

EXAMINATIONS COUNCIL OF ZAMBIA

Examination for General Certificate of Education Ordinary Level

Geometrical and Mechanical Drawing 7040/2

Paper 2

Friday

5 AUGUST 2016

Additional materials:
A2 Drawing paper (1 sheet)
Standard drawing equipment

Time: 2 hours 40 minutes

Marks: 100

Instructions to Candidates

Print your **name**, **centre number** and **candidate number** at the bottom right-hand side of your drawing paper.

There are **two (2)** questions in this paper. Answer **both** questions.

Use **both** sides of the drawing paper for your answers.

Information for Candidates

The number of marks is given in brackets [] at the beginning of each section.

The insert contains **Figure 2** for Section 2.

You have an additional **10 minutes** to read carefully the text of Section 2 before answering the questions.

Arcs of circles less than **5mm radius** may be drawn freehand.

All dimensions are in millimetres unless otherwise stated.

Cell phones are not allowed in the examination room.

Answer the question **from section 1 on one side** of the drawing paper and that **from section 2 on the other side**.

All dimensions are in **millimetres**.

Section 1 (16 marks)

Candidates are advised to spend not more than 30 minutes on this section of the paper:

- 1** Figure 1 shows two orthographic views of a **BRACKET** sketch (in freehand) a pictorial view of the bracket with point 'P' in the foreground of the view.

NB: The use of instruments when sketching or living-in will be heavily penalized. Faint construction lines and points used when preparing the sketch should not be erased.

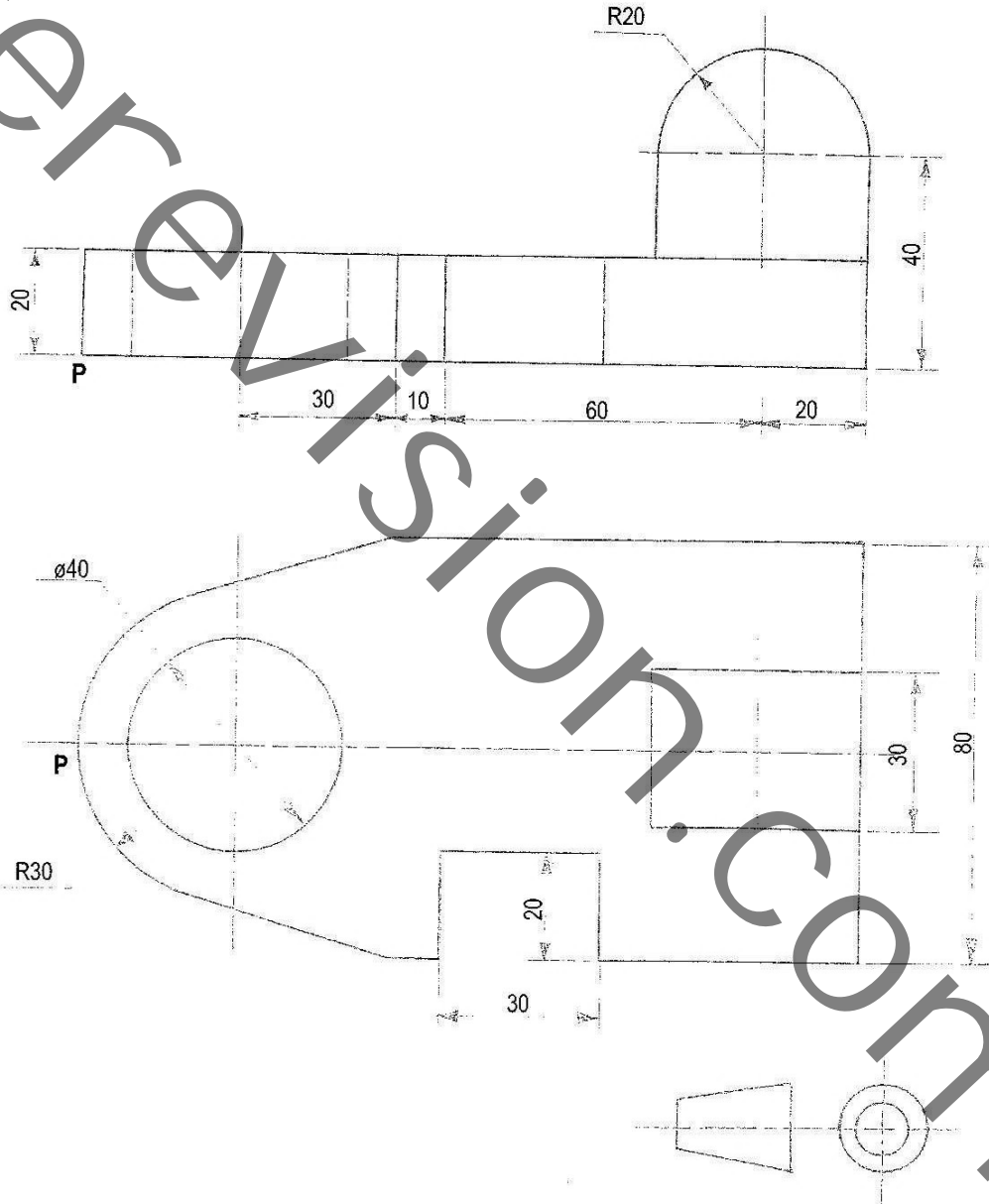


Figure 1

Section 2 (84 marks)

