higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

DRAWING OFFICE PROCEDURES AND TECHNIQUES

(Second Paper)

NQF LEVEL 4

(12050724)

14 March 2018 (Y-Paper)
13:00–17:00

CLOSED-BOOK EXAMINATION

REQUIREMENTS: **ONE sheet of A4 drawing paper**
Cover folder BOE 8/15

Drawing software and calculators may be used.

This question paper consists of 6 pages.

Copyright reserved

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 this question paper.
4. ALL drawing work, including candidate information, must be done in pencil.
5. ALL drawing work must comply with the relevant SANS (SABS) recommended codes.
6. ALL abbreviations and symbols must comply with the latest National Building Regulations and all relevant SANS (SABS) codes.
7. A balanced layout is very important and candidates will be penalised for poor planning.
8. Sketches and/or diagrams must be done in pencil, be neat, reasonably large, in proportion and fully labelled.
9. Work neatly.

Copyright reserved

QUESTION 1: COMPUTER ORIENTATION

1.1 Give the meaning of each of the following abbreviations:

1.1.1 Wi-Fi

1.1.2 JPEG

1.1.3 HDMI

(3 × 2) (6)

1.2 Differentiate between a *web page* and a *web site*. (2)

1.3 Explain what is meant by each of the following computer terms:

1.3.1 Firewall

1.3.2 Memory

1.3.3 Password

(3 × 2) (6)
[14]

QUESTION 2: ARCHITECTURAL GRAPHICS

FIGURE 1 on the next page shows a cross section of a cavity wall structural masonry.

Draw to a scale of 1 : 5 the elevation below and show the following on your drawing:

- Depth of excavation including face
- Thickness of the concrete
- Foundation brickwork, including face-brick plinth
- Damp-proof membrane (DPM)
- Back fill, including compaction specifications
- Surface bed, including specifications
- The start of superstructure cavity brickwork, plastered externally and internally
- Screed

Insert dimensions, specifications and annotations.

NOTE: For this cavity use brick sizes as 220 mm × 110 mm × 75 mm.

