P-II(1+1+1)H/Pr./11

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - II

Full Marks : 50 Time : Three Hours

The figures in the margin indicate full marks.

Answer *all* questions.

1. Take staff reading of the given stations with at least one change point (at given interval) by a Dumpy Level and prepare a field book (Collimation method) with B.M. 25 metres. Plot the profile with suitable scale.

Can an iron object cause error in reading of Prismatic Compass Survey ?

Give reasons in support of your answer. 17+3=20

Or,

Determine the height of a given object with the help of Theodolite (Base accessible). Prepare a table and plot with suitable scale.

Write on disadvantages in Plane Table Survey.

17+3=20

Or,

Make a Close Traverse Survey by Prismatic Compass of the given stations EFGH and plot it with necessary corrections.

Write on advantages and disadvantages of Collimation method used in Dumpy Level Survey. 17+3=20

(To be decided by lottery)

2. Draw a section along the given line on a given geological map and interprete it. Define line of unconformity. 10+3+2=15

3. Identify the given specimens of minerals and rocks and mention their important characteristics. 2×5=10

4. Laboratory Note Book and Viva-voce. 2+3=5

P- II (1+1+1)H/Pr./11

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Problem on Surveying

(In case of inclement weather)

Set - II

1. (a) The following consecutive readings were taken with a level and 4 metre staff on continuously sloping ground at a common interval of 25 metre.

0.736, 5.85, 7.50, 9.25, 1.435, 1.755, 2.910, 2.615, 2.927, 3.134, 1.285, 1.815, 2.458, 3.584, 0.975, 1.025, 1.617, and 2.575.

The reduced level of the first point was 120.250 metre and the instrument was shifted after 4th, 8th and 13th readings. Prepare a field book and draw the profile with suitable scale.

(b) Read the given instrument and record the reading.

(c) Write on precautions to be followed in plane table survey.

12+4+4=20

P- II (1+1+1)H/Pr./11

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - III

Full Marks : 50 Time : Three Hours

The figures in the margin indicate full marks.

Answer *all* questions.

1. Take staff reading of the given stations with at least one change point (at given interval) by a Dumpy Level and prepare a field book (Collimation method) with first R.L. 20 metres. Plot the profile with suitable scale.

Write on the sources of error in Plane Table Survey. 17+3=20

Or,

Determine the height of a given object with the help of Theodolite (Base accessible). Prepare a table and plot with suitable scale.

What is datum line? Write on its use in plotting of Dumpy Level Survey Data. 17+3=20

P.T.O.

8/10-390

Or,

Make a close Traverse Survey by Prismatic Compass of the given stations ABCD and plot it (included angle method) with necessary corrections.

Define Face Left and Face Right. 17+3=20

(To be decided by lottery)

2. Draw a section along the given line on a given geological map and interprete it. How do you determine apparant dip ? 10+3+2=15

3. Identify the given specimens of rocks and minerals and mention their important characteristics. 2×5=10

4. Laboratory Note Book and Viva-voce. 2+3=5

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - IV

Full Marks : 50 Time : Three Hours

The figures in the margin indicate full marks.

Answer *all* questions.

1. Take staff reading of the given stations with at least one change point (at given interval) by a Dumpy Level and prepare a field book (Rise and Fall method) with first R. L. 25 metres. Plot the profile with suitable scale.

Convert whole circle bearing into reduced bearing:

(i) 59° (ii) 280° (iii) 345° 17+3=20

Or

Determine the height of a given object with the help of Theodolite (Base inaccessible). Prepare a table and plot with suitable scale.

What do you mean by vertical exaggeration ? Why is it necessary in plotting of profile ? 17+3=20

P.T.O.

Or,

Make a Close Traverse Survey by Prismatic Compass of the given stations MNOP (included angle method) and plot it with necessary corrections.

Write on the demerits of Rise and Fall method followed in levelling survey. 17+3=20

2. Draw a section along the given line on a given geological map and interprete it. How do you identify succession of beds of different geological period on a section line? 10+3+2=15

3. Identify the given specimens of rocks and minerals and write their important characteristics. 2×5=10

4. Laboratory Note Book and Viva-voce. 2+3=5

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Problem on Surveying

(In case of inclement weather)

Set - IV

1. (a) A field book of Dumpy Level Survey at a common interval of 15metre with some missing readings is stated as follows :

Station	BS	IS	FS	Rise	Fall	R.L.	Remarks
	0.325					120.000	B.M.
		2.124					
		2.315					
	?		1.915		0.418		CP
		2.518					
	1.412		?	0.938			CP
		2.115					
		2.987					
		3.017					
	2.121		?		0.512		CP
		2.951					
		2.721					
	?		2.518	0.621			CP
		2.125					

P.T.O.

Complete the field book and draw a profile using suitable scale with necessary correction.

(b) What are the sources of error in Prismatic Compass Survey ?

(c) Read the given instrument and record the reading. 12+4+4=20

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - V

Full Marks : 50 Time : Three Hours

The figures in the margin indicate full marks.

Answer *all* questions.

1. Take staff reading of the given stations with at least one change point (at given interval) by a Dumpy Level and prepare a field book with first R.L. 30 metres. Plot the profile with suitable scale.

Define whole circle bearing and reduced bearing.

17+3=20

Or,

Determine the height of a given object with the help of Theodolite (Base accessible). Prepare a table and plot with suitable scale.

Write on permanent Bench Mark and temporary Bench Mark. ?? 17+3=20

Or,

Make a Close Traverse Survey by Prismatic Compass of the given stations MNOP and plot it with necessary corrections.

Write on fiducial point and Transit Theodolile.

?? 17+3=20

2. Draw a section along the given line on a given geological map and interprete it. What is true dip ?

10+3+2=15

3. Identify the given specimens of rocks and minerals and write their important characteristics.

4. Laboratory Note Book and Viva-voce. 2+3=5

P- II (1+1+1)H/Pr./11

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Problem on Surveying

(In case of inclement weather)

Set - V

1. Or, (a) A Theodolite was set up at an inaccessible distance from the tower but the theodolite was shifted to another point 4.5 metre away from the first point of same level ground. The angle of elevation of the top of the tower from the first point was 18°15′ and 27°30′ from the second point. The height of the instrument is 1.003 metre. The bench mark is 150 metre. Find out the actual height of the tower.

(b) What are the precautions to be followed in Prismatic Compass Survey ?

(c) Read the given instrument and record the reading. 12+4+4=20

2011

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Problem on Surveying

(In case of inclement weather)

Set - VI

1.Or (a) The following bearings were observed during Closed Traverse Survey by Prismatic Compass :

Line	Length (in metres)	Fore Bearing	Back Bearing
AB	70	45°	225°30′
BC	58	123°45′	303°
CD	65	182°15′	1°30′
DA	105	289°	108°45′

Prepare a table and plot the traverse (by interior angle method) with necessary correction.

(b) Write on arbitrary bench mark, permanent bench mark and temporary bench mark.

(c) Read the given instrument and record the reading.

12+4+4=20

2012

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - II

To be used in the event of inclement weather

The figures in the margin indicate full marks.

1. (a) Following table presents data collected during a closed traverse survey. Correct the bearings and plot with a suitable scale.

Side	Length (m)	Observed Bearings	
		FB	BB
AB	47.00	220° 45'	42° 00'
BC	56.00	303°30'	124°30'
CD	45.00	29° 15'	208° 30'
DE	54.50	82° 15'	264°30'
EA	40.00	182° 30'	3° 45'

(b) How do you do the arithmetic checks while calculating RL for levelling?

(c) Take readings by the instrument given to you.

14+2+4=20

2012

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - III

To be used in the event of inclement weather

The figures in the margin indicate full marks.

1. (a) Following table presents data collected during a closed traverse survey. Correct the bearings and plot with a suitable scale.

Side	Length (m)	Observed Bearings	
		FB	BB
AB	74.00	N 56° 15'W	S 57°15' E
BC	73.00	N 29°45' E	S 28°30'W
CD	72.00	N 83° 30' E	S 84° 00'W
DE	52.00	S 3° 00'W	N 4° 15' E
EA	65.00	S 40° 45'W	N 42° 15' E

(b) How do you correct computed Included Angles?

18+2 =20

2012

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - IV

Full Marks : 50 Time : Three Hours

The figures in the margin indicate full marks.

Attempt *all* the questions
(question no. 1 is to be decided through lottery)

1. Draw a longitudinal section along the given line with help of data collected by you using dumpy level with a suitable scale. BM of the first point is 30 m. Calculate gradient between the second point and the last point. What is collimation line? 16+2+2=20

Or,

Find out the height of the tower located in the enemy territory (leveled) with the help of Transit Theodolite. Justify the name 'Transit Theodolite'? What are the uses of Theodolite? 16+2+2=20

P.T.O.

Or,

Attempt a closed traverse survey with the help of Prismatic Compass and given details about the field. Also plot the data with necessary corrections if any. Distinguish bearing from angle. What is reduced bearing? 16+2+2=20

Or,

Transfer the objects on the sheet from the field using Plane Table (intersection method). Compare the map distance between two objects with the ground distance. Justify the name 'intersection method' of Plane Tabling. 16+2+2=20

2. Draw a geological section along the given line and interpret it. 10+5=15

3. Identify the given sample of Rocks and Minerals and mention at least two important properties of each of them. 2×5=10

4. Laboratory Notebook and Viva-voce 3+2=5

2012

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - VII

Full Marks : 50 Time : Three Hours

The figures in the margin indicate full marks.

Attempt *all* the questions
(question no. 1 is to be decided through lottery).

1. Draw a longitudinal section along the given line with help of data collected by you using dumpy level with a suitable scale. BM of the first point is 15 m. Distinguish Fore Sight and Back Sight. Mention the use of Datum line while preparation of drawing for leveling. 16+2+2=20

Or,

Find out the height of the tower located in the enemy territory (leveled) with the help of Transit Theodolite. Why do you require face left and face right in a 'Transit Theodolite'? Distinguish 'Bench Mark' from 'Datum'. 16+2+2=20

P.T.O.

Or,

Attempt a closed traverse survey with the help of Prismatic Compass and given details about the field. Also plot the data with necessary corrections if any. How to calculate included angle only from FB of lines? Why does closing error occur? 16+2+2=20

Or,

Transfer the objects on the sheet from the field using Plane Table (intersection method). Compare the map distance between two objects with the ground distance. What is fiducial edge ? Under what condition intersection method is recommended ? 17+1+2=20

2. Draw a geological section along the given line and interpret it. 10+5=15

3. Identify the given sample of Rocks and Minerals and mention at least two important properties of each of them. 2×5=10

4. Laboratory Notebook and Viva-voce 3+2=5

2012

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - VIII

To be used in the event of inclement weather

The figures in the margin indicate full marks.

3. (a) Following readings were extracted from a level field book. Readings were taken on sloping ground at a common interval of 50 m. The instrument was shifted after 4th and 7th readings. 3.460 (on A), 2.730, 2.165, 2.405, 3.510, 1.905, 0.720, 1.150, 3.210, 2.145, 1.785 and 2.765 (on B).

The RL of A is 249.550 m. Enter the readings in the form of a field book and draw the section with suitable datum. Apply usual check and calculate gradient between the highest and the lowest points.

(b) What are the sources of error in Plan Tabling?

(c) Take reading by the instrument given to you.

14+2+4=20

2012

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - X

To be used in the event of inclement weather

The figures in the margin indicate full marks.

1. (a) Following readings were extracted from a level field book where some readings were missing. Find out the missed readings in the field book and compute RL of the stations. Apply usual check and draw the section with suitable datum.

Chainage (m)	BS (m)	IS (m)	FS (m)	Rise (m)	Fall (m)	RL (m)	Remark
0	3.250					249.260	BM
20	1.755		?		0.750		CP
40		1.950					
60	?		1.920				CP
80		2.340		1.500			
120		?		1.000			
140	1.850		2.185				CP
160		1.575					

P.T.O.

Chainage (m)	BS (m)	IS (m)	FS (m)	Rise (m)	Fall (m)	RL (m)	Remark
180		?			1.970		
200	?		1.895	1.650			CP
220			1.350	0.750			

(b) What role prism plays in a Prismatic Compass?

(c) Take readings by the instrument given to you.

14+2+4=20

2014

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(New Syllabus)

Set - I

To be used in the event of inclement weather

The figures in the margin indicate full marks.

1. (a) Following readings were extracted from a level field book where some readings were missing. Find out the missed readings in the field book and compute RL of the stations. Apply usual check and draw the section with suitable datum.

