higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE:
MULTIDISCIPLINARY DRAWING OFFICE PRACTICE

COMPUTER-AIDED DRAUGHTING

(6010035)

29 November 2019 (X-Paper)
09:00–12:00

CLOSED-BOOK EXAMINATION

REQUIREMENTS: **A4 drawing sheets**
Cover folder (BOE 8/15)

This question paper consists of 5 pages, 2 diagram sheets, 1 information sheet and 1 answer sheet.

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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. Answer only QUESTION 1 on the ANSWER SHEET (attached). ALL other questions must be answered on A4 DRAWING SHEETS. Do NOT use A3 DRAWING SHEETS.
5. Use only ONE side of each DRAWING SHEET to plot or print the answers.
6. Plot or print each drawing on a separate DRAWING SHEET.
7. The QUESTION NUMBER must appear at the top left-hand corner of each DRAWING SHEET.
8. ALL candidate information must be plotted in the title block.
9. Provide each DRAWING SHEET with a border line.
10. Make ALL drawings to the given scale.
11. Use your discretion where dimensions are NOT given.
12. Plot or print your own drawings.
13. Maintain a balanced layout. Candidates must plan well to earn marks.
14. Insert ALL loose DRAWING SHEETS and the ANSWER SHEET in the cover folder BOE 8/15. Do NOT staple the pages.
15. Work neatly.

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QUESTION 1

Answer the following questions on the ANSWER SHEET (attached). Write your EXAMINATION NUMBER in the space provided at the top of the sheet.

1.1 Briefly explain each of the following terms:

1.1.1 Folder

1.1.2 Operating system

1.1.3 Partition

(3 × 1) (3)

1.2 Complete the following sentences by using the words in the list below. Write only the missing word or words next to the question number (1.2.1–1.2.2) on the ANSWER SHEET (attached).

recording; high-definition video; graphic symbol

1.2.1 An icon is a … for an application, file or folder. (1)

1.2.2 Blu-ray was developed for … and playing back … and storing large amounts of data. (2)

1.3 Write each of the following acronyms in full:

1.3.1 HDMI

1.3.2 DVD+R

(2 × 2) (4)

[10]

QUESTION 2: GENERAL AND MECHANICAL DRAUGHTING

FIGURE 1, DIAGRAM SHEET 1 (attached), shows a ratchet wheel drawn in oblique projection (cabinet method).

Make a half-sized landscape-orientated drawing of the given view. Insert ALL dimensions. **[25]**

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QUESTION 3: STRUCTURAL STEEL DETAILING

The main function of a structural steel detailer is to draw clear and precise details of various parts of a steel structure. FIGURE 2 shows a typical detail at the heel of a roof truss attached to the top of a column. The pitch of the roof is 25°.

Use the following specifications and draw, to scale 1:10, the completed detail:

Rafter marked A: 100 × 75 × 10 rolled steel angle
Bolt holes: FIVE holes spaced evenly at 100 mm centres with edge distance 35 mm

Tie beam marked B: 90 × 65 × 10 rolled steel angle
Bolt holes: THREE holes spaced evenly at 100 mm centres with edge distance 35 mm