Copyright reserved

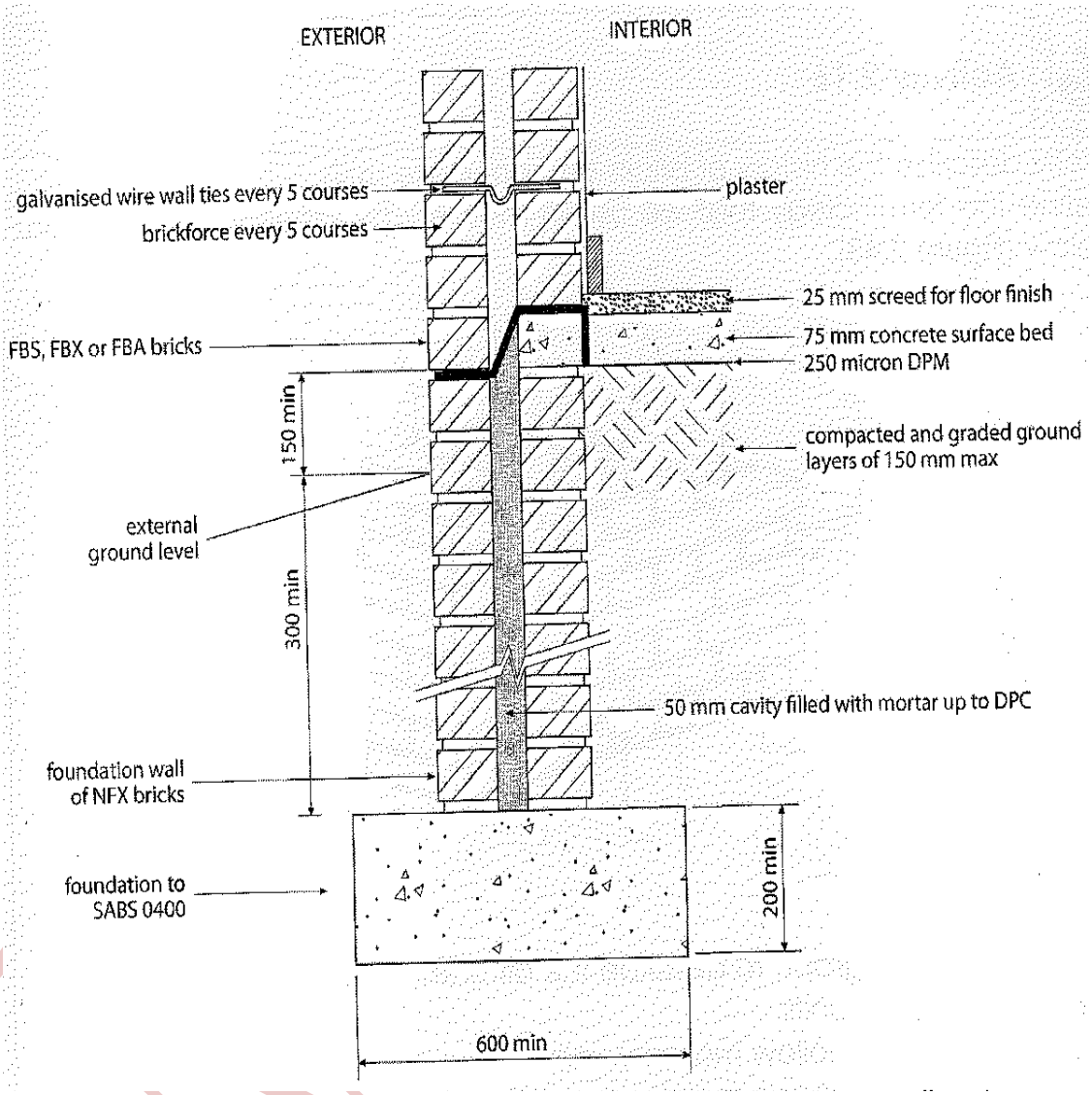

EXTERIOR
INTERIOR
galvanised wire wall ties every 5 courses
brickforce every 5 courses
plaster
25 mm screed for floor finish
75 mm concrete surface bed
250 micron DPM
FBS, FBX or FBA bricks
150 min
compacted and graded ground layers of 150 mm max
external ground level
300 min
50 mm cavity filled with mortar up to DPC
foundation wall of NFX bricks
foundation to SABS 0400
200 min
600 min

FIGURE 1

[26]

QUESTION 3: CIVIL AND STRUCTURAL

FIGURE 2 below shows a view of a steel structure.

Make fully detailed drawings to scale 1 : 10 of the columns marked C1 and C2 and supply enough information for the manufacturing of the beam in a structural steel workshop.

All plates are 10 mm thick and all bolts are M20.

Show the following information:

- The beam centres
- Lengths and sizes of columns
- Dimensions of columns over end plates
- Dimensions for the drilling of the bolt holes
- View with dimensions of end plates

INFORMATION NOT GIVEN IS LEFT TO YOUR OWN DISCRETION.