Chainage (m)	BS (m)	IS (m)	FS (m)	Rise (m)	Fall (m)	RL (m)	Remark
0	3.250					249.260	BM
20	1.755		?		0.750		CP
40		1.950					
60	?		1.920				CP
80		2.340		1.500			
120		?		1.000			

P.T.O.

140	1.850		2.185				CP
160		1.575					
180		?			1.970		
200	?		1.895	1.650			CP
220			1.350	0.750			

(b) What role prism plays in a Prismatic Compass ?

(c) Take readings by the instrument given to you.

14+2+4=20

2014

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(New Syllabus)

Set - III

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

Attempt *all* the questions. (question no. 2 and 3 are to be decided through lottery)

1. Measure the ground area of the basin graphically. State disadvantage of such method. 4+1=5

2. Draw a longitudinal section along the given line with help of data collected by you using dumpy level with a suitable scale. RL of the first station is 35 m. State uses of Dumpy level. What is the Datum for GTS bench mark? What is the least count of the leveling staff that you have used? 16+2+1+1=20

Or,

Find out the height of the tower located in the enemy territory (leveled ground) with the help of Transit Theodolite. Can Theodolite be used to measure angle along

the horizontal plane? Distinguish 'Spot Height' from 'Bench Mark'. 16+2+2=20

Or,

Attempt a closed traverse survey with the help of Prismatic Compass and given details about the field. Also plot the data with necessary corrections if required. Why is prism used in this instrument? What is closing error? 16+3+1=20

Or,

Transfer the objects on the sheet from the field using Plane Table (radiation method). Elevation of the point A is 560 m and the point B is 1050 m and the distance between those points on the map is 10 cm drawn on a scale 1 : 100000. Find out slope as well as gradient between those points. Mention two disadvantages of Plane Tabling. 14+4+2=20

3. (a) Draw a neat Graticule on **Sinusoidal Projection** to prepare the world map. The projection interval is 30° and the scale of the map is 1 : 120,000,000. 17

(b) Mention two properties of parallels and meridians in this projection. How many standard parallels are there in this projection? 2+1=3

Or,

(a) Draw a neat Graticule for north hemisphere on **Gnomonic Projection (polar Case)**. The projection interval is 30° and the scale of the map is 1 : 70,000,000. 17

(b) Justify the nomenclature of **Gnomonic Projection (Polar Case)**. Do you think this projection is suitable to prepare map of Amazon basin? Why? 1½+1½=3

Or,

(a) Draw a neat Graticule on **Conical Projection (One Standard Parallel)** to prepare map of an area between 30°N parallel to North Pole (interval 15°) and 10°W to 110°W meridians (interval 15°). The scale of the map is 1 : 55,000,000. 17

(b) Do you recommend **Conical Projection (One Standard Parallel)** for preparation of the world map? Why? Is it possible to have tangential point at the equator in this projection ? 2+1=3

Or,

(a) Draw a neat Graticule on **Mercator's Projection** to prepare map of an area demarcated by Equator to 80°N parallels and 180°E to 180°W meridians (through Prime Meridian). The projection interval is 10° and the scale of the map is 1 : 150,000,000. 17

(b) Do you recommend this projection for preparation of maps for using in aviation? Write two properties of parallels. 2+1=3

4. Laboratory Notebook and Viva-voce. 3+2=5

2014

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(New Syllabus)

Set - IV

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

Attempt *all* the questions. (question no. 2 and 3 are to be decided through lottery)

1. Measure the ground area of the basin graphically. Comment on accuracy of such method. 4+1=5

2. Draw a longitudinal section along the given line with help of data collected by you using dumpy level with a suitable scale. RL of the first station is 40 m. Calculate gradient between the second station and the last station. What is collimation line? 16+2+2=20

Or,

Find out the height of the tower located in the enemy territory (leveled ground) with the help of Transit Theodolite. Justify the name 'Transit Theodolite'? What are the uses of Theodolite? 16+2+2=20

P.T.O.

Or,

Attempt a closed traverse survey with the help of Prismatic Compass and given details about the field. Also plot the data with necessary corrections if required. Distinguish bearing from angle? What is reduced bearing? 16+2+2=20

Or,

Transfer the objects on the sheet from the field using Plane Table (radiation method). Sum of included angles of a closed traverse with 8 stations is 718°. What is the correction factor and how would you correct the calculated included angles? Justify the name 'radiation method' of Plane Tabling. 14+4+2=20

3. (a) Draw a neat Graticule on **Sinusoidal Projection** to prepare map of the world. Central Meridian is 90°E. The projection interval is 30° and the scale of the map is 1 : 125,000,000. 17

(b) Why the projection is named so ? Does it belong to conical group of projection ? 2+1=3

Or,

(a) Draw a neat Graticule on **Cylindrical Equal Area Projection (Polar Case)** to prepare map of an area demarcated by 20°N to 60°N parallels and 150°E to 130°W meridians (through International Date Line). The projection interval is 10° and the scale of the map is 1 : 70,000,000. 17

(b) Justify the nomenclature of this projection. Which region of the world can not be suitably shown in this projection ? Why ? 1+1+1=3

Or,

(a) Draw a neat Graticule on **Polyconic Projection** to prepare map of an area from South Pole to 40° S parallel and 150° E to 130° W meridians (through International Date Line). The projection interval is 10° and the scale of the map is 1:70,000,000. 17

(b) Mention two important properties of this projection. How many standard parallels are there in this projection? 2+1=3

Or,

(a) Draw a neat Graticule on **Mercator's Projection** to prepare map of an area demarcated by Equator to 80°S parallels and 170°E to 170°W meridians (through Prime Meridian). The projection interval is 10° and the scale of the map is 1 : 140,000,000. 17

(b) Do you recommend this projection for preparation of maps for using in Navigation? Write two properties of meridians. 2+1=3

4. Laboratory Notebook and Viva-voce. 3+2=5

2014

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(New Syllabus)

Set - IV

To be used in the event of inclement weather

The figures in the margin indicate full marks.

2. (a) Following consecutive readings were recorded with a level and 4 m leveling staff on sloping ground at a common interval of 30 m. The instrument was shifted after 4th, 7th and 10th readings. 0.885 (on A), 1.245, 1.275, 1.428, 1.540, 0.124, 0.320, 0.550, 0.950, 1.160, 1.560 and 1.760 (on B).

The RL of A is 95.005 m. Enter the readings in the form of a field book and draw the section with suitable datum. Apply usual checks and calculate gradient between the highest and the lowest points.

(b) What are the uses of Plan Tabling ?

(c) Take readings by the instrument given to you.

14+2+4=20

2014

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(New Syllabus)

Set - V

To be used in the event of inclement weather

The figures in the margin indicate full marks.

1. (a) Following consecutive readings were recorded with a level and 4 m leveling staff on a continuous sloping ground at a common interval of 40 m.

0.755 (on A), 1.545, 2.335, 3.105, 3.815, 0.580, 1.375, 2.050, 2.810, 3.455, 0.265, 1.015, 1.85, 2.645, and 3.485 (on B).

The RL of A is 510.455 m. Complete a level field book and draw the section with suitable datum. Apply usual check and calculate rising gradient between the end points.

(b) What are the limitations of Plan Tabling?

(c) Take readings by the instrument given to you.

14+2+4=20

2014

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(New Syllabus)

Set - VII

To be used in the event of inclement weather

The figures in the margin indicate full marks.

1. (a) Following table presents data collected during a closed traverse survey. Correct the bearings and plot with a suitable scale.

Side	Length (m)	Observed Bearings	
		FB	BB
AB	38.50	34°30'	215°15'
BC	37.10	112°00'	304°00'
CD	36.55	196°15'	16°30'
DE	31.50	272°15'	95°30'
EA	24.55	340°30'	160°15'

(b) What are the different uses of Transit Theodolite ?

(c) Take readings by the instrument given to you.

14 2+4=20

P-II(1+1+1)H/Pr/15 (NS)

2015

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(Revised New Syllabus)

Set - I

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. How much of area in Harirampur block of Dakshin Dinajpur district is occupied by Fine Loamy Typic Ustochrepts soil series ? Calculate by means of graphical method from the given map. 5

2. (a) What is developable surface ? In case of which projection more than one developable surfaces are used ? 1+1=2

(b) Draw graticule on Cylindrical Equal Area Projection using parameters as given below and also show the Tropic of Cancer and Tropic of Capricorn by broken line even though they are not appearing as per the interval :

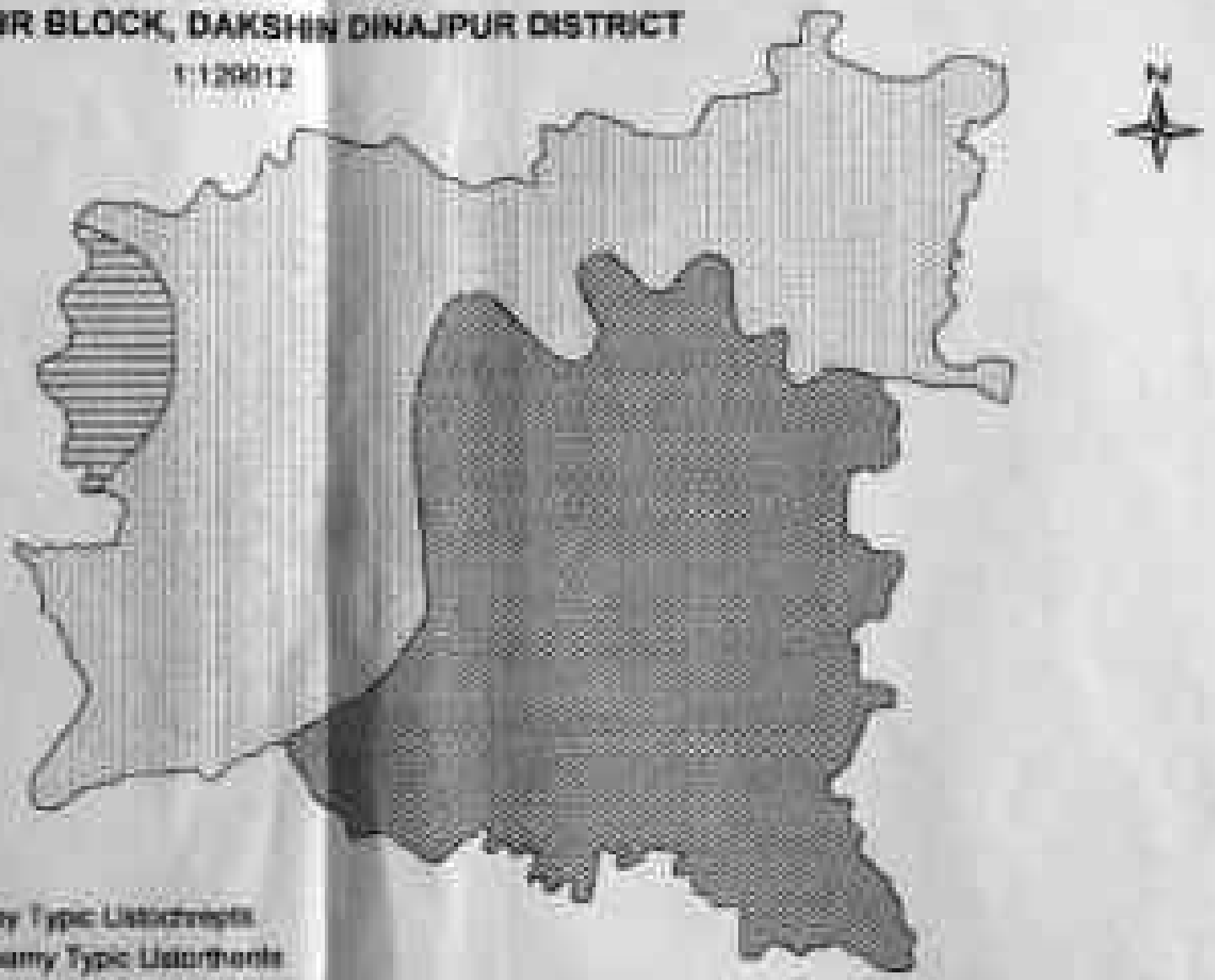
Extension of Parallel : Up to 30° on both the Hemisphere.

