

UNIVERSITY OF KALYANI



EXAMINATION APPLICATION FORM / PROVISIONAL ADMIT CARD

To
The Controller of Examinations
University of Kalyani
Kalyani, Nadia
West Bengal-741235, India

22042436-A/33522



Signature not available

Sir/Madam,

I would like to apply for examination stated below. I satisfy all the conditions for this purpose under the regulations of the university. Any wrong information/non-compliance will render my candidature liable to be cancelled at any stage of the Examinations as will be decided by the university.

Yours faithfully

Mouli Ghosh

Dated: 28/02/2022

B. A. HONOURS 1st SEMESTER EXAMINATION - 2021 [UNDER C.B.C.S.]

Registration Number : **042018** Session : **2021-22**
Roll No. : **3111137-2141466**
College : **SRIKRISHNA COLLEGE, BAGULA [137]**
Name : **MOULI GHOSH**
D/O : **BISWANATH GHOSH**
DOB : **14/08/2003**
Mob No : **8670645503**
Sex : **FEMALE**
Caste : **OBC-B**
Address : **VILL-FULBARI, PO-BANPUR
- 741503**

I agreed to appear for the following subjects in the said Examination.

HONOURS CORE COURSE	Geography	1	Geotectonics and Geomorphology
		2	Cartographic Techniques and Geological Map Study
GENERIC ELECTIVE-1 COURSE-1	History	1	History-I
ABILITY ENHANCEMENT COMPULSORY COURSE	Environmental Studies	1	Environmental Studies

Application No : UE2233522 Submitted On : 28/02/2022

Signature of the Student

SRI KRISHNA COLLEGE BAGULA

UNIVERSITY OF KALYANI

PRACTICAL NOTE BOOK 1st SEMESTER

NAME = MOULI GHOSH

REG NO - 042018

ROLL - 3111137 - NO-2141468

COLLEGE ROLL = 96

SUBJECT = GEOGRAPHY

SESSION = 2021-2022

Draw the parallels of polar Zenithal Stereographic Projection for 50°E to 130°E and 40°N to 90°N at an Interval of 5° on a Scale 1:60,000,000.

Calculation

Step-i: Radius of Reduced earth (R) = $\frac{\text{Actual Radius of the earth}}{\text{Diameter of the R.F}}$

$$= \frac{640,000,000}{60,000,000} = 10.6666 \text{ cm}$$

Step-ii: Parallels to be drawn = 40°N, 45°N, 50°N, 55°N, 60°N, 65°N, 70°N, 75°N, 80°N, 85°N, 90°N

Step-iii: Meridians to be drawn = 50°E, 55°E, 60°E, 65°E, 70°E, 75°E, 80°E, 85°E, 90°E, 95°E, 100°E, 105°E, 110°E, 115°E, 120°E

Step-iv: Radius of unparallel 2R from $\left(\frac{90^\circ - \theta}{2}\right)$
125°E, 130°E

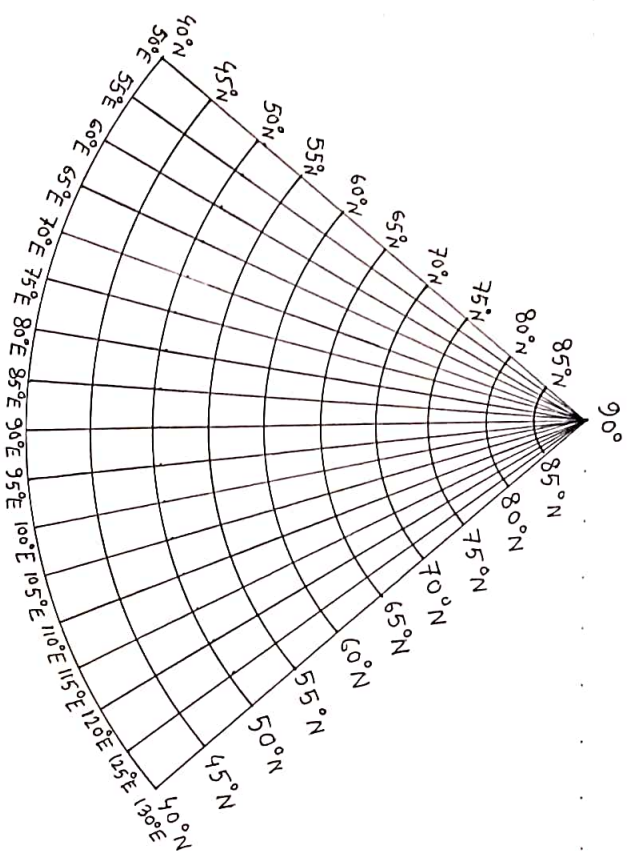
θ	$\left(\frac{90^\circ - \theta}{2}\right)$	tan. $\left(\frac{90^\circ - \theta}{2}\right)$	Rim cm	2Rim cm	2R tan $\left(\frac{90^\circ - \theta}{2}\right)$	Working unit in cm
40°N	25°	0.4663	↑	↑	9.9476	9.94 cm
45°N	22.50°	0.4142			8.8363	8.83 cm
50°N	20°	0.3639			7.7631	7.76 cm
55°N	17.50°	0.3152			6.7242	6.72 cm
60°N	15°	0.2749			5.7151	5.72 cm
65°N	12.50°	0.2216	↑	↑	4.7294	4.72 cm
70°N	10°	0.1763			3.7610	3.76 cm
75°N	7.50°	0.1316			2.8074	2.8 cm
80°N	5°	0.0874			1.8645	1.86 cm
85°N	2.50°	0.0436			0.9301	0.93 cm
90°N	—	—	↑	↑	—	—

126.102.22.

POLAR ZENITHAL STEREOGRAPHIC PROJECTION

Interval - 5°

Extension - 40°N to 90°N
 50°E to 130°E



R.F. 1: 60,000,000

02.22.



Draw the grid cells of Polar Zenithal Stereographic projection for the map of Southern hemisphere at an Interval of 10 on a Scale of 1:180,000,000.

Calculation:

Step-I:- Radius of Reduced earth (R) = $\frac{\text{Actual radius of the earth}}{\text{Denominator of the R.F.}}$

$$= \frac{640,000,000}{180,000,000} = 3.56 \text{ cm}$$

Step-II:- Parallels to be drawn = 0°, 10S, 20S, 30S, 40S, 50S, 60S, 70S, 80S, 90S.

Step-III:- Meridians to be drawn = 0, 10E/M, 20E/M, 30E/M, 40E/M, 50E/M, 60E/M, 70E/M, 80E/M, 90E/M, 100E/M, 110E/M, 120E/M, 130E/M, 140E/M, 150E/M, 160E/M, 170E/M, 180E/M

Step-IV:- Radius of unparallel 2R = $2R \tan\left(\frac{90-\theta}{2}\right)$

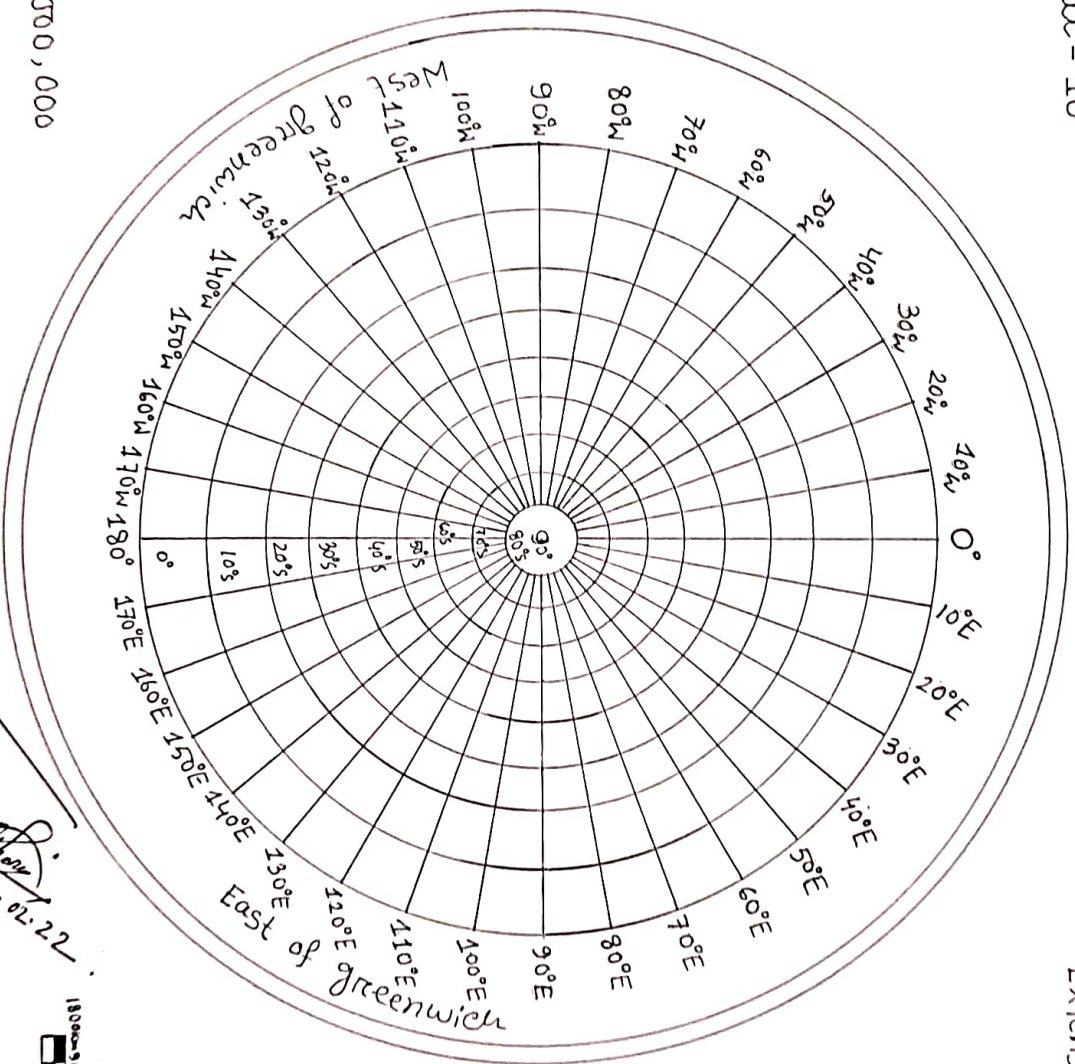
θ	$\left(\frac{90-\theta}{2}\right)$	$\tan\left(\frac{90-\theta}{2}\right)$	R in cm	2R in cm	2R tan $\left(\frac{90-\theta}{2}\right)$	Working unit in cm
0°	45°	0.8390	↗	↗	7.12	7.1 cm
10S	40°	0.8390	↗	↗	5.9743	5.9 cm
20S	35°	0.7002	↗	↗	4.9854	4.9 cm
30S	30°	0.5773	↗	↗	4.110	4.1 cm
40S	25°	0.4663	↗	↗	3.320	3.3 cm
50S	20°	0.3639	↗	↗	2.5914	2.5 cm
60S	15°	0.2672	↗	↗	1.9077	1.9 cm
70S	10°	0.1763	↗	↗	1.2554	1.2 cm
80S	5°	0.0874	↗	↗	0.6229	0.6 cm
90S	0°	—	↗	↗	—	—

19.02.22.

