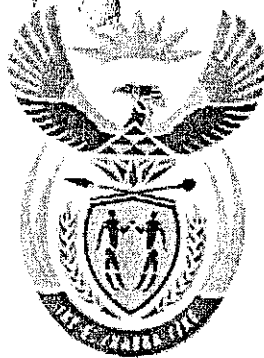


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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T560(E)(J28)T
AUGUST 2010

NATIONAL CERTIFICATE

ENGINEERING DRAWING N3

(8090283)

28 July (X-Paper)
09:00 – 13:00

REQUIREMENTS: One A2 drawing sheet

Candidates will require drawing instruments.

This question paper consists of 9 pages and a 1-page answer sheet.

1941



**DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA**

**NATIONAL CERTIFICATE
ENGINEERING DRAWING N3**

TIME: 4 HOURS

MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers correctly according to the numbering system used in this question paper.
 4. Use BOTH sides of the DRAWING SHEET.
 5. A 15 mm border MUST be drawn on BOTH sides of the DRAWING SHEET.
 6. ALL drawing work including candidate information MUST be done in PENCIL.
 7. A radius curve stencil may be used to draw smaller arcs.
 8. Unspecified radii must be R3.
 9. A balanced layout is very important and candidates are hereby advised to plan properly.
 10. ALL drawings MUST conform to the latest SABS 0111 Code of Practice for Engineering Drawing.
 11. Write neatly and legibly.
-

QUESTION 1

FIGURE 1 (attached) shows the primary views of the components of a machine vice.
The complete list of parts is as follows:

Item 1	Base	1 off	Cast iron
Item 2	Fixed jaw	1 off	Cast iron
Item 3	Sliding jaw	1 off	Cast iron
Item 4	Screw shaft	1 off	Mild steel
Item 5	Shaft ring	1 off	Mild steel
Item 6	Rod	1 off	Mild steel
Item 7	Rod cap	1 off	Mild steel
Item 8	M8 countersunk screw	1 off	Mild steel
Item 9	Pin	1 off	Mild steel

- 1.1 Draw, as an assembly drawing, to scale 1:1, a full-sectional front view of an assembly with the jaws in the closed position. (28)
- 1.2 Insert a suitable title and scale centrally, below the drawing. (2)

[30]

