higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

CONSTRUCTION PLANNING
NQF LEVEL 4

(12010464)

10 November 2022 (X-paper)
09:00–12:00

Calculators may be used.

This question paper consists of 7 pages.

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TIME: 3 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 this question paper.
4. Start each section on a new page.
5. Use only a blue or black pen.
6. Write neatly and legibly.

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QUESTION 1: INTRODUCTION TO CONSTRUCTION CONTRACTS

1.1 Briefly define the term *payment certificate*. (2)

1.2 Explain the concept *retention fund* as it is provided for in the Condition of Contract for a building project. (3)

1.3 Breach of contract is any behaviour from either party, the contractor or the employer that does not honour the contract.

List FOUR common forms of breach of contract by the contractor. (4)

1.4 Provide another expression/word for *variations*. (1)

1.5 Describe the FIVE most common activities that must be completed by the contractor during the contract period. (5)

[15]

QUESTION 2: BASIC COMMON AND COMMERCIAL LAW

2.1 Give the appropriate term for the following definitions. Write only the term next to the question number (2.1.1–2.1.7) in the ANSWER BOOK.

2.1.1 A common law right that comes into effect when the contractor takes possession of the site and commences with the construction project.

2.1.2 Supporting or holding back the sides of an excavation in a situation where the banks might collapse.

2.1.3 The action of digging a trench or channel to allow for concrete.

2.1.4 A law that comes from custom and previous judgments.

2.1.5 The employer can lay charges of theft against the contractor even if it is not stated in the contract.

2.1.6 A term in a contract that is not specifically stated.

2.1.7 An official document that confirms ownership of a property.

(7 × 1) (7)

2.2 Name THREE elements that are required for a valid contract or agreement which will stand up in court. (3)

[10]

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QUESTION 3: STANDARD CONSTRUCTION CONTRACTS

3.1 List THREE ways in which a contractor can be part of a contract. (3)

3.2 Explain the benefits of using standard building contracts in the building industry. (4)

3.3 List any THREE methods or resources that the quantity surveyor may use to calculate a variation order. (3)

[10]

QUESTION 4: TENDERS AND QUOTES

4.1 Complete the following paragraph based on the bill of quantities, by choosing ONE term from the given list. Write only the word next to the question number (4.1.1–4.1.7) in the ANSWER BOOK.

four; document; price; larger; smaller; tendering; five; materials

A bill of quantities is a (4.1.1) used for (4.1.2) in the construction industry. The bill of quantities is a list of (4.1.3) and labour that are itemized. It also details the terms and conditions of the construction contract and itemizes all work to enable a contractor to (4.1.4) the work that is being bided for. Bills of quantities usually only apply to (4.1.5) construction projects and are not used in (4.1.6) construction projects. The layout of a bill of quantities consists of (4.1.7) columns. (7)

4.2 Define the following types of tenders and contracts

4.2.1 Invited tenders

4.2.2 Day work contracts

4.2.3 Public tenders

(3 × 2) (6)

4.3 List at least TWO requirements for drawing up a proper tender document. (2)

[15]

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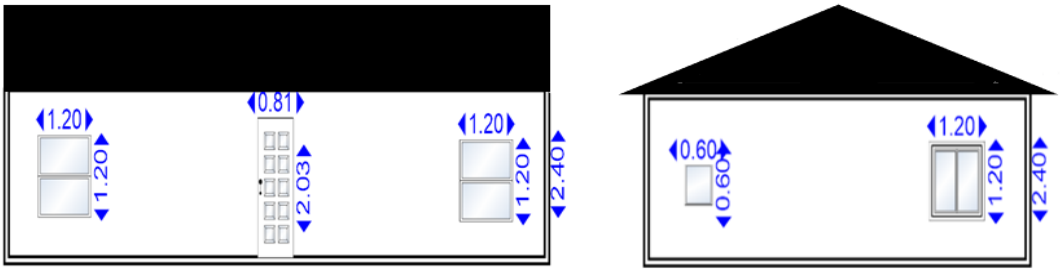
QUESTION 5: QUANTITIES AND COSTING

5.1 The plan below shows the Northern elevation as well as the Western elevation of a new clinic that has to be built for a community.
NOTE: The Southern elevation is a mirror image of the Northern elevation, and the Eastern elevation is a mirror image of the Western elevation.



5.1.1 Calculate the total area of all the window openings of the entire clinic. Do not round off. (10)

5.1.2 Calculate the total area of all the door openings of the clinic. Do not round off. (4)

5.1.3 Calculate the total number of blocks that will be deducted to accommodate for all the window openings. Assume 13 blocks in a square meter.
Round off the total blocks to the next whole number. (3)

5.2 A team consisting of one ceiling fixer and a labourer, can install 20 square meters of ceiling in an 8-hour day.

A dwelling has three rooms, two rooms sized 3 meters x 3 meters, and the other room sized 3 meters x 4 meters.

Calculate how many hours the above team will take to install the ceilings in these areas. (3)
[20]

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QUESTION 6: PLANNING AND ORGANISING CONSTRUCTION ACTIVITIES

6.1 There are two types of construction activities that need to be planned, namely critical activity and non-critical activity.

Indicate from the list below which activity is critical and which is non-critical.

6 1.1 Plastering

6.1.2 Casting the concrete foundation

6.1.3 Painting the exterior walls

6.1.4 Installation of window panes

6.1.5 Fitting and installing ceiling boards

6.1.6 Strip foundation brickwork

6.1.7 Casting of concrete slabs

(7 × 1) (7)

6.2 For a project to run on schedule it is important that the activities are executed in a logical and sequential order.

Rearrange the following activities in a logical and progressive sequence so that all the activities can be completed within the specified timeframe for each of the following phases/elements of the building.

- Site set up and management
- Setting up of temporary offices
- Installing windows
- Setting up corner profiles
- Filling under surface bed
- Marking out for excavations
- Foundation brickwork
- Checking boundary pegs and setting out building lines.
- Casting of concrete foundation
- Excavation for foundations
- Set up and install door frames
- Casting of concrete slab
- Superstructure brickwork

6 2.1 List THREE activities that form part of site establishment. (3)

6.2.2 List THREE activities that form part of foundations. (3)

6.2.3 List THREE activities that form part of the substructure phase. (3)

6.2.4 List FOUR activities that form part of the superstructure phase. (4)

[20]

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QUESTION 7: PROJECTION AND CASH FLOWS

7.1 State FIVE advantages of fast tracking. (5)

7.2 Calculate the number of man hours that will be required to dig a trench of 90 metres, if 15 metres of trench are dug in an 8-hour day. (3)

7.3 Define the term *fast tracking* as used in project planning. (2)

[10]

TOTAL: 100

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