Extension of Meridian : 160°E to 140°W (Take 170°W as the Central Meridian)

SOIL SERIES MAP

HARIRAMPUR BLOCK, DAKSHIN DINAJPUR DISTRICT

1:120012



Interval for Parallel : 15°

Interval for Meridian : 10°

Scale : 1 : 80,000,000 18

3. (a) Which of the following parameters of a plotted polygon, in case of Prismatic Compass Survey, is corrected by means of Bowditch's Method in order to adjust the closing error : (i) Angle (ii) Distance (iii) Both. 2

(b) Conduct a levelling survey with the help of Dumpy Level for eight stations marked on the field with one change point and prepare the field book and calculate RL by means of Collimation method taking 30m as the RL of first station and plot the profile with suitable scale. 18

Attempt Question No. 3(c) & 3(d) instead of Question No. 3(b) only in case of Inclement Weather

(c) Following table shows the data collected during Dumpy Level survey. Calculate the RL by means of Collimation method and plot the data to construct a longitudinal section using suitable scale. 12

Station	Distance (m)	Staff Reading (m)			Line of Collimation	RL (m)	Remarks
		BS	IS	FS			
1	0	2.620					
2	20		2.950				
3	40		3.000				
4	60		3.300				

5	80		3.600				
6	100	2.560		3.750			
7	120		2.880				
8	140		3.100			32.8	
9	160		3.400				
10	180		3.690				
11	200	2.720		4.000			
12	220		3.000				
13	240		3.460				
14	260		3.720				
15	280		3.850				
16	300			3.950			

(d) Following Trigonometrical Levelling data were collected using Transit Theodolite for determining the height of a Tower. Calculate the same (No need to plot). It is assumed that instruments and tower are collinear as well as coplanar. Out of the two stations one is farthest from the tower and another one is closest to it.

(i) Height of the instrument at both the stations : 1.2 m.

(ii) Distance between two stations : 21 m.

P.T.O.

(iii) Angle of elevation of the Tower measured from farthest station : 28°.

(iv) Angle of elevation of the Tower measured from closest station : 33°. 6

4. Laboratory notebook and viva-voce. 3+2=5

P-II(1+1+1)H/Pr/15 (NS)

2015

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(Revised New Syllabus)

Set - II

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. How much of area in Banshihari block of Dakshin Dinajpur district is occupied by Malda Formation ? Calculate by means of graphical method from the given map. 5

2. (a) Mention to which of the following categories Polar Zenithal Gnomonic Projection belongs to : (i) Perspective (ii) Semi-perspective (iii) Non-perspective. Give reason behind your choice. 1+1=2

(b) Draw graticule on Bonne's Projection with the parameters as given below and also show the Arctic Circle by means of broken line even though it is not appearing as per the interval :

Extension of Parallel : 50°N to 70°N.

Extension of Meridian : 0° to 40°E.

P.T.O.

Question No. 1

GEOLOGICAL FORMATION

BANSHIHARI BLOCK, DAKSHIN DINAJPUR DISTRICT

1:144522

Interval for both Parallel and Meridian : 10°.

Scale : 1 : 40,000,000. 18

3. (a) What do you mean by the term Reconnaissance ? 2

(b) Make a closed traverse survey with the help of Prismatic Compass and draw traverse with adjustment of closing error if comes. 18

Attempt Question No. 3(c) & 3(d) instead of Question No. 3(b) only in case of Inclement Weather

(c) Plot the data in following table to draw a closed traverse with necessary correction if any. 12

Station	Line	Distance (m)	Observed Bearing		Remarks
			FB	BB	
A	A-B	70	94°	274°	
B	B-C	39	167°	347°	
C	C-D	80	249°30′	69°30′	
D	D-E	72	356°	176°	

(d) Following Trigonometrical Levelling data were collected with the help of Transit Theodolite for determining the height of a tower. Calculate the same with these data (No

need to plot). It is assumed that the instruments and the tower are collinear as well as coplanar.

(i) Height of the instrument : 1.2m.

(ii) Angle of elevation of the tower : 35°.

(iii) Distance between the tower and the instrument : 60m. 6

4. Laboratory notebook and viva-voce. 3+2=5

P-II(1+1+1)H/Pr/15 (NS)

2015

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(Revised New Syllabus)

Set - III

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. How much of the area in Tapan block of Dakshin Dinajpur district is occupied by Barind Formation ? Calculate by means of graphical method from given map. 5

2. (a) What is Scale Factor ? For what group of projection Tangential Scale Factor (TSF) and Radial Scale Factor (RSF) are equal ? 1+1=2

(b) Draw graticule on Polar Zenithal Gnomonic Projection with the parameters as given below and also show the Arctic Circle by broken line even though it is not appearing as per the scale :

Extension of Parallel : 50°N to 70°N

Extension of Meridian : 60°W to 20°E

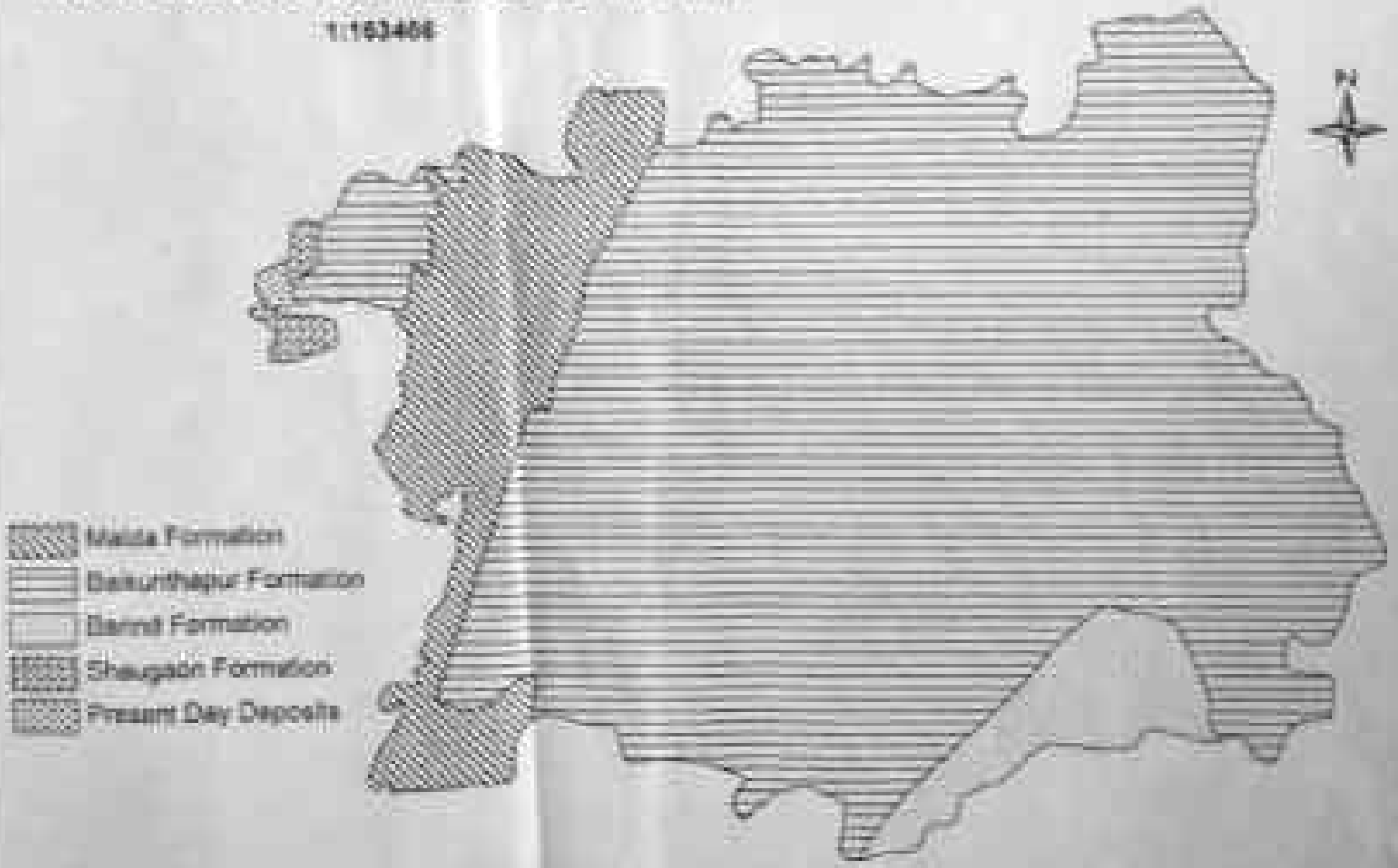
Interval for Parallel : 10°

P.T.O.

GEOLOGICAL FORMATION

TAPAN BLOCK, DAKSHIN DINAJPUR DISTRICT

1:153406



Interval for Meridian : 20°

Scale : 1 : 40,000,000 18

3. (a) Find out a single difference between the term Datum and Bench Mark. 2

(b) Measure the height of any chosen building of the examination centre by Transit Theodolite by means of base inaccessible method. The height of two stations will be different but both the instruments and the object will be collinear and it is assumed that all are coplanar also. 18

Attempt Question No. 3(c) & 3(d) instead of Question No. 3(b) only in case of Inclement Weather

(c) Plot the data in following table to draw a closed traverse with necessary correction if any. 12

Station	Line	Distance (m)	Observed Bearing		Remarks
			FB	BB	
A	A-B	60	84°	264°30'	
B	B-C	68.5	204°	24°	
C	C-D	37	264°	84°	
D	D-E	60	4°	184°30'	

(d) Following Trigonometrical Levelling data were collected with the help of Transit Theodolite for determining the height of a tower. Calculate the same with these data

(No need to plot). It is assumed that the instruments and the tower are collinear as well as coplanar.

(iv) Height of the instrument : 1.2 m.

(v) Angle of elevation of the tower : 40°

(vi) Distance between the tower and the instrument : 50 m. 6

5. Laboratory notebook and Viva-voce. 3+2=5

P-II(1+1+1)H/Pr/15 (NS)

2015

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(Revised New Syllabus)

Set - VI

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. How much of the area in Tapan block of Dakshin Dinajpur district is occupied by Uplifted Flood Basin? Calculate by means of graphical method from given map. 5

2. (a) In case of which projection does the pole appear as an arc and why ? 1+1=2

(b) Draw graticule on Cylindrical Equal Area Projection using parameters as given below and also show the Tropic of Cancer and Tropic of Capricorn by broken line even though they are not appearing as per the interval :

Extension of Parallel : Up to 45° on both the Hemisphere.

Extension of Meridian : 20°W to 80°E.

Interval for Parallel : 15°.

P.T.O.

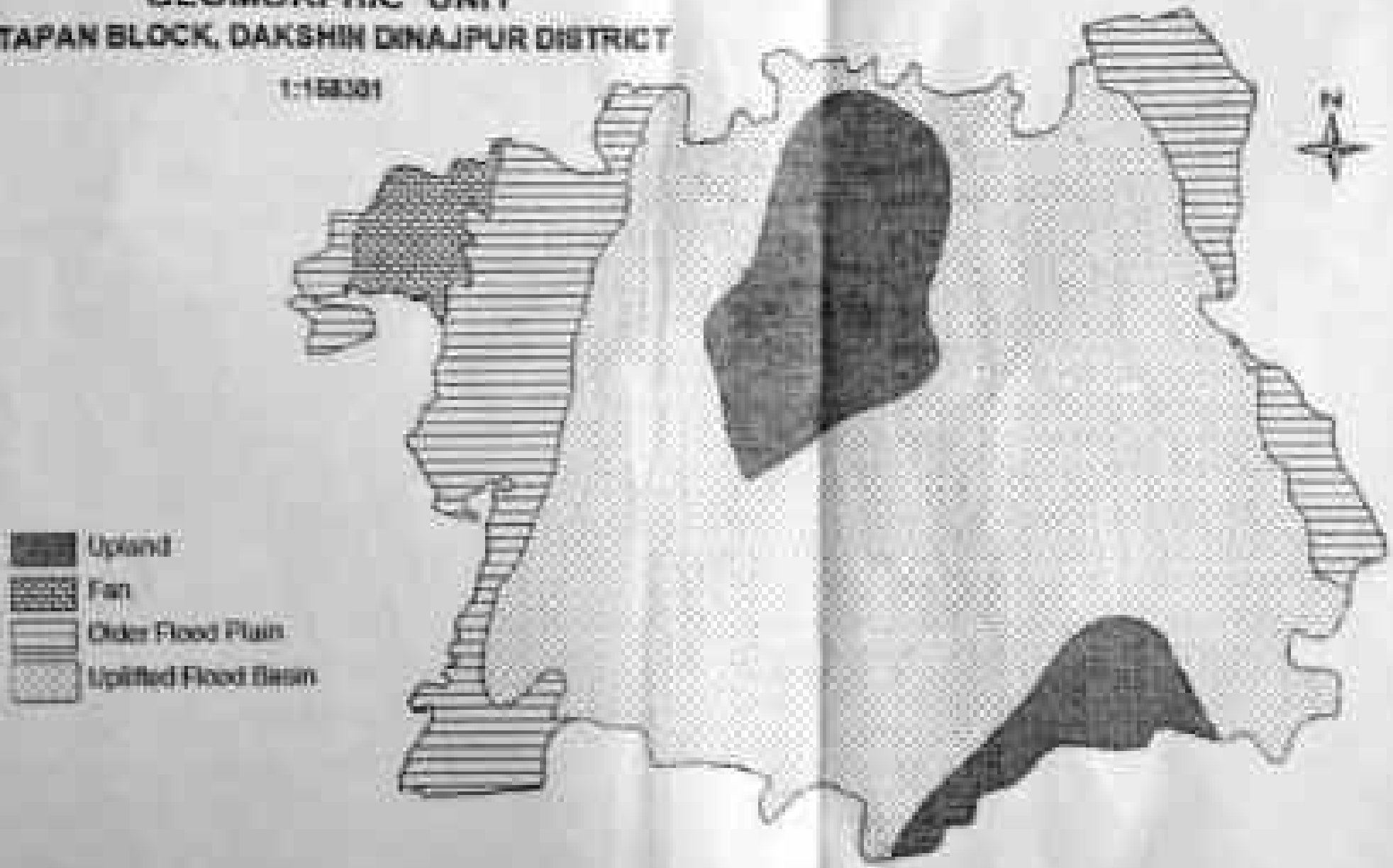
Question No. 1

Set - VI

GEOMORPHIC UNIT

TAPAN BLOCK, DAKSHIN DINAJPUR DISTRICT

1:158301



Interval for Meridian : 20°

Scale : 1 : 80,000,000. 18

3. (a) What is Trigonometric Levelling ? 2

(b) Make a closed traverse survey with the help of Prismatic Compass and draw traverse with adjustment of closing error if comes. 18

