



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1410(E)(A12)T
APRIL EXAMINATION

NATIONAL CERTIFICATE

QUANTITY SURVEYING N6

(2050026)

April 2016 (X-Paper)
09:00–13:00

REQUIREMENTS: Dimension paper (BOE 8/12)
Abstract paper (BOE 8/10)
Billing paper (BOE 8/11)
Standard System of Measuring Building Work

Calculators may be used.

This question paper consists of 4 pages and 7 addenda.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
QUANTITY SURVEYING N6
TIME: 4 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
 2. Only QUESTION 1 must be done in the ANSWER BOOK. The remainder of the work MUST be done on the appropriate paper.
 3. Work strictly according to the question numbers, for example QUESTION 2.1 and QUESTION 2.2 may NOT be combined. Number the answers correctly according to the numbering system used in this question paper.
 4. Begin each answer on a NEW page.
 5. Loose sheets must be placed in the correct sequence in the back of the ANSWER BOOK. Do not use a stapler.
 6. Consult the Standard System for description criteria.
 7. DO NOT use red or green ink.
 8. ALL the specification notes must be incorporated.
 9. When marking the answers, particular attention will be paid to systematic and orderly methods of taking-off and working-up techniques, well-referenced measurements with side casts, neatness, explosion and clear description of work.
 10. Write neatly and legibly.
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QUESTION 1

- 1.1 Explain what is understood by the following terms as used by the quantity surveyor:
- 1.1.1 Ditto
 - 1.1.2 Practical completion
 - 1.1.3 Dotting on
 - 1.1.4 Timesing
 - 1.1.5 Abstracting
 - 1.1.6 Reducing
 - 1.1.7 Drawing register
 - 1.1.8 Billing
 - 1.1.9 Squaring
 - 1.1.10 Query list
- (10 × 1) (10)
- 1.2 Describe the functions, uses and advantages of the bills of quantities. (10)
- 1.3 Name TWO methods of tendering. (2)
- 1.4 Name THREE contract documents that are necessary when a contractor tenders for a job. (3)
- [25]**

QUESTION 2

The attached ADDENDUM A shows the plan and elevation of a garden wall. The attached ADDENDA B and C contain the measurements of this structure.

Measure the following variation order:

A one-and-a-half brick wall in lieu of a one-brick wall. The width of the footing remains the same. No work was attempted before the issue of this variation order.

Do not measure net, but keep the following sections separate:

2.1 Omissions (12)

2.2 Additions (13)

Work strictly in the same order as given in the original measurements.

[25]

QUESTION 3

The attached ADDENDUM D shows the plan and section of a reinforced concrete structure.

Measure only the concrete and formwork items for the columns, beams and slab.

Show ALL waste calculations.

Concrete to be 20 MPa

Overall size of building: 10 000 × 10 000

Measure from natural ground level upwards.

[25]

QUESTION 4

The attached ADDENDUM E shows a schematic drawing of hot-water and cold-water pipe installations.

The attached ADDENDA F and G contain the measurements of these installations.

Detach ADDENDA F and G and square, abstract and bill ALL the measurements.

