higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1440**(E)**(A8)T

NATIONAL CERTIFICATE

QUANTITY SURVEYING N4

(2050004)

8 August 2018 (X-Paper)
09:00–13:00

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

Nonprogrammable calculators may be used.

The Manual: Standard System of Measuring Builders' Work may NOT be used in the examination venue.

This question paper consists of 6 pages and 2 diagram sheets.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
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NATIONAL CERTIFICATE
QUANTITY SURVEYING N4
TIME: 4 HOURS
MARKS: 100

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 the question paper.
4. ALL the work in SECTION A must be done on the appropriate paper.
5. ALL the work in SECTION B must be done in the ANSWER BOOK.
6. ALL the specification notes must be incorporated.
7. HINT: Colour in the drawings to establish what has to be measured.
8. In marking the answers, particular attention will be paid to systematic and orderly methods of taking-off and working-up techniques, neatness and clear description of work.
9. Use only BLUE or BLACK ink.
10. The word NIL must be used on the DIMENSION PAPER when cancelling.
11. Write neatly and legibly.

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SECTION A

QUESTION 1

Lusanda and Falaza Work Project is a proposed development consisting of ten identical houses. You have recently been appointed as the trainee quantity surveyor for the project.

The DIAGRAM SHEET (attached) shows the plan, elevations and a vertical cross section of a hexagonal house with a reinforced concrete roof.

Measure ALL the work in connection with the ten hexagonal houses, excluding the suspended reinforced concrete roof. Strictly measure according to the following list:

1.1	Foundation collections	(5)
1.2	Foundations (all work to top of surface bed level)	(28)
1.3	Superstructure brickwork	(2)
1.4	Square, abstract, reduce and bill only the waterproofing.	(5)

SPECIFICATIONS

EARTHWORKS:	The site has been cleared. Excavation is in ordinary earth and has to be partly filled in and rammed. Excess material has to be carted away to a dumping site approximately 2 km from the building site.
ROOF SLAB:	35 MPa reinforced concrete
FOOTINGS AND SURFACE BED:	15 MPa concrete
REINFORCEMENT:	Mesh reinforcement Ref. 175 to surface bed
BRICKWORK:	Local stock bricks English bond 1–4 cement mortar
WATERPROOFING:	375 micron damp-proof course 250 micron damp-proof membrane

[40]

TOTAL SECTION A: 40

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SECTION B

QUESTION 2

2.1 To be able to work out rates for the items in the bills of quantities, the estimator must be able to visualise the descriptions.

Use the whole page to sketch the front elevation of a door to the following bill description:

813 × 2030 × 45 mm thick wrot meranti half-glass door formed of 45 × 110 mm diminishing stiles (45 × 75 mm above lock rail), 45 × 75 mm top rail and 45 × 220 mm lock rail and bottom rail.
The part below the lock rail consists of two vertical raised fielded panels, separated by a 45 × 110 mm muntin.
The upper portion is divided into six equal panes separated by one vertical and two horizontal 45 × 45 mm glazing bars.

NOTE: Diminishing stiles = stiles which narrow gradually. (10)

2.2 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (2.2.1–2.2.10) in the ANSWER BOOK.

2.2.1 The bill of quantities is prepared by the building surveyor for a client.

2.2.2 Excavation in open faces such as cutting roads through hills shall be separated into successive depths of 2 metres.

2.2.3 The query list includes matters which are not clear on the drawings and specifications.

2.2.4 Backfilling to trenches shall be included with the description of the excavations.

2.2.5 Hard-core filling shall be given in cubic metres.

2.2.6 Damp-proof membrane with turn-ups shall be measured in square metres.

2.2.7 The bill of quantities is defined in the contract and is generally referred to as the Bill.

2.2.8 Wall ties for a cavity wall built in stretcher bond shall be given in numbers.

2.2.9 Preambles are specifications which cannot be shown on drawings.

2.2.10 Formwork to sides of 150 mm surface beds shall be given in m^2.

(10 × ½) (5)

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2.3 State ONE function of each of the following personnel found in the building/construction industry:

2.3.1 Civil engineer

2.3.2 Mechanical engineer

2.3.3 Quantity surveyor

2.3.4 Structural engineer

2.3.5 Land surveyor

(5 × 1) (5)
[20]

QUESTION 3

3.1 Give the definition of the Standard System of Measuring Builders Work. (4)

3.2 States the principles laid down in the Standard System regarding the following:

3.2.1 The setting out of the bills of quantities (5)

3.2.2 The order of dimensions (6)

3.3 Classify the following according to the trades/subtrades that appear in the Standard System, for example beam filling – masonry/brickwork.