Attempt Question No. 3(c) & 3(d) instead of Question No. 3(b) only in case of Inclement Weather

(c) Plot the data in following table to draw a closed traverse with necessary correction if any. 12

Station	Line	Distance (m)	Observed Bearing		Remarks
			FB	BB	
A	A-B	60	60°	240°	
B	B-C	50	150°	330°	
C	C-D	40	208°	28°30′	
D	D-E	75	309°30′	130°	

(d) Following Trigonometrical Levelling data were collected with the help of Transit Theodolite for determining the height of a tower. Calculate the same with these data (No need to plot). It is assumed that the instruments and the tower are collinear as well as coplanar.

(i) Height of the instrument : 1.2 m.

(ii) Angle of elevation of the tower : 48°

(iii) Distance between the tower and the instrument : 40 m. 6

4. Laboratory notebook and Viva-voce. 3+2=5

P-II(1+1+1)H/Pr/15 (NS)

2015

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

(Revised New Syllabus)

Set - VII

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. How much of the area in Hili block of Dakshin Dinajpur district is occupied by Swamp ? Calculate by means of graphical method from given map. 5

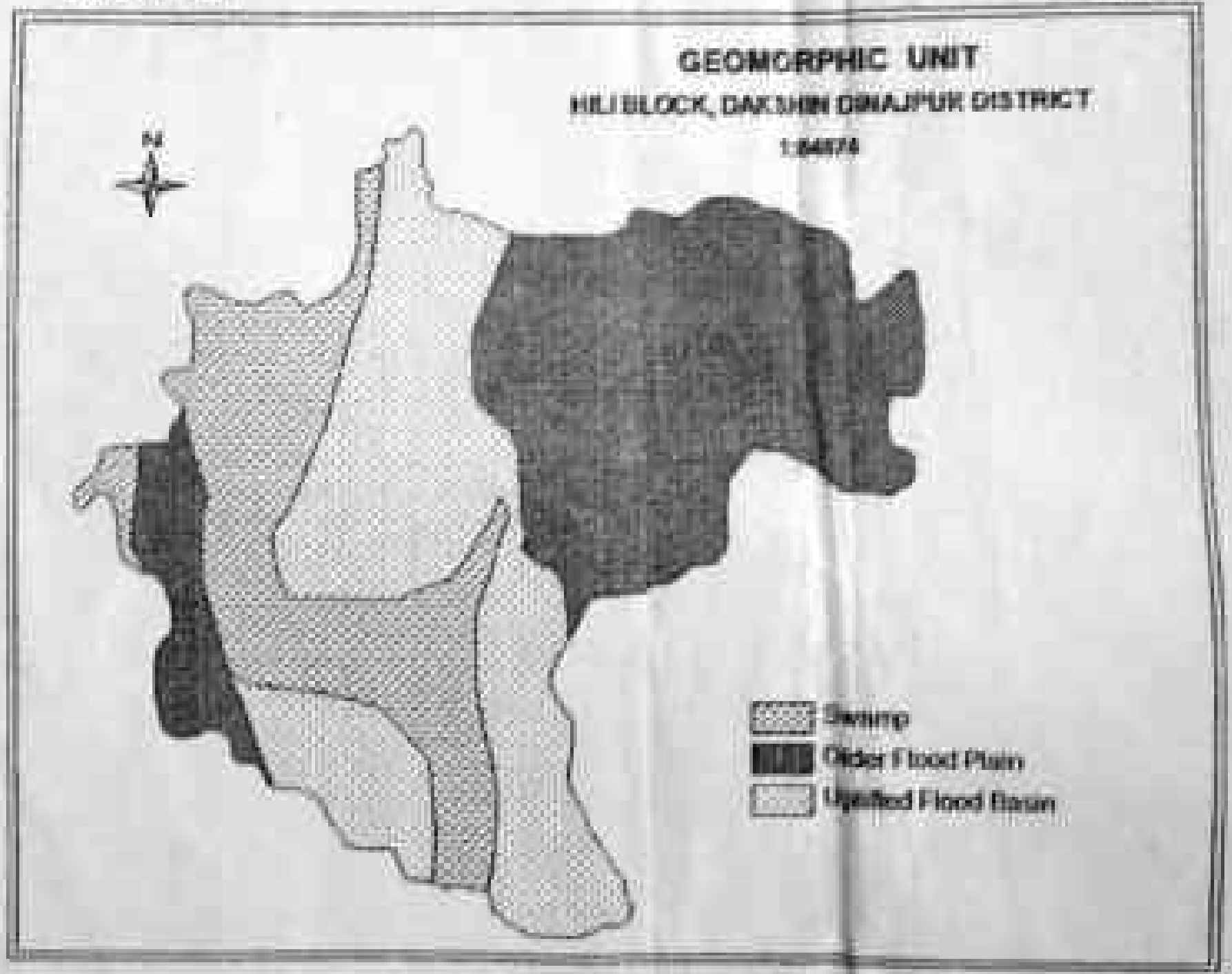
2. (a) What type of projection would you choose to show the ocean current distribution pattern? Give reason to your answer. 1+1=2

(b) Draw graticule on Polar Zenithal Gnomonic Projection with the parameters as given below and also show the Arctic Circle by broken line even though it is not appearing as per the scale :

Extension of Parallel : 50°N to 70°N

Extension of Meridian : 160°E to 120°W (Take 160°W as CM)

Interval for Parallel : 10°



Interval for Meridian : 20°

Scale : 1 : 40,000,000 18

3. (a) Why does closing error come when the observed traverse is plotted in case of Prismatic Compass survey? 2

(b) Measure the height of any chosen building of the examination centre by Transit Theodolite by means of base inaccessible method. The height of two stations will be different but both the instruments and the object will be collinear and it is assumed that all are coplanar also. 18

Attempt Question No. 3(c) & 3(d) instead of Question No. 3(b) only in case of Inclement Weather

(c) Following Trigonometrical Levelling data were collected using Transit Theodolite for determining the height of a Tower. Calculate the same (No need to plot). It is assumed that instruments and tower are collinear as well as coplanar. Out of the two stations one is farthest from the tower and another one is closest to it. Also explain the logic behind the mathematical tool you are using. 8+4=12

(i) Height of the instrument at farthest stations : 1.2 m.

(ii) Height of the instrument at closest station : 1.4

(iii) Distance between two stations : 25 m.

(iv) Angle of elevation of the Tower measured from farthest station : 30°

(v) Angle of elevation of the Tower measured from closest station : 35°

(d) Calculate included angle (interior) with the given data in the following table. 6

Station	Line	Distance (m)	Observed Bearing		Remarks
			FB	BB	
A	A-B	50	110°	290°	
B	B-C	71	210°30′	30°30′	
C	C-D	40	310°	130°	
D	D-E	55	21°30′	201°30′	

4. Laboratory notebook and Viva-voce. 3+2=5

P-II(1+1+1)H/Pr/16

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - I

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) On a Cylindrical Equal Area projection, the Tangential Scale Factor at certain point p is given as 0.98752. What will be the Radial Scale Factor on p ? 3

(b) The continent of Africa is extended from 37°21'N to 34°51'15"S longitude and 512°27'52"E to 17°33'22"W latitude. Draw a neat graticule on Sinusoidal Projection at an interval of 10° with the R.F. 1 : 60×10° to accommodate the continent of Africa within it. Label the projection properly. 15+2=17

3. (a) Write the following whole circle bearings in the quadrantal form :

(i) 314°37'

(ii) 187°58'

P.T.O.

(iii) 12°45'

(iv) 112° 1×4=4

(b) (i) Prepare a field book to note the readings of the vertical angles using transit theodolite to determine the height of the given object, provided that, there is no scope of viewing the staff, placed at the base of the object.

(ii) Observe the required readings from theodolite for determining the height of the given object and note them in the field book.

(iii) Calculate the height of the given object from base.

(iv) Calculate the hypotenuse distance between the instrument at first station and the top of the object. 2+6+5+3=16

Or

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that the instrument to be shifted after 3rd and 6th readings.

(ii) Observe the staff readings accordingly and note it within the field book.

(iii) Calculate the reduced level of all the stations (using the given B.M. information) with a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (X) within the traverse and plot it within the traverse you drawn. 10+2+4=16

4. Laboratory Note Book and Viva-voce. 3+2=5

2016

GEOGRAPHY (Honours)

Eighth Paper

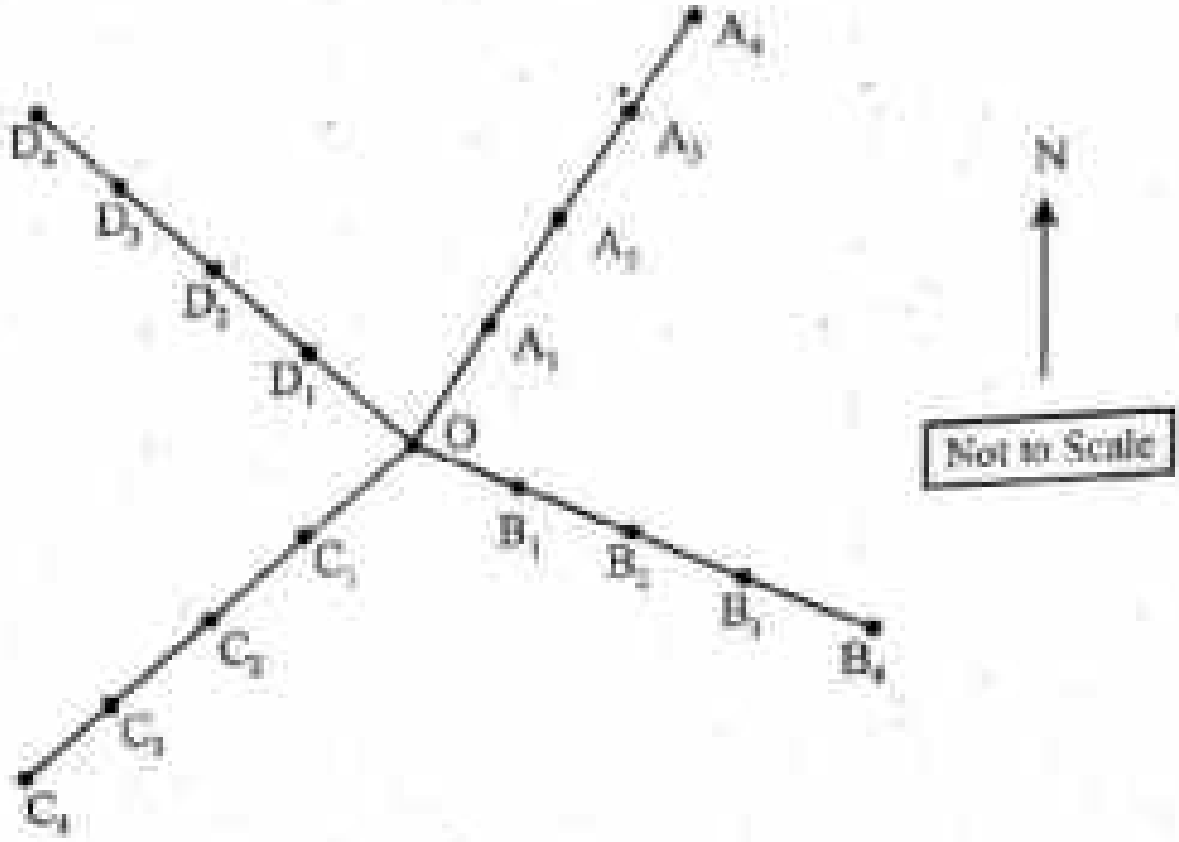
(Practical)

Set - I

This alternative question set to be used in case of inclement weather condition only.

