Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Question No. 1 is Compulsory and attempt two questions from each section. All questions carry equal marks.

SECTION A

1 (a) Describe the component parts of a metric chain.
(b) Describe Dip and Declination at a place.
(c) Write short notes on temporary adjustment.
(d) Describe method used for alignment of a road.
(e) Differentiate between stadia and tangential system of tachometry. [4x5=20]

2 (a) Differentiate between direct and indirect method of ranging.
(b) Enumerate various types of errors in chain survey. [2x10=20]

3 (a) Describe a method of establishing a new Bench Mark at site of work.
(b) From an instrument a back sight on a vertically held staff on a BM was observed to be 2.535 and the fore sight was taken as 3.135m on a point B. The RL of BM was 250.750m. Find the RL of point B. [2x10=20]

4 (a) Differentiae between a Prismatic Compass and a Surveyor’s compass.
(b) In a closed traverse, the following bearings were observed, with a compass, calculate their interior angles. [2x10=20]

SECTION B

5 (a) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings:
2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684m.
Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of 432.284m.
(b) Explain Fly Levelling with its suitability. And also explain the various types of Bench Marks used in Levelling. [2x10=20]

6 (a) How do you measure a horizontal angle by direction method?
(b) How will you measure deflection angle of a survey line with a theodolite? [2x10=20]

8 (a) Describe a method of finding out horizontal angle with a Theodolite.
(b) Describe a method of laying a simple horizontal curve. [2x10=20]