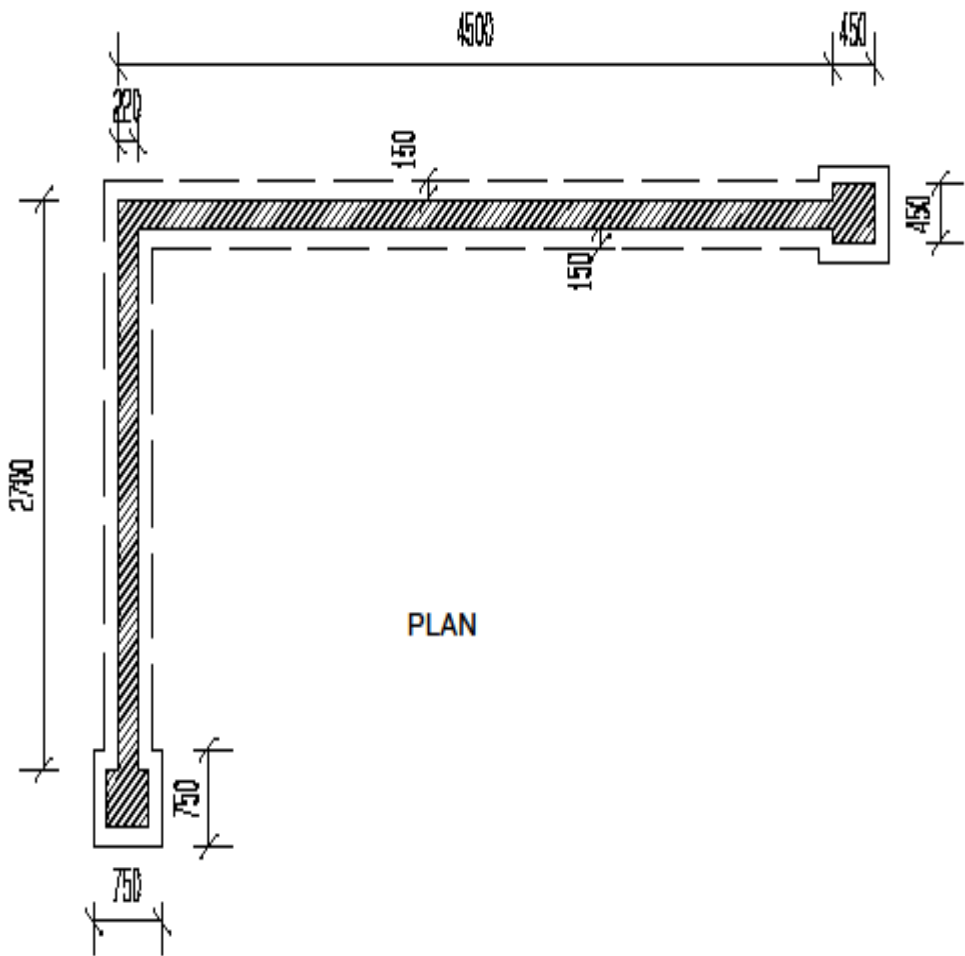
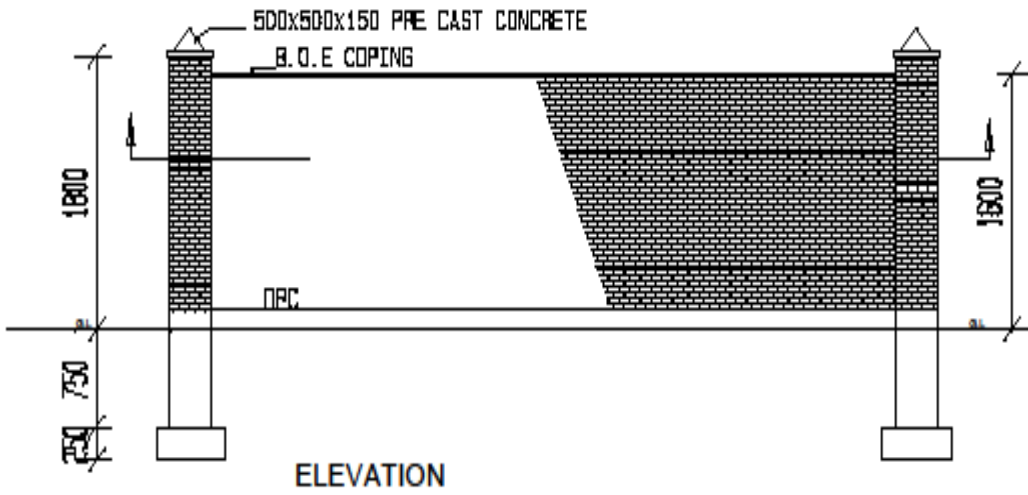
[25]

