BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

June, 2017

ΠΠ260

BAR-056 : TOPOGRAPHIC SYSTEMS

Time : 3 hours   *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) Define the following terms :   7
    (i) Relative precision
    (ii) Degree of accuracy
    (iii) Order of accuracy

   (b) The length of a survey line when measured with a chain of 20 m nominal length was found to be 840·5 m. When the chain was compared with a standard, it was found to be 0·1 m too long. Find the correct length of the line.   7

2. (a) Describe a method of indirect contouring.   7

   (b) R.L. of a workshop floor is 30·500. Staff reading on the floor is 1·610 m. Staff reading, when it is held inverted with the bottom touching the tie beam of the roof truss, is 3·700 m. Determine the height of the tie beam above the floor.   7

3. (a) Differentiate between the following :   7

        (i) True meridian and Magnetic meridian

        (ii) Declination and Dip

    (b) A stream is flowing from West to East. In order to find the width of the stream two points, P and Q are selected on the southern bank such that the distance, PQ = 75 m. Point P is westward. The bearings of a tree, R on the northern bank are observed to be 38° and 338° respectively from P and Q. Determine the width of the stream.   7

4. (a) What is meant by sensitivity of a bubble tube ? How is it determined ?   7

    (b) What is "balancing of sights" ? What is its importance in the field ? Discuss briefly.   7

5. (a) What are the various errors in plane table surveying ? Discuss briefly.   7

    (b) Differentiate between "height of instrument method" and "rise and fall method". Which method is more accurate ?   7

6. (a) Write the two basic principles of surveying.   7

    (b) Explain the following terms briefly :   7

        (i) Face left condition

        (ii) Line of collimation

        (iii) Swinging of telescope

7. (a) Work out the difference in levels between points P and Q, if curvature and refraction effects are taken into account in the following case : 7

Level is set over P and staff held at Q

R.L. of P = 150·000

Height of instrument of P = 1·000

Reading of staff at Q = 1·800

Distance PQ = 400 m

(b) What is a "total station" ? Discuss the advantages of its use briefly. 7

8. Write short notes on any *four* of the following : $4×3\frac{1}{2}=14$

(a) Prismatic Compass

(b) Limiting Length of Offsets

(c) Local Attraction

(d) Remote Sensing

(e) Barometric Levelling

(f) Types of Tapes

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