



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T80(E)(A5)T
APRIL EXAMINATION

NATIONAL CERTIFICATE

BUILDING AND CIVIL TECHNOLOGY N3

(11010273)

5 April 2016 (X-Paper)
09:00–12:00

This question paper consists of 8 pages.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
BUILDING AND CIVIL TECHNOLOGY N3
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. Write neatly and legibly.
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QUESTION 1

1.1 Effective management is important in any organisation.

Describe the management procedures regarding each of the following:

1.1.1 Planning

1.1.2 Control

1.1.3 Motivation

1.1.4 Communication

(4 × 2) (8)

1.2 State FOUR general duties of employees at work according to the Occupational Health and Safety Act. (4)

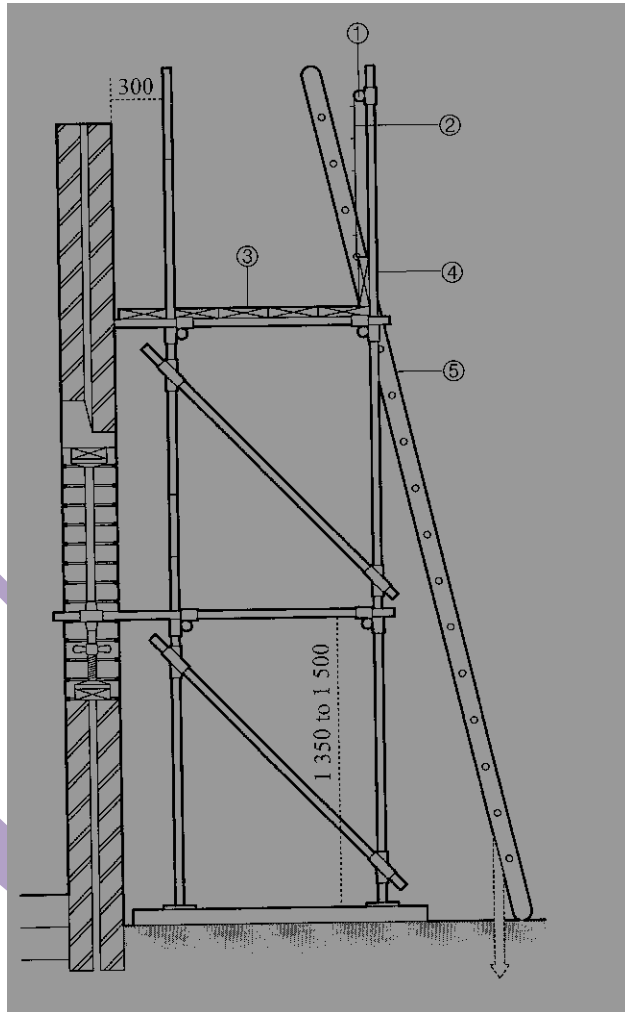
1.3 The Compensation for Occupational Injuries and Diseases Act states that all employers must keep an accident register.

What information should be recorded in such a register?

(4)
[16]

QUESTION 2

2.1 Name the type of scaffold represented by the diagram below.



(2)