- 2 **Figure 2** shows in First Angle Projection details of the components of a **SWIVEL BRACKET** – which are assembled as follows:

The **PIVOT BLOCK** ② is inserted in the middle of the **SWIVEL BRACKET** ① until it is centrally located and the 12mm holes are in exact alignment.

The **PIVOT BLOCK SPINDLE** ③ is then pushed through the **SWIVEL BRACKET** ① from the left hand side and passing through the **PIVOT BLOCK** ② until it comes out of the other end. Its head has to lie flush with the **SWIVEL BRACKET** ①.

The **RETAINING RING** ④ is then tightly fitted to the 12mm end of the **PIVOT BLOCK SPINDLE** ③.

The two **LOCATING PINS** ⑤ are force fitted into the $\varnothing 6\text{mm}$ hole of the upper part of the **PIVOT BLOCK** ② until they go in completely.

The **SPINDLE LOCATING SCREW** ⑥ is then screwed into the middle tapped holed of the **PIVOT BLOCK** ② until its head lies flush to the surface and its shank touches the slotted part of the **PIVOT BLOCK SPINDLE** ③.

Using the **NUT** ⑦ and the **WASHER** ⑧, secure them to the lower end of the **SWIVEL BRACKET** ①.

Finally the **RETAINING RING** ④ is secured to the **PIVOT BLOCK SPINDLE** ③ by using the **LOCKING PIN** ⑨ to stop it from coming off.

With the components assembled as detailed above, draw full size the following views in **either first angle or third angle projection**.

- (a) A **Sectional elevation**, the plane of the section and direction of the required view being indicated at **X – X**.
- (b) A **Plan** as viewed from the arrow **P** on the front elevation.
- (c) An **End elevation** as seen in the direction of arrow **E**.

NB

Suitable dimensions should be estimated where data is not provided. **No hidden details or part lines are required in any view.**

Insert six important dimensions on your drawing: these should include each of the following – a horizontal length, vertical length, width, a diameter, a radius and the size of the nut.

In the lower right-hand corner of the drawing paper and on the same side as that on which you have drawn the solution to question 2, draw a title block and print in this block the following: **the title of the drawing for question 2, your name, examination number, the scale, and indicate by standard symbols the method of projection you have used.**

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**Geometrical and
Mechanical Drawing**

