BACHELOR OF ARCHITECTURE (BARCH)

Term-End Examination

December, 2011

00522

BAR-056 : TOPOGRAPHIC SYSTEMS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt **any five** questions.*
*All questions carry **equal** marks.*

1. (a) What is surveying ? State the basic 7
principles of surveying.

   (b) State various instruments used for chain and 7
compass surveying.

2. (a) Define the following terms : 7
   (i) Main station
   (ii) Tie station
   (iii) Check line
   (iv) Base line
   (v) Offsets
   (vi) Tie lines
   (vii) Main Survey Lines
   Give sketches for each item.

(b) A survey line CDE crosses a river. D being   7
     on the near bank and E on the opposite. A
     perpendicular DF = 150 m is ranged at D
     on the left side. From F bearings of E and C
     are observed to be 67°-30′ and 157°-30′
     respectively. Chainage of C is 1520 m and
     that of D is 1620 m, find the chainage of E.

3. (a) Sketch the prismatic compass showing its   7
         various parts. Explain the significance of
         each part.

    (b) The following are the observed bearings of   7
         the lines of a closed traverse ABCD taken
         with a compass in a place where local
         attraction was suspected :-

Line	F. B.	B.B.
AB	66°-20′	246°-20′
BC	139°-30′	318°-50′
CD	189°-40′	11°-20′
DA	300°-30′	119°-30′

Find the corrected bearings of the lines.

4. (a) Explain the following in Plane Table
         Surveying :   2x3½=7
         (i)   Method of Radiations
         (ii) Method traversing

    (b) How is chain survey plotted and checked ?   7

5. (a) Describe the method of Repetition for the   7
        measurement of horizontal angle by
        Theodolite.

    (b) Describe the temporary adjustment of a   7
        Dumpy Level.

6. (a) Define *any four* of the following terms :   4
        (i)   Bench mark
        (ii)   A Level Line
        (iii) A Horizontal Line
        (iv)   Line of Collimation
        (v)   Back Sight Reading
        (vi)   Fore Sight Reading
        (vii) Reduced Level
        (viii) Mean sea level

    (b) The following consecutive readings were   10
        taken with a Dumpy Level and 3 m
        Levelling staff on a continuously sloping
        ground
        0.605, 1.235, 1.860, 2.575, 0.235, 0.910,
        1.435, 2.675, 0.565, 1.820, 2.725.
        Determine the R.L. of all points, if R.L. of
        first point is 100.00 m.

7. (a) Define a contour. What are the   7
        characteristics of contour ?

    (b) Discuss the uses of a contour plan.   7

8. Write short notes on *any four* of the following :

    3½x4=14

    (a) Reciprocal Levelling

    (b) Method of resection in plane tabling

    (c) Corrections in Linear measurement

    (d) Compare Prismatic Compass with the Surveyor's Compass.

    (e) Change point in levelling.

    (f) Fundamentals of G.I.S.

    (g) Uses of contour maps.

    (h) Obstacles in chain survey

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