



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

BUILDING AND STRUCTURAL SURVEYING N5

15 November 2019

This marking guideline consists of 4 pages.

QUESTION 1

- 1.1 False
 1.2 False
 1.3 True
 1.4 True
 1.5 False

(5 × 2) [10]

QUESTION 2

- 2.1 Chaining is a common site name✓ given to all taping work.✓
 2.2 It is horizontal direction✓ between any two points✓ defined in degrees, minutes and seconds.
 2.3 Cadastral surveying is a branch of survey, related to the preparation of plans and✓ showing and defining legal property boundaries.✓
 2.4 Parallax is when the cross hairs in the telescope and sighted object✓ are not seen in the same line✓ resulting in a blurred image of one or the other.
 2.5 Booking is entering all survey measurements✓ in a tache book✓ and arranging them in such a manner that any surveyor may produce a map from them.

(5 × 2) [10]

QUESTION 3

- 3.1
- From the site boundaries
 - measure out the proposed building
 - increasing the area by ± 1 m.
 - Punch in two pegs (± 2 m long pegs) 1 m away
 - from each corner
 - in line with the building line in all four corners.
 - Because of the length of the pegs, a traveller of 1,5 m would be appropriate.
 - The formation level plus/minus the benchmark
 - plus the length of the traveller
 - will give the staff reading on all the sight rails of the eight pegs. (10)
- 3.2
- Reading the staff upwards instead of downwards.
 - Reading an inverted staff downwards instead of upwards. (2 × 2) (4)

3.3 Each side = $\sqrt{25 \text{ m}^2}$ ✓
 = 5 m✓
 = 5 000 mm✓
 = 5 000 mm/200✓
 = 25 mm✓ (6)

3.4 • The contours are closer together when the terrain has a steep slope. (4)
 • The contours are further apart when the terrain has a gentle slope. (2 × 2) [24]

QUESTION 4

4.1 • Set the instrument on equal distances
 • between two pegs A and B
 • that are ± 600 m apart on a fairly level ground.
 • Take staff readings at A and B and find the difference in height.
 • Set the level closer to peg A and take staff readings,
 • if the difference in height in both instances
 • is the same, the instrument is right
 • but if there is a difference then the difference is used to adjust the collimation line until it is horizontal.
 • The adjustment is done by using the diaphragm adjusting screws until the staff reading is as calculated. (9)

4.2 **ADDENDUM - TABLE**

POINT	BACK SIGHT	INTER SIGHT	FORE SIGHT	RISE	FALL	REDUCED LEVEL	REMARKS
A	0,49					1020,600✓	
	0,27		3,29		2,800✓	1023,400✓	
	0,39		3,77		3,500✓	1026,900✓	
	3,72		3,59		3,200✓	1030,100	
		1,11		2,610✓		1027,490✓	
	3,56		0,82	0,290✓		1027,200✓	
	3,89		1,36	2,200✓		1025,000	BM 1025,00
	3,72		0,99	2,900✓		1027,900✓	
	3,69		1,02	2,700✓		103,600✓	
	3,86		1,31	2,380✓		1032,980	
	3,90		1,56	2,300✓		1035,280✓	
B			2,40	1,500✓		1036,780✓	

(20)
[29]