# B.TECH. CIVIL ENGINEERING (BTCLEVI)

00453

## Term-End Examination

## December, 2012

## BICE-002 : SURVEYING

*Time : 3 hours*        *Maximum Marks : 70*

***Note : Attempt any seven questions.***

1. (a) Explain in brief the importance of surveying.   5
   Write the principles of surveying and its classification.

   (b) The following interior angles were measured 5
   with a compass in a closed traverse. The beaming of line AB was measured as 60°00'.
   Calculate the bearings of all other line if.

   $\angle A = 140° 10'$,   $\angle B = 99° 8'$

   $\angle C = 60° 22'$,   $\angle D = 69° 20'$

2. (a) What are the various errors that can arise 5
   during chaining ?

   (b) Write the steps to be followed for measuring 5
   a length with the help of tape.

3. (a) The following bearings were observed with **5** a compass.

AB - 74° 0'     BA - 254° 0'

BC - 91° 0'     CB - 271° 0'

CD - 166° 0'    DC - 343° 0'

DE - 177° 0'    ED - 0° 0'

EF - 189° 0'    FE - 9° 0'

Where do you suspect the local attraction ? Find the correct bearings.

(b) Differentiate between surveyor's compass **5** and prismatic compass with neat sketches.

4. Explain rise and fall method. The following **10** consecutive readings were taken with a level and 5 meter levelling staff on continuously sloping ground at a common interval of 20 metres : 0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110, 4.485. The reduced level of first point was 208.125 m. Rule out a page of a level field book and enter the above readings. Calculate reduced levels of points by rise and fall method.

5. (a) Define the terms : **5**

   (i) Benchmark

   (ii) Level surface

   (iii) Bubble Line

   (iv) Reduced level

   (v) Mean Sea Level

(b) Explain the following : 5
    (i)   Differential levelling
    (ii)  Fly levelling

6. What are the various methods of plane - table 10
surveying ? Explain any two methods with neat
sketches.

7. List the different method of resection and explain 10
three point problem with the help of any one
method.

8. How will you measure a horizontal and vertical 10
and angles with the help of a theodolite ? Write
the steps involved.

9. Write short notes on *any two* of the following : 10
    (a)   Three foot screw method
    (b)   Height of instrument method
    (c)   Sources of errors in surveying

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