POLAR ZENITHAL STEREOGRAPHIC PROJECTION

Interval - 10°

Extension - 0° to $90^\circ S$
 $180^\circ W$ to $180^\circ E$



R.F. 1:180,000,000

18000000 1800 3200 km

69.02.22

Draw a Simple Conical Projection with one Standard parallel for the area between 35° N to 75° N and 10° W to 70° E at an interval of 10° with a Scale 1:45,000,000

Calculation:-

Step-i Radius of the beduced earth (R) = $\frac{\text{Actual radius of the earth}}{\text{Denominator of R.F}}$

$$= \frac{6400,000,000}{45,000,000}$$

$$= 14.22 \text{ cm}$$

Step-ii, Parallel to be drawn = 35° N, 45° N, 55° N, 65° N, 75° N

$\therefore$ Standard parallel choice is = $\frac{\text{Maximum } \theta + \text{Minimum } \theta}{2}$

$$= \frac{75^{\circ}\text{N} + 35^{\circ}\text{N}}{2} = \frac{110^{\circ}\text{N}}{2} = 55^{\circ}\text{N}$$

Step-iii, Meridians to be drawn = 10° W, 0° , 10° E, 20° E, 30° E, 40° E, 50° E, 60° E, 70° E

Central meridian choice is = $\frac{+ \text{Maximum } \theta - \text{Minimum } \theta}{2}$

$$= \frac{+70^{\circ} - 10^{\circ}\text{W}}{2} = \frac{60^{\circ}\text{E}}{2} = 30^{\circ}\text{E}$$

Step-iv, The Radius of the Standard parallel = $R \cos \theta$

$$= 14.2222 \times \cos 55^{\circ} = 8.1584$$

$$= 9.95 \text{ cm}$$

Step-v, The division of central meridian for spacing Parallel at 10° Interval = $\frac{nR}{180^{\circ}} \times 10^{\circ}$

$$= \frac{3.14 \times 14.2222 \times 180^{\circ}}{180^{\circ}} \times 10^{\circ} = 2.48 \text{ cm}$$

Step-vi, The division of the Standard parallel for spacing the meridians at 10° Interval = $\frac{2nR \cos \theta}{360^{\circ}} \times 10^{\circ}$

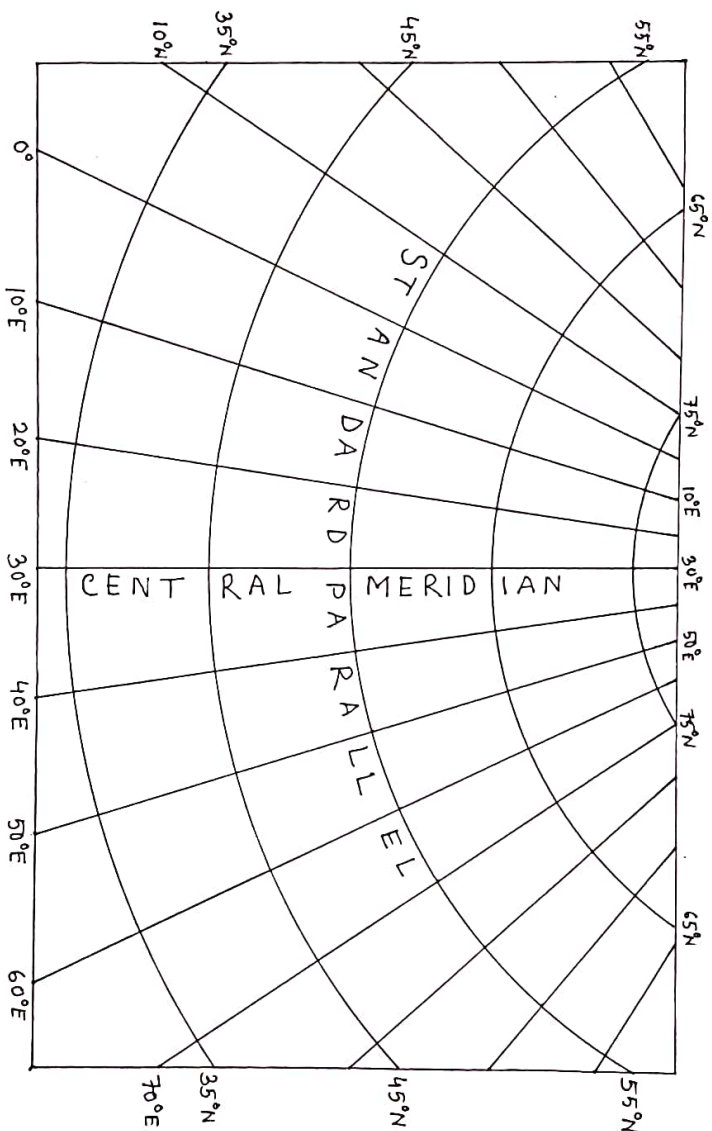
$$= 1.42 \text{ cm}$$

SIMPLE CONICAL PROJECTION WITH ONE STANDARD PARALLEL

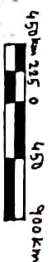
Interval - 10°

□ APEX

Extension - 35°N to 75°N
 10°W to 70°E



R.F. 1:45,000,000



6.9.62-22.

Draw a Simple Conical Projection with one Standard parallel for the area between 30°S — 70°S and 180° — 100°W at an Interval 10° with a Scale 1 inch = 750 mile.

Calculation:-

$$R.F - 1: 750 \times 63360 = 1: 47,520,000$$

Step-i:- Radius of the reduced earth (R): Actual radius of the earth

$$= \frac{R.F}{47,520,000} = \frac{250,000,000}{47,520,000} = 5.2069 \text{ Inch}$$

Step-ii:- Parallels to be drawn: 30°S , 40°S , 50°S , 60°S , 70°S

Standard parallel choice is:- Maximum θ + Minimum θ

$$= \frac{70^{\circ}\text{S} - 30^{\circ}\text{S}}{2} = \frac{100^{\circ}\text{S}}{2} = 50^{\circ}\text{S}$$

Step-iii:- Meridians to be drawn: 100°W , 110°W , 120°W , 130°W , 140°W , 150°W , 160°W , 170°W , 180°E

Central meridian choice is: + Maximum θ - Minimum θ

$$= \frac{+180^{\circ}\text{E} - 100^{\circ}\text{W}}{2} = \frac{280^{\circ}\text{W}}{2} = 140^{\circ}\text{W}$$

Step-iv:- The division of central meridian for Spacing Parallel at 10° Interval: $\frac{\pi R}{180^{\circ}} \times \text{interval}$

$$= \frac{3.14 \times 5.2069}{180^{\circ}} \times 10^{\circ} = 0.9083 = 0.91 \text{ Inch}$$

Step-v: Radius of Standard Parallel: $R \cos \theta$

$$= 5.2069 \times \cos 50^{\circ} = 4.3691 \text{ Inch}$$

$$= 4.31 \text{ Inch}$$

Step-vi: The division of the Standard parallel for Spacing meridians at 10° Interval: $\frac{2\pi R \cos \theta}{360^{\circ}} \times \text{interval}$

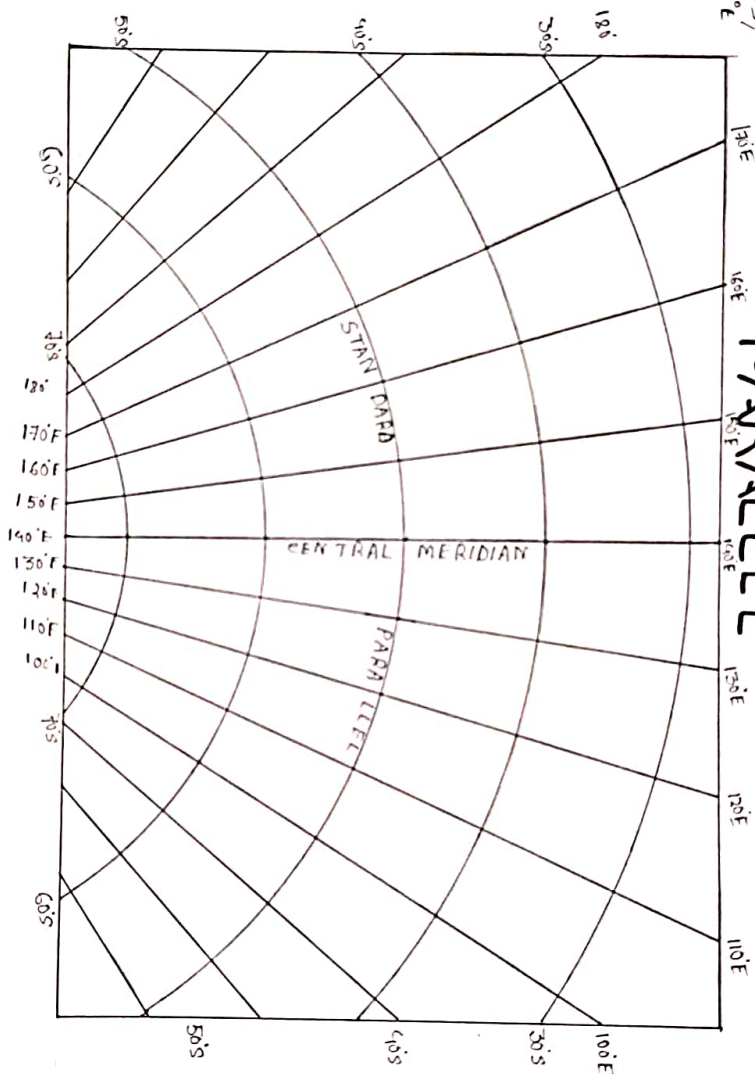
$$= \frac{2 \times 3.14 \times 4.3691 \times \cos 50^{\circ}}{360^{\circ}} \times 10^{\circ} = 0.5809 = 0.58 \text{ Inch}$$

SIMPLE CONICAL PROJECTION WITH CONE STANDARD

Extension - 30°S to 70°S/
180° to 100°E

PARALLEL

Interval - 10°



• CONEX

R.F. 1:47620000



27-70-03-22

Draw the world map on mercator's projection at 15' Interval with a Scale 1:160x10⁶

