higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

# NATIONAL CERTIFICATE

# QUANTITY SURVEYING N5

(2050015)

**12 August 2021 (X-paper)**
**09:00–13:00**

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

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

**This question paper consists of 4 pages and 2 addenda.**

300Q1G2112

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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. The question paper consists of SECTION A and SECTION B
5. Answer all the questions in SECTION A on the appropriate paper.
6. Answer all the questions in SECTION B in the ANSWER BOOK.
7. Use only a black or blue pen.
8. Loose sheets must be placed in the correct sequence in the back of the ANSWER BOOK. DO NOT use a stapler.
9. In 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 and clear descriptions.
10. Write neatly and legibly.

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## SECTION A

Use dimension, abstract and billing papers to answer the questions in SECTION A.

ADDENDUM A (attached) shows the plan and sectional view of a reinforced concrete structure.

The specifications are as follows:

| | |
|---|---|
| Concrete: | 25 MPa |
| Reinforcement: | Allow a provisional amount of R20 000,00 |
| **NOTE:** | Measure ALL the concrete, formwork and reinforcement. Measure the columns to 500 mm below the ground level and to the underside of the beams. |

### QUESTION 1

Carefully study the drawings and specifications provided in ADDENDUM A (attached), then measure the REINFORCED CONCRETE STRUCTURE items using the measuring list provided below:

- Concrete of the columns
- Formwork to the columns
- Concrete of the slab
- Formwork to the soffit of the slab **[20]**

### QUESTION 2

Measure all the CONCRETE, FORMWORK and REINFORCEMENT items using the measuring list provided below:

- 25 MPa reinforced concrete beams
- Centreline of the ring beam
- Formwork to the soffits and sides
- Provisional sum for the provision of steel rod reinforcement is R20 000,00 **[20]**

### QUESTION 3

Square, abstract and bill only steel rod reinforcement. **[20]**

**TOTAL SECTION A: 60**

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## SECTION B

Answer SECTION B in the ANSWER BOOK.

## QUESTION 4

4.1 Mr Jacobs is working on a Tshwane Municipality project as a quantity surveyor. He is requested by the architect to prepare variation orders.

List any FIVE reasons why variation orders may occur. (5)

4.2 Briefly explain any FIVE pre-contract duties performed by the contractor's quantity surveyor in a construction project. (5)

**[10]**

## QUESTION 5

Prepare the second interim valuation for a shopping mall and calculate the amount due to the contractor based on the information gathered on site. The contract period is 11 months and the summary of the bills of quantities is set out in ADDENDUM B (attached).

The details are as follows:

- Earthwork is 100% complete.
- Concrete work is 14% complete.
- Masonry is 7% complete.
- Allow R3 700,00 for pipes.
- Allow 10% retention fund.
- Value of materials on site amounts to R8 400,00.
- Amount paid in first certificate is R66 080,00.
- Round off the amounts to the nearest TEN RAND (R10,00) **[10]**

## QUESTION 6

6.1 Mr Lubengo is requested by his client to prepare a contract document for his augmentation project at the Vaal Dam.

Name any FIVE documents that Mr Lubengo should include when preparing the contract. (5)

6.2 6.2.1 What is *tendering*? (1)

6.2.2 List any FOUR types of tendering methods in construction. (4)

6.3 In lump sum contracts, the contractor submits the lump sum price based on the drawing and specifications provided by the client.

