

# EXAMINATIONS COUNCIL OF ZAMBIA

Examination for General Certificate of Education Ordinary Level

## Geometrical and Mechanical Drawing Paper 2

7040/2

Monday

17 JULY 2017

**Additional Material(s):**

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** in the Title Block 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 end of each question or part question.

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.**

Section 1 (16 marks)

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

**1** **Figure 1** shows a **CASTING BRACKET** in first angle projection. Make a freehand pictorial sketch of this component – approximately full size with **P** as the lowest point in the foreground.

NB: The use of instruments will be severely penalized. Faint construction lines and points used when preparing the sketch should not be erased.

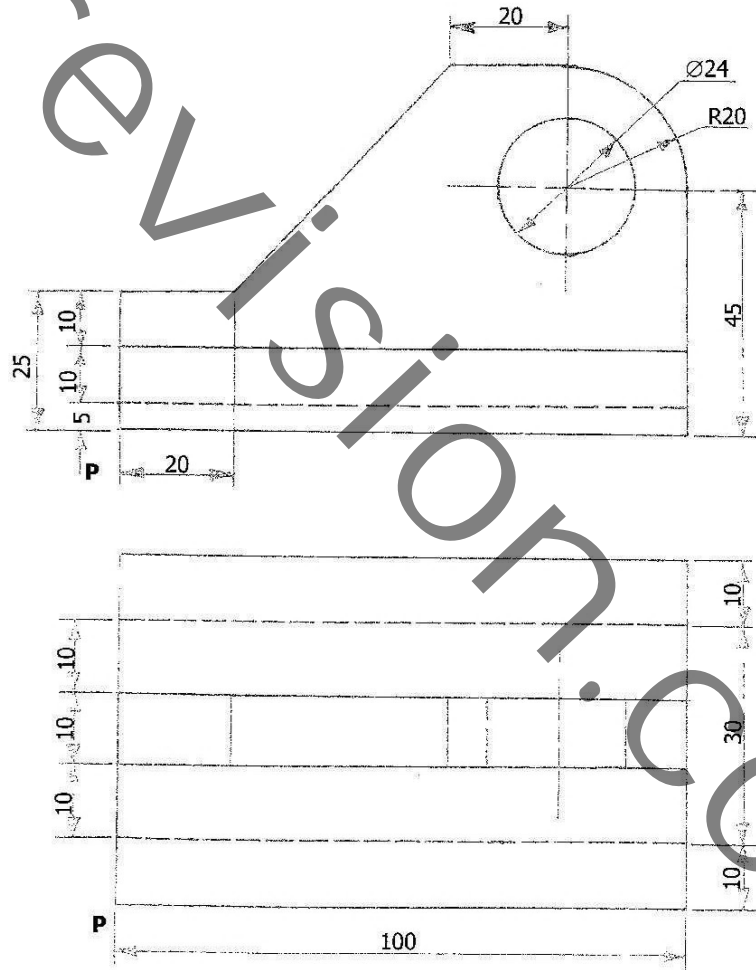


Figure 1

## Section 2 (84 marks)

**2** **Figure 2** shows details of the components of a **ROLLER BEARING**.

The components are assembled as follows:

The **Bush** ⑤ is fitted in the 28mm diameter hole in the **Roller** ⑥. The **Shaft** ⑦ is then inserted into the 20mm hole of the **Bush** ⑤ until the Roller is centrally positioned.

The sub assembly is then fitted on top of the **Body** ① with the shaft resting on the R10 semi-circular holes. The **bearing Caps** ② are fitted on top of the **Body** ① so that the 10mm diameter holes are aligned with the M10 blind tapped holes in the body.

The **Studs** ③ are inserted into the 10mm diameter holes of the **Bearing Cap** and screwed into the M10 blind holes. The **Washers** ④ are inserted into the four studs and screwed by means of four M10 hexagonal nuts.

Draw full size, in either **first** or **third angle projection** a fully assembled:

- (a) Front elevation looking in the direction of arrow **F**.
- (b) Sectional End Elevation, the plane of the section and direction of the required view being indicated at **X – X** on the front elevation.

**Note:** The Plan is not required.

- Suitable dimensions should be estimated where not provided. Hidden details not required in any view.
  - Insert the following dimensions on the views using the recommended BS 308 standard.
    - (i) a horizontal dimension
    - (ii) a vertical dimension
    - (iii) a diameter
    - (iv) the size of the screw thread
- (c) On the same side of your drawing showing these views, draw a **Title block**.

Print in this **Title block**: a Title, Scale, Centre and Projection symbol using the recommended BS 308.

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**Paper 2**

**INSERT**

