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**Second Semester B.Arch. Degree Examination, Dec.2013/Jan.2014**  
**Surveying and Levelling**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1
  - a. Discuss in brief the principles of survey with neat sketches. (10 Marks)
  - b. Define shrunk scale. (04 Marks)
  - c. The area of the plan of an old survey plotted to a scale of 10 meters to 1cm measures now as 100.2 cm<sup>2</sup> as found by a planimeter. The plan is found to have shrunk so that a line originally 10cm long now measures 9.7cm only. Find: i) the shrunk scale; ii) True area of the survey. (06 Marks)
  
- 2
  - a. What are the accessories required for chain surveying? (10 Marks)
  - b. A 20m chain was found to be 10cm too long after chaining the end of day's work after chaining a total distance of 2900m. Find the true distance if the chain was correct before the commencement of the work. (10 Marks)
  
- 3
  - a. Explain the methods of erecting perpendicular to a chainline from a point on the chain line. (10 Marks)
  - b. A survey line BAC crosses a river, A and C being on the near and distant banks respectively. Standing at D, a point 50 meters measured perpendicularly to AB from A, the bearings of C and B are 320° and 230° respectively AB being 25m. Find the width of the river. (10 Marks)
  
- 4
  - a. What are the advantages and disadvantages of plane table survey? (10 Marks)
  - b. List the methods of plane table survey and explain any one with neat sketch. (10 Marks)
  
- 5
  - a. Define leveling, datum, elevation, mean sea level and bench mark. (10 Marks)
  - b. The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings: 2.228; 1.606; 0.988; 2.090; 2.864; 1.262; 0.602; 1.982; 1.044, 2.684 meters. Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of 432.384m. (10 Marks)
  
- 6
  - a. Define the terms:
    - i) Face left observation.
    - ii) Face right observation.
    - iii) Swinging the telescope.
    - iv) Transiting the telescope.
    - v) Telescope normal in theodolite survey. (10 Marks)
  - b. Explain the measurement of horizontal angle by repetition method, using theodolite. (10 Marks)
  
- 7
  - a. Describe with the help of sketches. the characteristics of contour. (10 Marks)
  - b. Explain with sketches, the uses of contour maps. (10 Marks)
  
- 8
 

Write short notes on:

  - a. Cross staff
  - b. Perpendicular offset and oblique offset.
  - c. Orientation of plane table.
  - d. Classification of surveying. (20 Marks)