3. (b) (i) Measure the distance between the instrument (A) and the given object (B) using the leveling staff and transit theodolite, applying stadia method. 4

(ii) The following staff readings has been taken along four radial lines with four equidistant stations on each of the lines. The arrangement of lines and stations are also given below. Calculate the reduced levels of each points and draw three contours with a suitable scale. Label the sheet properly. 6+4+2=12



Field Book

Station	Distance (m)	Staff Readings (m)			Remark
		BS	IS	FS	
O	0	1.375			B.M. = 75.00 m
A_1	5		1.030		
A_2	10		0.620		
A_3	15		0.585		
A_4	20		0.345		
B_1	5		0.815		
B_2	10		0.905		
B_3	15		0.900		
B_4	20	1.350		1.215	C.P.-1
C_1	5		0.665		

C_2	10		0.875		
C_3	15		1.285		
C_4	20	0.845		1.405	C.P.-2
D_1	5		0.855		
D_2	10		0.620		
D_3	15		0.515		
D_4	20			0.265	

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - II

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) A Simple Conical projection, derived from a generating globe of 5 inches radius, shows the length of 40°N parallel drawn on the projection as 25 inches. Calculate the Tangential Scale Factor on the said parallel of latitude. 3

(b) Draw a neat graticule on Polar Zenithal Gnomonic projection at an interval of 10° with the R.F. 1:45×10⁶ for the southern hemisphere. Label the projection properly. Also, draw the Antarctic Circle on the graticule. 12+2+3=17

3. (a) The Forward Bearing of a line is measured as 96°30′ and Backward Bearing of the same line is measured as 276° with a Prismatic Compass. How do you adjust the bearings ? 2+2=4

P.T.O.

(b) (i) Prepare a field book to note the readings of the vertical angles using transit theodolite to determine the height of the given object, provided that, there is no scope of viewing the staff, placed at the base of the object.

(ii) Observe the required readings from theodolite for determining the height of the given object and note them in the field book.

(iii) Calculate the height of the given object from base.

(iv) Calculate the hypotenuse distance between the instrument at first station and the top of the object. 2+6+5+3=16

Or,

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 3rd and 5th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (x) within the traverse and plot it within the traverse you drawn. 10+2+4=16

4. Laboratory Note Book and Viva-Voce. 3+2=5

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - II

This alternative question set to be used in case of inclement weather condition only.

3. (b) (i) Two given lines : $\overline{AB}$ and $\overline{BC}$ have formed the interior $\angle B$. Take required observations with the help of a prismatic compass and a ranging rod and determine the interior $\angle B$. 4+2=6

(ii) The following is the page of a level book, where some reading were mission. Fill in the missing readings and calculate the reduced levels of all the stations. Draw the profile with a suitable scale and label it neatly.

Stn.	Distance (m)	Staff Readings (m)			Rise (m)	Fall (m)	RL (m)	Remark
		BS	IS	FS				
A	0	3.250					150.70	BM
B	10	1.755		?		0.750		CP-1
C	20		1.950					
D	30	?		1.920				CP-2
E	40		2.340		1.500			
F	50		?		1.000			
G	60	1.85		2.185				CP-3

(3+3)+3+1=10

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - III

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) On a graticule, drawn on Simple Conical Projection with one Standard Parallel, the length of 60°N parallel, bounded by the Prime Meridian and 30°E Meridian is measured as 2.5 inches. What is the radius of the Generating Globe (R) from where the projection has been derived ? 3

(b) Draw a neat graticule on Polar Zenithal Gnomonic projection at an interval of 10° with the R.F. 1:45×10⁶ for the northern hemisphere. Lavel the projection properly. Also, draw the Tropic of Cancer on the graticule.

12+2+3=17

P.T.O.

3. (a) Convert the following reduced bearings to whole circle bearings :

(i) S 37°30′ E

(ii) N 27°45′ W

(iii) S 30°15′ W

(iv) N 15°15′ E 1×4=4

(b) (i) Prepare a field book to note the readings of the vertical angles using transit theodolite to determine the height of the given object, provided that, reading the leveling staff, placed at the base of the object, is possible.

(ii) Observe the required readings from theodolite for determining the height of the given object and note them in the field book.

(iii) Calculate the height of the given object from base.

(iv) Calculate the hypotenuse distance between the instrument and the top of the object.

2+6+5+3=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (x) within the traverse and plot it within the traverse you drawn. 10+2+4=16

Or,

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 3rd and 5th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B. M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

4. Laboratory notebook and Viva-voce. 3+2=5

P-II(1+1+1)H/Pr/16

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - III

This alternative question set to be used in case of inclement weather condition only.

3.- (b) (i) Observe the readings from the leveling staff placed on given two stations : A and B. If, the RL of A is 170.50 m, then calculate the RL of B. (2+2)+2=6

(ii) The following consecutive readings (in m) were taken on equidistant stations along a 120 m long line $\overline{XY}$ with a leveling staff and a dumpy level :

0.455, 0.685, 0.825, 1.755, 1.850, 2.355, 1.750, 0.415, 0.695, 1.230, 2.160 and 3.050

The instruments were shifted after forth, seventh and ninth readings.

Prepare a level book and calculate the RLs of different points, given, the RL of the first station is 225 m.

Draw the profile with a suitable scale and label it neatly. (2+4)+3+1=10

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - IV

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) On a graticule, drawn on Cylindrical Equal Area Projection, the length of 60° E meridian, bounded by the Equator and 40°S parallel is measured as 3.2 inches. What is the radius of the Generating Globe (R) from where the projection has been derived ? 3

(b) The continent of South America is extended from 12.985° N to 55.9725° S latitude and 24.5182° W to 81.3699° W longitude. Draw graticule on Simple Conical Projection with one Standard Parallel at an interval of 10° with the R.F. 1:130×10⁶ to accommodate the continent of South America. Lavel the projection neatly. 15+2=17

P.T.O.

3. (a) The staff readings taken on three stations P, Q and R by the same dumpy level without changing the height of collimation as 1.250 m, 1.005 m and 1.485 m respectively. The B.M. at station P is given as 80.00 m. What will be the reduced level at station Q and R ? 2+2=4

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 3rd and 5th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (x) within the traverse and plot it within the traverse you drawn. 10+2+4=16

Or,

(b) (i) Prepare a field book to note the readings of magnetic bearings of different lines of the given quadrilateral closed traverse using the prismatic compass.

(ii) Observe the readings from prismatic compass and note them in the field book.

(iii) Apply required corrections on the observed bearings.

(iv) Plot the traverse with suitable scale and adjust the closing error graphically.

2+6+4+4=16

4. Laboratory notebook and Viva-voce. 3+2=5

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - IV

This alternative question set to be used in case of inclement weather condition only.

3. (b) (i) Two given lines : $\overline{PQ}$ and $\overline{QR}$ have formed the interior $\angle Q$. Take required observations with the help of a prismatic compass and a ranging rod and determine the interior $\angle Q$. 4+2=6

(ii) The following consecutive readings were taken with a dumpy level and a 4-m leveling staff on a continuously sloping ground at common interval of 25 m :

2.945, 2.655, 1.850, 1.015, 0.595, 3.455, 2.955, 2.055, 1.390, 0.545, 3.725, 3.125, 2.345, 1.745 and 0.905

Given, the RL of the first station is 325.60 m.

P.T.O.

Insert the readings properly in a field book and calculate the RLs of all the stations.

Draw the profile with a suitable scale and label it neatly. (2+4)+3+1=10

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - V

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) What is Rhumb line ? How can you draw a Rhumb line on a Mercator projection ? 2+1=3

(b) India is located between 8°4′ - 37°6′ north latitude and 68°7′ - 97°25′ east longitude. Draw graticule on Bonne's projection at an interval of 10° with the R.F. 1:30×10⁶ to accommodate India within it. Label the projection neatly. 15+2=17

3. (a) The angle of inclination is read as 18°17′ in a transit theodolite when the middle stadia of the Telescope is fixed with the 50m altitude mark of a tower. What will be the angle of inclination when the Telescope will be fixed with 100 m altitude mark of the tower ? 4

P.T.O.

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 2nd and 5th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Prepare a field book to note the readings of the vertical angles using transit theodolite to determine the height of the given object, provided that, reading the leveling staff, placed at the base of the object, is possible.

(ii) Observe the required readings from theodolite for determining the height of the given object and note them in the field book.

(iii) Calculate the height of the given object from base.

(iv) What will be the vertical angle reading if the instrument is shifted 7.5m away behind the

present position without changing the instrument height ? 2+6+5+3=16

Or,

(b) (i) Prepare a field book to note the readings of magnetic bearings of different lines of the given quadrilateral closed traverse using the prismatic compass.

(ii) Observe the readings from prismatic compass and note them in the field book.

(iii) Apply required corrections on the observed bearings.

(iv) Plot the traverse with suitable scale and adjust the closing error graphically.

2+6+4+4=16

4. Laboratory notebook and Viva-voce. 3+2=5

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - V

This alternative question set to be used in case of inclement weather condition only.

3. (b) (i) Two given lines : $\overline{AB}$ and $\overline{BC}$ have formed the interior $\angle B$. Take required observations with the help of a prismatic compass and a ranging rod and determine the interior $\angle B$. 4+2=6

(ii) Following is the field book containing the observed bearings and distances of all the lines of quadrilateral closed traverse, surveyed by prismatic compass :

P.T.O.

Line	Length (Feet)	Observed Bearings		Remark
		Fore	Back	
PQ	33.1	N 40° 00' E	S 40° 00' W	Stations P and Q are free from local attraction
QR	35.2	S 84° 30' E	N 83° 30' W	
RS	36.4	S 28° 30' W	N 25° 30' E	
SP	42.2	N 77° 30' W	S 75° 30' E	

Apply required correction to the observed bearings.

Plot the traverse with a suitable scale and adjust the closing error (if any) graphically. Label the drawing neatly.

4+3+2+1=10

2016

GEOGRAPHY (Honours)

Eighth Paper

(Practical)

Set - VI

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) A graticule is drawn on Polar Zenithal Gnomonic Projection from a generating globe of 5 inches radius. What will be the Tangential Scale Factor along 60° N Parallel in the graticule ? 3

(b) Draw graticule on Polyconic projection for latitudinal extension of 20° N to 70° N and longitudinal extension of 20° E to 80° W at an interval of 10° with the R.F. 1:120×10⁶. Label the graticule properly. 15+2=17

3. (a) In a quadrilateral closed traverse ABCD (surveyed clockwise), the fore bearing of line AB is 152°20'. If the included angle B is 124°30', then what will be the fore and back bearing of the line BC ? 2+2=4

P.T.O.

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 2nd and 5th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and level it properly. 2+6+4+4=16

Or,

(b) (i) Prepare a field book to note the readings of the vertical angles using transit theodolite to determine the height of the given object, provided that, reading the leveling staff, placed at the base of the object, is possible.

(ii) Observe the required readings from theodolite for determining the height of the given object and note them in the field book.

(iii) Calculate the height of the given object from base.

(iv) What will be the vertical angle reading if the instrument is shifted 10 m towards the object

from the present position without changing the instrument height ? 2+6+5+3=16

Or,

(b) (i) Prepare a field book to note the readings of magnetic bearings of different lines of the given quadrilateral closed traverse using the prismatic compass.

(ii) Observe the readings from prismatic compass and note them in the field book.

(iii) Apply required corrections on the observed bearings.

(iv) Plot the traverse with suitable scale and adjust the closing error graphically.

