Diploma / Integrated B.Tech 4th Semester (CE) Examination
June, 2014
Surveying - II

Subject Code: CEL-038

Time Allowed: 03 hours. Maximum Marks: 100

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.

Q1. Describe briefly the following:
   (i) Latitude and departure
   (ii) Transit and non-transit theodolite
   (iii) Transition curve
   (iv) Minor instruments
   (v) Reconnaissance survey  [20]

Q2. Describe the characteristics of different contours. Define and explain the following:
   Contour interval, grade contour, vertical cliff and horizontal equivalent  [20]

Q3. Calculate the length of CD and bearing of line AB from the following traverse observations:

<table>
<thead>
<tr>
<th>Line</th>
<th>Bearing</th>
<th>length(m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>Roughly east</td>
<td>150.00</td>
</tr>
<tr>
<td>BC</td>
<td>17800’</td>
<td>75.50</td>
</tr>
<tr>
<td>CD</td>
<td>27000’</td>
<td>Not obtained</td>
</tr>
<tr>
<td>DA</td>
<td>100’</td>
<td>6300’</td>
</tr>
</tbody>
</table>

Q4. What are major differences between a Tacheometer and a Transit Theodolite? Describe with the help of a neat sketch the component parts of a theodolite.  [20]

SECTION B

Q5. In order to determine the constant of tacheometer, two distances 201m and 400m were accurately measured from the instrument and readings on stadia rods were taken as under:

<table>
<thead>
<tr>
<th>Distance in meters</th>
<th>lower stadia reading</th>
<th>Upper stadia reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>2.00</td>
<td>4.00</td>
</tr>
<tr>
<td>400</td>
<td>0.50</td>
<td>4.50</td>
</tr>
</tbody>
</table>

Determine the stadia constants and find the distance when the readings of wires were 1.500 and 4.500, the line of sight being horizontal.  [20]

Q6. What are the methods of setting out simple curve? Explain Rankine’s method of tangential angle for setting out a curve. Also state different elements of a simple horizontal curve.  [20]

Q7 Write short notes on the following:
   (i) Total Station
   (ii) EDM
   (iii) Ceylon Ghat Tracer
   (iv) Tangent Clinometer  [20]