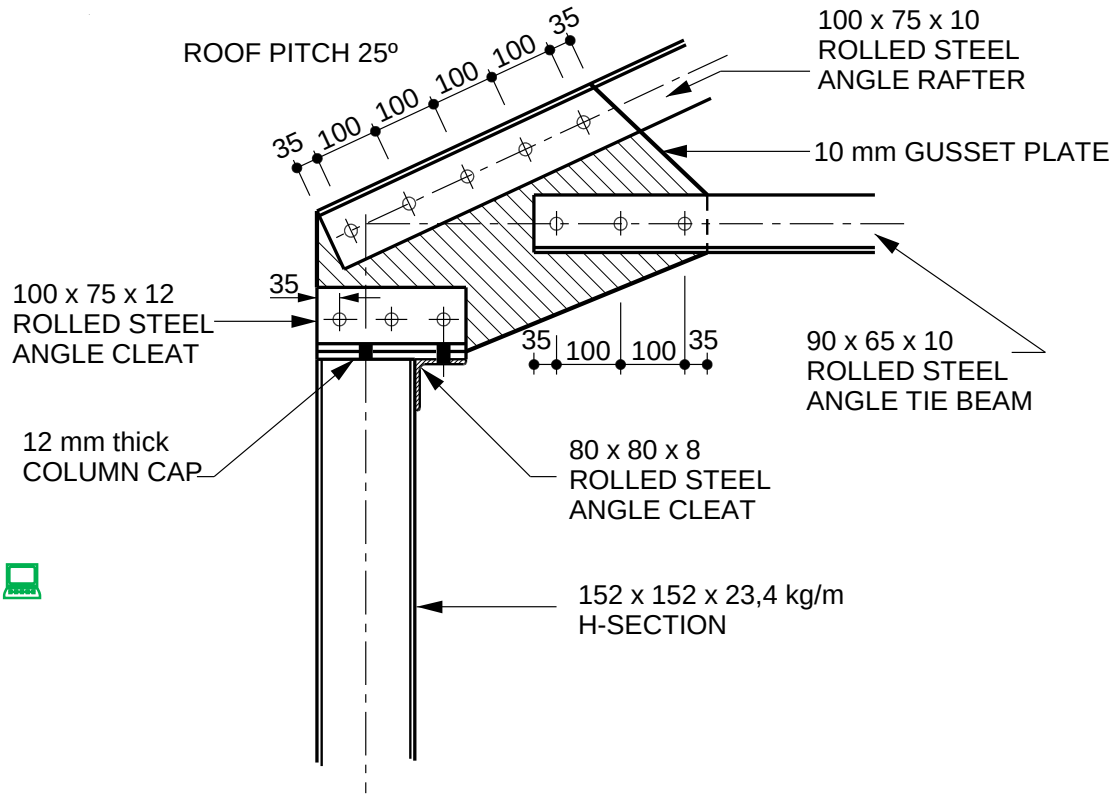


FIGURE 2

The completed drawing must include ALL labels, sectioning and a title. **[20]**

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QUESTION 4: ELECTRICAL DRAUGHTING

FIGURE 3, DIAGRAM SHEET 1 (attached), shows a typical circuit diagram for the layout of a domestic wiring system.

Draw, NOT to scale but in good proportion, a large, neat drawing of the given circuit diagram. The completed drawing must include ALL symbols and labels. **[15]**

QUESTION 5: BUILDING DRAUGHTING

FIGURE 4, DIAGRAM SHEET 2 (attached), shows a plan view of an incomplete house-plan layout.

Draw, to scale 1:100, the house-plan layout. The completed view must include the following:

- ALL missing dimensions
- Windows as indicated (use the steel-window schedule on the INFORMATION SHEET (attached) and include appropriate windows where NO window codes are indicated)
- Doors to ALL rooms (except for the dressing room) as well as the back and front doors
- Fitments to the TWO bathrooms **[30]**