2+6+4+4=16

4. Laboratory notebook and Viva-voce. 3+2=5

2016

GEOGRAPHY (Honours)

Eighth Paper

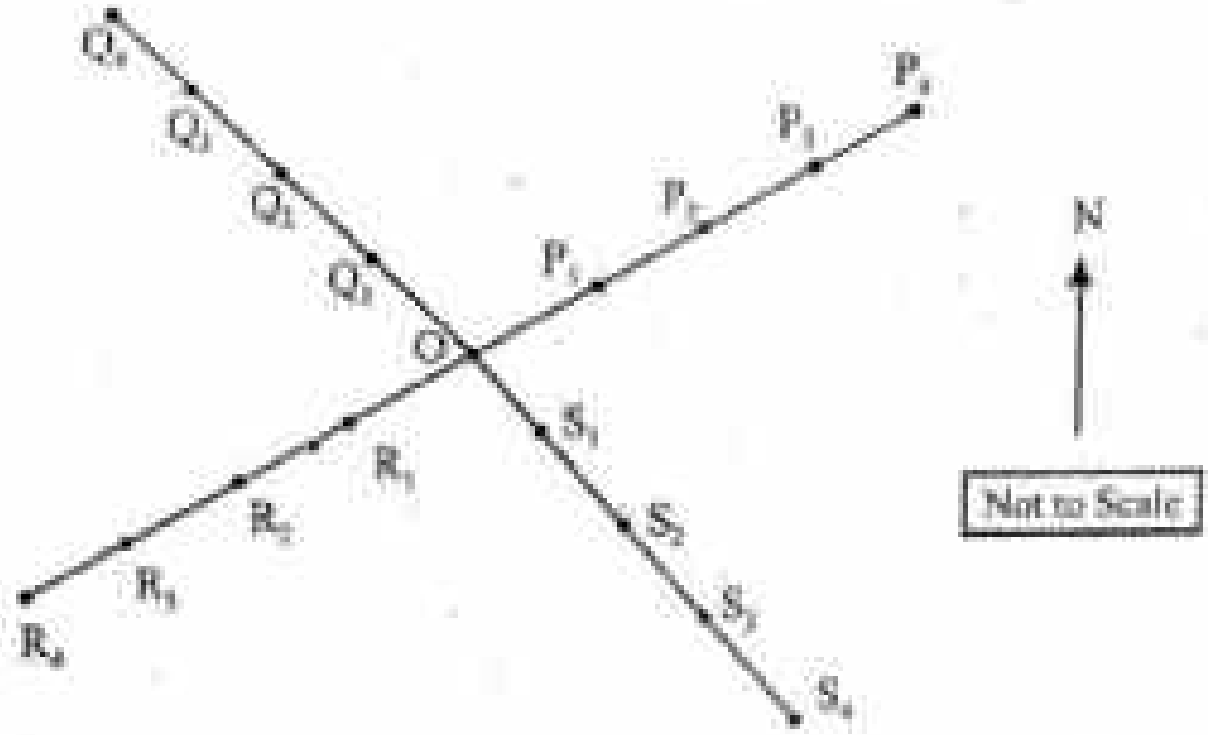
(Practical)

Set - VI

This alternative question set to be used in case of inclement weather condition only.

3. (b) (i) Measure the distance between the instrument (X) and the given object (Y) using the leveling staff and transit theodolite, applying low degree method. 4

(ii) The following staff readings has been taken along four radial lines with four equidistant stations on each of the lines. The arrangement of lines and stations are also given below. Calculate the reduced levels of each points and draw three contours with a suitable scale. Label the sheet properly. 6+4+2=12



Field Book

Station	Distance (m)	Staff Readings (m)			Remark
		BS	IS	FS	
O	0	0.685			B.M. - 155.6 m
P_1	10		1.025		
P_2	20		1.650		
P_3	30		1.655		
P_4	40	1.115		1.685	CP-1
Q_1	10		1.055		
Q_2	20		0.950		
Q_3	30		0.865		
Q_4	40	1.205		0.705	CP-2
R_1	10		1.100		

R_2	20		1.155		
R_3	30		1.225		
R_4	40		1.235		
S_1	10		2.205		
S_2	20		2.225		
S_3	30		2.365		
S_4	40			2.410	

P-II(1+1+1)H/Pr/17(N&O)

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - I

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) An orthomorphic projection, derived from a generating globe on scale $1:50 \times 10^6$, shows the length of 45°N parallel drawn on the projection as 23 inches. Calculate the Tangential Scale Factor on the said parallel of latitude. Calculate the Radial Scale factor. 2+1=3

(b) Draw a net of graticules on **Polar Zenithal Gnomonic projection** at an interval of 10° with the R.F. $1 : 45 \times 10^6$ for the southern hemisphere. Label the projection properly. Also, draw the Antarctic Circle on the graticules. 12+2+3=17

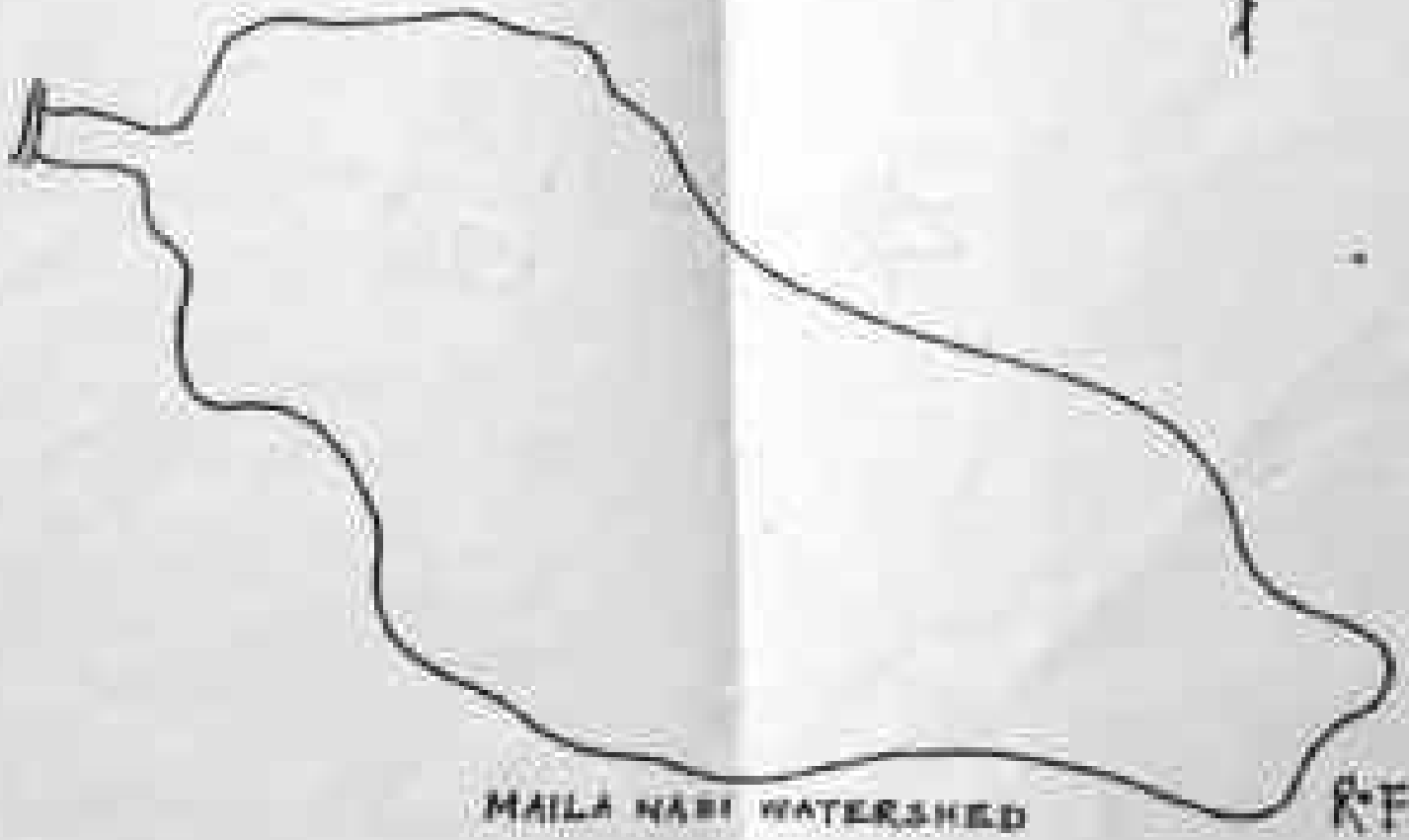
3. (a) The bearing of a line AB=N 80° E and angle BAC=90° clockwise. Find the bearing of AC ? 4

P.T.O.

SET-1

Q1.

TRANSECT MAP NO 75%



MAILA NABI WATERSHED

R.F.- 1:50,000

(b) (i) Prepare a field book to note the readings of the vertical angles using transit theodolite to determine the height of the given object, provided that, there is no scope of viewing the staff, placed at the base of the object.

(ii) Observe the required readings from theodolite for determining the height of the given object and note them in the field book.

(iii) Calculate the height of the given object from base.

(iv) Calculate the hypotenuse distance between the instrument at first station and the top of the object. 2+6+5+3=16

Or,

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that the instrument to be shifted after 3rd and 4th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (X) within the traverse and plot it within the traverse you drawn. 10+2+4=16

4. Laboratory Note Book and Viva-voce. 3+2=5

P-II(1+1+1)H/Pr/17(N & O)

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - I

This alternative question set to be used in case of inclement weather condition only

3. (b) (i) Measure the distance between the instrument (X) and the given object (Y) using the leveling staff and transit theodolite, applying low degree method. 5

(ii) The following is the page of a level book, where some readings were missing. Fill in the missing readings and complete the table applying all checks.

P.T.O.

Stn.	Distance (m)	Staff Readings (m)			Rise (m)	Fall (m)	RL (m)	Remark
		BS	IS	FS				
1	0	1.816					23.500	BM
2	5		?				24.105	
3	10		?				24.372	
4	15	?		?			25.024	CP-1
5	20		0.917				25.668	
6	25		1.312				?	
7	30			1.184			?	

Draw the profile with a suitable scale and label it neatly.

Find the gradient between station 1 and station 5.

(6+3+1)+1=11

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - II

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) In a Simple Conical Projection with one standard parallel, derived from a generating globe of 3.125 inches radius, shows the radius of the standard parallel $r_{\varphi_0} = 3.125$ inch. Find out the standard parallel φ_0 ? 3

(b) Draw a net graticules on **Simple Conic Projection** with one standard parallel for an area extending from 0° to 50° S and 125°W to 175°W at 10° interval on scale 1:75 × 10^6. Label the projection neatly. 15+2=17

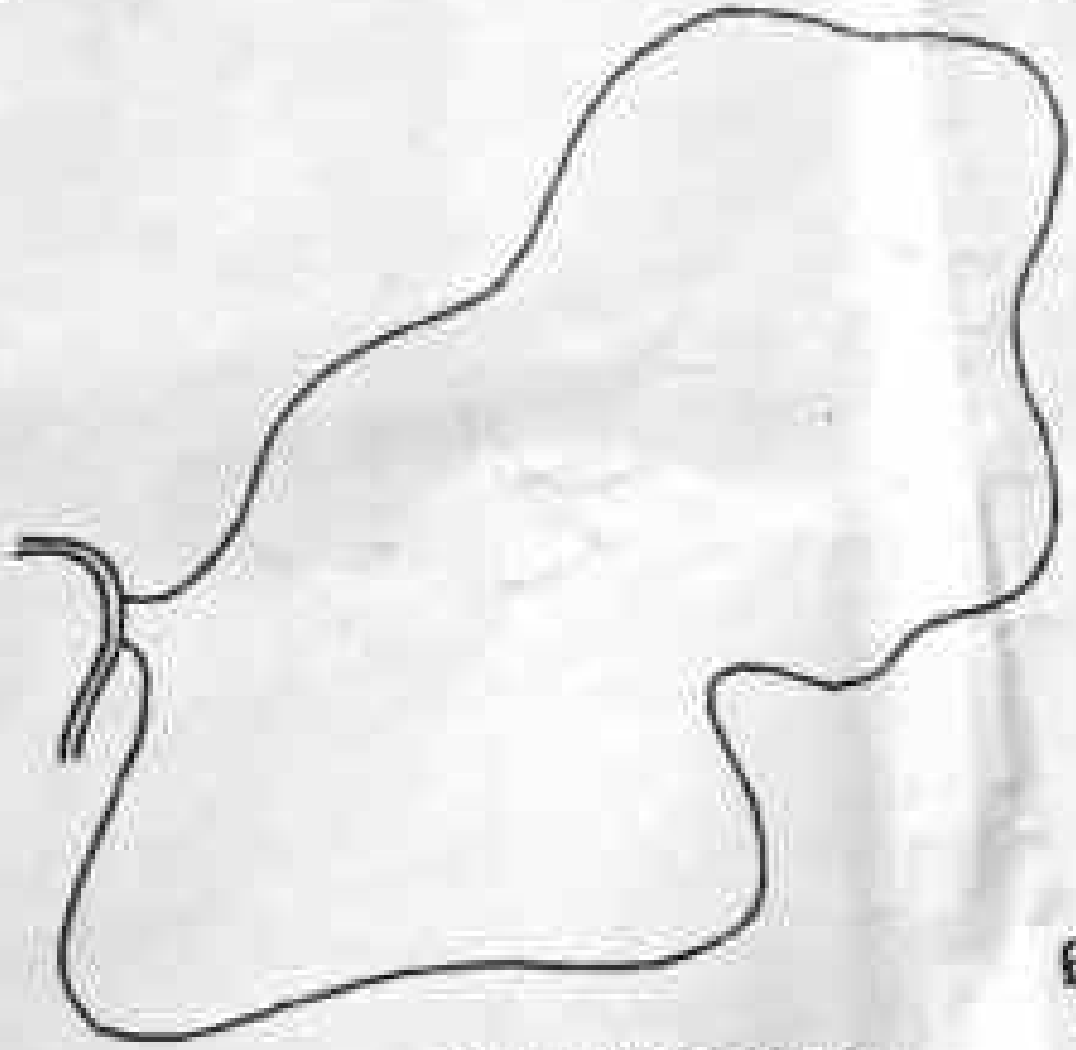
3. (a) Find back bearings of the following observed fore bearings of lines AB = 63°30′; BC = 112°45′; CD = 203°45′; DE = 320°30′. 4

P.T.O.