Calculation:

Step-i; Radius of the Reduced earth (R) = $\frac{640,000,000}{160,000,000} = 4 \text{ cm}$

Step-ii; Parallels to be drawn - 0, 15, 30, 45, 60, 75, 90

Meridians to be drawn - 0, 15E/M, 30E/M, 45E/M, 60E/M, 75E/M, 90E/M, 105E/M, 120E/M, 135E/M, 150E/M, 165E/M, 180E/M

Step-iii, length of the Equator = $2\pi R = 25.13 \text{ cm}$

Step-iv, Divisions along the equator for Spacing the meridians = $\frac{2\pi R}{360} \times 15' = 1.04 \text{ cm}$

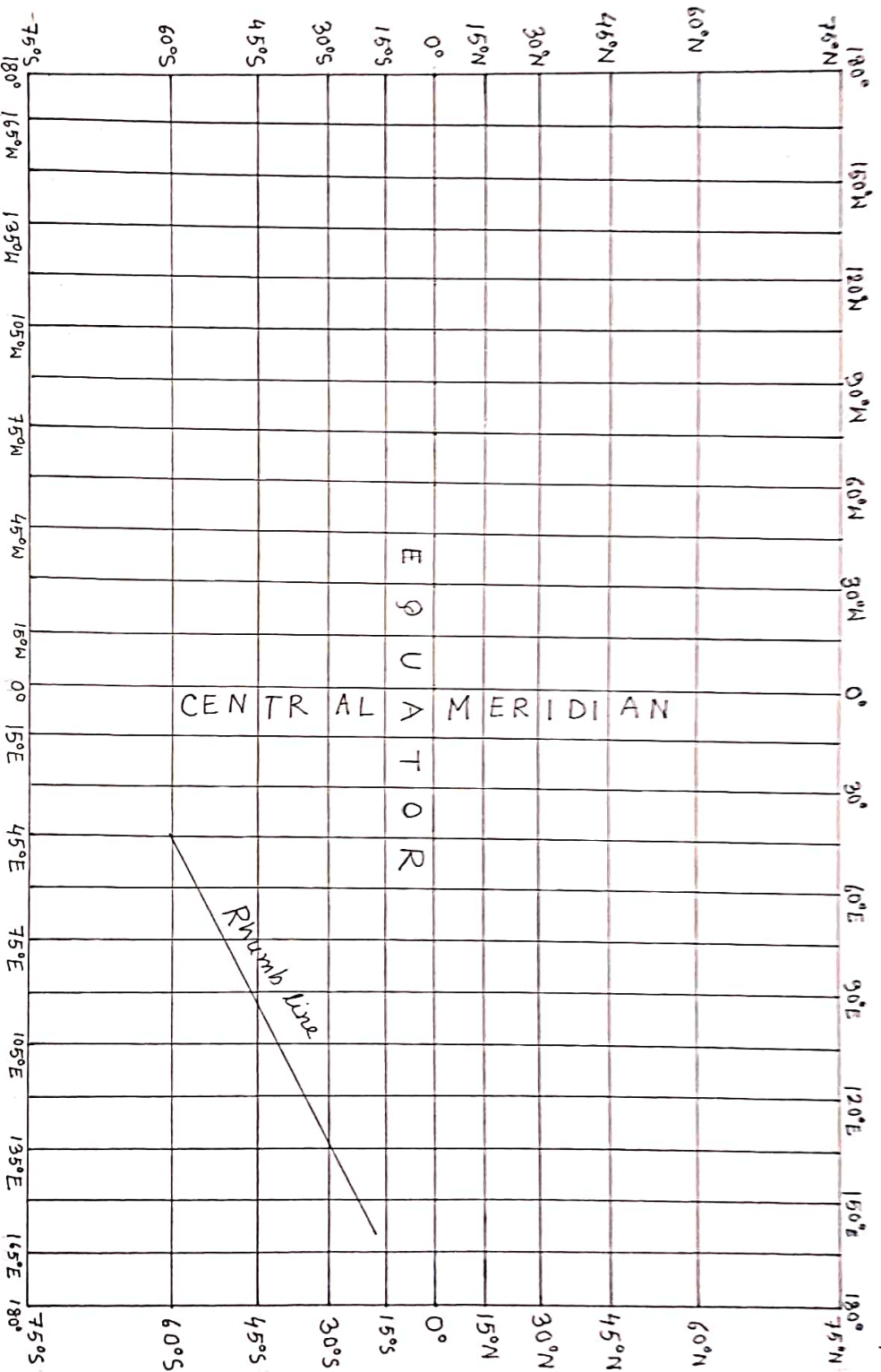
Step-v, Height of any Parallel's above the equator - $R \times 2.3026 \log \tan 45 + \frac{R}{2} / (\frac{20}{2} \pm \theta)$

θ	R in cm	$(\frac{20}{2} \pm \theta)$	$\log \tan (\frac{20}{2} \pm \theta)$	$2.3026 \log \tan (\frac{20}{2} \pm \theta)$	$R \times 2.3026 \log \tan (\frac{20}{2} \pm \theta)$
15°N/S	4	52'30"	0.1150	0.2648	1.0552
30°N/S	4	60'	0.2385	0.5492	2.1267
45°N/S	4	67'30"	0.3827	0.8812	3.5248
60°N/S	4	75'	0.5719	1.3168	5.2674
75°N/S	4	82'30"	0.8805	2.0274	8.1097
90°N/S	4	90'	—	—	—

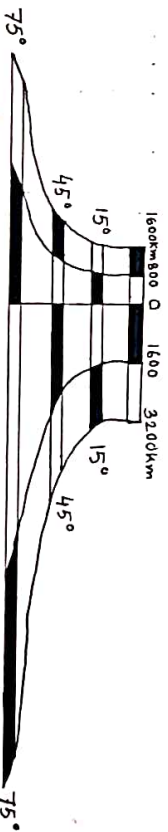
MERCATOR'S PROJECTION

Interval - 15°

Extension - $180^\circ E/W$
 $75^\circ N/S$



R.F. 1:160,000,000



12.03.22.

Q. Draw the parallels of Bonne's Projection for the extension 35°N to 75°N and 10°W to 70°E at an interval 10° on a scale 1 : 45,000,000

Calculation:

Step-I: Radius of the reduced earth (R) = $\frac{\text{Actual radius of the earth}}{\text{Denominator of R.F}}$

$$= \frac{640,000,000}{45,000,000}$$

$$= 14.2222 \text{ cm}$$

Step-II: Parallel to be drawn - 35°N, 45°N, 55°N, 65°N, 75°N
∴ standard parallel choice is -

Step-III: Meridian to be drawn - 10°W, 0°, 10°E, 20°E, 30°E, 40°E, 50°E, 60°E, 70°E
∴ central meridian choice is -

Step-IV: The radius of standard Parallel : $R \cos \theta$

$$= 9.958 \text{ cm.}$$

Step-V: The division of the central meridian for spacing the parallel at 10° interval
$$\frac{\pi R}{180^\circ} \times 10^\circ = \frac{3.14 \times 14.2222}{180^\circ} = 2.4809$$

Step-VI: The division of the standard Parallel for spacing the meridians 10° interval
$$\frac{2\pi R \cos \theta}{360^\circ} \times 10^\circ = \frac{2\pi R \times \cos \theta}{360^\circ} \times 10^\circ$$

θ	$\cos \theta$	R in cm	2π	$2\pi R \times \cos \theta$	$\frac{2\pi R \times \cos \theta}{360^\circ} \times 10^\circ$	Working unit cm
35°N	0.8191	14.2222	6.28	73.1582	2.0321	2.03
45°N	0.7071	14.2222	6.28	63.1549	1.7543	1.75
55°N	0.5735	14.2222	6.28	51.2223	1.4228	1.42
65°N	0.4226	14.2222	6.28	37.7446	1.0484	1.04
75°N	0.2598	14.2222	6.28	23.1148	0.6420	0.64

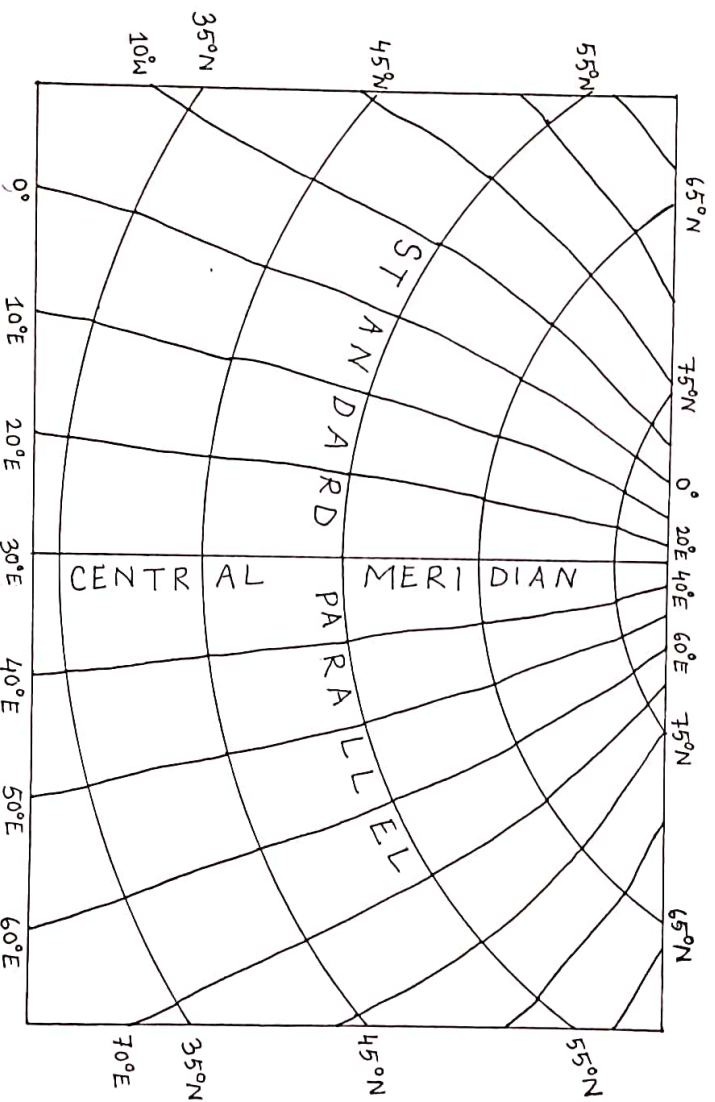
Pranav
12.03.22

BONNE'S PROJECTION

Interval - 10°

☐ APEX

Extension - $35^\circ\text{N} - 75^\circ\text{N}$
 $10^\circ\text{W} - 70^\circ\text{E}$



R.F. 1: 45,000,000



Handwritten signature
 12.03.22

Construct a linear Scale to show 5 km in Primary division and 500 metre in Secondary division and total length of Scale is 10 km from given R.F 1:102800.