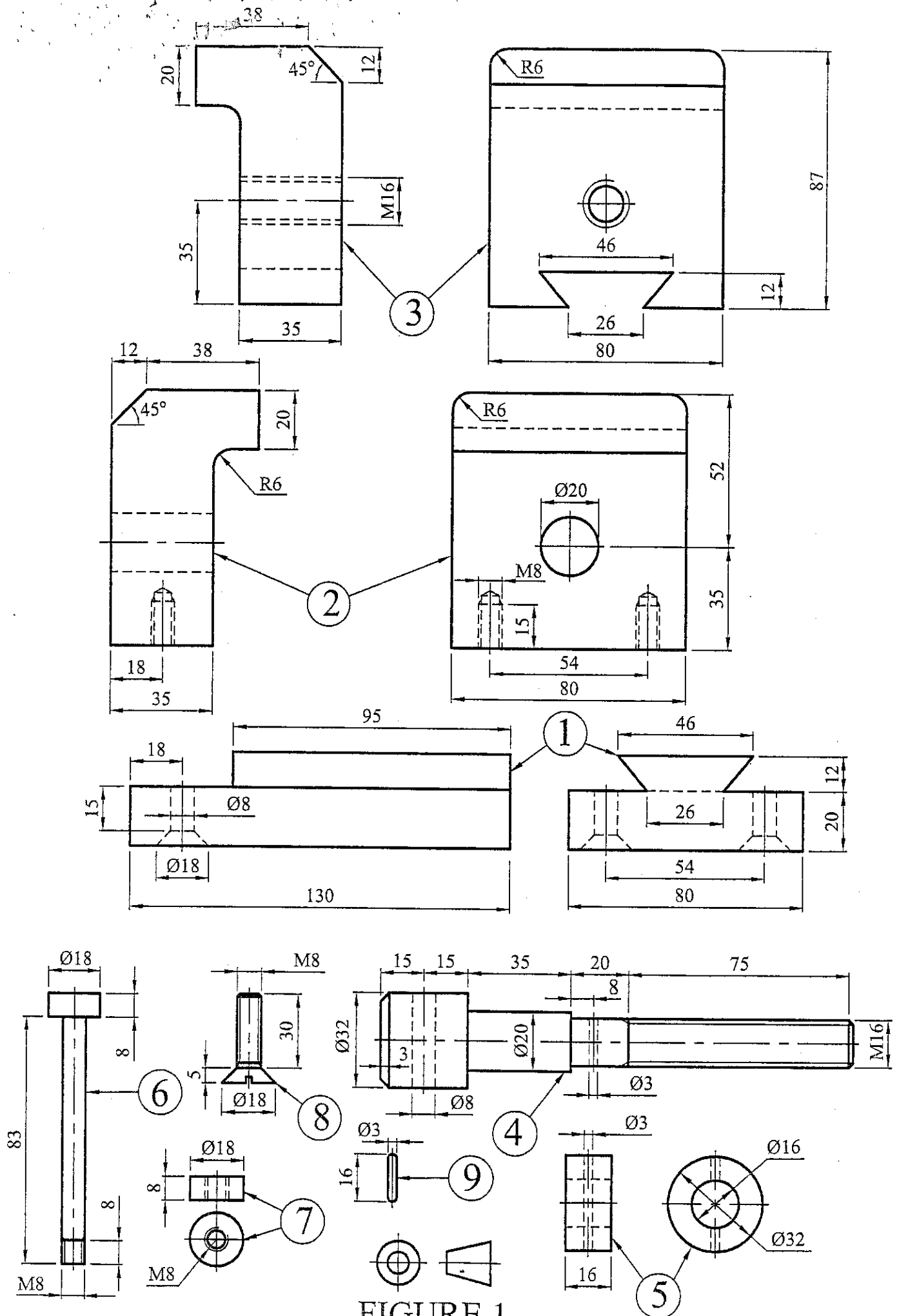


FIGURE 1

QUESTION 2: SECTIONAL DRAWING

FIGURE 2 shows TWO primary views of a component.
Draw, to scale 1:1 and in FIRST-ANGLE ORTHOGRAPHIC PROJECTION, the following views of the component:

2.1 A full-sectional front view

(10)

2.2 A full-sectional top view

(10)

NO hidden detail is necessary.

