent Permanent Huts
- (e) Agriculture is carried out by the people of Bikanwas. Presence of lined perennial well.
- (f) Settlement pattern of Karaunti is Compact and Rajgarh is scattered.
- (g) Conventional symbols in G.S. 5124-Temple, lined perennial well, unlined perennial well, palm trees, open scrub.
- (h) Between Rannari and Bikanwas the distance is 3.5 cms.  
Scale given 2cms = 1km  
Therefore,  $\frac{1}{2} \times 3.5 = 1.75$  kms  
Thus, actual ground distance between Rannari and Bikanwas is 1.75 kms.
- (i) Rampura is North West of Warka  
Brown patches indicate Sand dunes.

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**PART V**  
[Easting 56-64 and Northing 21-31]

**ANSWERS OF EXERCISE 1**

- (a) (i) A prominent surveyed tree near Selwara- 566275  
(ii) Chattri at Dak- 598243
- (b) 240 in G.S. 5623 means the milestone
- (c) Different modes of transport- Metalled road              
Cart track-         
Pack track-
- (d) Both the settlements (Basiya and Dhandhpur) have permanent types of huts.
- (e) SipuNadi is flowing towards South West. The spot height is decreasing from spot height 279 to 261.
- (f) (i) Chattri
- (g) (ii) Dry Tank with embankment  
(iii) Prominent Surveyed Tree  
(iv) Permanent Huts
- }      Refer to symbol chart and draw the symbols
- (h) 6223- 4r means the height of the embankment is 4 metres
- (i) 5825- Broken grounds

- (j) Open scrub- A xerophytic vegetation which are found in the semi desert region of less than 100 cm rainfall.

#### ANSWERS OF EXERCISE 2

- (a) Stony Waste: 5924  
(b) Selwara- Compact pattern  
Mohabbatgarh- Scattered pattern  
(c) (i) Surveyed tree- 6024  
(ii) Temple- 5826  
(iii) Lined perennial well- 6229  
(iv) Embankment- 5928  
(d) (i) Black curve lines are broken grounds.  
(ii) They are formed along the banks of the streams in arid regions where the soil gets eroded due to flooding during the rainy season.  
(e) 5822- Knolls  
(f) In G.S. 6127 the number 280 written in black means Spot height and in G.S. and 6128 the number 280 written in brown means Contour value.  
(g) The compass direction of Dak from Thal is North East.  
(h) Four facilities that Anadra enjoy-  
(i) Police chauki  
(ii) Hospital  
(iii) Temple  
(iv) National Highway (NH 168)  
(i) (i) .269 means spot height which indicates the height of a particular point above mean sea level.  
(ii) 3r means relative height or depth and is represented by a small 'r' which indicates height or depth of a particular point from the surrounding surface and not from above the mean sea level.  
5730- Trellis drainage pattern

#### ANSWERS OF EXERCISE 3

- (a) 14r at Anadra- depth of lined perennial well  
(b) The green patch indicates forested region  
(c) The distance along the pack track between Dak and the permanent hut (616239) on the map is 2 cm  
Scale given 2cm = 1 km  
Therefore, the distance along the pack track between Dak and the permanent hut (616239) on the ground in kilometre is 1km.  
(d) (i) .270 near Dhanera- 589219  
(ii) Temple near Dak- 603244  
(iii) Lined perennial well near Thal - 582215

- (iv) Chattri at Dhandpur- 588267
- (e) (i) Agriculture  
(ii) Presence of lined perennial well and open scrub.
- (f) Yes. Because there is a metalled road connecting both the towns.
- (g) Goguanadi and DevanganNadi.
- (h) In 6223, the symbol around the dry tank is embankment.
- (i) Meander- 5826
- (j) Area of one grid square –  
Each grid in cm is  $2\text{cm} \times 2\text{cm} = 4\text{ cm}^2$   
Scale given- 2 cms= 1km  
Therefore,  $1\text{km} \times 1\text{km} = 2\text{ km}^2$   
Thus, area of each grid is  $2\text{km}^2$

