higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1720**(E)**(J26)T

NATIONAL CERTIFICATE

TECHNICAL ILLUSTRATION

(8090235)

26 July 2019 (X-Paper)
09:00–13:00

REQUIREMENTS: TWO A3 drawing sheets
ONE sheet of A4 tracing paper and a grid

Calculators and drawing instruments may be used.

This question paper consists of 4 pages and 3 diagram sheets.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
TECHNICAL ILLUSTRATION
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. Use only ONE side of the DRAWING SHEETS and TRACING PAPER.
5. Complete ALL drawing work, including candidate information, in pencil.
6. Answer QUESTION 1 in the ANSWER BOOK. Answer ALL other questions on the DRAWING SHEETS.
7. TWO A3 DRAWING SHEETS for QUESTION 2 and 3, as well as ONE sheet of A4 TRACING PAPER and a GRID for QUESTION 4, are supplied.
8. Show ALL construction lines.
9. Marks will be awarded for neatness and accuracy.
10. A balanced layout is very important. Candidates will be penalised for poor planning.
11. Write neatly and legibly.

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SECTION A: WRITTEN

QUESTION 1: TECHNICAL ILLUSTRATION

Complete the following sentences by writing the missing word or words next to the question number (1.1.1–1.3.2) in the ANSWER BOOK.

1.1 Technical Illustration is the technique of translating pure engineering drawings into (1.1.1) …, accurate and easily recognisable illustrations by a process of (1.1.2) … perspective projection.

1.2 Although Technical Illustration is simple to (1.2.1) …, it is not simple to (1.2.2) …

1.3 By the end of the modules in this course, the student will have a sound knowledge of (1.3.1) …, two-point and (1.3.2) … perspective.

(3 × 2) **[6]**

TOTAL SECTION A: 6

SECTION B: DRAWING

QUESTION 2: TWO-POINT PERSPECTIVE

FIGURE 1, DIAGRAM SHEET 1 (attached), shows an object and its dimensions.

2.1 Draw an object resting on the ground with its sides vanishing to the left at an angle of 45°. (8)

2.2 The distance of the eye in front of the PP is 130 mm. The height of the eye above the GL is 100 mm. The model lies on the GL with its leading edge A 30 mm to the right of the CV. (5)

2.3 Include a title bar, student number, centre number, scale, date and question number. (3)

ALL measurements are given in millimetres. **[16]**

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QUESTION 3: OBLIQUE PERSPECTIVE

Refer to FIGURE 2 on DIAGRAM SHEET 2 (attached).

3.1 Construct a three-point perspective grid using the information supplied.

3.2 The distance of the eye in front of the PP is 120 mm. The height of the eye above the GL is 104 mm. Construct an oblong 8 × 8 units, 16 units long, with each unit 10 mm. The oblong is 20° to the left of the PP and is elevated to the right at 45° to the ground. Point A, the leading edge of the oblong, is situated 40 mm to the left of the CV and 50 mm behind the PP.

3.3 Include a title bar, student number, centre number, scale, date and question number.

ALL measurements are given in millimetres. **[22]**

QUESTION 4: THREE-POINT PERSPECTIVE EXPLODED-VIEW ILLUSTRATION OF A MODEL ASSEMBLY

FIGURE 3, DIAGRAM SHEET 3 (attached), shows a model and its dimensions.

4.1 Draw an exploded-view illustration of the assembly as shown on the grid supplied.

4.2 Include a title bar, student number, centre number, scale, date and question number.

4.3 Scale: ALL measurements in grid units.

4.4 **NOTE:** When the construction is complete, outline the object in bolder line treatment 0,5 mm thick. Do NOT show the dimensions on the final illustration. **[56]**