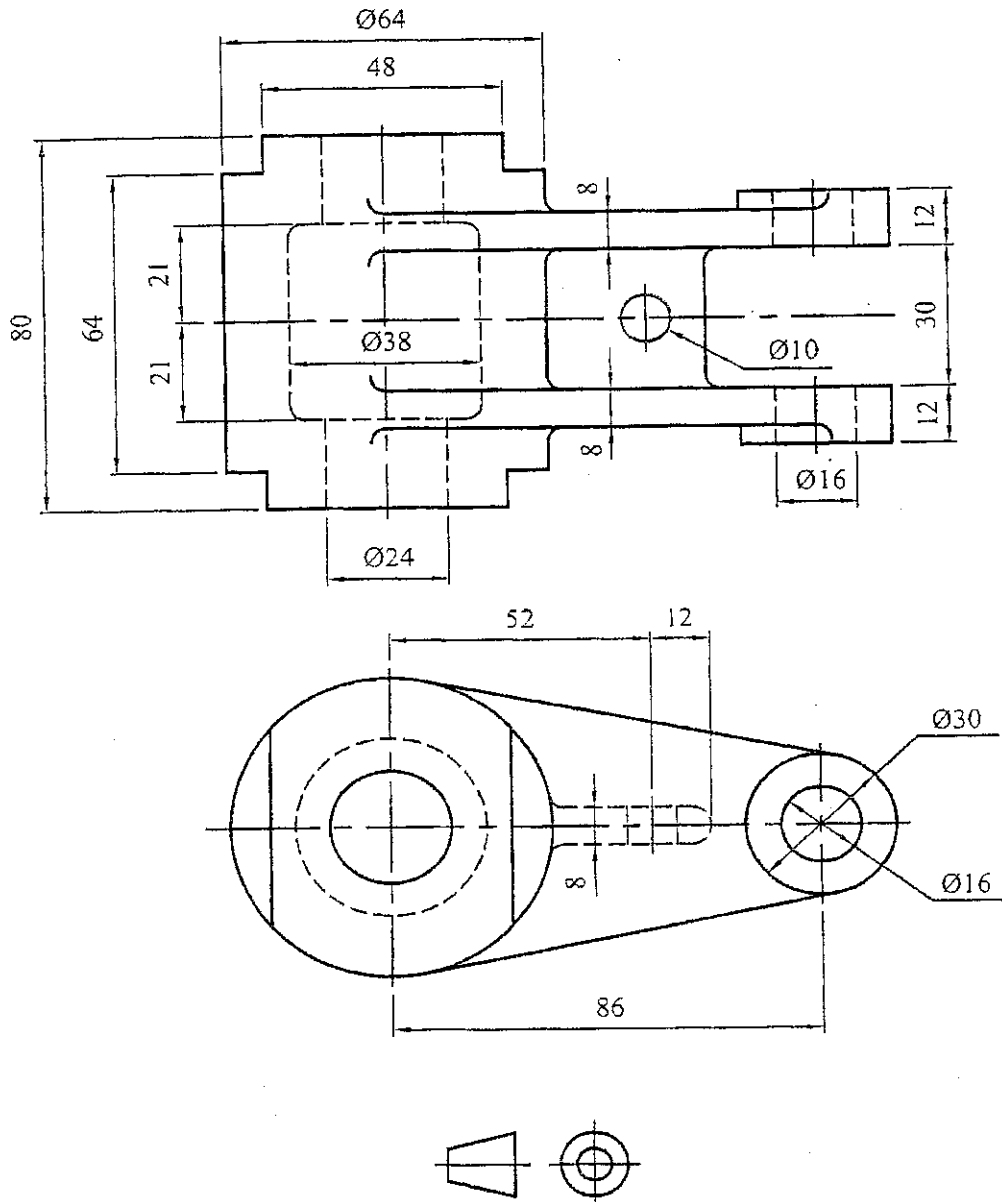


FIGURE 2

[20]

PTO

QUESTION 3: DETAILED DRAWING

FIGURE 3 (attached) shows TWO primary views of an assembly. Draw, to scale 1:1 and in FIRST-ANGLE ORTHOGRAPHIC PROJECTION, detailed drawings of the following items:

3.1 The base (Item 1) showing the following views:

3.1.1 A half-sectional front view with the right half in section

(7)

3.1.2 A top view

(6)

3.2 The arm (Item 2) showing the following view:

A full-sectional front view

Show hidden details in the parts that are NOT in section.

(7)

[20]