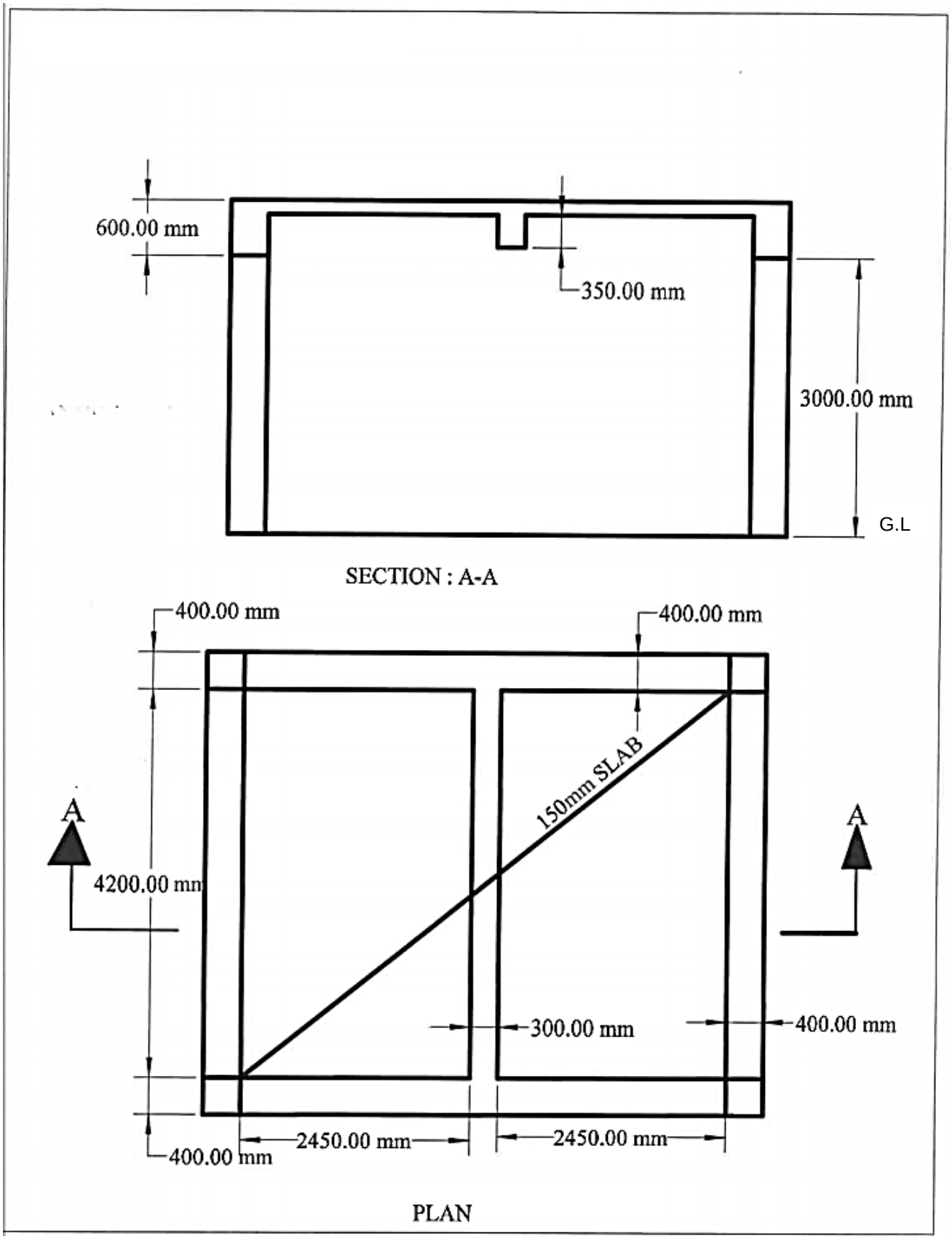
Briefly explain FIVE advantages of using lump sum contracts. (10)

**[20]**

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

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**ADDENDUM A**




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**ADDENDUM B**

## SHOPPING CENTRE

## BILL OF QUANTITIES

## SUMMARY

| Bill No. | Description | Page | Amount |
|---|---|---|---|
| 1 | Preliminary and general | 86 | R130 230,00 |
| 2 | Foundations | 76 | R98 241,33 |
| 3 | Concrete, formwork and reinforcement | 100 | R75 500,40 |
| 4 | Masonry | 102 | R106 321,69 |
| 5 | Waterproofing | 115 | R10 345,99 |
| 6 | Carpentry and joinery | 123 | R 67 546,00 |
| 7 | Floor coverings | 154 | R49 699,98 |
| 8 | Ironmongery | 162 | R6 700,00 |
| 9 | Metalwork | 108 | R50 220,78 |
| 10 | Plastering | 125 | R10 600,60 |
| 11 | Tiling | 185 | R 5000,00 |
| 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 | | R35 000,00 |
| | FINAL TENDER PRICE | | R991 110,47 |

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