

**BACHELOR OF ARCHITECTURE (B.Arch.)**

**Term-End Examination**

00292

December, 2017

**BAR-056 : TOPOGRAPHIC SYSTEMS**

*Time : 3 hours*

*Maximum Marks : 70*

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

1. (a) Explain a method of chaining on a sloping ground. 7
- (b) The volume of an earthwork was computed to be  $4000 \text{ m}^3$  when measured with a tape of 30 m nominal length. If the tape was 0.1 m too long, find the correct volume. 7
2. (a) Define True bearing, Magnetic bearing and Arbitrary bearing. 7
- (b) In a closed traverse PQRST, the bearing of the line PQ was  $150^\circ 30'$ . The included angles were measured as follows :  
 $\angle P = 130^\circ 10'$ ,  $\angle Q = 89^\circ 45'$ ,  $\angle R = 125^\circ 22'$ ,  
 $\angle S = 135^\circ 34'$ ,  $\angle T = 59^\circ 9'$ .  
Determine the bearings of all other lines. 7

3. (a) Explain temporary adjustment of a dumpy level briefly. 7
- (b) Find out the missing data and complete the level book. Apply arithmetic check also. 7

BS	IS	FS	HI	RL	Remark
4.390			×	×	Point 1
	×			192.00	Point 2
3.910		6.520	×	×	Point 3
	5.390			191.620	BM
	4.730			×	Point 4
	×			203.300	Point 5 staff inverted
4.330		×	×	×	Point 6
		2.990		194.830	Point 7

4. (a) What is Direct Method of Contouring? What are the advantages and disadvantages of it? 7
- (b) If the sensitivity of the bubble tube of a level is 30" of arc per division, determine the distance of a point at which the combined curvature and refraction correction become numerically equal to the error induced by dislevelment of one division. 7

5. (a) What are the different types of Alidades ?  
Discuss the use of a plain alidade briefly. 7
- (b) Describe radiation method of plane table surveying. 7
6. (a) Discuss the procedure of measuring a horizontal angle with a theodolite. 7
- (b) Define the following terms : 7  
Centering, Vertical Axis and Line of Collimation.
7. (a) Explain the Bowditch rule for adjusting a compass traverse. 7
- (b) Discuss any two errors in compass surveying. 7
8. Write short notes on any *four* of the following :  $4 \times 3 \frac{1}{2} = 14$
- (a) Obstacles in Chaining
- (b) Difference between Prismatic and Surveyor's Compass
- (c) Construction of Simple Telescope
- (d) GIS
- (e) Use of Contour Maps
- (f) Three-Point Problem