7040/2

PAPER 2

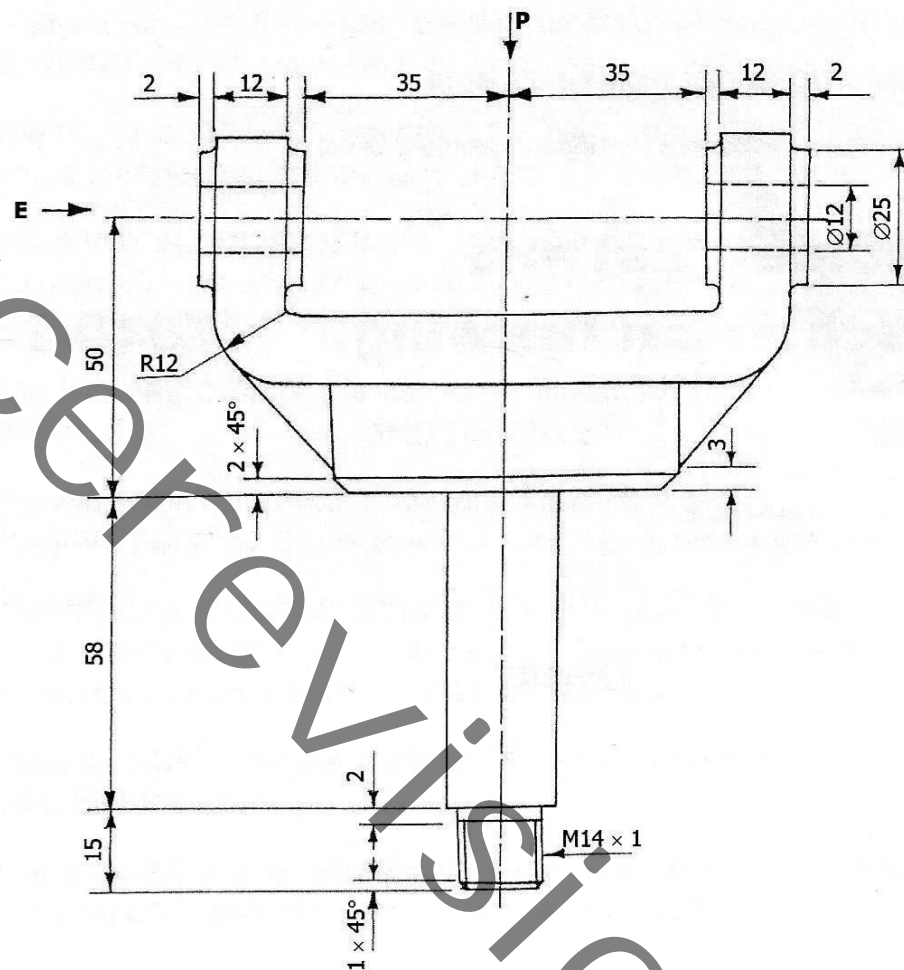
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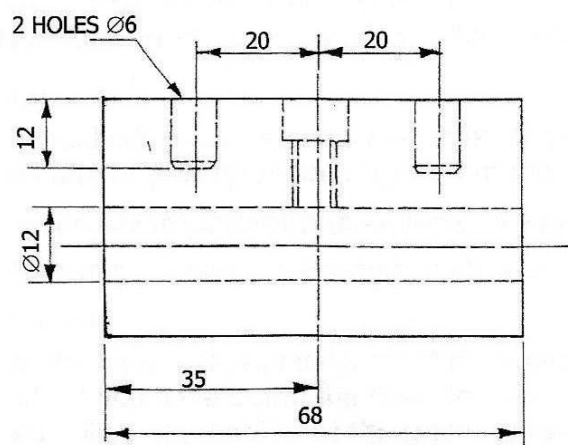
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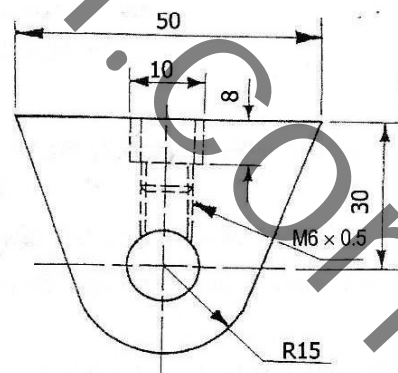
INSERT



1 SWIVEL BRACKET 1 OFF



2 PIVOT BLOCK 1 OFF



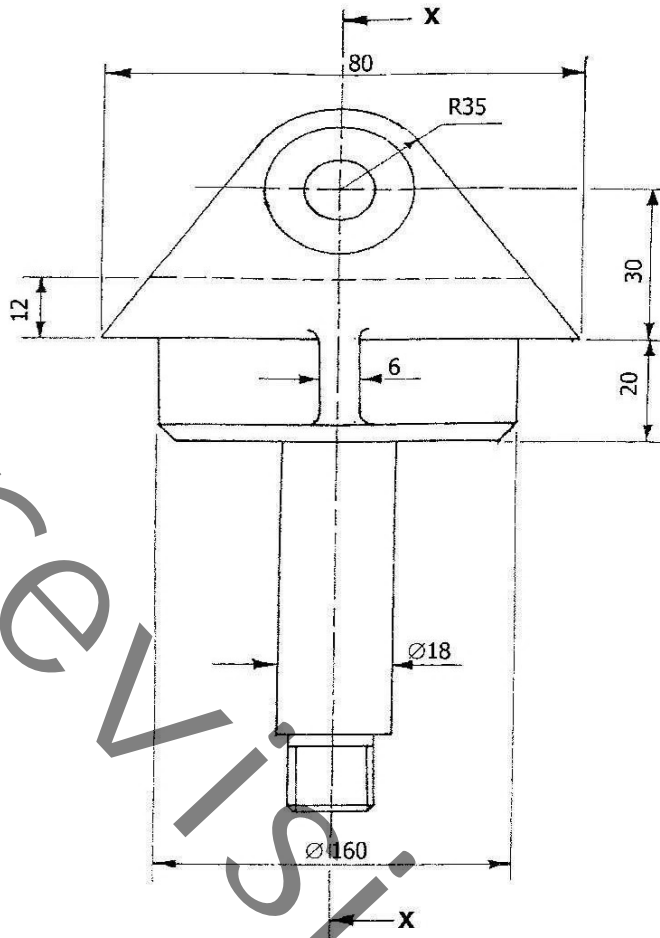


FIGURE 2

