Code: 9A01303

R09

B. Tech II Year I Semester (R09) Supplementary Examinations, May 2013
**SURVEYING**
(Civil Engineering)

Time: 3 hours                                                                    Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1       Explain the following terms with neat sketches:
    (a)   Base line.
    (b)   Check line.
    (c)   Tie line.
    (d)   Oblique offset.

2   (a)   What considerations would you have while selecting survey stations and survey lines in a
          chain survey?
    (b)   Write a short note on the marking of survey stations and referencing.

3   (a)   What are the uses of a contour map? Explain with an example, how will you determine the
          intervisibility of points. How will you determine the intervisibility of points, if the contour map is
          given to you?
    (b)   R.L. of a factory floor is 520.000 m. staff reading on the floor is 1.255 m and reading on a staff
          held inverted with its bottom touching the beam at the roof-truss is 3.785 m. Find the R.L. of
          the beam.

4       A chain line was divided into eight sections of 12 m each and offsets were taken from the
        chain line to a hedge. The lengths of the offsets were (in meters) 0.0, 5.2, 7.4, 8.6, 7.9, 8.5,
        8.2, 9.1 and 7.6. Find the area between the chain line, the first and last offsets, and the
        boundary by:
    (a)   The average ordinate rule.
    (b)   The trapezoidal rule and
    (c)   The Simpson's rule.

5       Give a list of the permanent adjustments of a transit theodolite and state the object of each of
        the adjustment. Describe how you would make the trunnion axis perpendicular to the vertical
        axis.

6   (a)   Explain the basic principle of tachometry.
    (b)   A tachometer was set up at station P and observations were taken on a staff held at Q, the
          vertical reading being zero. The readings were 1.980 m. 1.660 m and 1.340 m. The reading
          from P to a staff held at a BM of elevation 1020.50 m was 2.85 m. Find the distance PQ and
          the elevation of point Q. The instrument constants were 100 and 0.5.

7   (a)   Why are the curves provided? Explain different types of curves with neat sketches.
    (b)   Two straights intersect at a chainage of 3500.5 m with an angle of intersection of 156º. These
          two straights are to be connected by a simple circular curve of 200 m radius. Calculate the
          data necessary by the method of offsets from the chords produced with a peg interval of 20 m.

8   (a)   Describe the required steps for the initial setting of a total station for a fieldwork.
    (b)   What are the advantages and disadvantages of total station?

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