TOTAL: 100

ADDENDUM A

EXAMINATION NUMBER:

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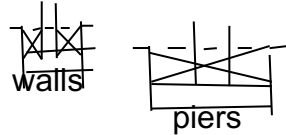


ADDENDUM B

EXAMINATION NUMBER:

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		<u>GARDEN WALL</u>					
				6.98			1bk wl in local stock
				<u>2.40</u>			bks in 1 : 3 c.m. in
							stretcher bond
		<u>Collections</u>	4 500				
		750	<u>2 700</u>				1 650
		450	7 200				<u>750</u>
		<u>300 ÷ 2</u>					2 400
		150	<u>-220</u>				
		col	<u>1bkwl:</u> 6 980				
		450	2/150	2/	0.45		2Bk (450 mm) attach.
		750	<u>300</u>		0.45		Square pier in ditto
			<u>conc:</u> 6 680		<u>2.40</u>		
							1 800
							<u>750</u>
							1 800 2 550
							<u>-1 650</u> <u>-150</u>
							2 400
<u>Item</u>		Keep excav. free from					
		H20		2/	0.45		Ditto, isolated rising
					0.45		above attached, ditto
					<u>0.15</u>		ditto
6.68		Excav. in p.m. for s.t. ξ.					
0.52		Attached pier bases n.e. 2 m					E.o. for c.a.a.b.
<u>1.00</u>		dp			6.98		
0.75					0.22		
2/	0.75	220	750		<u>0.75</u>		
	<u>1.00</u>	2/150	<u>300</u>	2/	0.45		
		W:: 520	<u>250</u>		0.45		
			h: 1 000		<u>0.75</u>		
6.68		R.o.c. to sides of s.t. ξ,					
2/	<u>1.00</u>	attached pier bases n.e. 1,5 m					Backfill from excav.
	0.75	dp					to sides of s.t. & next
2/4/	<u>1.00</u>				6.68		to piers
					0.15		
					<u>0.75</u>		
0.52		<u>Ddt</u>		2/	0.75		-wls
2/	<u>1.00</u>	Ditto			0.75		walls
					0.75		
					<u>0.75</u>		-prs
6.68		15 MPa conc. in fcgs					
0.52		ξ attached pier bases					
<u>0.25</u>							<u>Ddt</u>
0.75		#			0.45		Ditto
2/	0.75				0.45		
	<u>0.25</u>	E.o.excav. for c.a.			<u>0.75</u>		prs



ADDENDUM C

EXAMINATION NUMBER:

