

I. Objective type questions (0.5 x 20 = 10)

Fill up the following:

- 1) The length of one link in a 20m chain is -----
- 2) The longest line in chain triangulation is called the -----
- 3) The quadrantal bearing of $346^{\circ} 12'$ is -----
- 4) The whole circle bearing of $S43^{\circ} 18' W$ is -----
- 5) The BB of a line AB whose FB is $38^{\circ} 14'$ is -----
- 6) The distant and inaccessible points can be located by -----method of plane tabling.
- 7) The correction for curvature is -----m.
- 8) The first reading taken after setting up of dumpy level is the -----
- 9) The vertical distance between two consecutive contours is called the -----
- 10) Theodolite fitted with verniers is called -----

True or False

- 11) In geodetic survey, the curvature of earth is ignored
- 12) Differential leveling is also known as compound leveling
- 13) Prismatic compass measures the angle between two lines directly
- 14) The length of engineer's chain is 100 feet
- 15) Planimeter is used for measuring the slope of hills.

Match the following

Sl. No	Group A	Correct matching word	Group B
16	Invar tape		One mile
17	Bench mark		Steel and Nickel
18	80 Gunter's chain		Photogrammetry
19	Check line		Point of known elevation
20	Tilt distortion		Proof line Theodolite

II Questions for short answers (1 x 14 = 14)

Define the following:

- 1) Meridian
- 2) Dip of needle
- 3) Level surface
- 4) GTS Bench mark
- 5) Hypsometry

Distinguish between

- 6) Terrestrial and aerial photogrammetry
- 7) Compensating and cumulative errors in chaining
- 8) Closed and open traverse
- 9) Fore bearing and back bearing
- 10) Contour interval and horizontal equivalent

What is meant by

- 11) Triangulation survey
- 12) Reference sketch
- 13) Flying height
- 14) Tilted photograph

III. Questions for short notes (Answer any 8 questions) (2 x 8 = 16)

- 1) Classify survey based on the instruments used
- 2) Briefly explain the fundamental principles of surveying
- 3) Explain how you would range a line between two points which are not intervisible
- 4) Write short note on clinometer
- 5) What are the methods of traversing and explain any one of them
- 6) What is meant by local attraction and how it is detected?
- 7) Explain Bowditch's rule
- 8) Give a list of permanent adjustments of transit theodolite
- 9) Write short note on Ceylon ghat tracer
- 10) Explain the method of determining reservoir volumes from contour maps

IV. Short essays (Answer any five questions) (4 x 5 = 20)

1. What are the sources of error in chaining and what precautions would you take to guard against them?
2. Explain the resection method of plane tabling. What is two point problem and how it is solved?
3. Describe the various methods of traversing with theodolite and discuss their merits and demerits.
4. The following consecutive readings were taken with a dumpy level:
3.864, 3.346, 2.932, 1.952, 0.854, 3.796, 2.639, 1.542, 1.934, 0.864, 0.665.
The level was shifted after the fifth and eighth readings. Calculate the reduced levels of the change points, and the difference of level between the first and last points.
5. The following offsets were taken from a chain line to a hedge.

Distance. m	0	6	12	18	24	36	48	60	72	81	90
Offset, m	3.60	3.00	2.40	1.80	1.20	1.50	2.10	2.40	3.00	3.30	3.50

Calculate the area enclosed between the chain line, the hedge and the end offsets by a) Simpson's rule and b) by trapezoidal rule.

6. Explain with the help of sketch, a phototheodolite and its working.