SET- 2

01.

TOPOSHEET MAP NO 73 I/5



R.F – 1:50,000

DURANGER NALA WATERSHED

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 2nd and 3rd readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (x) within the traverse and plot it within the traverse you drawn. 10+2+4=16

Or,

(b) (i) Prepare a field book to note the readings of magnetic bearings of different lines of the given quadrilateral closed traverse using the prismatic compass.

(ii) Observe the readings from prismatic compass and note them in the field book.

(iii) Apply required corrections on the observed bearings.

(iv) Plot the traverse with suitable scale and adjust the closing error graphically.

2+6+4+4=16

4. Laboratory Note Book and Viva-Voce. 3+2=5

P-II (1+1+1)H/Pr/17 (N & O)

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - II

This alternative question set to be used in case of inclement weather condition only

3. (b) (i) Measure the distance between the instrument (A) and the given object (B) using the leveling staff and transit theodolite, applying low degree method. 5

(ii) The following is the page of a level book from which several readings are missing. Reconstruct the page and fill all the missing entries. Apply all the necessary checks.

P.T.O.

Stn.	Distance (m)	Staff Readings (m)			Rise (m)	Fall (m)	RL. (m)	Remark
		BS	IS	FS				
1	0	1.385					54.000	BM
2	5		1.430			0.045	?	
3	10		?			0.395	?	
4	15	?		1.275	?		?	CP-1
5	20	0.630		0.585	0.310		?	CP-2
6	25		0.920			?	54.130	
7	30		?			0.210	?	
8	35			1.740		?	?	

Draw the profile with a suitable scale and label it neatly.

Find the gradient between station 2 and station 4.

(6+3+1)+1=11

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - III

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) In a case of Bonne's Projection, principal scale of the projection is equivalent to $1/10^{th}$ part of the actual radius of the earth. Calculate the radius of the standard parallel of 40° N of the same projection. 3

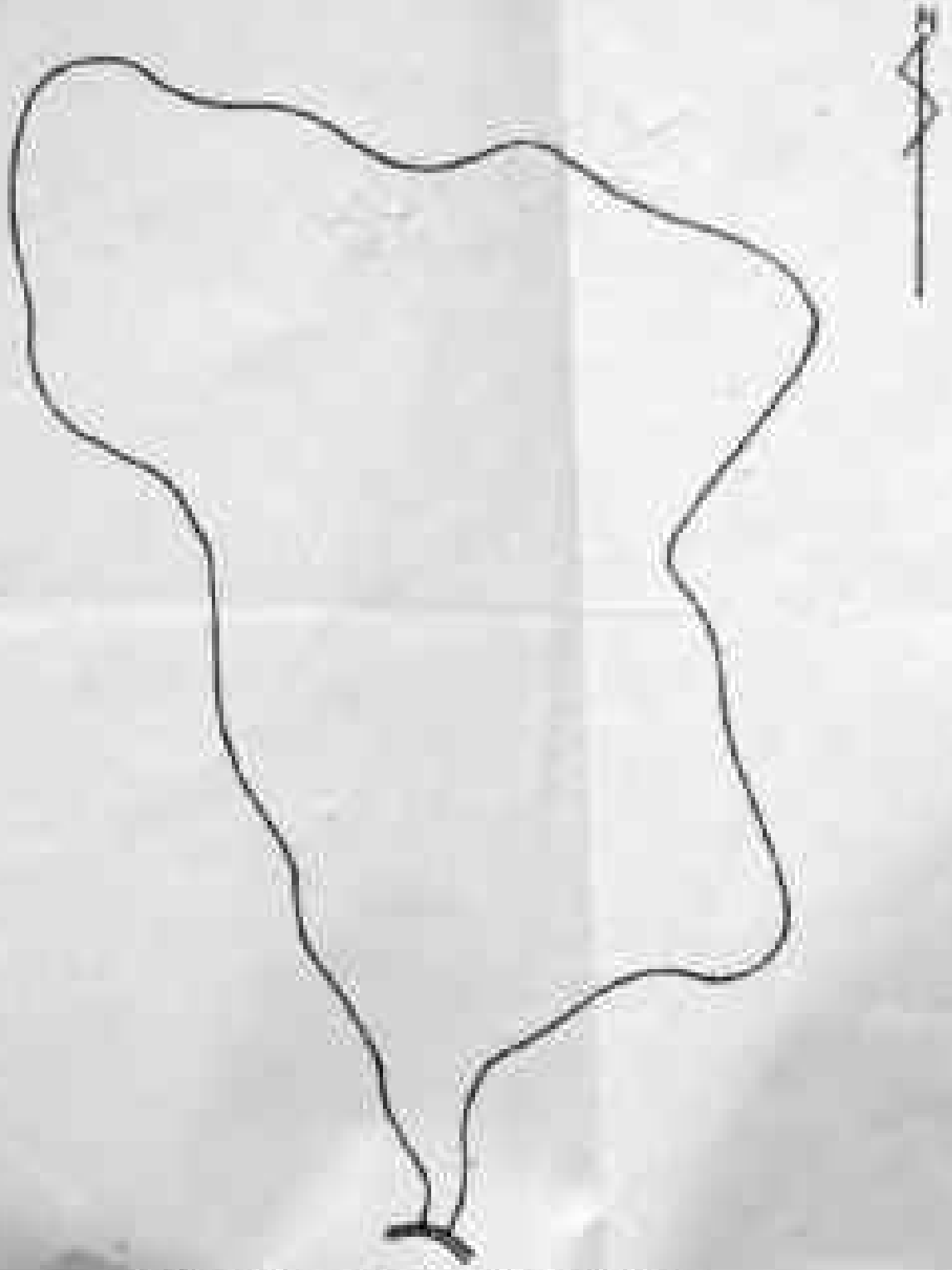
(b) Draw a net graticules on **Bonne's Projection** for an area extending from 30° S to 70°S and 30°W to 20°E at 10° interval on scale $1:40 \times 10^6$. Label the projection neatly. 15+2=17

3. (a) The staff readings taken on three stations P, Q and R by the same dumpy level without changing the height of collimation as 1.250 m, 1.005 m and 1.485 m respectively.

P.T.O.

SET-3

Q1. TOPOSHEET MAP NO 73 P/13



SALEGUTU NALA WATERSHED

RF - 1:50,000

The R.L. at station Q is given as 56.50 m. Calculate the reduced level at station P and R. 2+2=4

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 4th and 5th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (x) within the traverse and plot it within the traverse you drawn. 10+2+4=16

Or,

(b) (i) Prepare a field book to note the readings of magnetic bearings of different lines of the given quadrilateral closed traverse using the prismatic compass.

(ii) Observe the readings from prismatic compass and note them in the field book.

(iii) Apply required corrections on the observed bearings.

(iv) Plot the traverse with suitable scale and adjust the closing error graphically.

2+6+4+4=16

4. Laboratory notebook and Viva-voce. 3+2=5

P-II(1+1+1)H/Pr/17(N&O)

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - III

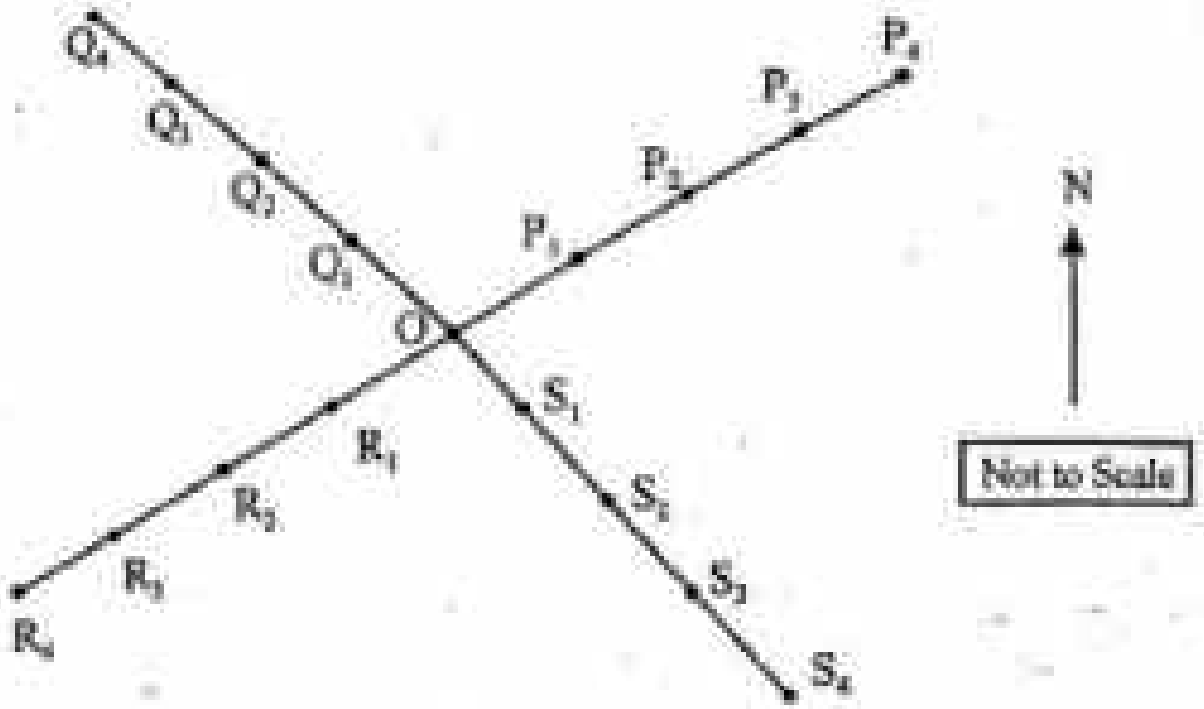
This alternative question set to be used in case of inclement weather condition only

3. (b) (i) Measure the distance between the instrument (I) and the given object (O) using the leveling staff and transit theodolite, applying low degree method. 5

(ii) Mean sea level is a — Bench mark/datum (pick up the correct one) 1

(iii) The following staff readings have been taken along four radial lines with four equidistant stations on each of the lines. The arrangement of lines and stations are also given below. Calculate the reduced levels of each point and draw three contours with a suitable scale. Label the sheet properly. 6+3+1=10

P.T.O.



