09ENG2.6
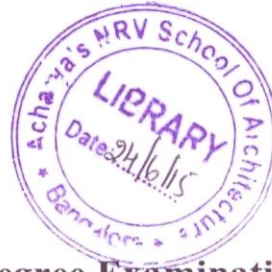
Second Semester B.Arch. Degree Examination, June/July 2015
Surveying and Leveling

Time: 3 hrs.   Max. Marks:100

Note: 1. *Answer any FIVE full questions.*
2. *Assume missing data suitably.*

1 a. Explain briefly Plane surveying and Geodetic surveying.   **(04 Marks)**
   b. Explain in detail the classification of surveying.   **(10 Marks)**
   c. A 20 mts chain was found to be 4cms too long after chaining 1400 mts. It was 8 cms too long at the end of day's work after chaining a total distance of 2420 mts. If chain was correct before commencement of work, find time distance.   **(06 Marks)**

2 a. Explain different methods of chaining on sloping ground (any three methods). **(09 Marks)**
   b. What are errors encountered in chain surveying?   **(06 Marks)**
   c. With the help of a neat sketch, briefly explain the working of line ranger. **(05 Marks)**

3 a. With neat sketch, explain "Reciprocal Ranging".   **(06 Marks)**
   b. Explain the following corrections applied to the tape in Base line measurement :
      i) Correction to absolute length   ii) Correction to temperatures   iii) Correction to Pull or Tension   iv) Correction for sag.   **(08 Marks)**
   c. Explain Gunters chain in detail.   **(06 Marks)**

4 a. Explain the obstacles encountered in chain surveying. Explain any 2 methods in each obstacle.   **(12 Marks)**
   b. Explain chaining on sloped ground.   **(08 Marks)**

5 a. Explain with neat sketch, Radiation and Intersection.   **(10 Marks)**
   b. What are advantages and disadvantages of Plain table survey?   **(10 Marks)**

6 a. Define the following :
      i) Level surface   ii) Horizontal surface   iii) Reduced level   iv) Bench mark
      v) Mean sea level datum.   **(05 Marks)**
   b. Briefly differentiate between Differential leveling and Reciprocal leveling. **(05 Marks)**
   c. The following consecutive readings were taken with a level and 4 mt leveling staff on a continuously sloping ground
      0.755, 1.545, 2.335, 3.345, 3.655, 0.525, 1.275, 2.630, 2.895, 3.565, 0.345, 1.5250, 1.850, 2.675, 3.775. 1st Reading was taken on BM of RL 200.000 mts.
      Rule out a page of level book and enter the readings. Calculate the RL of stations by line of collination method. Apply Normal check.   **(10 Marks)**

7 a. Explain how the horizontal angles are measured in the theodelite by
      i) Method of Repitition   ii) Method of Reiteration.   **(14 Marks)**
   b. What are the characteristics of contour?   **(06 Marks)**

8 Write short notes on any four of the following :
   a. Principles adopted in surveying.
   b. Shrunk Scale - & its importance.
   c. Three point problem & its application in surveying.
   d. Different types of chains used in chaining process.
   e. With neat sketch, explain optical squares.
   f. Direct and indirect method of countering.
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