TOTAL SECTION B: 94
GRAND TOTAL: 100

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DIAGRAM SHEET 1

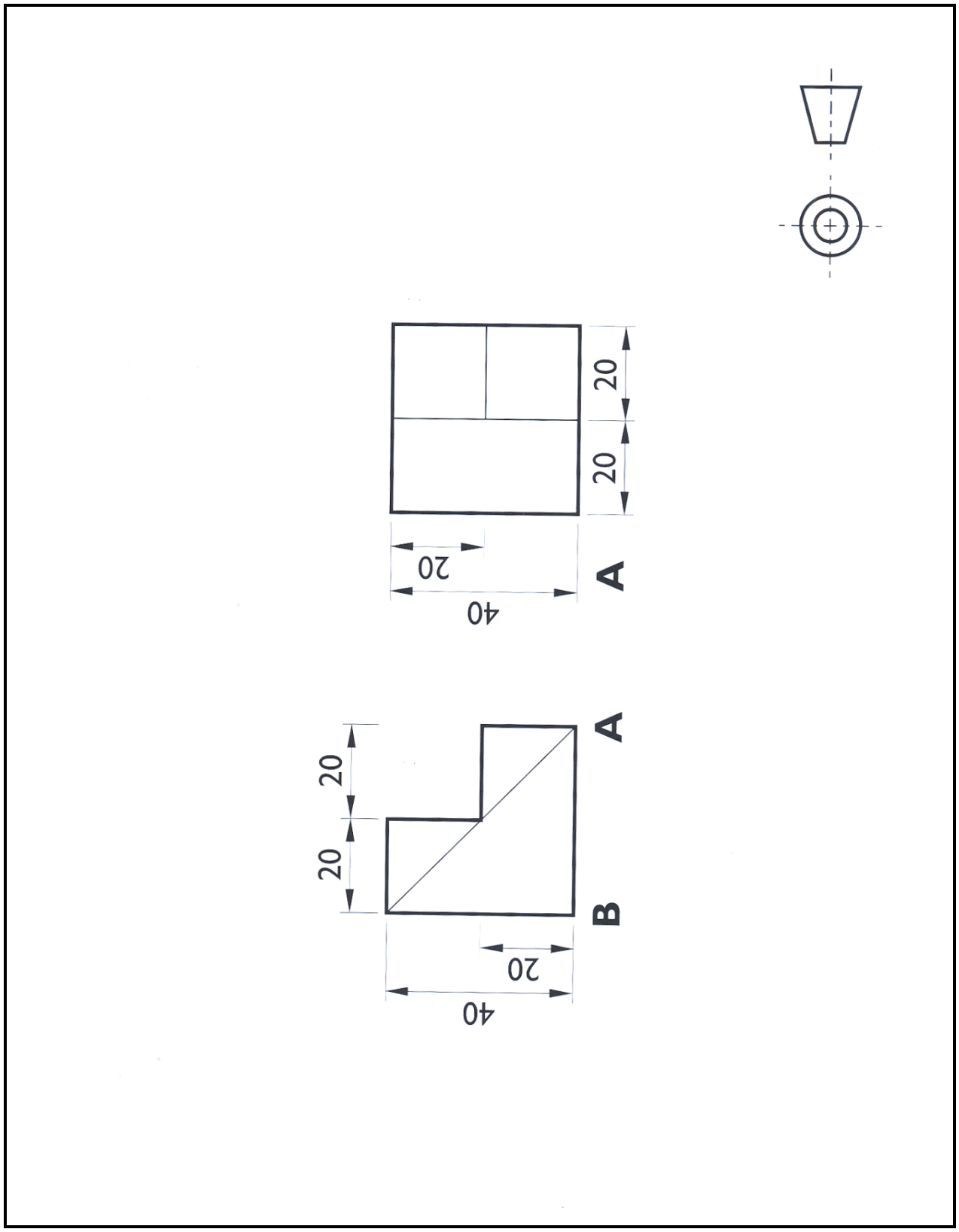


FIGURE 1

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DIAGRAM SHEET 2