Field Book

Station	Distance (m)	Staff Readings (m)			Remark
		BS	IS	FS	
O	0	0.585			B.M. = 55.6 m
P_1	2.5		0.785		
P_2	5.0		0.990		
P_3	7.5		1.355		
P_4	10.0	1.115		1.585	CP-1
Q_1	2.5		1.035		
Q_2	5.0		0.855		
Q_3	7.5		0.845		
Q_4	10.0	1.215		0.725	CP-2
R_1	2.5		1.105		

R_2	5.0		1.160		
R_3	7.5		1.220		
R_4	10.0		1.235		
S_1	2.5		1.185		
S_2	5.0		2.210		
S_3	7.5		2.345		
S_4	10.0			2.385	

P-II (1+1+1)H/Pr/17 (N & O)

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - VI

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

2. (a) Distance between two successive parallels (Projection Simple Conic) at 1° interval on the Central Meridian is 0.12 inch. Calculate the R.F. 3

(b) Draw a net of graticules on **Sinusoidal Projection** for an area extending from 20° N to 70° N and 175°E to 125°W at 10° interval on scale 1 cm to 350 km. Label the projection neatly. 15+2=17

3. (a) Find fore bearings (F.B.) of the following observed back bearings (B.B.) of lines AB = 246°30′; BC = 318°30′; CD = 11°30′; DE = 119°30′. 4

P.T.O.

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 6th and 7th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Label the plotted traverse properly.

(iii) Locate the given object (x) within the traverse and plot it within the traverse you drawn. 10+2+4=16

Or,

(b) (i) Prepare a field book to note the readings of magnetic bearings of different lines of the given quadrilateral closed traverse using the prismatic compass.

(ii) Observe the readings from prismatic compass and note them in the field book.

(iii) Apply required corrections on the observed bearings.

(iv) Plot the traverse with suitable scale and adjust the closing error graphically.

2+6+4+4=16

4. Laboratory note Book and Viva-voce. 3+2=5

P-II (1+1+1)H/Pr/17(N&O)

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - VI

This alternative question set to be used in case of inclement weather condition only

3. (b) (i) Measure the distance between the instrument (I) and the given object (O) using the leveling staff and transit theodolite, applying low degree method. 5

(ii) Height of instrument is the R.L. of the line of collimation when the instrument is correctly leveled. (True/False) 1

(iii) Following is the field book containing the observed bearings and distances of all the lines of quadrilateral closed traverse, surveyed by prismatic compass :

P.T.O.

Line	Length (m)	Observed Bearings		Remarks
		Fore	Back	
AB	8.90	S 50°00' E	N 50°30' W	All Stations are locally attracted
BC	8.00	S 23°00' W	N 24°00'E	
CD	10.70	N 61°30' W	S 62°30' E	
DA	9.80	N 35°00' E	S 36°00' W	

Apply required correction to the observed bearings.

Plot the traverse with a suitable scale and adjust the closing error (if any) graphically. Label the drawing neatly.

4+3+2+1=10

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - V

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

1. Measure the area (on ground) of the given river basin applying graphical method. 5

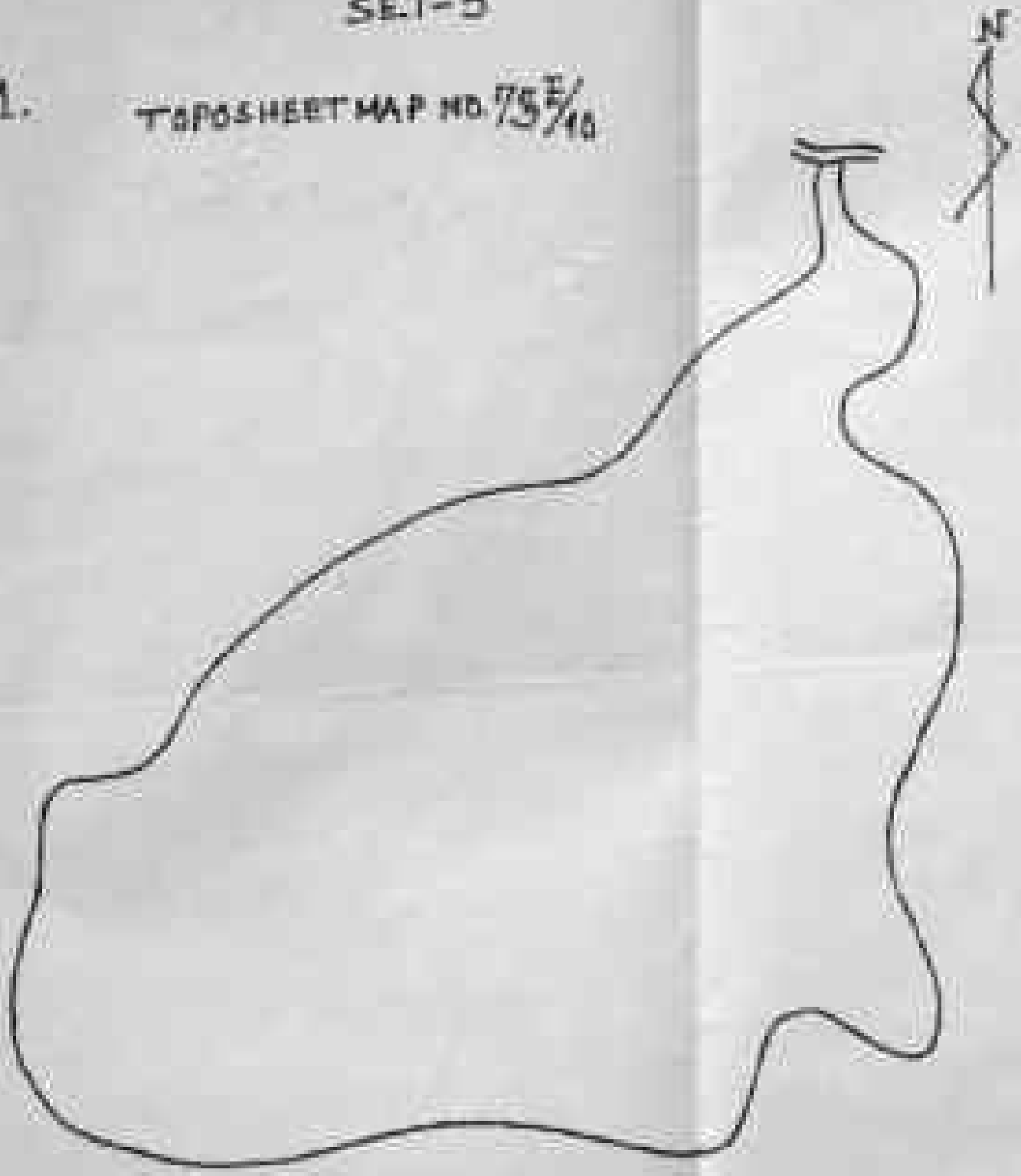
2. (a) A Sinusoidal projection, derived from a generating globe on scale ¶:60 × 10⁶, shows the length of 30°N parallel drawn on the projection as 22.9 inches. Calculate the Tangential Scale Factor on the said parallel of latitude. Calculate the Radial Scale factor. 2+1=3

(b) Draw a net of graticules on **Cylindrical Equal Area Projection** for the map of South America extending from 20° N to 60° S and 30° W at 10° interval on the scale 1 cm to 550 km. Label the projection neatly. 15+2=17

P.T.O.

SET-5

61. TOPOSHEET MAP NO. 73 F/16



BARKI NADI WATERSHED

R.F.- 1:50,000

3. (a) Find the angle between the lines OA and OB, if their respective bearings are :

(i) 36°30′ and 152°30′ and

(ii) 128°30′ and 298°00′ 2+2=4

(b) (i) Prepare a field book to note the staff readings on given 8 (eight) equidistant collinear stations, provided that, the instrument to be shifted after 5th and 7th readings.

(ii) Observe the staff readings accordingly and note them in the field book.

(iii) Calculate the reduced level of all the stations (with the given B.M. information) using a suitable method.

(iv) Plot the reduced levels with suitable scale and label it properly. 2+6+4+4=16

Or,

(b) (i) Plot the given quadrilateral closed traverse with a suitable scale using a plane table and related accessories.

(ii) Lebel the plotted traverse properly.

(iii) Locate the given object (x) within the traverse and plot it within the traverse you drawn. 10+2+4=16

Or,

(b) (i) Prepare a field book to note the readings of magnetic bearings of different lines of the given quadrilateral closed traverse using the prismatic compass.

(ii) Observe the readings from prismatic compass and note them in the field book.

(iii) Apply required corrections on the observed bearings.

(iv) Plot the traverse with suitable scale and adjust the closing error graphically. 2+6+4+4=16

4. Laboratory notebook and Viva-voce. 3+2=5

2017

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - V

This alternative question set to be used in case of inclement weather condition only

3. (b) (i) Measure the distance between the instrument (I) and the given object (O) using the leveling staff and transit theodolite, applying low degree method. 5

(ii) Reduced level of a point is its elevation with reference to ground level / datum (pick up the correct one). 1

(iii) The fore and back bearings of PQ, QR, RS, SP were observed to be respectively : S45°30′E and N45°30′W, S60°0′E and N60°40′W, S5°30′E and N3°20′W, N83°30′W and S85°0′E.

Apply required correction to the observed bearings.

P.T.O.

Check for internal angles of the traverse PQRS.

Sketch the method of determination of included angle. 4+4+2=10

P- II (1+1+1)H/Pr/18 (N & O)

2018

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - I

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

Attempt *all* questions.

1. Measure the area of the given map applying graphical method. 5

2. (a) Draw a neat graticule on Polyconic Projection to prepare map of an area extending between 40°S to 80°S parallels and 10°E to 100°E meridians. Apart scale of the map is $1 : 85 \times 10^6$. The interval is 10°.

(b) What are the differences between perspective and non-perspective projections ? 2+16+2=20

3. (a) (i) What is Bench Mark ?

(ii) The true bearing of a line PQ is 210°45'. What will be its magnetic bearing if the declination is 8°15' W. 1+2=3

P.T.O.

(b) Determine the height of the given object with the help of a theodolite (Base in accessible)

(i) Prepare the proper field book and enter the reading.

(ii) Calculate and plot the with a suitable scale.

8+7=15

Or,

(b) Prepare a closed Traverse Survey by Prismatic compass of the given stations PQRS and

(i) Prepare the field book and enter the readings

(ii) Complete the table with necessary calculations and plot by using parallel meridian method.

(iii) Adjust the errors if any graphically.

7+6+2=15

Or,

Conduct a levelling survey with the help of Dumpy Level with taking staff reading of the given 8 stations at least one change point. (with given interval).

(i) Prepare a field book and enter the readings.

(ii) Calculate RL by means of Rise and Fall method taking 20m as the RL of the first point.

(iii) Plot the profile with suitable scale.

(c) Convert the following readings to the form of reduced bearing :

(i) 272°45′

(ii) 102°30′ 7+5+3=15

4. Laboratory Note Book and Viva-voce. 3+2=5

P-II (1+1+1)H/Pr/18 (N & O)

2018

GEOGRAPHY (Honours)

Fourth Paper (New Syllabus)

Eighth Paper (Old Syllabus)

(Practical)

Set - III

Full Marks : 50 Time : Four Hours

The figures in the margin indicate full marks.

Attempt *all* questions.

1. Measure the area of the given map applying graphical method. 5

2. (a) If the length of standard parallel (45°S) in a simple conic projection is represented by 24.41144". What is the R of the reduced earth ?

(b) Draw a graticule of **Bonne's Projection** extending between 15°N to 75°N and 45°W to 165°W longitude at an interval 15° apart on the scale $1:90 \times 10^6$.

(c) Why Marcator's projection is called "Orthomorphic" projection ? 2+16+2=20

P.T.O.

[For Question No. 3b. Lottery is to be allotted]

3. (a) What is called true bearing ? Find out Back Bearings if

(i) Observed Fore bearing of line AB = 138°14′ and

(ii) Observed Fore bearing of line BC, S. 43°18′ E. 1+2=3

(b) Make a closed traverse survey by prismatic compass for the area ABCD (Given in the field).

(i) Prepare a field book and enter the readings

(ii) Make necessary corrections and plot (parallel meridian method)

(iii) Adjust the closing errors graphically (if any)

7+6+2=15

Or,

(b) Find out the height of an object with the help of transit theodolite where the base is inaccessible (instrument and object located in the same vertical plane)

(i) Prepare a field book with a field sketch and enter the readings.

(ii) Calculate the height of the object.

(iii) Plot the same on a suitable scale.

8+4+3=15

Or,

Find out the reduced levels of the given points taken 1.5 m interval with Dumpy level along a line of 12.0 m Length. The instrument is shifted at fourth point. The Bench Mark at 3rd point is 6.00m.

(i) Prepare a field book and enter the readings.

(ii) Plot the profile along the line (with rise and fall method) on a suitable scale. 8+7=15

(c) Given the backward bearing of $\overline{AB}$ is 260° and forward bearing of $\overline{DC}$ is 86°. Calculate ∠ABC. 2

4. Laboratory Notebook and Viva-voce. 3+2=5