#### ANSWERS OF EXERCISE 4

- (a) 15r is relative depth of lined perennial well.  
15r- 587269
- (b) Black dots in SipuNadi indicate sediments and silts.
- (c) Seasonal rainfall is experienced.  
Reasons- Presence of lined perennial well and open scrub.
- (d) 3r in G.S. 6127 height of embankment and in G.S. 5729 3r means the depth of the bank of the stream which 3 metres from the surrounding surface.
- (e) Agriculture.
- (f) The white patches indicate open scrub
- (g) Distance between Dabani and Lunol is 7cms on the map  
Scale given 2 cms =1 km  
Therefore,  $\frac{1}{2} \times 7 = 3.5\text{ kms}$  and 3500 metres on the ground
- (h) (i) Stony waste- Barren land with stones  
(ii) Open scrub- A xerophytic vegetation which are found in the semi desert region of less than 100 cm rainfall.  
(iii) Relative height- It is represented with a small 'r' written along with a number, like, 22r. It indicates the relative height or depth of a particular point from the surrounding surface and not from the sea level.
- (i) Four natural features in G.S. 6224- Open scrub, broken ground, trees and streams.  
To draw the symbols see from the list of signs and symbols given on page no. 24 of the book.

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**PART VI**  
**[Easting 64-72 and Northing 21-31]**

**ANSWERS OF EXERCISE 1**

- (a) .1425- 694253
- (b) (i) Abu is the most important settlement  
(ii) Reasons- (1) Density of population is high  
(2) All important government buildings are located e.g. Raj bhawan  
(3) It's an important tourist place e.g. Dilwara Jain temples are located here
- (c) Open scrub and Fairly dense mixed jungle with bamboo
- (d) Bamba has temporary huts.  
Conventional symbol- □□□□
- (e) Sheet Rock means stretch of horizontally embedded hard rocks which are exposed to the surface and are well polished and prominent due to the agents of erosions like wind and water.
- (f) South west.
- (g) 6728- Radial drainage pattern  
6924- Trellis drainage pattern
- (h) In G.S. 6722, the blue patch is a water reservoir- NakhiTalao. It helps people in using the water for their daily life like drinking, etc.
- (i) (i) Concave slope-6725  
(ii) Ridge- 6824  
(iii) Saddle- 6828
- (j) 5.2The distance in kilometers along the metalled road between the causeways in G.S. 6829 and G.S. 7028 is 5.2 cms on the map  
Scale given 2cms=1km  
 $\frac{1}{2} \times 5.2 = 2.6$  kms on the ground

**ANSWERS OF EXERCISE 2**

- (a) (i) PWD in grid square 6822- Public Works Department  
(ii)  $\Delta$ 1327 in grid square 6721- Triangulated height  
(iii) Falls 7m in grid square 6622- Waterfalls which is at a height of 7 metres
- (b) G.S. 6523- Ridge
- (c) The people of Abu use metalled road and pack track
- (d) (i) Western part of the map.  
(ii) Presence yellow cultivable land and lined perennial well
- (e) .501- 642216
- (f) South East
- (g) (i) 7124- Trellis  
(ii) 7123- Trellis

- (iii) 6728- Radial
- (iv) 6724-Dendritic
- (h) In G.S. 6627, the two types of huts are Permanent and Temporary
- (i) (i) 6725- Concave slope
- (ii) 6925- Ridge
- (j) Scale- It represents the proportion between the distance on the map and the actual distance on the ground.