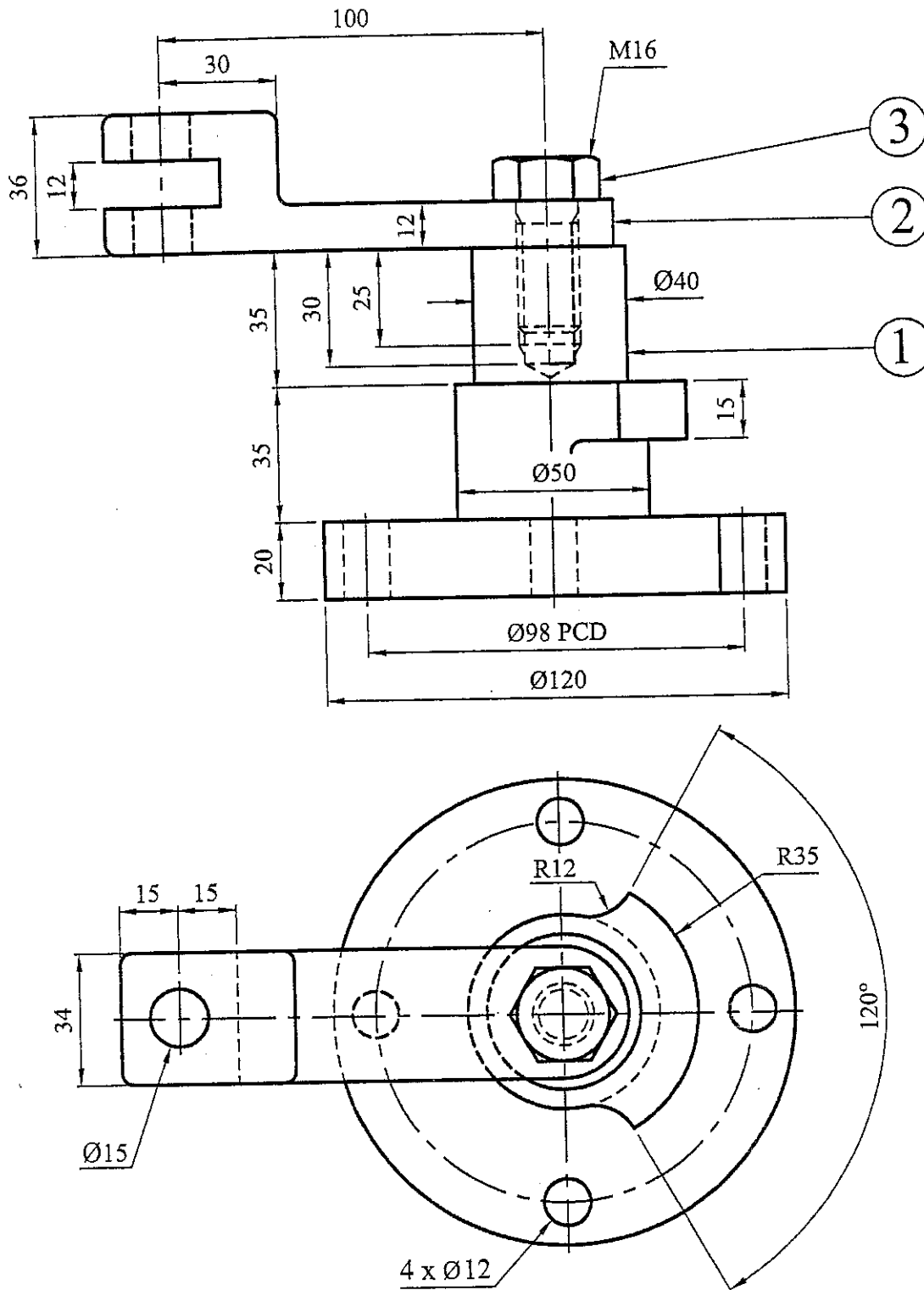


FIGURE 3

QUESTION 5: PERSPECTIVE DRAWING

NOTE: THIS QUESTION MUST BE ANSWERED ON THE PREPARED ANSWER SHEET AND ATTACHED TO THE DRAWING SHEET.

Use the information shown on the prepared ANSWER SHEET to draw a neat two-point perspective view of the machined block.

Point A is situated in the line with the centre of vision and up against the picture plane.

Line AB vanishes to the left at 45° .

The distance of the eye in front of the picture plane is 110 mm.

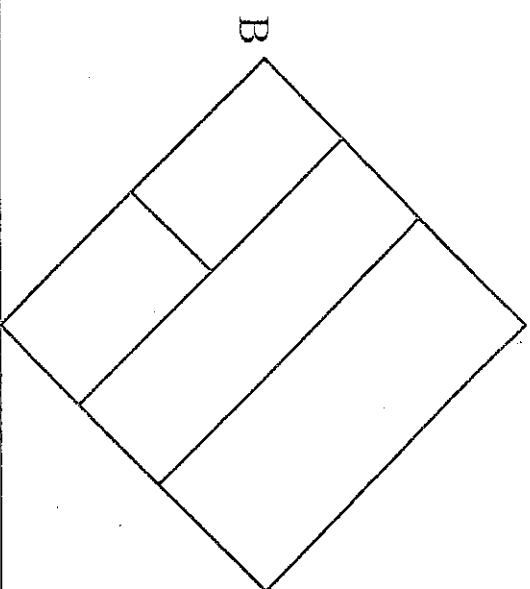
[15]

Layout, neatness and general impression of the DRAWING SHEET.

[5]

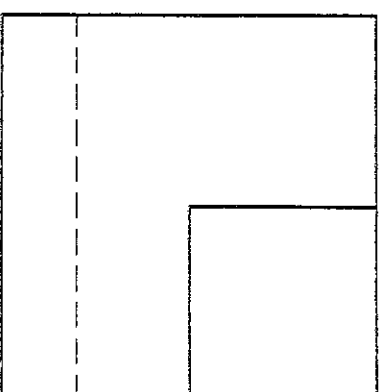
TOTAL: 100

HORIZON LINE (HL)



PICTURE PLANE (PP)

GROUND LINE (GL)



EXAMINATION NUMBER

10/10/10

10/10/10