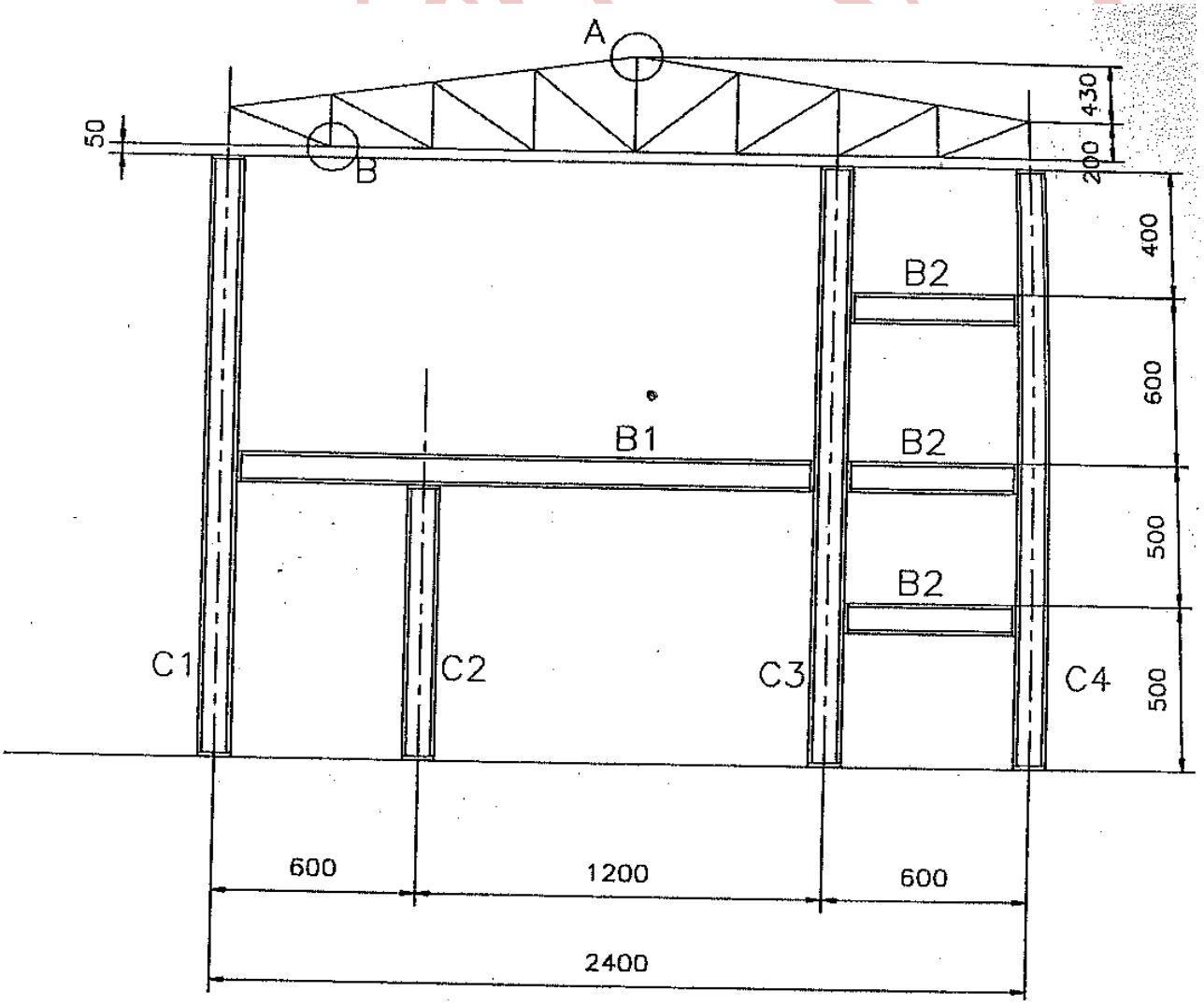


FIGURE 2

B1 – UB 254 × 146 × 31 kg/m
B2 – UB 203 × 133 × 25 kg/m
C1 and C2 – UB 203 × 203 × 46 kg/m
End plates – 10 mm with 4 × M20 bolts
Base plates – 20 mm with 2 × M20 bolts

[25]

QUESTION 4: MECHANICAL

FIGURE 3 below shows a front view of a trophy.

