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.

1. (20)
   (a) What is called as chain triangulation and survey stations?
   (b) What do you mean by survey line or base line, check lines and tie lines?
   (c) What do you mean by offset and write about oblique offset?
   (d) What is called as whole circle bearing and reduced bearing (Quadrantal bearing)?
   (e) Convert the following whole circle bearing to quadrantal bearings?
      (i) 22°30’
      (ii) 170°12’
   (f) Convert the following quadrantal bearing to whole circle bearing
      (i) N 12°24’ E
      (ii) S 31° 36’ E
   (g) What is called as Local attraction and what are its causes?
   (h) What do you mean by obstacles in chaining, write about one method of obstacles to ranging but not chaining?
   (i) What are the different between Prismatic compass and surveyor’s compass?
   (j) What is called as Fore bearing and Back bearing?

SECTION A

2(a) The following are bearings taken on a closed compass traverse:

<table>
<thead>
<tr>
<th>Line</th>
<th>F.B.</th>
<th>B.B</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>80°10’</td>
<td>259°0’</td>
</tr>
<tr>
<td>BC</td>
<td>120°20’</td>
<td>301°50’</td>
</tr>
<tr>
<td>CD</td>
<td>170°50’</td>
<td>350°50’</td>
</tr>
<tr>
<td>DE</td>
<td>230°10’</td>
<td>49°30’</td>
</tr>
<tr>
<td>EA</td>
<td>310°20’</td>
<td>130°15’</td>
</tr>
</tbody>
</table>

Compute the interior angles and correct them for observational errors. (15)

(b) Give definition of Level line, Horizontal plane and Mean sea level. (5)

3(a) What are the equipments and methods used in the plane table surveying? (10)

(b) What are the procedures of setting out of Plane table surveying? (10)

4(a) Write the definition of followings.
   (i) Fore Sight
   (ii) Intermediate Sight
   (iii) Back Sight
   (iv) Height of Instrument
   (v) Change Point

(b) The following consecutive readings were taken along AB with a 4m leveling staff on a continuously sloping ground at an interval of 20 meters:
1.450, 2.630, 3.875, 0.655, 1.745, 2.965, 3.945, 1.125, 2.475, 3.865 on B. The elevation of A was 60.350. Enter the above readings in a level book form and Workout the R.Ls. By Rise and Fall Method. (10)

SECTION B

5(a) Draw a clean sketch of Dumpy level machine and give the name of its parts? (10)

(b) Write the adjustment of dumpy level machine in brief? (10)

6(a) What are the errors and mistakes in chaining explain about its? (10)

(b) What is surveying? Mention all types of surveying in detail? (10)

7(a) Write about Intersection method and Traversing method.? (10)

(b) Explain the prismatic compass and Surveyor’s compass in detail? (10)