TOTAL: 100

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DIAGRAM SHEET 1

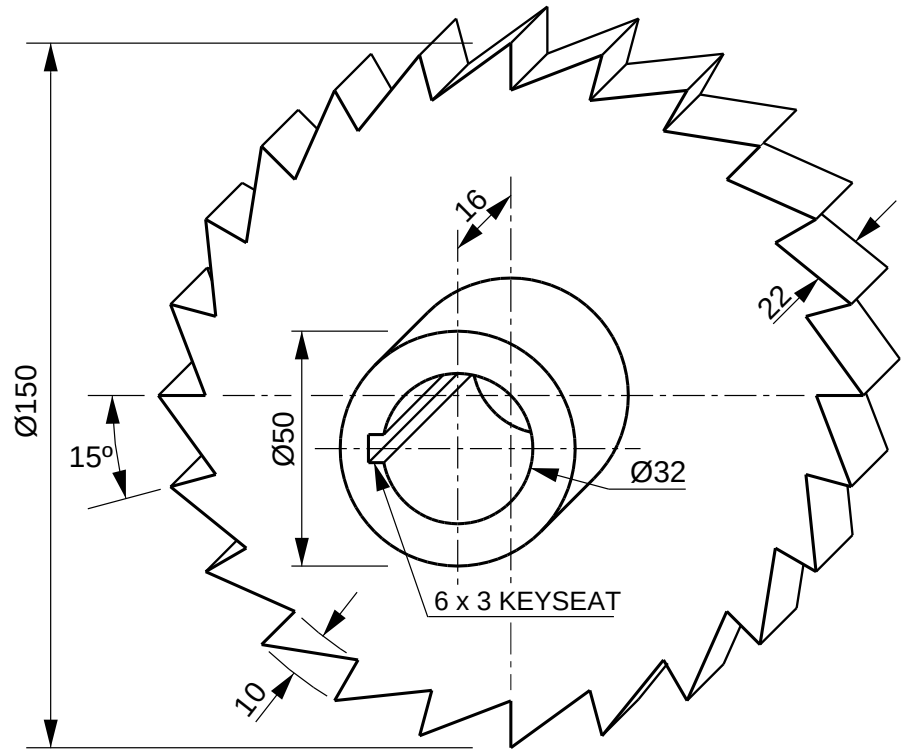


FIGURE 1

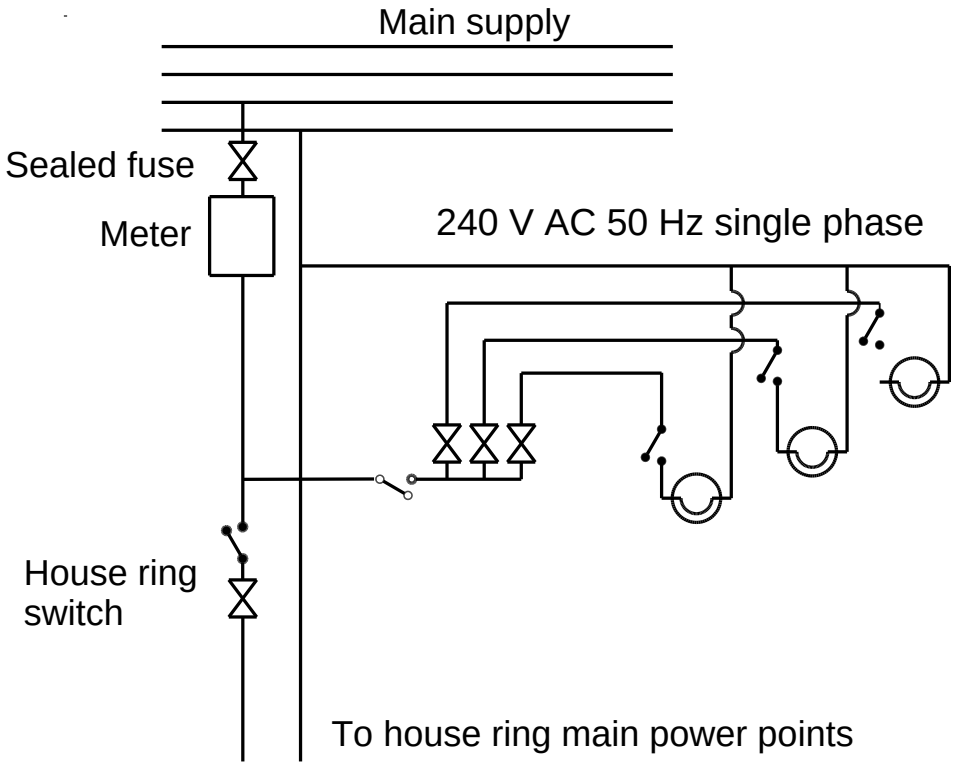


FIGURE 3

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DIAGRAM SHEET 2

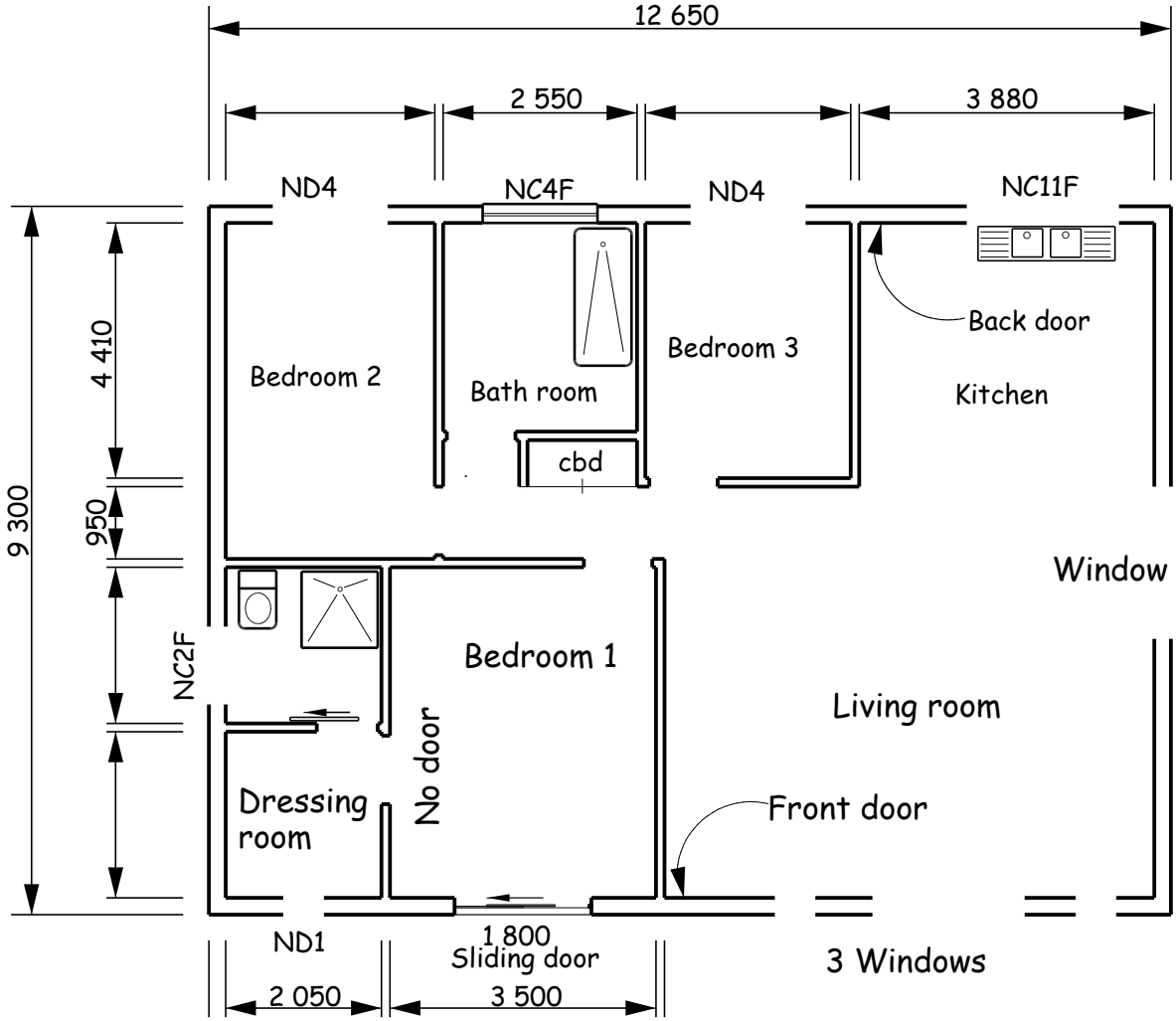


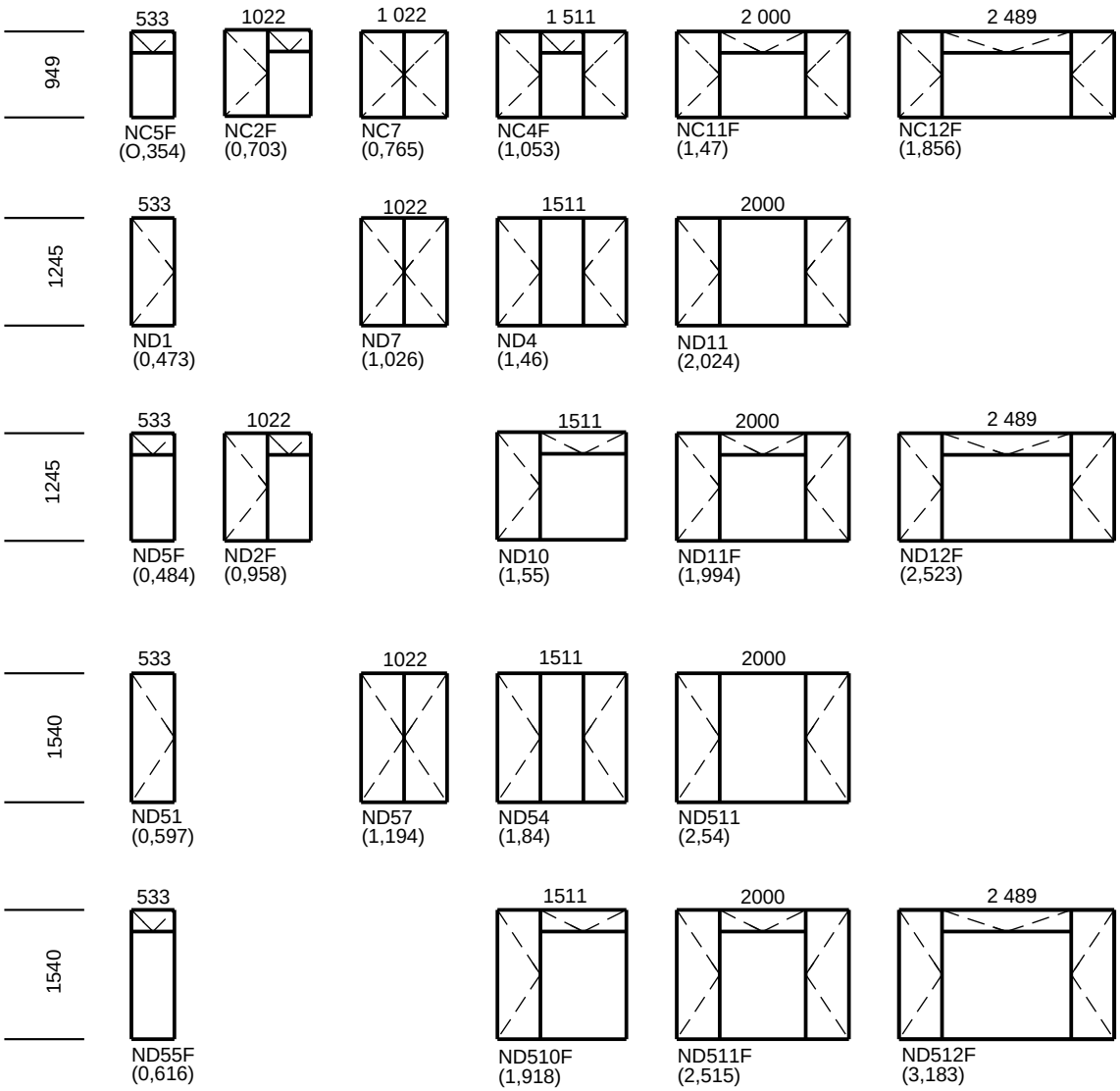
FIGURE 4

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(6010035)

INFORMATION SHEET

STEEL-WINDOW SCHEDULE



(Figures in brackets indicate light areas)

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ANSWER SHEET **EXAMINATION NUMBER:** | | | | | | | | | | | | | |

QUESTION 1

A pen or pencil may be used.

1.1 1.1.1 _____

_____

1.1.2 _____

_____

1.1.3 _____

_____

(3 × 1) (3)

1.2 1.2.1 _____ (1)

1.2.2 _____ (2)

1.3 1.3.1 _____

1.3.2 _____

(2 × 2) (4)

[10]

QUESTION 1……../10

QUESTION 2……../25

QUESTION 3……../20

QUESTION 4……../15

QUESTION 5……../30

TOTAL……/100 **……%**

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