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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

# NATIONAL CERTIFICATE

# QUANTITY SURVEYING N5

(2050015)

**29 November 2022 (X-paper)**
**09:00–13:00**

**REQUIREMENTS:** **Abstract paper (BOE 8/10)**
**Billing paper (BOE 8/11)**
**Dimension paper (BOE 8/12)**

**Nonprogrammable calculators and an unmarked copy of the Standard System of Measuring Building Work may be used.**

**This question paper consists of 6 pages and 2 addenda.**

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# DEPARTMENT OF HIGHER EDUCATION AND TRAINING
# REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
QUANTITY SURVEYING N5
TIME: 4 HOURS
MARKS: 100

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**INSTRUCTIONS AND INFORMATION**

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Use only a black or blue pen.
5. All the work in SECTION A must be done on appropriate paper.
6. All the work in SECTION B must be done in the ANSWER BOOK.
7. Start each question on a new page.
8. All loose sheets must be numbered and placed in sequence inside the ANSWER BOOK.
9. Candidates must strictly apply the rules and methods stipulated in the Standard System of Measuring Building Work.
10. Candidates must insert their EXAMINATION NUMBER on each loose sheet handed in.
11. Write neatly and legibly.

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## SECTION A

ADDENDUM A (attached) shows the front, vertical and horizontal sectional views of a timber casement window with two sashes and one fixed light at the middle part of the casement window for a mountain hut.

**Specifications:**

| | |
|---|---|
| Carpentry and joinery: | All the timber components are meranti timber<br>22 × 18 mm weather bar drip on the frame head |
| Paintwork: | Prime backs of timber frame<br>Apply two coats clear varnish to exposed timber areas |
| Waterproofing: | 375 micron |
| Ironmongery: | 63 mm brass concealed hinges (two per sash)<br>300 mm casement polished brass stayed pins and pegs (one per sash)<br>Nature handle matt brass finish<br>Weather bar at bottom of casement window |
| Glazing: | 3 mm thick clear float glass |

**NOTE:** There are FOUR identical windows to be prepared by the taker-off.

Study the specifications above along with ADDENDUM A to answer QUESTION 1–4.

## QUESTION 1

Measure the timber casement window frame according to the following measuring list:

- Stiles
- Frame head
- Frame sill
- Sash window
- Fixed light

**[10]**

## QUESTION 2

2.1 Measure the paintwork items for all the items prepared in QUESTION 1. (12)

2.2 Measure primer to the back of the stiles. (3)

2.3 Measure the DPC to the top of the frame head and at the bottom of frame sill. (3)

**[18]**

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## QUESTION 3

3.1 Measure the ironmongery items for these identical windows. (8)

3.2 Measure the glazing required for these identical windows. (4)

**[12]**

## QUESTION 4

Prepare a blank bill for all the items measured in QUESTION 3.

4.1 Transfer the items measured in QUESTION 3.1 and 3.2 and prepare squaring. (5)

4.2 Transfer the items squared in QUESTION 4.1 and prepare the process of gathering similar items into their respective trades. (7)

4.3 Prepare the blank bill that will be used for tender purposes. (8)

**[20]**

**TOTAL SECTION A: 60**

## SECTION B

## QUESTION 5

5.1 List and explain FOUR types of building contracts. (8)

5.2 A project consist of several stages in order to satisfy the client's vision or objectives.

Name any FIVE stages in a construction project. (5)

5.3 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A–E) next to the question number (5.3.1–5.3.5) in the ANSWER BOOK.

| COLUMN A | | COLUMN B | |
|---|---|---|---|
| 5.3.1 | Tender | A | A process whereby the client invites potential contractors to bid for a particular project |
| 5.3.2 | Cost | | |
| 5.3.3 | Bid | B | An actual expense incurred by the contractor in the project |
| 5.3.4 | Price | C | An amount of money a client is willing to pay for a product or service according to the accepted tender |
| 5.3.5 | Value | D | The worth of the completed building |
| | | E | A formal offer by the tenderer |

(5 × 1) (5)

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5.4 Name any TWO types of construction contract specifications. (2)

**[20]**

## QUESTION 6

Variations refers to the change in the scope of work that may occur in the construction project contract, in the form of an omission or addition.

Briefly explain any FIVE common causes of changes to the scope of work in a construction project. **[5]**

## QUESTION 7

Prepare the final account for the shopping complex and calculate the final payment due to the contractor based on the relevant items in the summary of the bill of quantities as set out in ADDENDUM B (attached).

The following adjustments need to be made:

| | |
|---|---|
| Prime cost and provisional sums | R120 450,00 |
| Net extra on variation orders | R27 678,00 |
| Re-measurement of earthworks | R96 678,89 |
| Re-measurement of plumbing and drainage | R111 507,99 |
| Re-measurement of site works | R130 456,96 |

The increased costs amount to R95 785,45 and the previously received payments amount to R1 006 345,00.

