

BACHELOR OF ARCHITECTURE (B ARCH)

Term-End Examination

June, 2013

BAR-056 : TOPOGRAPHIC SYSTEMS

Time : 3 hours

Maximum Marks : 70

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- Note :* (i) *Attempt any five questions.*
(ii) *All questions carry equal marks.*
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1. (a) State various instruments used for chain and compass survey. 7
(b) Discuss in brief the use and care of surveying instruments. 7
2. (a) Explain the basic principles of surveying. State classifications of survey by function. 7
(b) Define the following terms : 7
(i) Main station
(ii) Tie station
(iii) Base Line
(iv) Check Line
(v) Offsets

Also draw sketches for each of them.

3. (a) Differentiate between Prismatic Compass and Surveyor's Compass. 7
- (b) A 30m chain was tested before the commencement of the day's work and found to be correct. After completion of 100 chains, the chain was found to be 5 cm too long. At the end of day's work, after chaining a total of 180 chains, the chain was found to be 10 cm too long. What was the true distance chained ? 7
4. (a) State various methods used for Plane Table Surveying and explain any one in detail. 7
- (b) The following bearings were taken in a compass traverse survey : 7

Line	F.B.	B.B.
AB	$124^{\circ} - 30'$	$304^{\circ} - 30'$
BC	$68^{\circ} - 15'$	$246^{\circ} - 00'$
CD	$310^{\circ} - 30'$	$135^{\circ} - 15'$
DA	$200^{\circ} - 15'$	$17^{\circ} - 45'$

In which stations do you suspect local attraction ? Find the corrected bearings of the sides of this traverse.

5. (a) Explain the temporary adjustments of a Theodolite. How these can be tested ? 7
- (b) Discuss in brief various methods used for contouring. 7

6. (a) What are the various characteristics of contour ? Also state the uses of a contour map. 7

(b) The following readings were successively taken with an instrument in levelling work : 7

0.320, 0.530, 0.620, 1.780, 1.910, 2.350,
1.750, 0.350, 0.690, 1.240 and 0.980.

The position of the instrument was changed after the third, seventh and ninth readings. Draw out the form of a level book and enter above readings properly. Assume RL of 1st point as 81.530m, calculate R.L.'s of all other points and apply usual checks.

7. (a) Explain the process for measuring a horizontal angle with the help of a Theodolite by the method of Repetition. 7

(b) Define the following terms : 7

(i) Line of collimation

(ii) Bench Mark

(iii) Change Point

(iv) Face right and Face left observations

(v) Contour

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

4x3½=14

- (a) Fundamentals of G.I.S.
 - (b) Orientation of Plane Table
 - (c) Reciprocal Levelling
 - (d) Local attraction
 - (e) Closing error
 - (f) Aspects of surveying for the Architect
 - (g) Degree of accuracy
 - (h) Instruments used in Plane Table Survey
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