3.3.1 Brandering

3.3.2 Excavation for reducing levels

3.3.3 Timber rafters

3.3.4 Vapour barrier

3.3.5 Roofing tiles

3.3.6 Granolithic floor finish

3.3.7 Fabric/Mesh reinforcement

3.3.8 Yellow plastic roof underlay

3.3.9 Turning piece

3.3.10 Brick-on-edge coping

(10 × ½) (5)
[20]

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QUESTION 4

4.1 Write the following standard abbreviations in full often used in taking off:

4.1.1 P.M.

4.1.2 b/s

4.1.3 r.c. & w

4.1.4 P.C.

4.1.5 c.s.g.

(5 × 1) (5)

4.2 Briefly define the following terms used in the theory of quantity surveying:

4.2.1 Arbitration

4.2.2 Interim payment

4.2.3 Cost estimate

4.2.4 Variations

4.2.5 Ditto

(5 × 1) (5)

4.3 Name FIVE types of building contracts. (5)

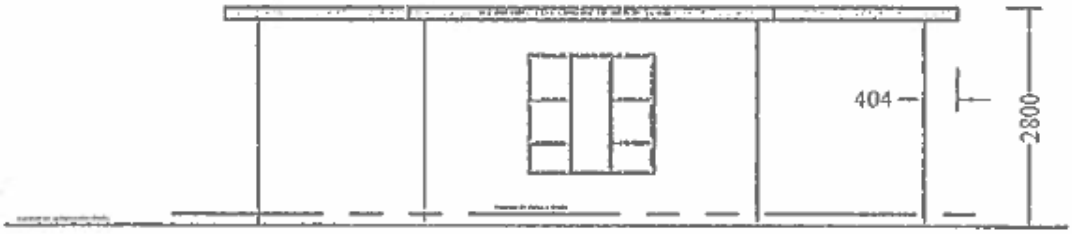
4.4 State FIVE advantages of using a bill of quantities. (5)
[20]

TOTAL SECTION B: 60
GRAND TOTAL: 100

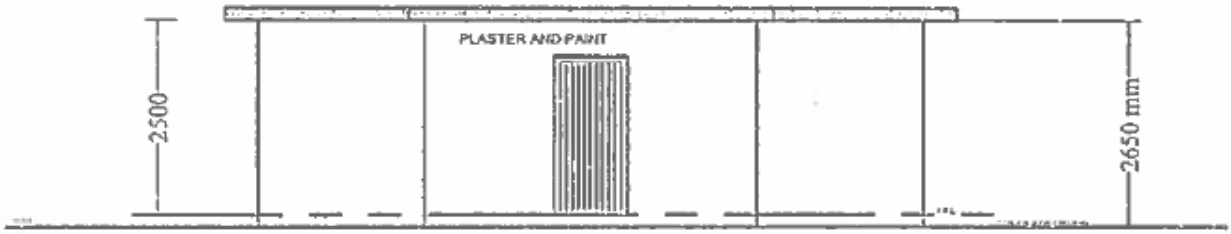
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DIAGRAM SHEET 1