Calculation:

Step-i, 1cm on the map distance are represented by 102800 on the ground distance.
 1cm on the map distance are represented by $\frac{1}{102800}$ on the ground distance.
 100km/100000 on the map distance are represented by $\frac{1 \times 100000}{102800}$ on the ground distance.

Step-ii, length of the primary division on map
 1.028 km on the ground distance are represented by 1cm on the map.
 1 km on the ground distance are represented by $\frac{1}{1.028}$ cm on the map.

5 km on the ground distance are represented by $\frac{1}{1.028} \times 5$ cm on the map.

Step-iii, length of the Secondary division on map
 = 4.86 cm

1.028 km on the ground distance are represented by 1 cm on the map.

1 km on the ground distance are represented by $\frac{1}{1.028}$ cm on the map.
 500metre/0.5 km on the ground distance are represented by $\frac{1}{1.028} \times 0.5$ cm on the map.

Step-iv, Number of primary division = $\frac{\text{length of total Scale}}{\text{length of Primary division}} = \frac{10 \text{ km}}{2 \text{ km}} = 5$

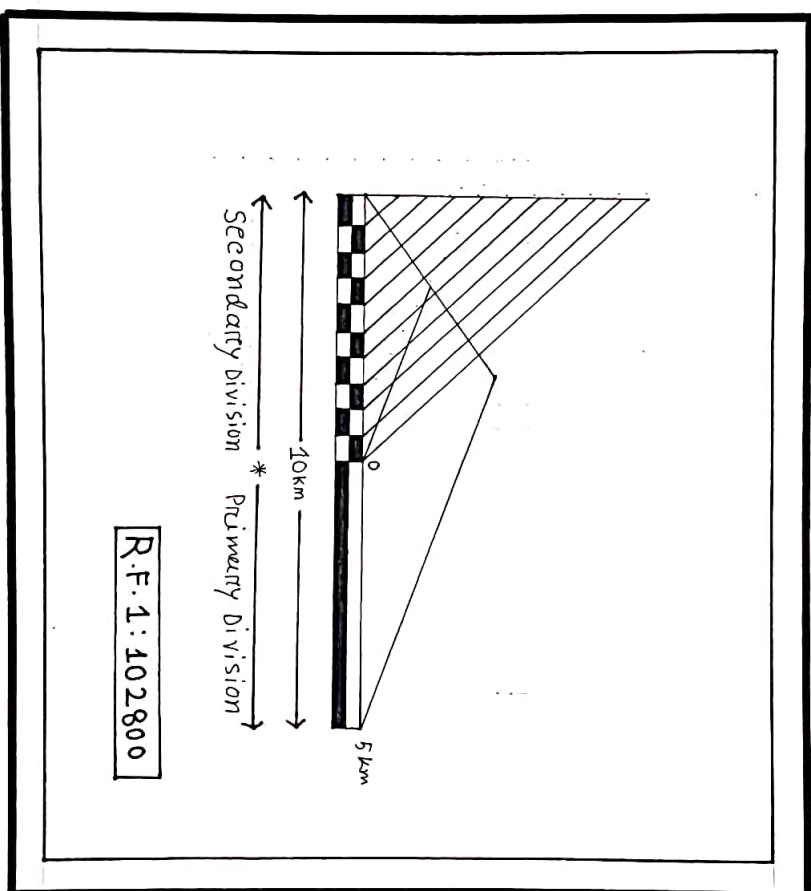
Step-v, Number of Secondary division = $\frac{\text{length of P.D}}{\text{length of S.D}} = \frac{5 \text{ km}}{5} = 10$

Step-vi, total length of the Scale,

length of 1 Primary Part = 4.85 cm
 length of 21st Primary Part = (4.85×2)
 = 9.7 cm

$\therefore$ Total length of the Scale = 9.7 cm

LINEAR SCALE



R.F. 1 : 402800

20/12/22

- Following given R.F. 1:36000 Draw a line Scale to show 12 miles and 2 miles in Primary and Secondary division respectively.

Calculation

Step-i: Transformation of R.F. into Statement

1 inch on the map distance 36000 inch on the ground distance.
 $\therefore$ 1 inch on the map distance $\frac{36000}{1}$ inch on the ground distance.
 $\therefore$ 63360 inch on the map distance $\frac{36000}{63360}$ inch on the ground distance.
 $= 5.68$ mile.

Step-ii: Length of the Primary division

5.68 mile on the ground distance 1 inch on the map distance.
 $\therefore$ 1 mile on the ground distance $\frac{1}{5.68}$ inch on the map distance.
 $\therefore$ 12 mile on the ground distance $\frac{12}{5.68}$ inch on the map distance.
 $= 2.11$ inch

Step-iii: Secondary Divisions

5.68 mile on the ground distance once represented by 1" on the map distance
 1 mile on the ground distance once represented by $\frac{1}{5.68}$ on the map distance
 2 mile on the ground distance once represented by $\frac{2}{5.68}$ on the map distance.
 $= 0.352$ inch

The number of Primary Division — 3

The number of Secondary Division — 10

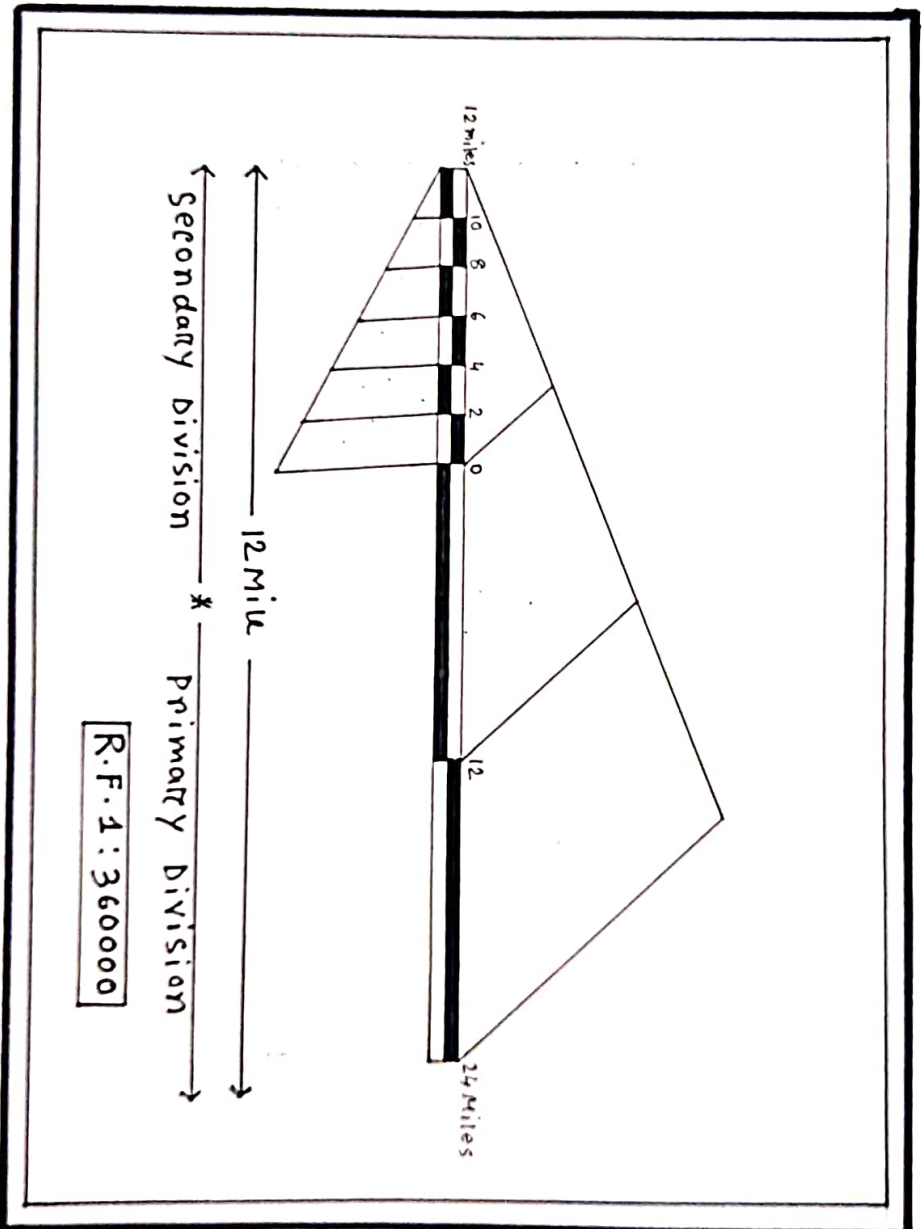
Step-iv: Total length of the Scale

Length of 1 primary Part = 2.11 inch
 Length of 3 Primary Part = $(2.11 \times 3) = 6.33$ inch.
 $\therefore$ Total length on the Scale = 6.33 inch.

Step-v: No of the Secondary division

$$= \frac{\text{Value of 1 Primary division}}{\text{Value of 1 Secondary division}} = \frac{12 \text{ mile}}{2 \text{ mile}} = 6 \text{ part}.$$

LINE/AIR SCALE



Draw a Comparative Linear Scale to show 15 miles and 15 km of total length of Primary division is 5 miles/km and length of Secondary division is 2.5 miles/km - provided R.F = 1:100,000

E.G.'s

Calculation:

[illegible]

Primaux division:

1 km on the ground distance due by 1 cm map distance
 5 " " " " "
 " " " " "
 " " " " "
 $\frac{1}{5000}$ " "
 = 50 cm

Secondary division:

1 km on the ground distance are by 1 cm map distance

1 "	"	"	"	"	"	"	"	"
2.5 "	"	"	"	"	"	"	$\frac{1}{1 \times 2.5}$	"
							$= 2.5 \text{ cm}$	

Number of Primary division-3

Number of Secondary division—2

total length of the scale - 15 cm

Calculation:

सं

$$\begin{array}{r} \text{"on the map distance are by } 1000 \text{ on the ground distances} \\ 1'' \quad " \quad " \quad " \quad " \quad " \quad " \\ \underline{63360} \\ = 1'56 \text{ mile} \end{array}$$

Preliminary division:

1.56 mile on the ground distance over by 1" map distance

1	"	"	"	"	"	"	"	"
5	"	"	"	"	"	"	"	"

Second order division!

