

USN

--	--	--	--	--	--	--	--	--	--

09ENG2.6

**Second Semester B.Arch. Degree Examination, Dec.2014/Jan.2015**  
**Surveying and Levelling**

Time: 3 hrs.

Max. Marks: 100

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

- 1 a. Explain the classification of surveying. (10 Marks)  
 b. The area of the plan of an old survey plotted to a scale of 14m to 1cm now measures 125cm<sup>2</sup>. The plan has shrunk such that a line originally 18cm now measures 17.4cm. Find the shrunk scale and the true area of the field. (10 Marks)
- 2 a. Explain reciprocal ranging. (06 Marks)  
 b. A 20m chain was found to be 12cm too long after chaining a distance of 2500m. It was found to be 20cm too long at the end of day's work after chaining a total distance of 4800m. Find the true distance of the chain was correct before the commencement of the work. (14 Marks)
- 3 a. Explain the following terms with respect to chain surveying:  
 i) Survey station  
 ii) Base line  
 iii) Tie line  
 iv) Check line  
 v) Oblique offset. (10 Marks)  
 b. Explain any two instruments used to set out right angle to a chain line. (10 Marks)
- 4 a. Explain any one method like methods of plane traversing on intersection tabling. (12 Marks)  
 b. Explain plane table accessories. (08 Marks)
- 5 a. Explain the following terms in leveling:  
 i) Bench mark.  
 ii) Height of instrument.  
 iii) Back sight.  
 iv) Turning point.  
 v) Fore sight. (10 Marks)  
 b. The following staff readings were observed successively with a dumpy level, the instrument having been moved after third, sixth and eighth readings. 2.228, 1.606, 0.988, 2.600, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 metres. Enter a page of a level book and calculate RLS of points by rise and fall method. (10 Marks)
- 6 a. Explain the following terms related to theodolite:  
 i) Vertical axis.  
 ii) Transiting.  
 iii) Swinging the telescope.  
 iv) Face right observation.  
 v) The line of collimation. (10 Marks)  
 b. Explain how do you measure horizontal angle by repetition method. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.

- 7 a. With neat sketches, explain the different characteristics of contours. (10 Marks)  
b. Write short notes on direct and indirect methods of contouring. (10 Marks)

- 8 Explain briefly any four:  
a. Contour intervals.  
b. Map and plan.  
c. Temporary adjustments of dumpy level.  
d. Reciprocal levelling.  
e. Uses of contour maps. (20 Marks)

\*\*\*\*\*

Highly confidential document EDC - 192, @ 15-12-2014 08:46:41