

SECTION-B

2. a) Give the primary classification of 'Survey' and distinguish between them.
b) Explain the chaining operation. Who is the actual surveyor- leader or the follower, why? A road 1557m long was found, when measured by a defective 30m chain, to be 1550m. How much correction does the chain need?
3. What is a two point problem? Explain with a neat sketch the procedure of solving a two point problem in plane table surveying.
4. What are the characteristics of contour lines?
5. Why is balancing of backsight and foresight necessary? Explain with a neat sketch.
6. To find the RL of station B, two observations are taken by a theodolite from station A one to a BM and the other to the station B. The record are as follows :

Inst. St.	Staff St.	Target	Vertical angle	Staff reading	Remarks
A	BM	Lower	$-10^{\circ}0'$	0.655	RL of BM = 510.500m
		upper	$-7^{\circ}0'$	2.655	
A	B	Lower	$-5^{\circ}0'$	1.250	
		upper	$+4^{\circ}0'$	3.200	

Find the RL of B and the distance between the BM and station B.

SECTION-C

7. a) Find the missing figures and complete the level page book. Apply usual arithmetic checks. 5

Station	BS	IS	FS	HI	RL	Remarks
1	1.175			X	100	BM
2		X			98.975	
3		1.470			X	
4	2.00		X	X	98.100	CP
5		1.900			X	
6		X			97.200	
7	3.5		2.5	101.10	97.600	CP
8			2.65		X	

- b) What are constants of a tachometer and how they are determined? 5

8. a) The following data is available for a closed traverse ABCDEA :

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Line	Length	Bearing
AB	130	92°
BC	158	174°
CD	145	220°
DE	308	279°
EA	337	48°

Check for angular error and correct it, if necessary.

- b) The elevations of two proposed triangulation stations A and B, are 140m and 416m above MSL, resp. The elevation of an intervening peak at C, 60km from A, which is likely to obstruct the line of sight, is 150m: Ascertain if A and B are intervisible, and if not, find the height required, for the scaffold at B so that the line of sight clears C by 3 m.

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9. Write short notes on :

- a) Rise and fall method
 b) Temporary adjustments of theodolite
 c) Elements of simple circular curve

(3,3,4)