Draw the front view of the trophy shown and insert any 10 dimensions. Show the construction lines. Print the following title and scale centrally beneath the front view:

TROPHY
SCALE 1 : 1

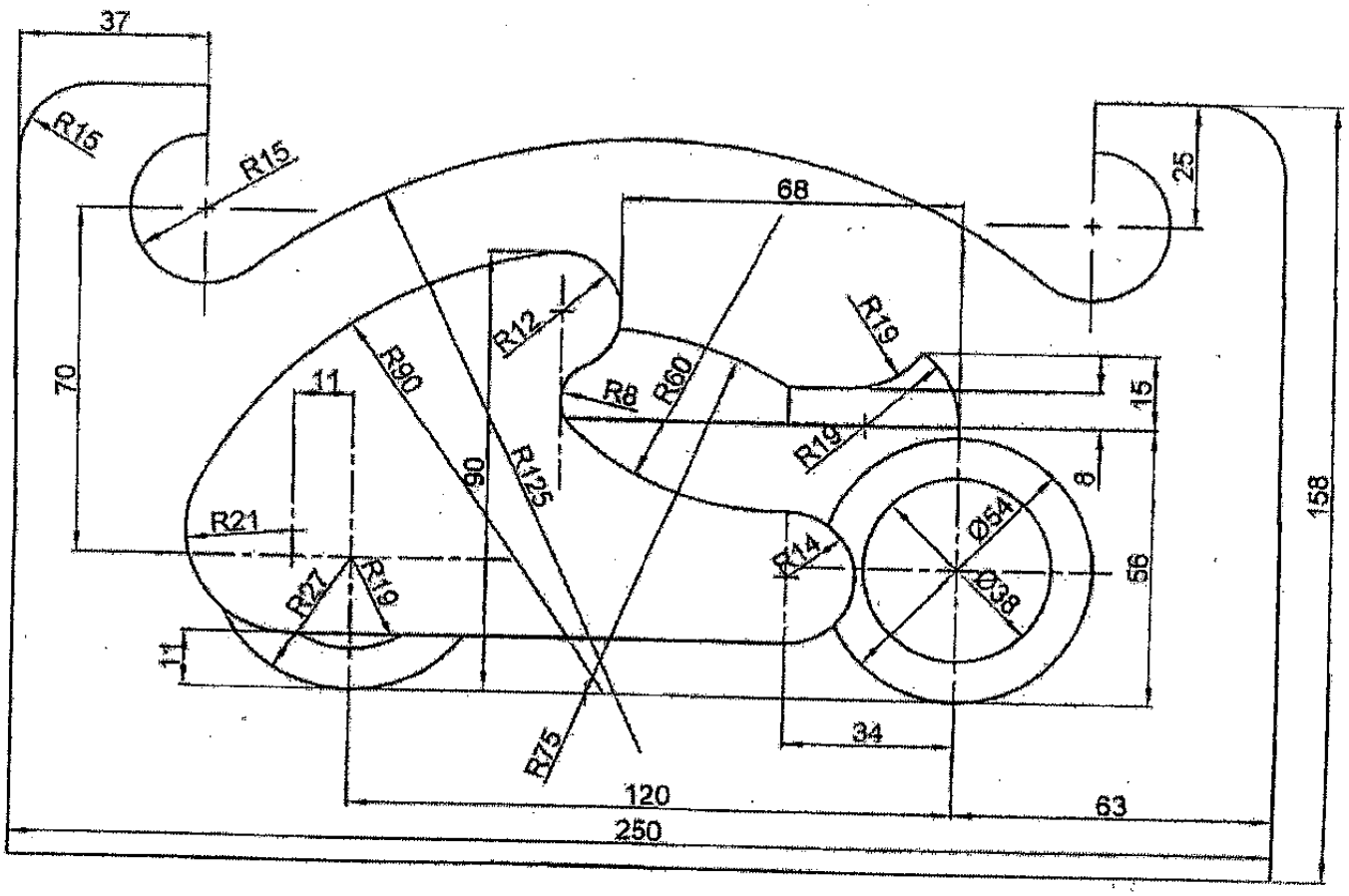


FIGURE 3

[35]

TOTAL: 100

Copyright reserved