B. Tech.
(Sem. III) (Odd. Sem.) Examination, 2010-11
Basic Surveying

Time: 3 Hours
[Total Marks: 100]

Note: Attempt all questions.

1. Attempt any four parts:
   (a) Explain the following terms:
       (i) Precision  (ii) True error
   (b) What is local attraction? How it is detected and eliminated?
   (c) Define the following terms:
       (i) True bearing
       (ii) Magnetic bearing
       (iii) back bearing
       (iv) Magnitude Declination
       (v) Reference Meridians
   (d) What is face left and face right observations? Why it is necessary to take both face observations?
   (e) Write short note on electronic total station.
   (f) Write the uses of counters.

2. Attempt any four parts:
   (a) Write the characteristics of transition curve
   (b) Discuss the ideal transition curve
   (c) What do you mean by satellite stations? Write their functions.
(d) What do you mean by strength of figures in triangulation system? Explain.
(e) Differentiate between curvature and refraction.
(f) Write the principle of traversing by compass.

3 Attempt any two parts:
(a) Write the advantages and disadvantages of plane tableing.
(b) Explain the resection by three point problem.
(c) The following bearings were observed in running a closed traverse.

<table>
<thead>
<tr>
<th>Line</th>
<th>F.B.</th>
<th>B.B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>71° 05'</td>
<td>258° 20'</td>
</tr>
<tr>
<td>BC</td>
<td>110° 20'</td>
<td>292° 35'</td>
</tr>
<tr>
<td>CD</td>
<td>161° 35'</td>
<td>341° 45'</td>
</tr>
<tr>
<td>DE</td>
<td>220° 50'</td>
<td>40° 05'</td>
</tr>
<tr>
<td>EA</td>
<td>300° 50'</td>
<td>121° 10'</td>
</tr>
</tbody>
</table>

Determine the correct bearings of the lines.

4 Attempt any two parts:
(a) Explain different types of tapes.
(b) Give the differences between prismatic compass and surveyor's compass in tabular form.
(c) What are the different errors in theodolite work? How are they eliminated?

5 Attempt any two parts:
(a) Explain the methods of setting out simple circular curves.
(b) Explain the principle of stadia systems with one example.
(c) Write short note on:
   (i) Principle of surveying
   (ii) Vertical curves.