### ANSWERS OF EXERCISE 3

- (a) (i)  $\Delta 1426- 717251$
- (ii) 6r in G.S. 6827- 683276
- (iii) Trevor Tal- 697248
- (iv) Unlined well near Harmatiya- 656273
- (b) (i) Fireline- =====
- (ii) Temporary Huts- □□□□
- (c) The streams are flowing towards the West.
- (d) (i) Brackish means salty water
- (ii) It is unfit for drinking and agricultural purposes.
- (e) (i) 6r in G.S. 6827- Relative depth of seasonal dry tank
- (ii) .842 in G.S. 6521- Spot height of that particular spot of the summit
- (iii) The number 400 in G.S. 6827- Contour Value
- (f) (i) Concave slope
- (ii) Cliff
- (g) Abu- (i) Presence of Raj Bhawan
- (ii) Dilwara Jain Temples
- (iii) Scenic beauty due to its location
- (h) CPWD\_ Central Public Works Department
- (i) G.S. 7028- Red dotted lines indicate Foot Path.
- (j) Eastings 64 to 72- 8 Grids
- Northings- 21 to 31- 10 grids
- Each grid 2cm- 1km
- Scale given 2cms= 1km
- So, each grid= 1 km<sup>2</sup>
- 8 grids= 8km
- 10 grids= 10 km
- 8 x 10 = 80 kms<sup>2</sup>

### ANSWERS OF EXERCISE 4

- (a)  $\Delta 1426- G.S. 7125$
- (b) Agriculture and Forestry
- (c) (i) 6524- Trellis





Therefore,  $\frac{1}{2} \times 8 = 4$  kms

The distance between Bhamra and Dhann is 4kms on the ground.

- (f) The streams are flowing towards South. The spot height is decreasing from 324 (G.S. 5338) to 290 (G.S. 5032).
- (g) Agriculture is the occupation of the people around Dantrai.
- (h) G.S. 5033- Trellis drainage pattern  
G.S. 5434- Dendritic drainage pattern
- (i) White patches depict open scrub and black curve lines depict broken grounds.
- (j) (i) Black line parallel to Northings 35 is the Latitudinal line which is at  $24^{\circ}42'30''$   
(ii) 3r in G.S. 5034- Relative height of the embankment  
(iii) .311 in G.S. 5435- Spot height of the knoll which is 311 metres from above the mean sea level.

#### ANSWERS OF EXERCISE 2

- (a) (i) .324 in G.S. 5338- 536388  
(ii) Dhadtalao- 536338
- (b) The conventional symbols to be drawn from the chart of Signs and symbols.
- (c) (i) Broken lines indicate broken grounds.  
(ii) They are formed along the banks of streams or rivers in arid regions where the soil gets easily eroded due to floods.
- (d) G.S. 4733- Ridge
- (e) 2r in G.S. 5237- Relative depth of the dry seasonal tank.
- (f) (i) Compass direction of Bhamra from Dhann- South west  
(ii) Unmetalled road
- (g) Brown lines are called contour lines. They indicate the height of the places having equal heights.
- (h) Eastings 49 to 52- 3 grids- 3km  
Northings 35 to 38- 3 grids- 3km  
Scale given- 2cm= 1km  
Therefore,  $3 \times 3 = 9 \text{ km}^2$
- (i) In grid square 5032, the number 280 means contour height and 290 means spot height.  
In grid square 5334, one made feature is chattri and one natural feature is seasonal dry tank.

#### ANSWERS OF EXERCISE 3

- (a) (i) Spot height- It is represented on the map by a black dot in front of the number like .247 which indicates the height of that particular point above mean sea level.  
(ii) Relative height- It is represented by a small 'r' written along with a number like 22r. It indicates the relative height or depth of a particular point from the surrounding surface and not the sea level.
- (b) (i) G.S. 5235- Trellis drainage pattern

- (ii) G.S. 4838- dendritic drainage pattern
- (c) G.S. 5236- Tehsil boundary
- (d) Seasonal rainfall.  
Reasons- (i) Presence of broken ground  
(ii) Presence of open scrub
- (e) (i) Spot height- It is represented on the map by a black dot in front of the number like .247 which indicates the height of that particular point above mean sea level.  
(ii) Rock outcrop- It represents scanty semi xerophytic vegetation where rocks cropped out.
- (f) (i) R.F. means Representative Fraction. It is the ratio between the distance on the map and the corresponding distance on the actual ground.  
(ii) 4cm= 1km  
R.F. =  $\frac{MD}{GD}$   
 $\frac{4}{100,000} = \frac{2}{50,000} = \frac{1}{25,000} = 1:25,000$
- (g) G.S. 5034 - Knolls
- (h) DhadTalao is a seasonal dry tank. This indicates that the region receives seasonal rainfall.
- (i) In G.S. 4933, 5r means the relative depth of the bank of the stream.  
In G.S. 5336, the number 300 indicates Contour height value and 311 indicates Spot height.

