

Name-Surname..... Student code..... Seat number.....



King Mongkut's University of Technology Thonburi

Final Examination

Semester 1 Academic Year 2012

CVE 223 Surveying Practices

2nd Year International Program in Civil Engineering

Date: Wenesday 13 December 2555

Time 9.00 - 12.00

Instructions:

1. There are 3 questions; total of 7 pages (50 marks).
2. Write your name on all question sheets.
3. All final answers have to write in 3 digits number.
4. An approved calculator is allowed in the examination room.
5. **Not allowed** any documents or textbooks in the examination room.
6. If any doubt on any question writes your comment on it.

Examiner: (Tel. 0-2470-9149)

Theera Laphitchayangkul

This examination paper has been approved by the Department of Civil Engineering

A handwritten signature in black ink, appearing to read 'Chai', is written over a horizontal line.

(Professor Dr. Chai Jaturapitakkul)

Head of the Civil Engineering Department

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1. Compute the elevation and error of each point as shown in table 1. If elevation of propose 210.000 m. by grade line = 0 %, find cut and fill elevation of each point. (16 marks)

Table 1 Data for Profile

STA	BS (m.)	IFS (m.)	FS (m.)	ELEVATION (m.)
BMS 101	0.475			212.815
0+000		0.020		
0+020		0.410		
0+040		0.730		
0+060		0.700		
0+066.280		0.726		
0+080		1.380		
0+100		1.750		
0+120		2.470		
TP1	0.666		2.993	
0+140		0.570		
0+143.780		0.634		
0+147.020		0.681		
0+160		0.710		
0+180		0.690		
0+200		1.370		
TP2	0.033		1.705	
BMS 102			2.891	

2. Calculate elevation by do not adjustment and check error of the Level Net shown in Figure 2 by HI method. (10 marks)

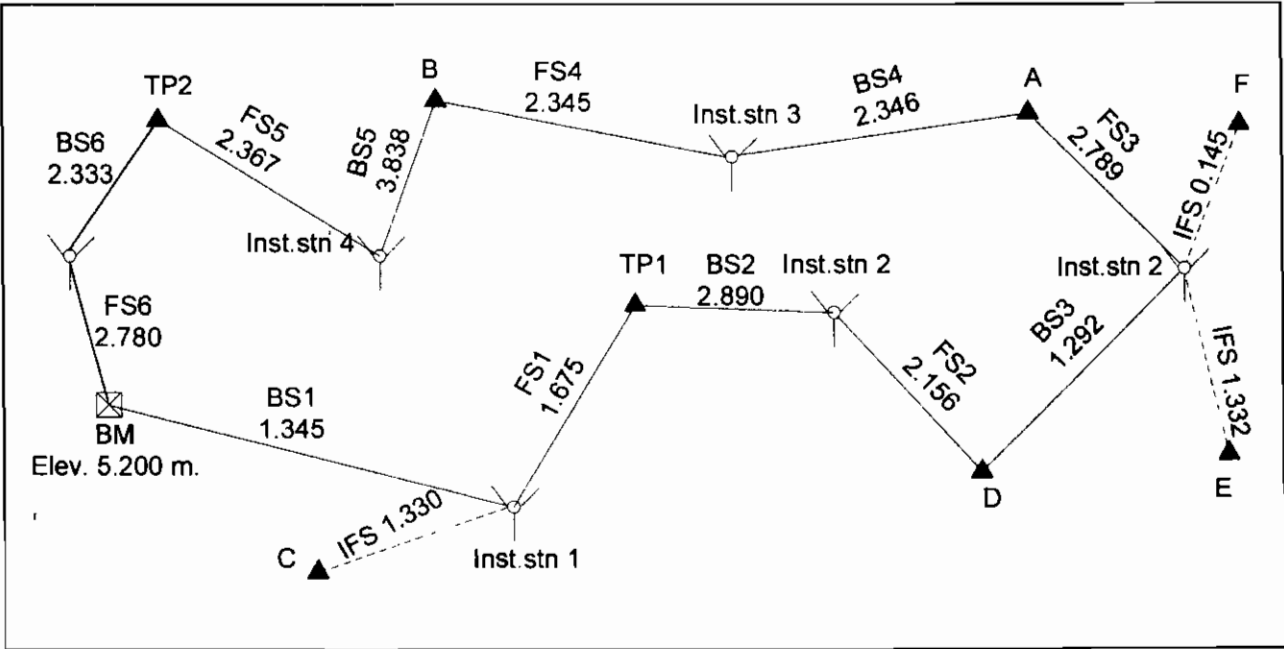


Figure 2 Level Net

STA	BS	HI	IFS	FS	Elev. HI

3. Three horizontal angles are measured around Point O as Show in Figure 3.

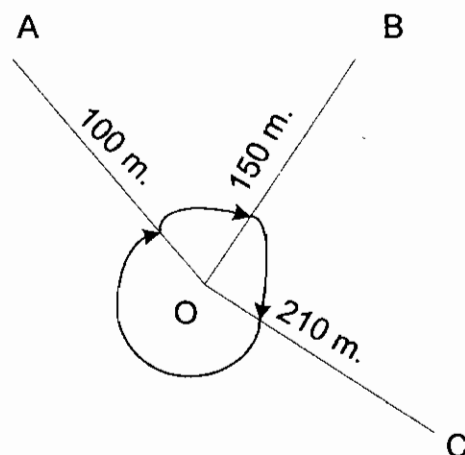


Figure 3 Horizontal angles measurements

3.1 3 Calculate an error from measurement and correct horizontal angle of \hat{AOB} , \hat{BOC} and \hat{COA} as shown in figure 3 (12 marks)

Table 3.1 Result of Direction angle in filed

Station	Target	Reading	
		L	R
O	A	$60^{\circ}10'10''$	$240^{\circ}10'20''$
	B	$121^{\circ}32'40''$	$301^{\circ}32'50''$

Table 3.2 Result of Repetition angle in filed

Station	Target	Rep.	Reading	
			L	R
O	B	0	$300^{\circ}10'12''$	$120^{\circ}10'14''$
	C	1	$50^{\circ}46'52''$	$230^{\circ}46'52''$
		12	$247^{\circ}20'00''$	$67^{\circ}20'10''$
O	C	0	$10^{\circ}10'00''$	$190^{\circ}10'10''$
	A	1	$193^{\circ}11'41''$	$13^{\circ}11'41''$
		5	$205^{\circ}18'25''$	$25^{\circ}08'20''$

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Station	Target	Reading		Avg.Angle
		L	R	

Station	Target	Rep.	Reading		Avg.
			L	R	

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Seat number.....

[illegible]