

5119
M.A. (Final) Geography
Practical - I : Surveying & Leveling

Unit - I

- a) Surveying as an art and science.
- b) Principles of surveying.
- c) General errors and inaccuracies in surveying.
- d) Precautions in using survey instruments.
- e) Trigonometrically methods of solution of triangles and computation of lengths.

Unit - II

Plane Table:

- a) Use of plane table in composite surveys and related methods.
- b) Methods of resectioning.
- c) General planning of large area plane surveys.
- d) A composite survey of college campus or any neighbourhood area on scale 1:100 to 1:1000.
- e) Drawing of control points and surveyed plan.

Unit - III

Theodolite and tacheometer:

- a) Theodolite as an instrument of surveying and levelling.
- b) Adjustments of theodolite.
- c) Computation of theodolite bearings.
- d) Computation of lengths of triangles and plotting of control points.
- e) Telemetry: stadia and tangential.

Unit - IV

- a) Concepts of social well-being and physical quality of life.
- b) Human development: concept, components, indices and measurement.
- c) Rural-urban deprivation with respect to shelter, health and education.

Unit - V

Dumpy level:

- a) Use of dumpy level as an instrument of levelling.
- b) Adjustment of the dumpy level.
- c) Principles: Calculation of difference of level, series levelling, backsights, foresights, intermediate sights.
- d) Level book and computation of reduced levels: Rise and fall and collimation methods.
- e) Plotting of profiles.

Note:

Candidates will submit following exercises as record work:

- Resectioning: 3 exercises of graphical methods of Lano's, Bessel's and trial and error.
Profiles: 2 exercises based on levelling measurements obtained with dumpy level.
Contouring: 1 exercise based on levelling measurements obtained with dumpy level.
Contouring: 1 exercise based on levelling measurements obtained with Clinometer.

Measuring and plotting reduced levels using tacheometer: 2 exercises. Triangulation survey based on a minimum of 15 control points using theodolite: 2 exercises including one related to composite survey.

Plan of any unsurveyed campus/neighbourhood area based on composite survey: 1 exercise.

Thematic maps showing socio-economic characteristics of the surveyed area: form of built-up area, building material, functional use, social composition, availability of sanitary, water, electricity, telephone amenities, assets and income: 6 exercises.

All exercises will be based on surveying and levelling work done by the candidates themselves for areas hitherto unsurveyed.

Distribution of Marks Total Marks 50

Practical – Assessed by External Examiner

A Part- Surveying –Practical Exam (30 marks)

A - Test paper Survey exercise – 30 marks, Working on each instruments with following distribution of marks:

Instrument	Exercise	Marks
A. Plane Table	Resectioning	30 marks
B. Theodolite	Measurement of angle between two points	
C. Dumpy Level	Measuring level difference between two distant points	
D. Clinometer	Measuring heights of and level difference between two distant points	
E. Tacheometer	Measuring distance of any distant point	

B - Record work – 10 marks

C - Viva-voce – 10 marks

Suggested Readings:

- Clark, D., Plane and Geodetic Sureying, Constable.
- Davis, R.E. and F.S. Foot, Surveying: Theory and Practice, McGraw Hill.
- Hinks, A.R., Map and Survey, Cambridge.
- Kanetkar, T.P., Surveying and Levelling, Vol. I & II, A.U. Grah Prakashan.
- Kiley, P.T., Surveying and Levelling, Vol. I & II, A.U. Grah Prakashan.
- Survey Manual, Vol. I - VIII, Survey of India.
- Williamson, J.T., Surveying and Field Work, Constable.
 - शर्मा, जे. पी. : प्रायोगिक भूगोल, रस्तोगी प्रकाशन, मेरठ
 - खुल्लर, डी. आर., प्रयोगात्मक भूगोल, कल्याणी पब्लिशर्स, नईदिल्ली
 - मिश्रा, आर. एन. एवं शर्मा, पी. के.: प्रायोगिक भूगोल, रावत पब्लिकेशन्स, जयपुर
 - जैन, शेषमल : प्रयोगात्मक भूगोल, साहित्य भवन, आगरा
 - भल्ला, आर. एल. : प्रायोगात्मक भूगोल, के. डी प्रकाशन, अजमेर
 - मामोरिया, चतुर्भज : मानचित्र विज्ञान एवं प्रायोगात्मक भूगोल, साहित्य भवन, आगरा

- वर्मा, एल. एन. व लोढा, आर. एम. : प्रायोगात्मक भूगोल, राज. हिन्दी ग्रंथ अकादमी, जयपुर
- सिंह, एल. आर. : मानचित्र एवं प्रायोगात्मक भूगोल, सेन्ट्रल बुक डिपो, इलाहाबाद
- सिंह एवं कन्नोजिया : प्रायोगात्मक भूगोल की रूपरेखा, सेन्ट्रल बुक डिपो, इलाहाबाद