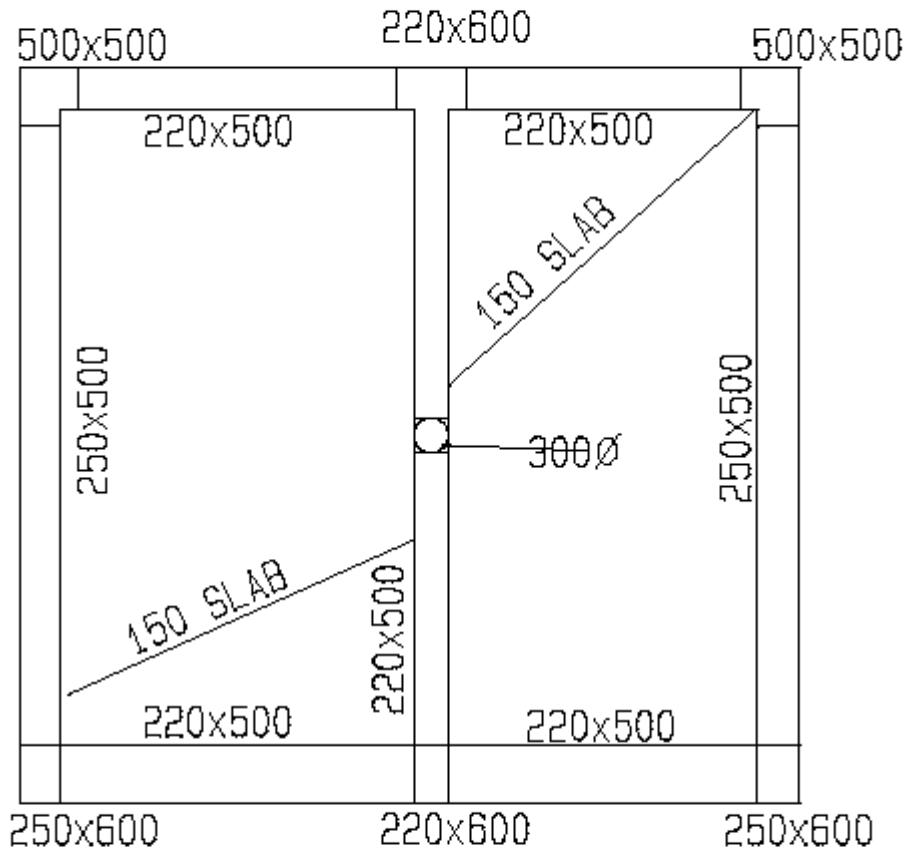
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2/	6.98 <u>0.22</u> 0.45 <u>0.45</u>	3-ply asphalt d.p.c			
2/	6.98 <u>1.80</u>	E.o.b. for golden brown fcgs wi. weathered joints	1 650 <u>150</u> 1 800	2/75	
2/3/	0.45 <u>1.80</u>	Do. In attached piers			
2/2/	0.12 <u>1.80</u>		+50 <u>-220</u> <u>230</u> ÷ 2 115		
2/4/	0.45 <u>0.15</u>	Do. In isolated piers above attached			
	<u>6.98</u>	B.o.e. golden brown faced coping t.b.d.			
	<u>2</u>	500 × 500 × 150 pre-cast conc.pier cap			

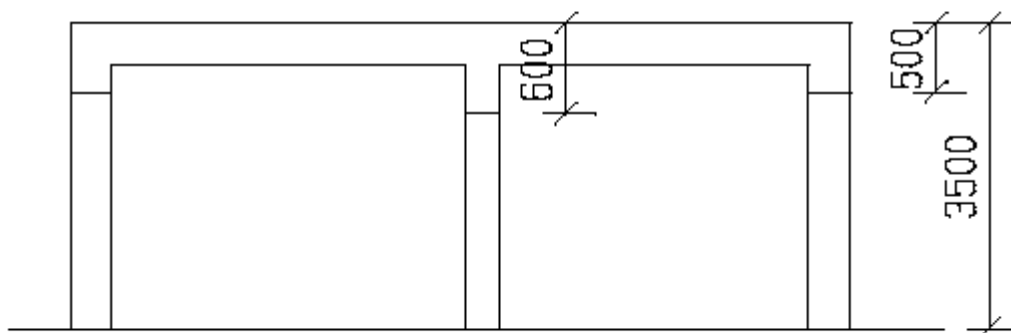
ADDENDUM D

EXAMINATION NUMBER:

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PLAN



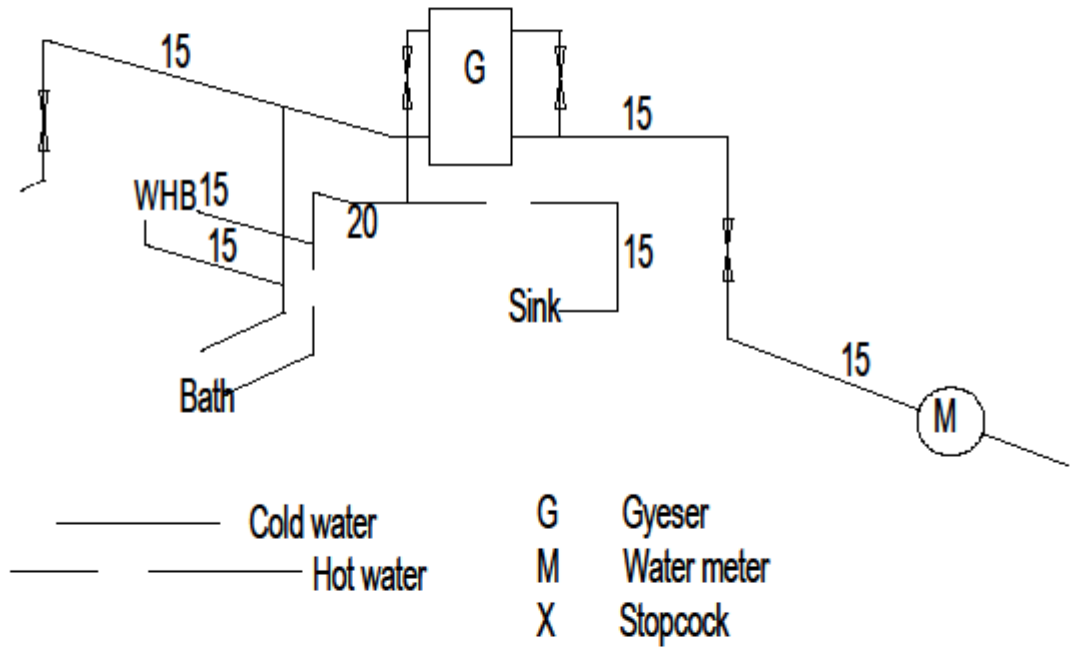
SECTION

ADDENDUM E

EXAMINATION NUMBER:

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SCHEMATIC DRAWING OF HOT AND COLD WATER INSTALLATION



ADDENDUM F

EXAMINATION NUMBER:

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Detach this ADDENDUM and insert it in the ANSWER BOOK.

			<u>HOT & COLD WATER</u>				/
			Note: ALL work msd prov.				E.o. cu pipe for fittings n.e. 30 mm
			<u>EXTERNAL</u>	5/	<u>1</u>		-bend
			15 Ø cu in ground incldg excav. & backf.	4/	<u>1</u>		-tee
		<u>8.50</u>					/
			15 Ø Do. to wls etc.		<u>5</u>		Ex. For adapter n.e. 30 mm
		<u>0.45</u>					/
		<u>0.33</u>					/
		<u>2.59</u>					/
		<u>1.00</u>					/
		<u>2.50</u>					/
		<u>1.00</u>					/
		<u>5.00</u>		3/	<u>1</u>		15 brass s.c.
2/		<u>0.75</u>					/
		<u>0.50</u>					/
			15 Ø Do. in chase, wrapped in 2 layers brown paper				/
		<u>2.00</u>					/
		<u>1.20</u>					/
		<u>1.50</u>					/

ADDENDUM G

EXAMINATION NUMBER:

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Detach this ADDENDUM and insert it in the ANSWER BOOK.

		<u>INTERNAL</u>							
1		150 L. electr. comb. geyser wi. 1,2 mm galv. m.s. tray							E.o. cu pipe for fittings n.e. 30 mm
<u>2.00</u>		15 Ø cu. To wls etc.	1.1	2					-15 bend -20 bend -20 red-tee
<u>1.00</u>			2	1					
<u>0.50</u>			1	1					
<u>0.50</u>		20 Ø Do. do.							Ex. For adapter n.e 30 mm
<u>3.00</u>									
<u>2.00</u>		15 Ø Do. in chase, wrapped in 2 layers brown paper	3/	1					-15 -20
<u>1.00</u>			1	1					
<u>1.50</u>									20 brass s.c.
<u>2.00</u>		20 Ø Do. do.							
<u>2.00</u>		Expanded polystyrene lagging secured wi. adhesive tape ar. 15 Ø pipe							
<u>3.00</u>		Do. ar 20 Ø pipe							