$\frac{1}{1.56} \times 5 = 3.2$

Secondary division:

1.56 mile on the ground diston are by 1" map distance

1	"	"	"	"	"	"
2.5	"	"	"	"	"	"

$\frac{1}{1.56}$ " "

$\frac{1}{2.5} \times 2.5$ " "

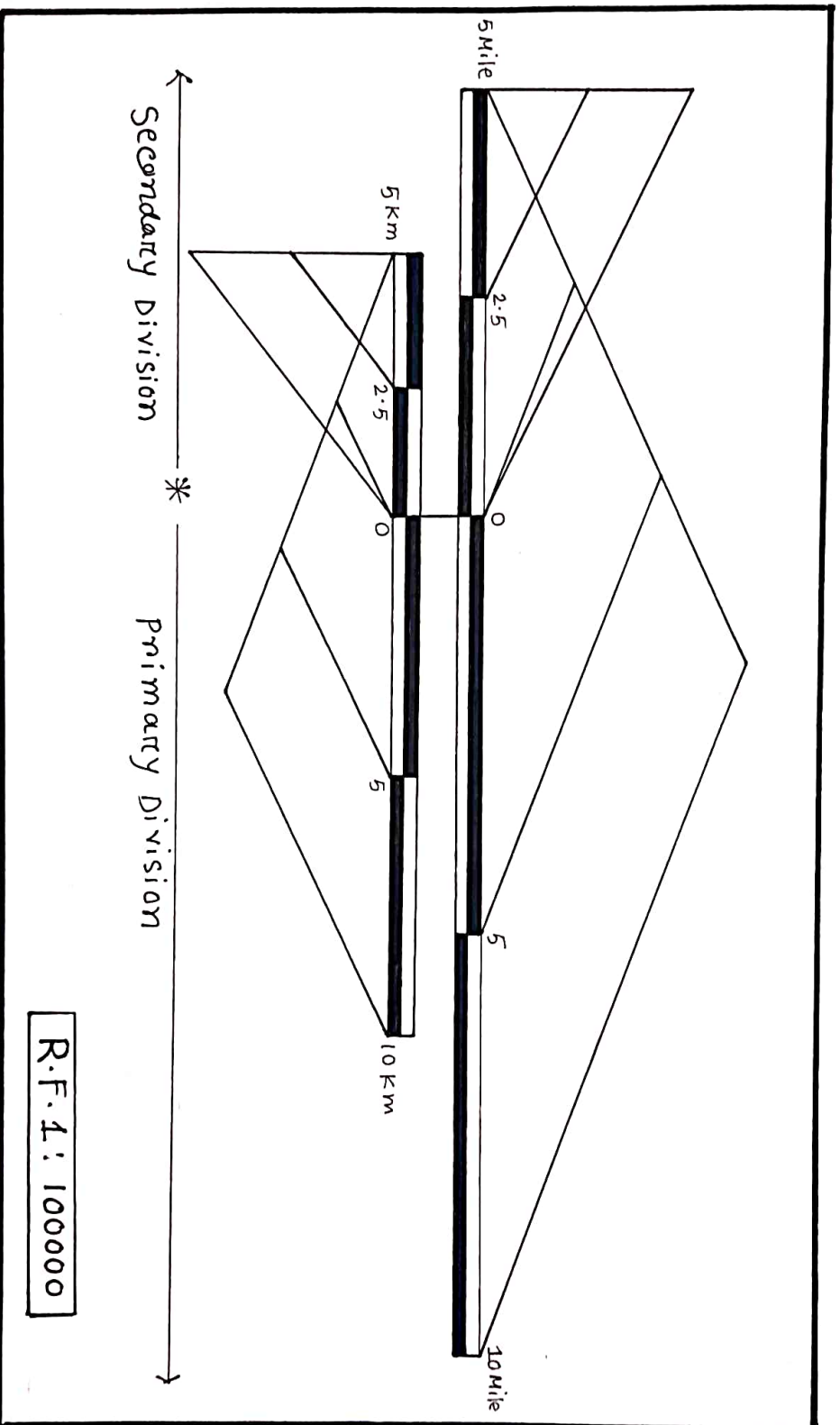
$= 0.4$ "

Number of Foremanry division—3

Number of Secondary division-2

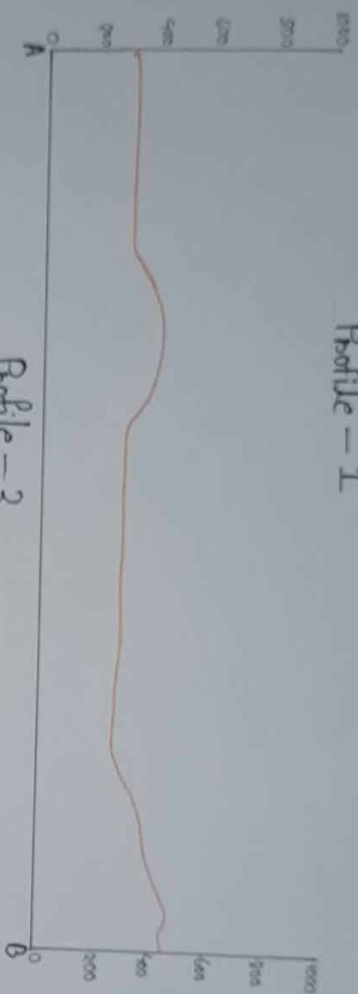
Total length of the Seed - 9.50"

