B.TECH IN CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2011

BICE-002 : SURVEYING

Time : 3 hours   *Maximum Marks : 70*

Note : *Attempt any seven questions.*
All the questions are to be answered in English language only.

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1. What are the basic principles of surveying ? **10**
   Discuss the classification of surveying based on the purpose for which it is carried out.

2. (a) Differentiate between accuracy and precision. Why may a measurement be very precise, but still inaccurate ? **5**

   (b) What are different sources of errors ? Give one example of each. **5**

3. Enumerate the different methods of making a linear measurement ? Describe various types of measuring chains. What are the advantages of a chain over a steel band ? **10**

4. Below are the bearings observed in a traverse **10** survey conducted with a prismatic compass at a place where local attraction was suspected.

Line	F.B.	B.B.
PQ	124°30'	304°30'
QR	68°15'	246°0'
RS	310°30'	135°15'
SP	200°15'	17°45'

At what stations do you suspect local attraction? Find the corrected bearings of the lines and also calculate the included angles.

5. Explain the working of a dumpy level with a **10** sketch. What are its various temporary adjustments ?

6. The following consecutive readings were taken **10** with a level on a continuously sloping ground at a common interval of 20 m.

0.600, 1.235, 1.860, 2.575, 0.235, 0.915, 1.935, 2.870, 0.565, 1.825, 2.725.

The reduced level of the first point was 192.125. Rule out a page of level book, enter the above readings. Calculate the reduced levels of the points, using rise and fall method.

7. What are the effects of curvature of earth and **10** refraction on the accuracy of levelling ? Drive an expression for the corrections due to both the effects.

8. What is resection ? Describe any **two** methods of   **10**
    resection.

9. Discuss the procedure of measuring a horizontal   **10**
    angle with a theodolite and explain the temporary
    adjustments of the instruments.

10. Write a short note on any *two* of the following :   **10**
    (i)   Bowditch rule.
    (ii) Three point problem.
    (iii) Prismatic compass.

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