USN ☐☐☐☐☐☐☐☐☐☐   **09ENG2.6**

Second Semester B.Arch. Degree Examination, Dec.2017/Jan.2018
Surveying & Levelling

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. Define surveying. Briefly explain principles of surveying.   **(10 Marks)**
   b. Explain classification of surveying.   **(10 Marks)**

2 a. Explain ranging and different types of ranging.   **(10 Marks)**
   b. A 20m chain was found to be 10 cm long after chaining a distance of 1500m. It was found to be 18 cm too long at 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 chainline.   **(10 Marks)**
   b. In passing an obstacle in the form of a pond stations A and C, on the mainline were taken on the opposite sides of the pond. On the left of AD, a line AB, 200m long was laid down and a second line AC, 250m long, was ranged on the right of AD. The points B, D & C being in the same straight line. BD and DC were then chained and found to be 125 m and 150 m respectively. Find the length AD.   **(10 Marks)**

4 a. What are the accessories required for plane table surveying?   **(10 Marks)**
   b. List the methods of plane table survey and explain any one method with neat sketch.   **(10 Marks)**

5 a. Define : Levelling, Datum, Elevation, Mean sea level and Bench mark.   **(10 Marks)**
   b. The following consecutive readings were taken with a level and 5 m leveling staff on continuously sloping ground at a common interval of 20 m 0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110, 4.485. The reduced level of the first point was 208.125m. Enter the above readings in a page of a level book and calculate the R.L. of points by rise and fall method. Also the gradient of the line joining the first and the last point.   **(10 Marks)**

6 a. Define the terms: (i) Horizontal axis   (ii) Transiting   (iii) Line of collimation   (iv) Telescope normal   and (v) Telescope inverted.   **(10 Marks)**
   b. Explain with sketch temporary adjustment of a 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. Advantages and disadvantages of plane table
   b. Perpendicular and oblique offset
   c. Orientation of plane table
   d. Types of chain   **(20 Marks)**

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