COMPARATIVE LINEAR SCALE

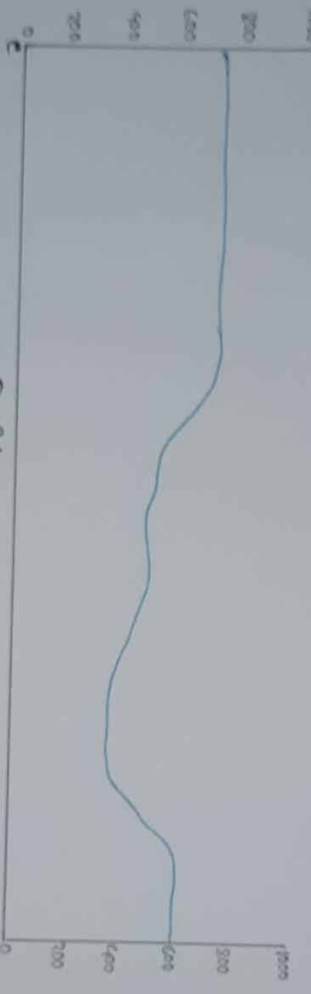


SERIAL PROFILE

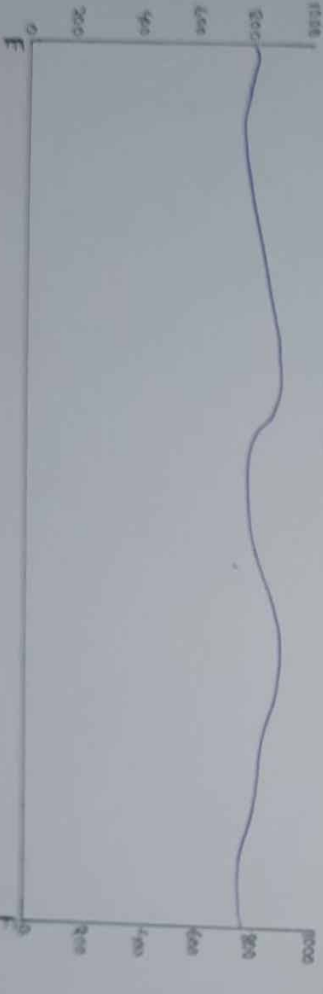
Profile - 1



Profile - 2



Profile - 3

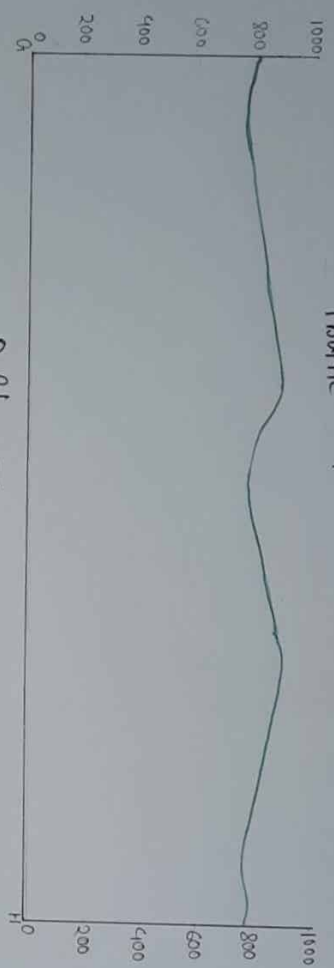


Scale - 1 cm = 200 mts

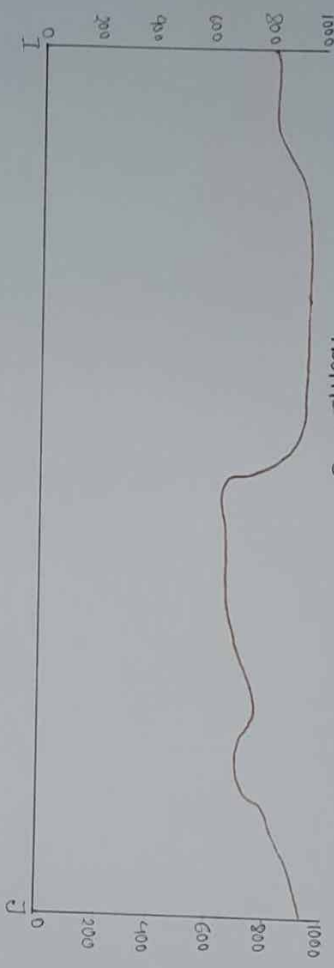
R.F = 1:50,000

INDEX	
	1st Profile
	2nd Profile
	3rd Profile
	4th Profile
	5th Profile

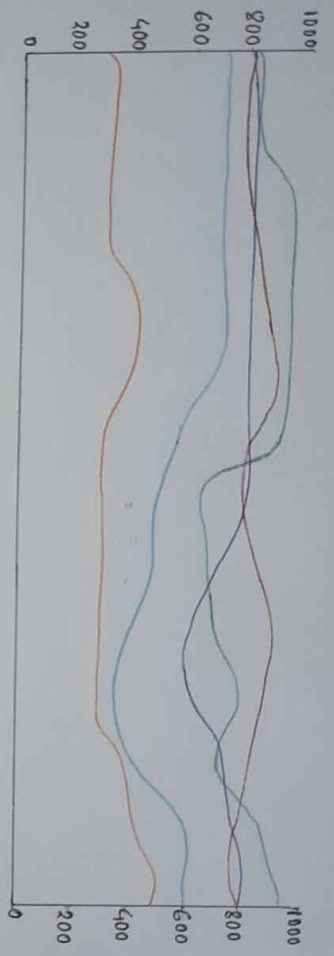
Profile - 4



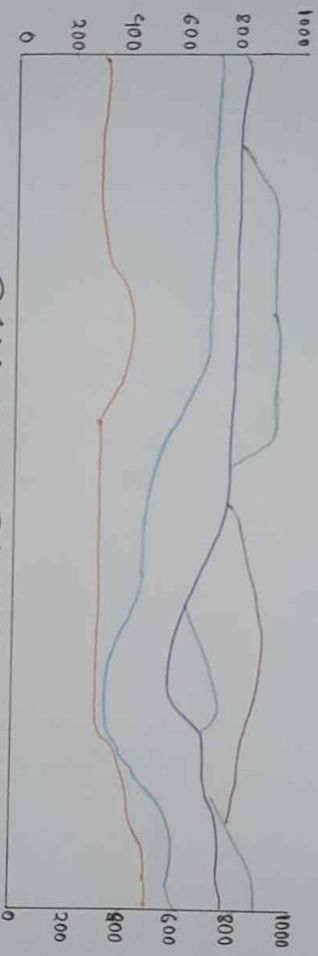
Profile - 5



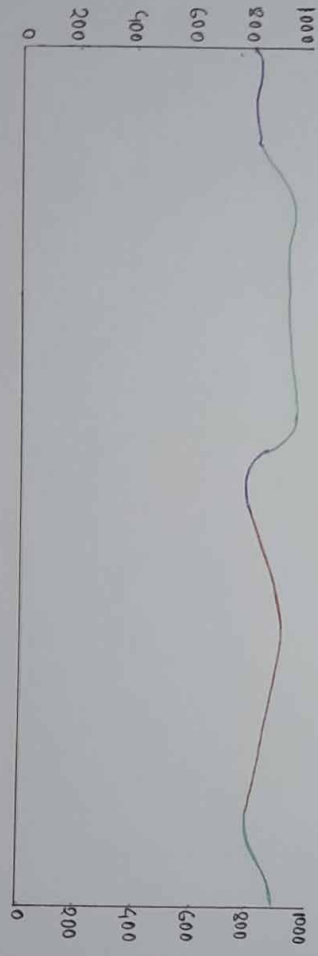
SUPER IMPROSEID PROFILE



PROJECTED



C(IMP)SITE



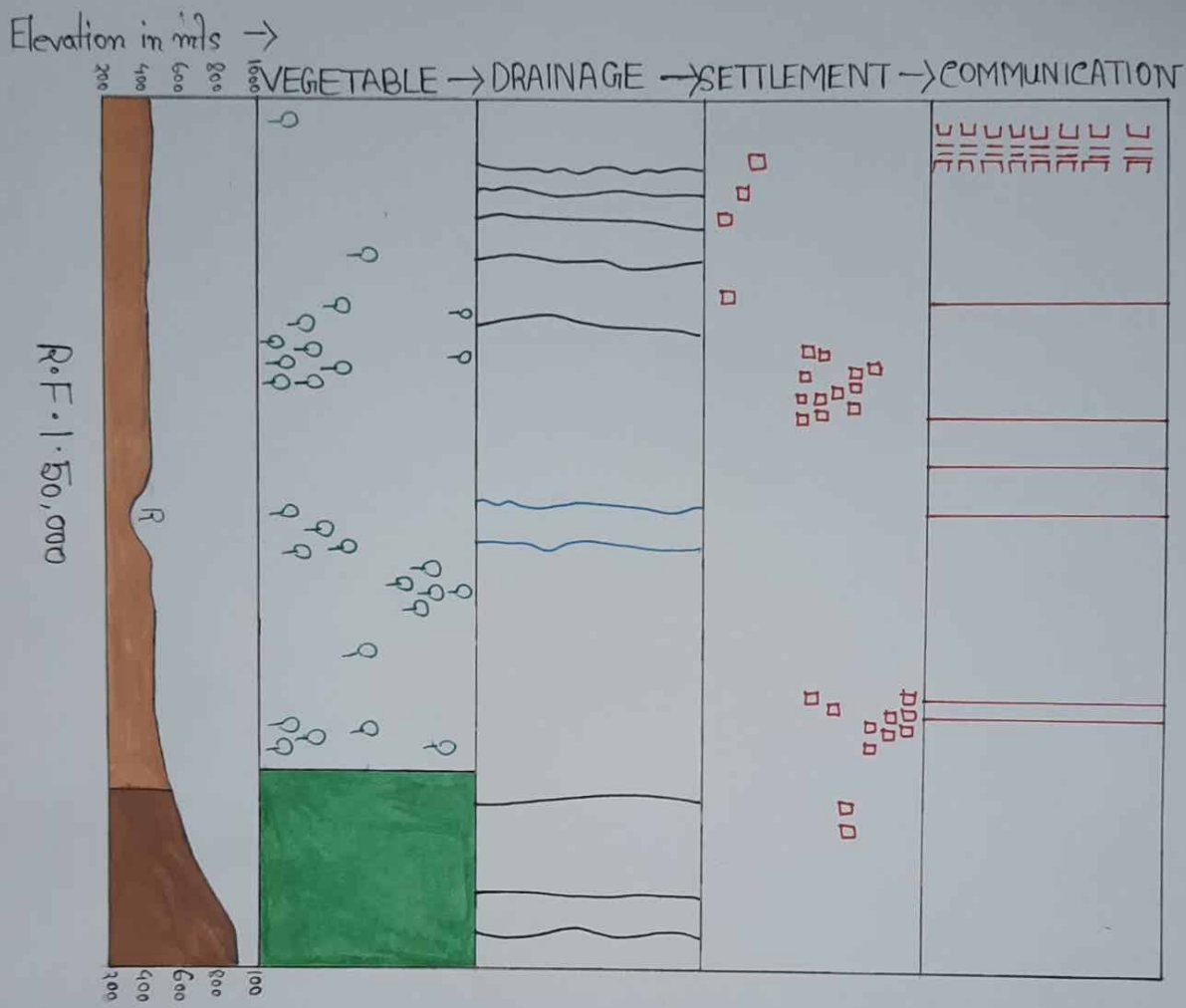
Vertical Scale - 0.5cm = 300 metre

A.F 1:50,000

INDEX	
	1st, Profile
	2nd, Profile
	3rd, Profile
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	5th, Profile

TRANSVERSE CHART RELATION BETWEEN PHYSICAL AND NATURAL ELEMENTS

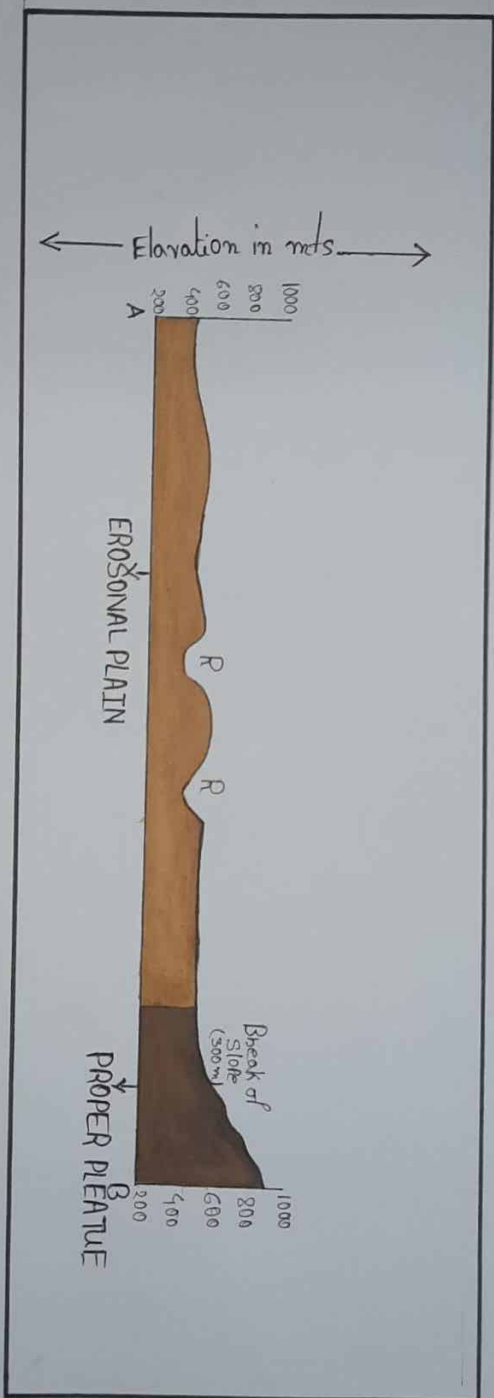
MAP NO - 65 1/4



INDEX	
RELIEF	PROPER PLATEAU EROSIONAL PLAIN
VEGETATION	OPEN MIXED JUNGLE PLANTATION
DRAINAGE	TIDAL RIVER
SETTLEMENT	RADIAL SETTLEMENT DISPERSED SETTLEMENT
COMMUNICATION	METTALED UNMETTALED ROAD FOOTPATH WITH BRIDGE

