BACHELOR OF ARCHITECTURE (B.Arch.)
Term-End Examination
June, 2019

BAR-056 : TOPOGRAPHIC SYSTEMS

Time : 3 hours   *Maximum Marks : 70*

Note :   (i)   *Attempt **any five** questions.*

       (ii)   *All questions carry equal marks.*

1.   (a)   What is surveying ? Write the applications of surveying in detail.   **2+5=7**

     (b)   Explain the terms (i) Precision (ii) accuracy. Briefly explain types of errors.   **3+4=7**

2.   (a)   Explain the method of reciprocal ranging. When do you need it ?   **5+2=7**

     (b)   A chain was tested before starting the survey and was found to be exactly 20 m. At the end of the survey it was tested again and was found to be 20.12 m. Area of the plan of the field drawn to a scale of 1 cm = 6 m was 50.4 cm². Find the true area of the field in sq. metres.   **7**

3. (a) With neat sketches indicate the conventional   9
         symbols used for the following cases in
         surveying :

         (i)   Triangulation station

         (ii)   Railway line : Double

         (iii) Road bridge

         (iv)   River

         (v)   Road under railway

         (vi)   Boundaries with pillars

    (b) Write any five points which should be   5
         considered while selecting station points.

4. (a) Differentiate between prismatic compass   7
         and surveyor's compass.

    (b) The following bearings were observed with   7
         a compass. Calculate the interior angles :

Line	Fore bearing
AB	64°30'
BC	130°0'
CD	47°0'
DE	210°30'
EA	310°30'

5. (a) List the accessories of a plane table.   5

    (b) Explain the two - point problem and its   9
         solution.

6. (a) The following consecutive readings are taken 10 with a level and a 4m levelling staff along continuously sloping line AB at a common interval of 20 m; 0.385, 1.030, 1.925, 2.825, 0.625, 2.005, 3.110. The RL of the first point was 200.00 m. Enter the readings in a level book and calculate the RLs of each point by rise and fall method and calculate the gradient of the line joining first and the last points.

(b) Define the terms : 4

(i) Contour lines

(ii) Contour interval

(iii) Horizontal equivalent

(iv) Contour gradient

7. (a) Define the following term in Theodolite 6 survey (i) Line of collimation (ii) Face left and face right condition (iii) Swinging of telescope

(b) Explain the temporary adjustment of transit 8 theodolite.

8. Write short notes on **any four** of following : **4x3½=14**

(a) Effect of curvature in levelling

(b) Bench Mark

(c) Magnetic Dip

(d) Local attraction

(e) Offsets in chain surveying