#### ANSWERS OF EXERCISE 4

- (a) Towards South. The spot height is decreasing from North to South.
- (b) The distance between Idarla and Abidri on the map is 10.5 cms  
Scale given is 2cm = 1km  
Therefore,  $\frac{1}{2} \times 10.5 = 5.25$  kms is the distance on the ground.
- (c) These brown circles are Knolls.
- (d) Bhamra lie South East of Dantrai.
- (e) Red line indicates cart track, Black line indicates seasonal stream and Brown line indicates contour line.
- (f) Quarrying. Presence of Rock outcrop and absence of lined perennial well indicates that people are engaged in quarrying.
- (g) Two man made features in G.S. 5032- Permanent huts and Temple  
Two natural features –Broken ground and dry tank
- (h) Temple nearSaran kakhera- 471326
- (i) Eastings 47 to 56 = 9 grids  
Northings 31 to 39 = 8.5 grids  
Each grid= 2cm or 1 km  
Eastings-  $9 \times 1 = 9$  km  
Northings=  $8.5 \times 1 = 8.5$  km  
Area-  $9 \times 8.5 = 76.5$  km<sup>2</sup>  
4r in G.S. 4932 indicate relative depth of the bank of the stream.

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**PART VIII**  
**[Easting 56-64 and Northing 31-39]**

**ANSWERS OF EXERCISE 1**

- (a) (i) Village Dadarla- 563318  
(ii) .362 in NE corner of the map- 624385
- (b) Brackish in G.S. 6232 means salty water which is unfit for drinking and agricultural purposes.
- (c) G.S. 6034- Dendritic drainage pattern  
G.S. 6338- Trellis drainage pattern
- (d) Two villages are- Malgaon and Pamera
- (e) Pamera is an important settlement.  
Reasons- 1. Presence of Post office  
2. Veterinary hospital
- (f) (i) The brown lines are contour lines  
(ii) Rocky knob- It is a ridge that runs for a few miles.
- (g) Metalled road, unmetalled road, pack track and cart track.
- (h) 4r in grid square 5635 means relative depth of the bank of the river  
15r in grid square 5735 means relative depth of the lined perennial well.
- (i) Each side of a grid = 2cm = 1km  
Eastings 58 to 60 = 2 grids = 4 cms  
Northings 36 to 38 = 2 grids = 4 cms  
Therefore, the area = 4km<sup>2</sup>
- (j) (i) Dior Nadi is flowing towards South East.  
(ii) The spot height is decreasing and with the help of the marked arrow.

**ANSWERS OF EXERCISE 2**

- (a) (i) Stony waste- It means a barren land with stones.  
(ii) Open scrub- A xerophytic vegetation which are found in the semi desert region of less than 100 cm rainfall.
- (b) Annual Fair is an important cultural event in the villages of Pamera and Malgaon.
- (c) (i) Highest point- .362  
(ii) .362- 624385
- (d) Well in the NW part of the map- 576391
- (e) In G.S. 6234- Natural feature- Stony waste  
Artificial feature- lined perennial well
- (f) (i) The difference in height between the grid square 6138 and grid square 6136 is 44 mts.  
(.351-.307)  
(ii) Contour value in G.S. 6338 is 320 m.
- (g) Black dots in Dior Nadi indicate silts and sediments. It indicates that this region receives seasonal rainfall.