TOPOGRAPHIC PROFILE BETWEEN THE HIGHEST AND LOWEST POINT

M/12(NC) - 6514

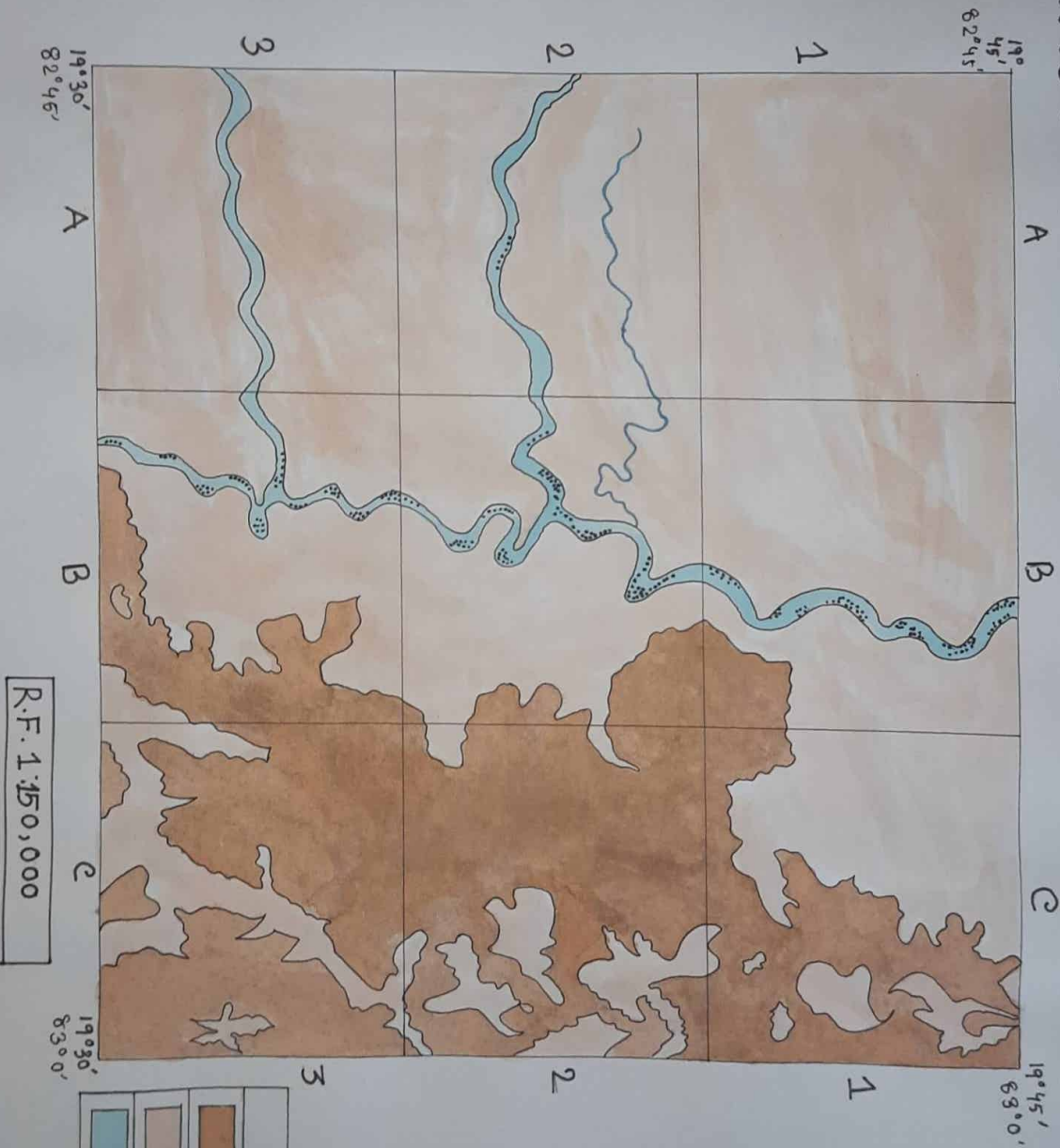


R.F 1:50,000

INDEX	
	Proper Plain
	Erosional Plain

MAJOR PHYSIOGRAPHIC DIVISION

MAP NO - 65 $\frac{1}{14}$



R.F. 1:150,000

INDEX	
	PROPER PLEATUE
	EROSIONAL PLAIN
	RIVER

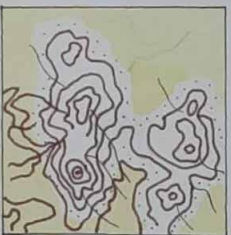
GN
12/02/22

Bithula Mondak

TYPICAL PHYSICAL FEATURES



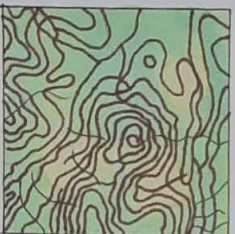
RIDGE



SADDLE



CONICAL HILL



FLAT TOPPED HILL



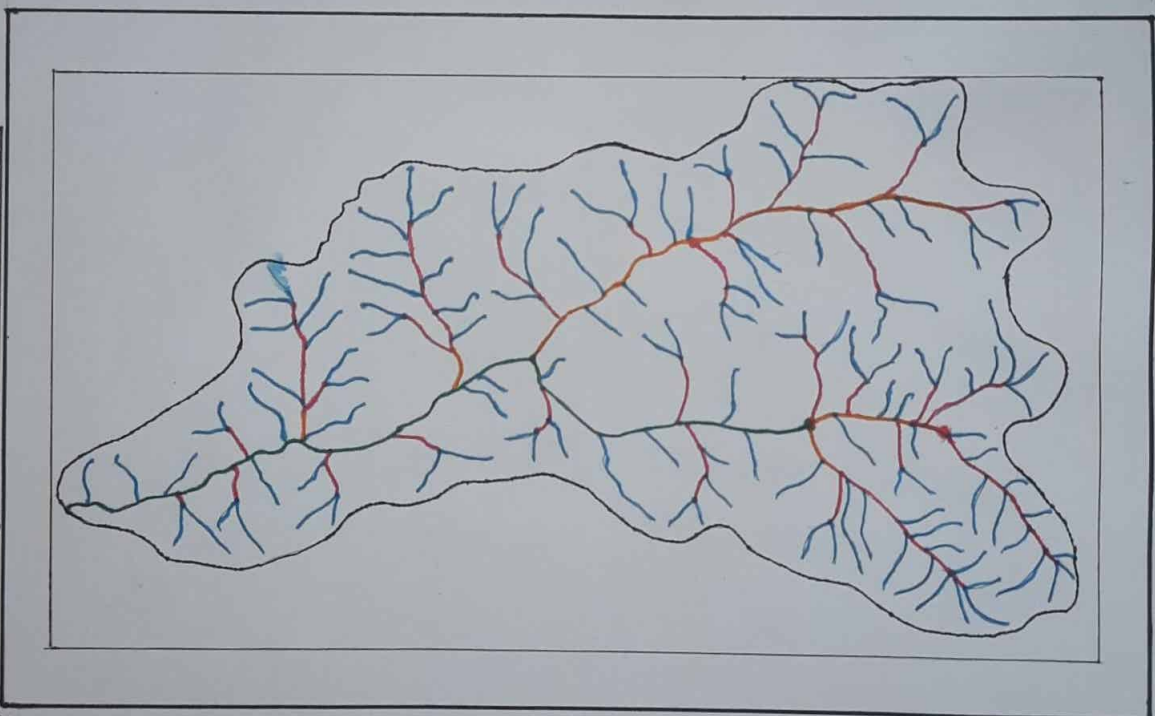
COL

R.F. 1 : 50,000

GM
04/03/22

STREAM ORDERING AFTER STRAHLER

MAP NO - 65 ¹/₁₄



LEGEND	
	1st order
	2nd order
	3rd order
	4th order

R.F 1:50,000

21/12/21

BASIN OF THE TRIBUTARY
OF KESIDHAI/A N/A/LA

MAP NO - 65 $\frac{1}{14}$

82°57'7"

82°59'56"



82°57'7"

R.F. 1:50,000

82°59'56"

Signature

Grid No	Number of contour crossing in a grid	Average contour crossing $\frac{\text{crossing}}{636.6} \times \text{interval}$	$\tan^{-1}$	Slope in Degree
A ₁	56	0.4398	23.74	23°44'
A ₂	29	0.227	12.83	12°49'
A ₃	34	0.2670	14.9515	14°57'
A ₄	45	0.3534	19.4654	19°27'
A ₅	45	0.3534	19.4654	19°27'
A ₆	42	0.3298	18.2565	18°15'
A ₇	28	0.2199	12.4029	12°24'
B ₁	48	0.3770	20.6565	20°39'
B ₂	36	0.2827	15.7888	15°47'
B ₃	29	0.2277	12.8314	12°49'
B ₄	34	0.2670	14.9515	14°57'
B ₅	25	0.1968	11.1090	11°6'
B ₆	40	0.3141	17.4411	17°26'
B ₇	40	0.3141	17.4411	17°26'
B ₈	41	0.3220	17.8497	17°50'
C ₁	34	0.2670	14.9515	14°57'
C ₂	36	0.2827	15.7888	15°47'
C ₃	38	0.2984	16.6182	16°37'
C ₄	39	0.3063	17.0306	17°11'
C ₅	25	0.1968	11.1090	11°6'
C ₆	32	0.2513	14.1082	14°6'
C ₇	28	0.2199	12.4029	12°24'
C ₈	34	0.2670	14.9515	14°57'
D ₁	40	0.3141	17.4411	17°26'

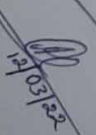
AVERAGE SLOPE BY WENTWORTH METHOD BASIN OF A TRIBUTARY OF KESDHARA NALA

MAP No - 65 $\frac{1}{14}$

	A	B	C	D	E
1	23°44'	20°39'	14°57'	17°26'	16°37'
2	12°49'	15°47'	15°47'	15°47'	17°50'
3	14°57'	12°49'	6°37'	14°31'	15°22'
4	19°27'	14°57'	17°1'	15°47'	17°1'
5	19°27'	11°6'	11°6'	12°24'	.
6	18°15'	17°26'	14°6'	11°6'	.
7	12°24'	17°26'	12°24'	11°6'	10°40'
8	.	17°50'	14°57'	13°15'	11°32'
9	.	.	.	9°21'	7°36'

INDEX
Average Slope

20
15
10


 11/10/22

Grid No	Number of contour crossing in a grid	Average contour crossing $\frac{636.3}{\text{Number of class}}$ x interval	tan ⁻¹	Slope in Degree
D ₂	36	0.2827	15.7883	15°47'
D ₃	33	0.2591	14.5307	14°31'
D ₄	36	0.2827	15.7883	15°47'
D ₅	28	0.2199	12.4029	12°24'
D ₆	25	0.1963	11.1090	11°6'
D ₇	25	0.1963	11.1090	11°6'
D ₈	21	0.2434	13.6841	13°15'
D ₉	38	0.1649	9.3659	9°21'
E ₁	41	0.2984	16.6182	16°37'
E ₂	35	0.3220	17.8497	17°50'
E ₃	39	0.2748	15.3708	15°22'
E ₄	31	0.3063	17.0306	17°01'
E ₇	24	0.1885	10.6750	10°40'
E ₈	26	0.2042	11.5416	11°32'
E ₉	17	0.1335	7.6052	7°36'

Step-I: Different between A Height and lowest relative relief = $23^{\circ}44' - 7^{\circ}36' = 16^{\circ}08'$