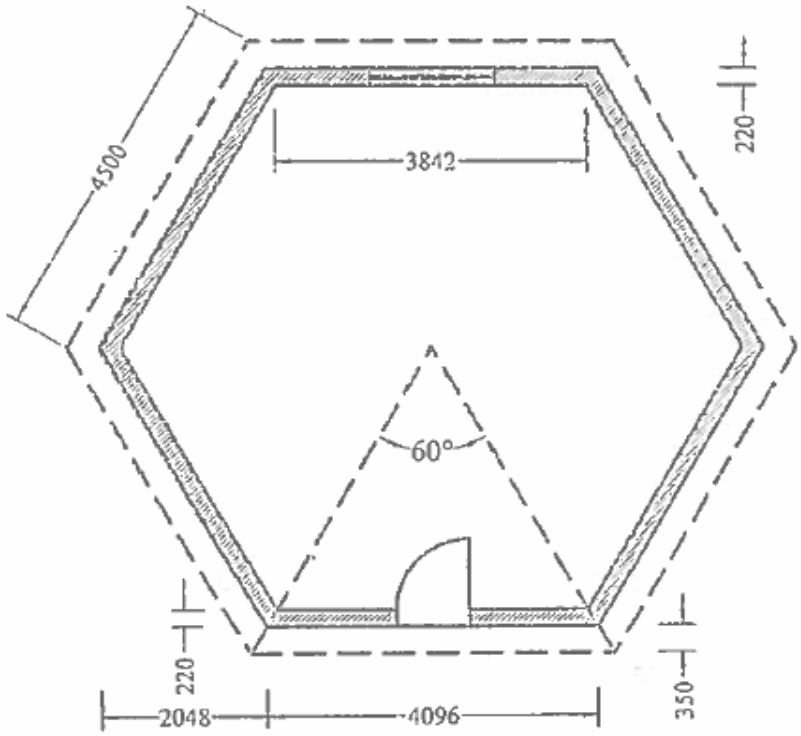
QUANTITY SURVEYING N4: NATIONAL EXAMINATION
DRAWING NO. 1
HEXAGONAL HOUSE



REAR ELEVATION

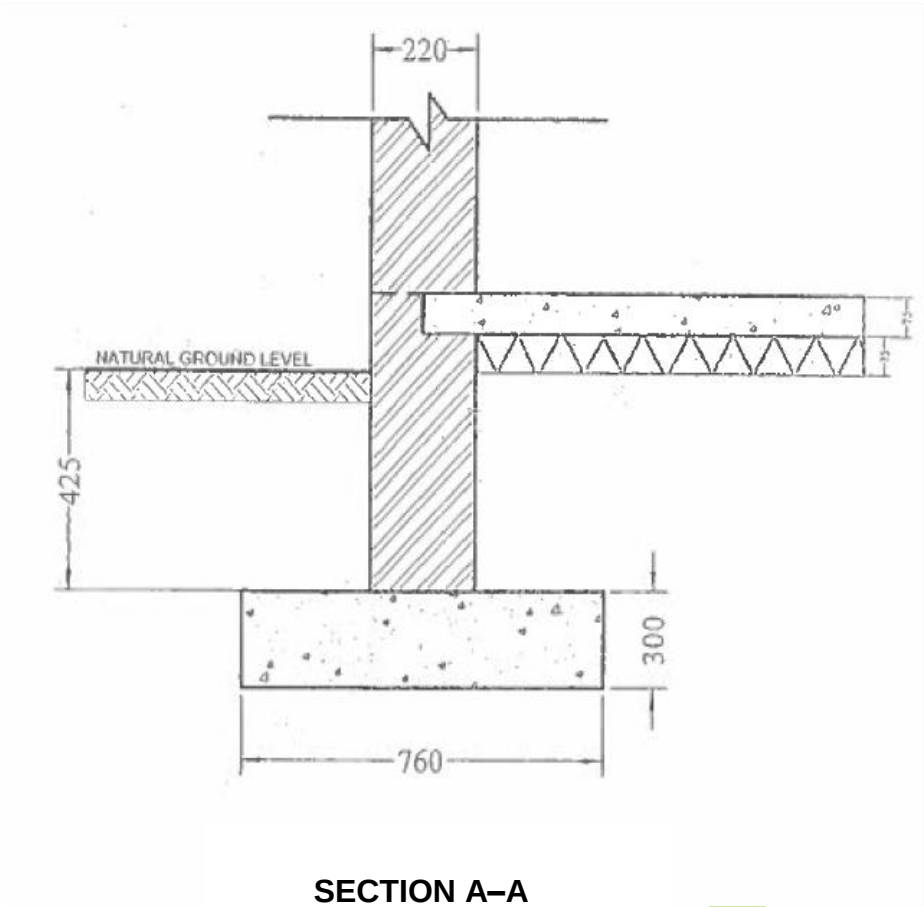


FRONT ELEVATION



PLAN VIEW

DIAGRAM SHEET 2



SECTION A–A

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