- (h) (i) General direction of slope is towards South.  
(ii) 1. Aqueduct- An artificial channel usually elevated and built of masonry to carry water.  
2. Causeway- A raised masonry road over a small stream, but is not a bridge.  
3. Open scrub- A xerophytic vegetation which are found in the semi desert region of less than 100 cm rainfall.
- (i) G.S. 6334- Trellis  
G.S. 6033- Dendritic
- (j) (i) Metalled road  
(ii) Length of road from Malgaon to Posintra- 2.5 cms  
Scale given- 2cms = 1 km  
Therefore,  $\frac{1}{2} \times 2.5 = 1.25$  kms.

### ANSWERS OF EXERCISE-3

- (a) (i) Dry tank in Posintra- 613324  
(ii) PO in Pamera- 627336  
(iii) Red cross near Nagani (Diggi)- 581355  
(iv) Surveyed tree near Posintra- 601321
- (b) (i) The land form in grid square 5934- Ridge  
(ii) Green colour arc in G.S. 6236- Grass scrub  
(iii) Red cross in G.S. 5835- Hospital Dispensary
- (c) Rock Outcrop- It represents scanty semi xerophytic vegetation where rocks cropped out.  
Stony waste- It is a barren land with stones.
- (d) The distance along the pack track between Nagani and the spot height.307 in G.S. 6136 on the map is 6.5 cms  
Scale given is 2 cms = 1km  
Therefore,  $\frac{1}{2} \times 6.5 = 3.25$  km
- (e) 20r in G.S. 6133 means relative depth of lined perennial well.
- (f) R- Relative height or depth of a particular place from the surrounding surface and not from the sea level.  
 $\Delta$ - Trigonometrical station
- (g) (i) The occupation of the people of Dangrali is agriculture and quarrying  
Reasons- 1. Presence of lined perennial well  
2. Presence of Sheet rock
- (h) In G.S. 5734, the black dotted lines are the Tehsil boundary.
- (i) Karja is a scattered settlement and Nagani is a compact settlement.
- (j) 1. Temple  
2. Chattri  
3. Lined perennial well  
4. Hospital dispensary  
5. Dry natural tank  
6. Metalled road

7. Permanent hut

8. Trees

[All the symbols are given in the Conventional Symbols chart]

#### ANSWERS OF EXERCISE 4

- (a) Pamera is situated at a height of 292 m.  
(b) (i) Yes.  
(ii) Pamera. The post box is found there.  
(c) Due to the presence of rocky knob, rock outcrop, stony waste and open scrub, there is no habitation.  
(d) (i) Rock outcrop- 5938  
(ii) Rock outcrop represents scanty semi xerophytic vegetation where rocks cropped out.  
(e) Surveyed tree near Dior Nadi- 581330  
(f) The general pattern of drainage in this area is Dendritic. The spot height is decreasing from north to south.  
(g) Northern part of the map is a highland and southern part of the map is a flat level land.  
(h) Seasonal rainfall.  
Reasons- 1.Presence of Rock outcrop, stony waste and open scrub  
2. Lined perennial wells  
(i) Statement of the scale- 2cms = 1km  
Other two scales are- Representative Fraction and Linear scale  
(j) (i) C.I. means Contour Interval. It is the vertical distance between two successive contour lines which remains constant throughout the map.  
(ii) 20 metres

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#### PART IX

[Easting 64-72 and Northing 31-39]

#### ANSWERS OF EXERCISE 1

- (a) (i) Settlement Asawa- 6734  
(ii) Dispensary- 6533  
(iii) Stony waste- 6737  
(iv) Ridge- 6936  
(b) Contour- Contours represents highland on maps. These are imaginary lines joining places of same height.  
C.I. of the map is 20 metres  
(c) South west  
(d) Causeway- It is a raised masonry road across a minor stream or low lying marshy area.  
(e) The distance in kilometres along the metalled road between Asawa and Udwariya is 4.5 cms on the map

Scale given 2cm =1km

Therefore,  $\frac{1}{2} \times 4.5 = 2.25$  kms

- (f) 4r in grid square 6834 indicate Relative depth of the bank of the stream.  
3r in grid square 6933 indicate Relative height of the embankment.
- (g) (i) Agriculture  
(ii) Lined perennial well and canal  
(iii) Sluice in G.S. 6832 means a sliding gate for controlling the flow of water.
- (h) 7136- Trellis  
7132- Disappearing
- (i) The green colour indicates forest region  
In 7034, the red double dash lines indicate unmetalled road.

