00411

BAR-056

BACHELOR OF ARCHITECTURE (B.Arch.)
Term-End Examination
December, 2015

BAR-056 : TOPOGRAPHIC SYSTEMS

Time : 3 hours   *Maximum Marks : 70*

*Note : Attempt any **five** questions. All questions are of equal marks.*

1. (a) Explain the basic principles of surveying with neat sketches.   7

    (b) What is the sensitivity of a bubble tube ? How is it determined ?   7

2. (a) Explain the booking of a field book.   7

    (b) Find the horizontal distance between stations A and D, if the measurements were carried out along rising and falling slopes as follows :   7

    AB 500·65 m along a rising slope of 5·65°

    BC 700·35 m along a gradient of 1 : 18

    CD 400·00 m along a falling slope of 2·56 in 20 m

3. (a) Explain true meridians, magnetic meridians, fore bearing, back bearing and WBC.   7

   (b) WBC of the lines of a traverse ABCDA are given below. Find the interior angles.   7

Line	Bearing
AB	70° 30′
BC	120° 45′
CD	223° 30′
DA	320° 47′

4. (a) Explain the radiation and intersection methods of plane table.   7

   (b) What are the advantages and disadvantages of plane table surveying ?   7

5. (a) Discuss the errors in theodolite work.   7

   (b) Explain the step-by-step procedure to find the vertical angle between two points.   7

6. (a) Explain closing error. How are the magnitude and direction of closing error determined ?   7

   (b) The survey data of a traverse is given below. Find the missing measurements.   7

Line	AB	BC	CD	DA
Length	201·8	288·4	192·6	missing
Bearing	N 45° 00′ W	N 60° 30′ E	S 34° 45′ E	missing

7. (a) Explain profile levelling and cross-sectioning. 7

(b) The following readings were taken during reciprocal observations to find the difference in elevation between two points. Find the true difference in elevation between them. If the RL of A is 127·945 m, find the RL of B. 7

Instruments at	A	B
Staff at A	1·345	1·965
Staff at B	1·525	2·015

8. Write short notes on any *four* of the following :

$$4 \times 3\frac{1}{2} = 14$$

(a) Reciprocal ranging

(b) Site survey technique

(c) Classification of survey

(d) Contouring

(e) Audio Visual presentation

(f) Rise and fall method