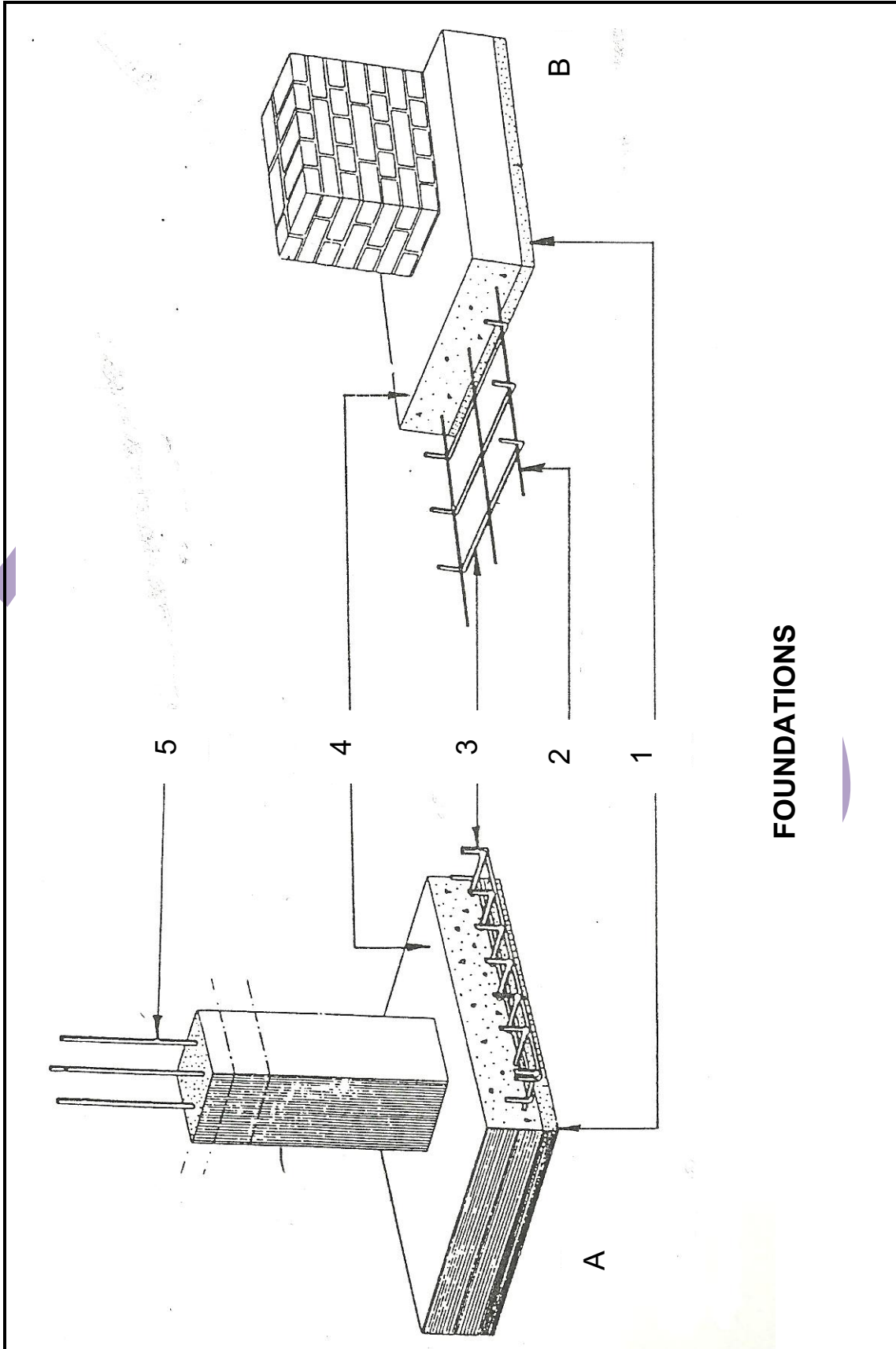
2.2 Identify the different parts of the scaffold numbered 1–5 in the diagram in QUESTION 2.1. Write only the name of the part next to the number (1–5) in the ANSWER BOOK.

(5)

2.3 Define the term *scaffolding*.

(2)

2.4 Identify the TWO types of foundation, A and B, in the diagram below. Write the answer next to the letter (A–B) in the ANSWER BOOK.



(2)

2.5 Identify the different parts of the two foundations as shown in the diagram in QUESTION 2.4. Write only the name of the part next to the number (1–5) in the ANSWER BOOK.

(5)
[16]

QUESTION 3

3.1 Briefly explain each of the following terms:

3.1.1 Compaction

3.1.2 Age

3.1.3 Water/cement ratio

3.1.4 Fine aggregation

3.1.5 Coarse aggregation

(5 × 1) (5)

3.2 Briefly state the THREE main issues at stake when concrete is transported from a plant to a destination.

(3)

3.3 Briefly explain how cement should be stored.

(4)

3.4 State FOUR rules to which one should adhere when working with concrete.

(4)
[16]

QUESTION 4

4.1 Structural steel is often used when constructing a framed building.

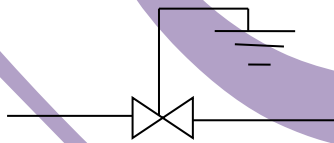
Make a neat sketch to show clearly how the structural steel column base is mounted on a pad foundation and label the different parts. (8)

4.2 Identify each of the following symbols and abbreviations used in plumbing. Write the answer next to the question number (4.2.1–4.2.8) in the ANSWER BOOK.

4.2.1



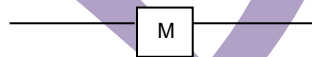
4.2.2



4.2.3



4.2.4



4.2.5

ST

4.2.6

BT

4.2.7

ET

4.2.8

COP

(8 × 1)

(8)

[16]

QUESTION 5

- 5.1 Name FIVE characteristics a floor should have to be functional. (5)
- 5.2 Define *plastering*. (2)
- 5.3 A wall in an office has been panelled with new timber and the panelling must now be varnished.
How will you go about preparing and varnishing the new work? (5)
- 5.4 Where will you use the following floor finishes?
- 5.4.1 P.V.C tiles
- 5.4.2 Clay tiles (2 × 2) (4)
- [16]**

QUESTION 6

- 6.1 Kerbs define the edges of a road and act as barriers.
State THREE main types of kerbs. (3)
- 6.2 Give FOUR purposes of kerbing. (4)
- 6.3 Define the term *footway*. (2)
- 6.4 A one-brick wall with a length of 6 m and a height of 2,7 m has to be built with a door opening 2 m high and 1 m wide. Labour cost is R100/m².
NOTE: ½ brick walling = 50 bricks/m²
1 m³ sand = 1 000 kg (1 tonne)
Calculate the following:
- 6.4.1 The area of the wall (5)
- 6.4.2 The amount of bricks required (2)
- 6.4.3 The amount of sand required (2)
- 6.4.4 The labour cost (2)
- [20]**

TOTAL: 100