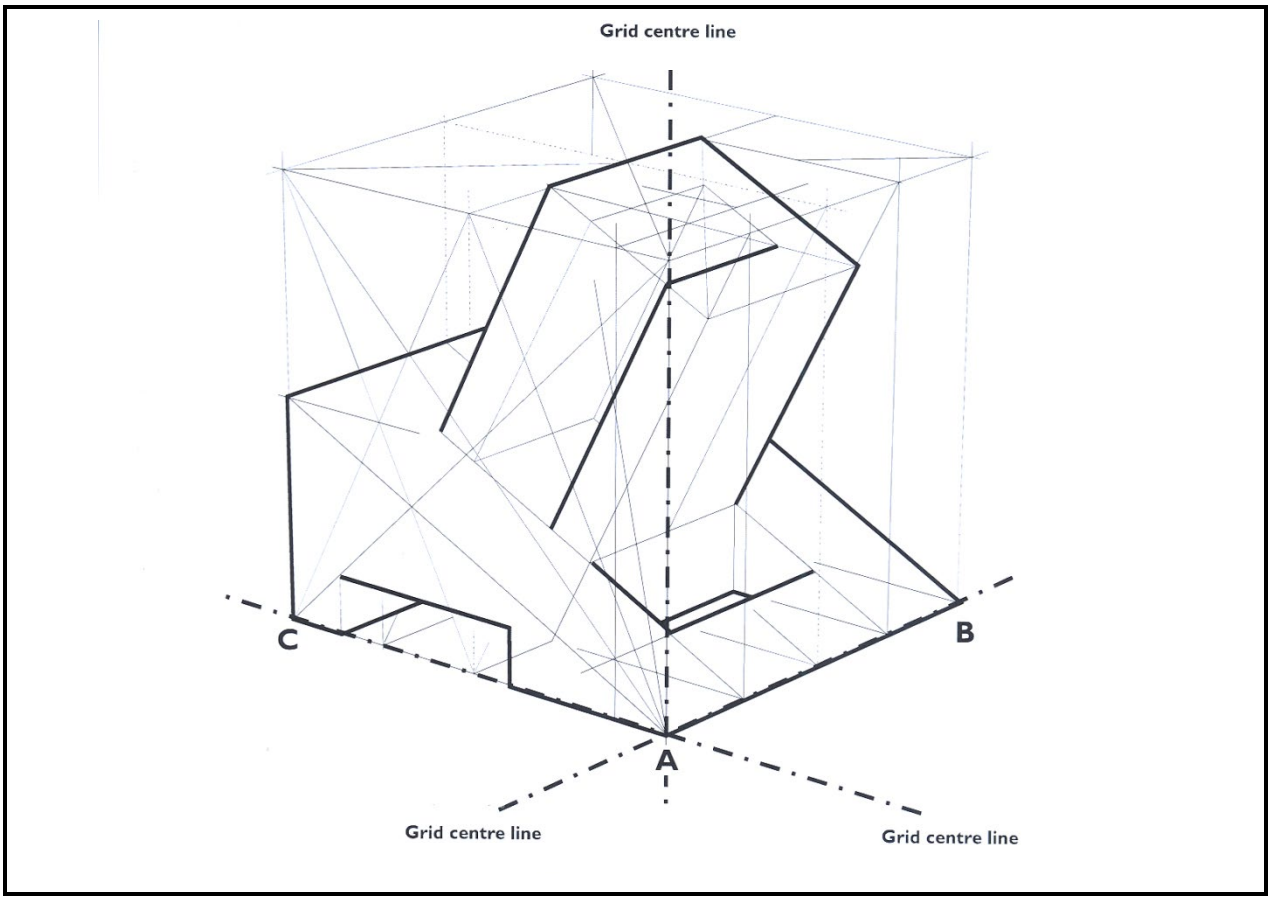


FIGURE 2

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DIAGRAM SHEET 3

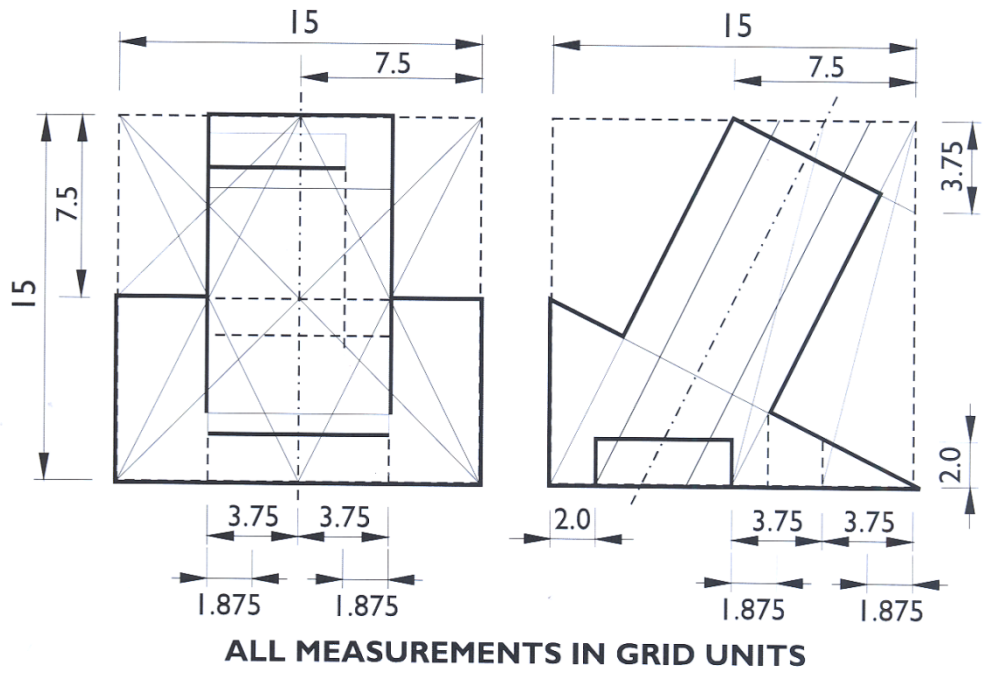


FIGURE 3

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