**[15]**

**TOTAL SECTION B: 40**
**GRAND TOTAL: 100**

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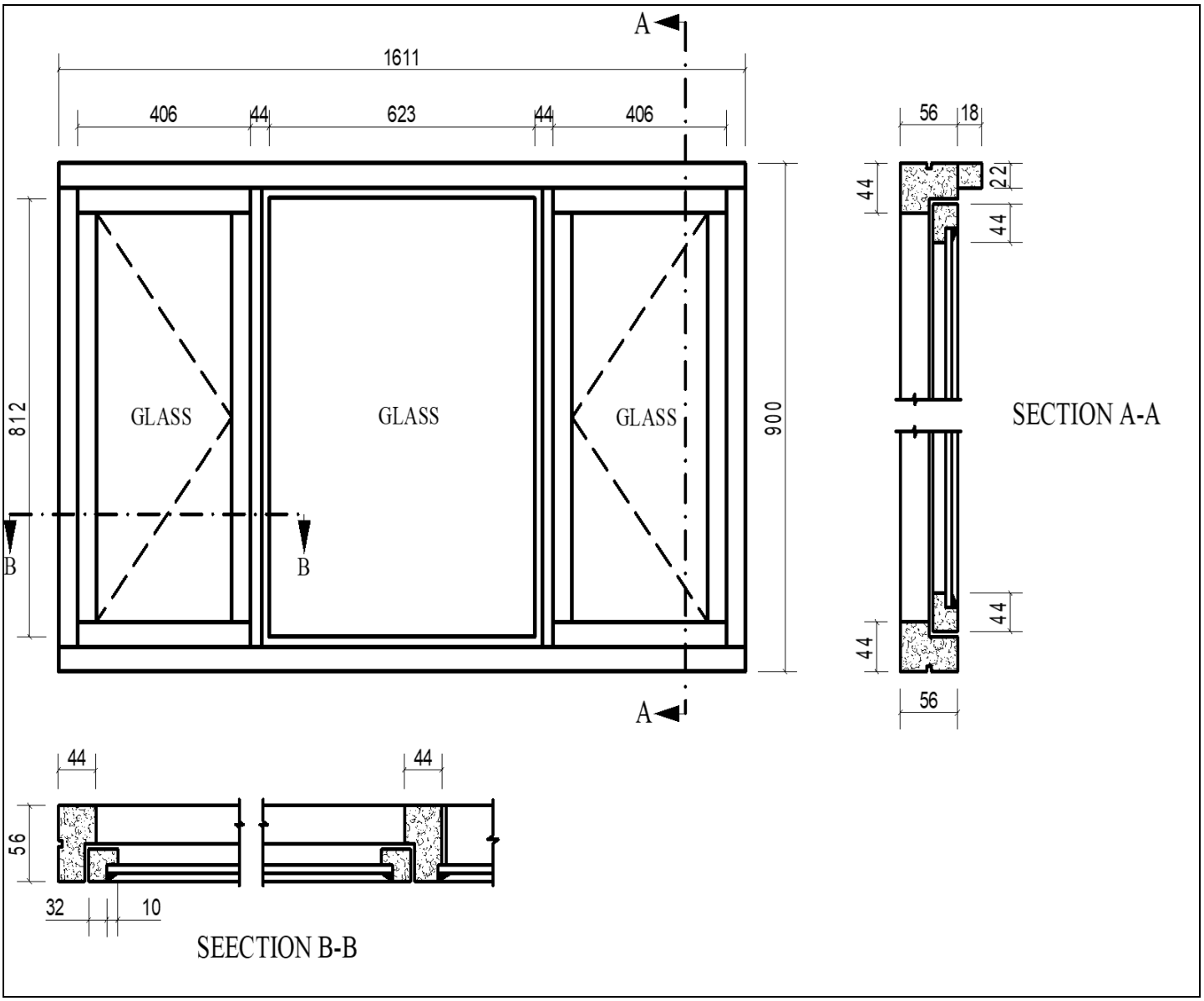
## ADDENDUM A

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**ADDENDUM B**

## SHOPPING COMPLEX

## BILL OF QUANTITIES

## SUMMARY

| Bill no. | Description | Page | Amount |
|---|---|---|---|
| 1 | Preliminary and general | 80 | R70 575,00 |
| 2 | Earthworks | 96 | R101 241,33 |
| 3 | Concrete, formwork and reinforcement | 100 | R90 500,25 |
| 4 | Masonry | 112 | R126 667,84 |
| 5 | Waterproofing | 115 | R10 345,99 |
| 6 | Carpentry and joinery | 123 | R67 546,00 |
| 7 | Floor coverings | 154 | R49 699,98 |
| 8 | Ironmongery | 162 | R6 700,00 |
| 9 | Metalwork | 168 | R72 678,78 |
| 10 | Plastering | 175 | R35 765,00 |
| 11 | Tiling | 185 | R4 587,00 |
| 12 | Plumbing and drainage | 190 | R89 692,99 |
| 13 | Glazing | 198 | R45 034,99 |
| 14 | Painting | 203 | R23 435,87 |
| 15 | Site works | 213 | R132 435,96 |
| 16 | Prime cost and provisional sums | 220 | R125 259,45 |
| 17 | Contingency sum | | R10 500,00 |
| | FINAL TENDER PRICE | | R1 012 937,44 |

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