Step-II: We are making four equal class
So the interval is

$$= \frac{\text{Range}}{\text{Number of class}} = \frac{16^{\circ}08'}{4}$$

$$= 4^{\circ}02' \text{ or } 5^{\circ} (\text{Approx})$$

Step-III: The 180 plate will be drawn -

5°-10°
10°-15°
15°-20°
20°-30°

RELATIVE RELIEF MAP AFTER SMITH ON THE BASIN OF KESHDHARA NALA

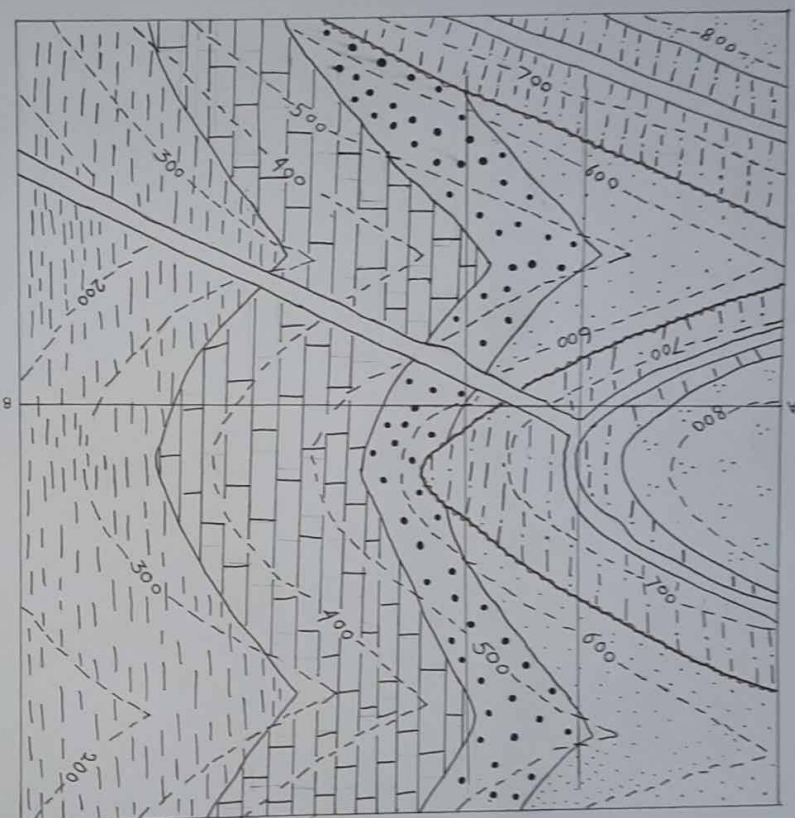
MAP NO - 65 $\frac{1}{14}$

	A	B	C	D	E
1	428	180	120	140	80
2	120	180	160	140	140
3	220	140	140	158	160
4	230	120	140	180	160
5	140	180	80	120	.
6	140	120	100	111	.
7	40	100	184	140	180
8	.	160	160	120	156
9	.	.	.	.	80

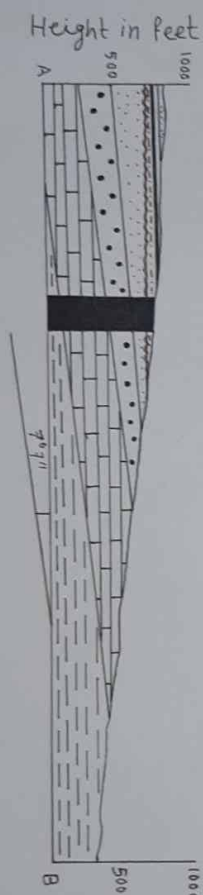
INDEX
RELATIVE RELIEF
450
300
150

[Signature]
20/02/22

GEOLOGICAL MAP



GEOLOGICAL SECTION DRAWN ALONG THE LINE AB

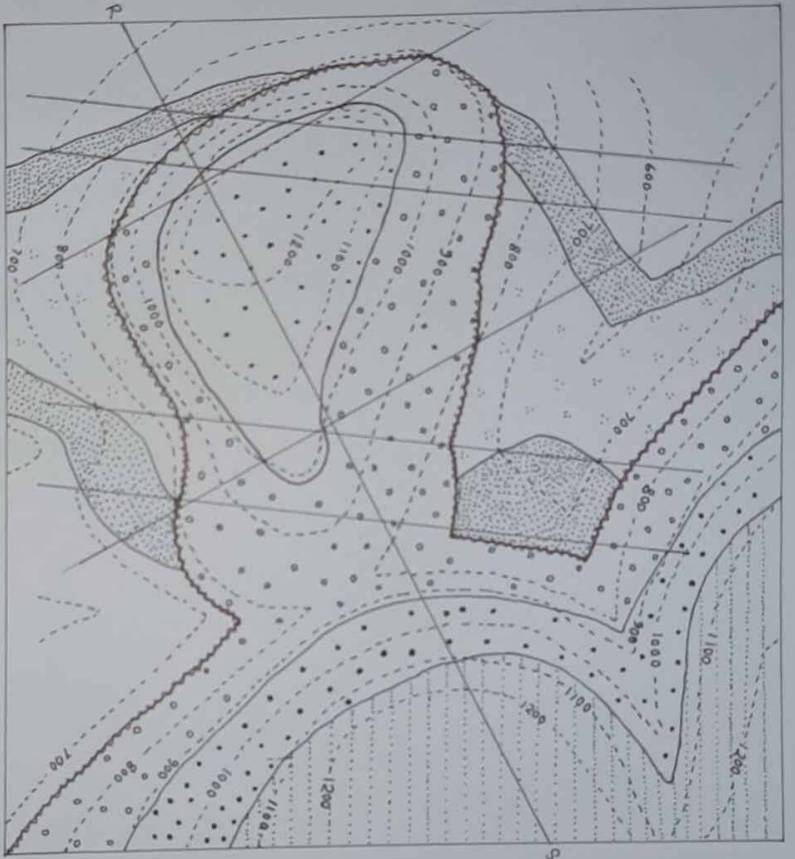


Scale - 1" = 1000 Feet

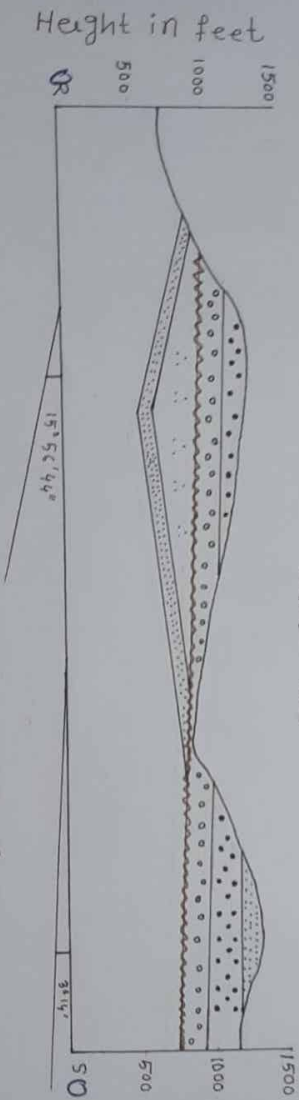
INDEX	
CARBONIFEROUS SERIES	
	MUDSTONE
	CONGLOMERATE
	SILL
	LINE OF UNCONFORMITY
SILURIAN SERIES	
	SANDSTONE
	LIMESTONE
	GRIT
	SHALE
	DYKE

12/2/21

GEOLOGICAL MAP



GEOLOGICAL SECTION DRAWN ALONG THE LINE RS

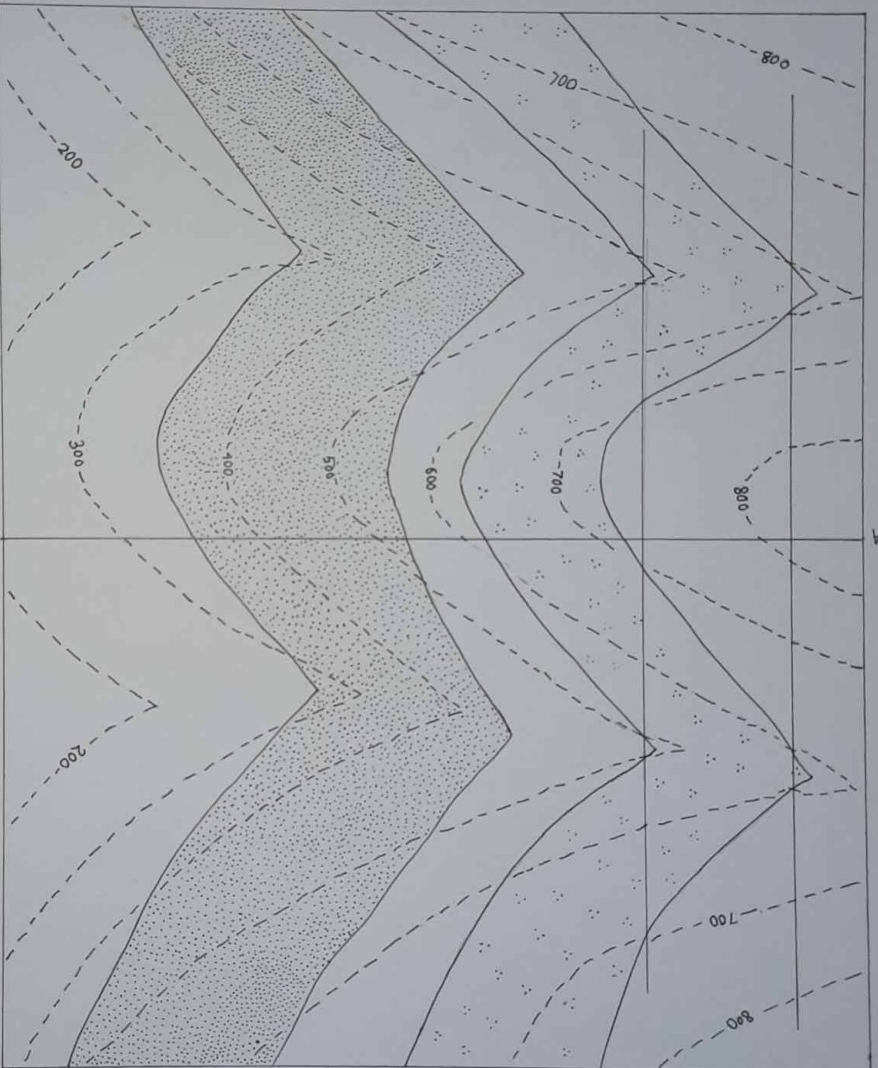


Scale : 1" = 1000 feet

INDEX	
CARBONIFEROUS	
	LIMESTONE AND SHALES
	LIMESTONE
	CONGLOMERATE
	LINE OF UNCONFORMITY
SILURIAN	
	SHALE
	GRIT
	SHALE

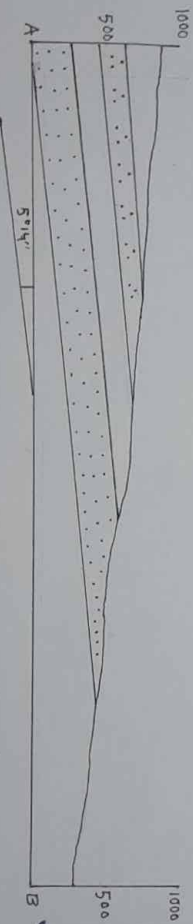
2/2/13

GEOLOGICAL MAP



GEOLOGICAL SECTION DRAWN ALONG THE LINE AB

Height in feet



Scale : 1" = 1000 feet

INDEX	
	UPPER SHALE
	UPPER SANDSTONE
	MUDSTONE
	LOWER SANDSTONE
	LOWER SHALE

15/2/22