#### ANSWERS OF EXERCISE 2

- (a) Temple near Pithapura- 664333
- (b) Main power line indicates the supply of electricity to the region. It is found in the central part of the map.
- (c) It is embankment. It helps in to hold back water to prevent flooding.
- (d) The three red squares indicate Temporary Huts.
- (e) Hospital/dispensary
- (f) 6633. It is formed in the second stage.
- (g) Sipu nadi is flowing in the South west direction. The spot height is decreasing from 350 m. to 289 m.
- (h) (i) PF stands for Protected Forest.  
(ii) Brown patch around the PF indicates Stony waste area.
- (i) (i) Disappearing drainage pattern  
(ii) Ridge  
(iii) 320 m
- (j) (i) Artificial lake  
(ii) Reason- an embankment around the lake shows that it is an artificial lake.  
(iii) It helps in irrigation.

#### ANSWERS OF EXERCISE 3

- (a) (i) Natural dry tank on the right side of Udvariya- 704346  
(ii) Nearest temple of Sanwara- 662364
- (b) 300 in G.S. 6733 is the contour value and 331 in G.S. 6534 is the Trigonometrical height.
- (c) Two manmade features in 6932 are embankment and lined perennial wells
- (d) (i) Sipu Nadi is flowing towards South west  
(ii) 6934
- (e) (i) Blue patch in G.S. 6832 indicates artificial lake.  
(ii) Sluice- means a sliding gate for controlling the flow of water.

- (f) The length of the metalled road from the point 645320 to the point 666370 is 5.5 kms.
- (g) (i) PF in G.S. 6737 means Protected Forest. In these forests trees are planted to act as shelter belts to prevent soil erosion.  
(ii) The symbol in blue circle in G.S.6533 means Hospital or dispensary  
(iii) 21r in G.S. 6536 means relative depth of lined perennial well.  
(iv) Open scrub in G.S. 7038 means xerophytic vegetation which is found in the semi desert region of less than 100 cm rainfall.
- (h) The brown lines indicate contour lines that represent a highland.
- (i) The white patch in G.S. 6632 indicate island.
- (j) (i) Udwareya from Sirori- East  
(ii) Sanwara from Asawa- North West  
(iii) Gulabganj from Udwareya- South West

#### ANSWERS OF EXERCISE 4

- (a) (i) Chattri- 652323  
(ii) Surveyed Tree- 703346  
(iii) Permanent Hut- 648383  
(iv) Dry Tank (man-made)- 673342
- (b) (i) Sipu nadi is flowing towards South West.  
(ii) The spot height is decreasing from 350 to 289
- (c) The black line running parallel to Easting line 68 indicate Longitudinal line.
- (d) The distance along the cart track between the temple near Asawa and the temple along the road in Sanwara on the map is 5.4 cms  
Scale given 2cm = 1km  
Therefore,  $\frac{1}{2} \times 5.4 = 2.7$  kms.
- (e) (i) The people of Hindu community reside.  
(ii) Presence of temples.
- (f) Natural features in G.S. 6933- dry tank, trees, open scrub  
Man-made features- embankment and temple
- (g) Tehsil forest boundary
- (h) (i) Ridge- 7035  
(ii) Knolls- 7134
- (i) (i) C.I. means Contour Interval. It is the vertical distance between two contour lines which remains constant throughout the map.  
(ii) C.I. is 20 metres
- (j) (i) Drainage pattern in G.S. 7136- Trellis  
(ii) 4r in G.S. 7132 means relative depth of lined perennial well.