

EXAMINATIONS COUNCIL OF ZAMBIA

Joint Examination for the School Certificate
and General Certificate of Education Ordinary Level

**GEOMETRICAL AND MECHANICAL
DRAWING 7040/2**

PAPER 2

Wednesday

5 NOVEMBER 2014

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** in the Title Block at the bottom right-hand side of your drawing paper.

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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 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 **20 minutes** on this section of the paper:

- 1** Three orthographic views of a bracket are shown in Figure 1.

Do not copy the views but sketch free hand and in good proportion, a pictorial view of the bracket with point 'N' in the foreground of the view.

The use of instruments, including any form of straight edge, when sketching the view or when lining in will be heavily penalised. Faint construction lines and points used when sketching the pictorial view should not be erased.

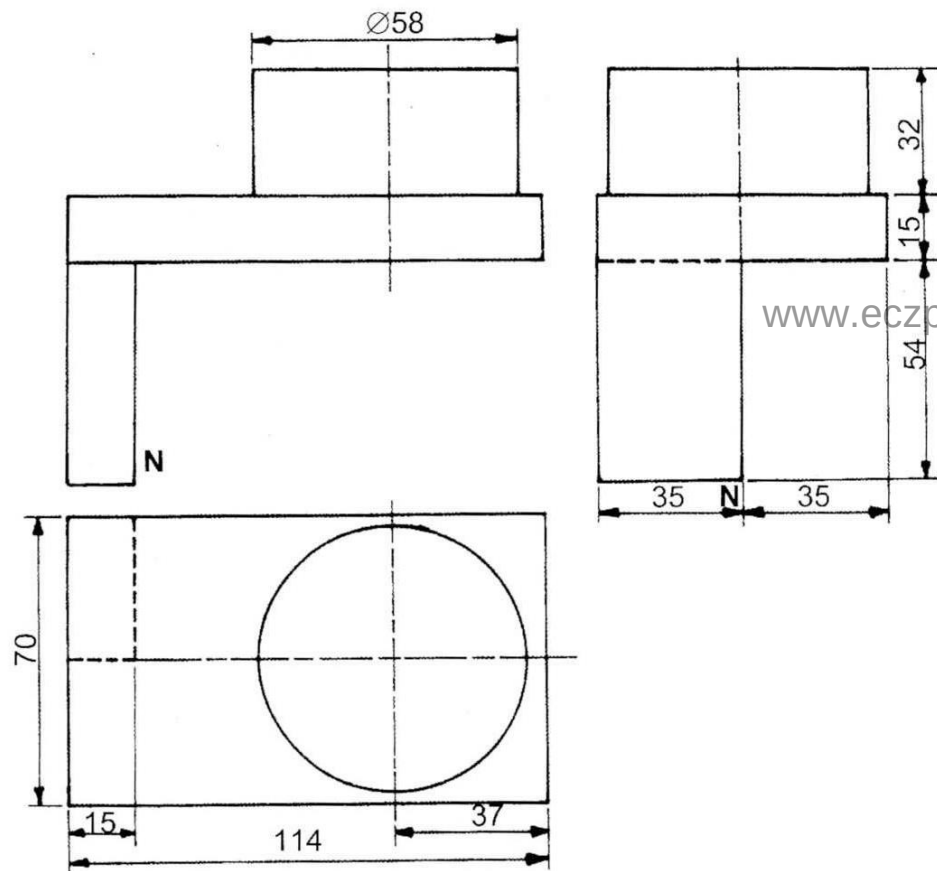


Figure 1
FIRST ANGLE PROJECTION

Section 2 (84 marks)

- 2** Figure 2 on the insert shows details of the main components of a **PRESSURE PUMP VALVE** in First Angle Projection.

The components are assembled as follows:

The SPINDLE (2) is inserted in the 40mm diameter hole of the BODY (1) and further lowered into the 20mm diameter hole of the body until it rests flush.

The FLANGE (3) is inserted through the threaded end of the spindle until it comes into contact with the body and then secured by the NUT (5) and WASHER (4).

The BOLTS (6) are fitted into the diameter 18mm holes in the flange through the threaded holes in the body.

With the components assembled as detailed above, draw full size the following views in either First Angle or Third Angle Projection showing only the left hand side bolt in place.

(a) A sectional elevation, the plane of the section being indicated by X – X in the plan.

(b) A plan viewed from arrow P.

NB

Suitable dimensions should be estimated where data is not provided. Hidden details or part lines are not required in any view.

Insert four important dimensions as recommended in BS 308. These should be of varied character and should include any of the following: length, diameter, radius and details of a bolt and 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 the title block. Print in the title block the following details:

The title, your name, examination number and the scale used. Additionally, indicate by standard symbol the method of projection you have used.

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DRAWING**

7040/2

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Thursday

30 OCTOBER 2014

Additional materials:

A2 Drawing paper (1 sheet)

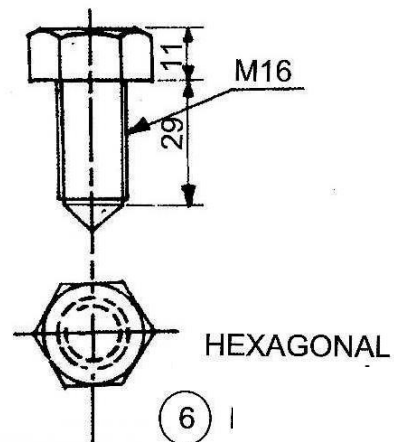
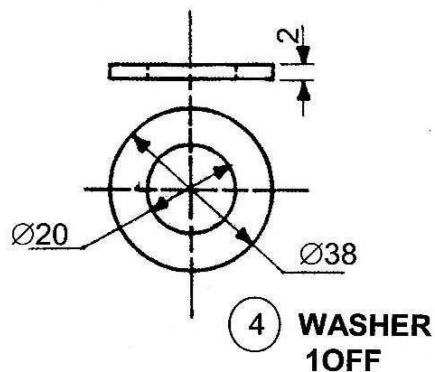
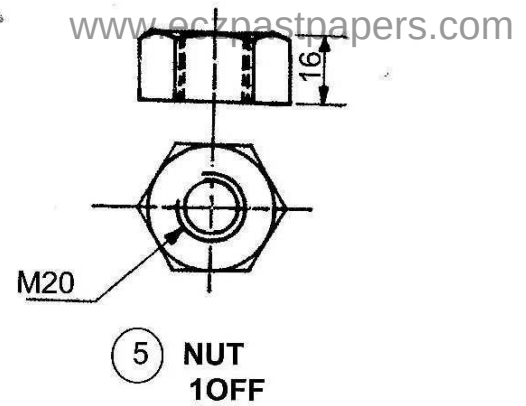
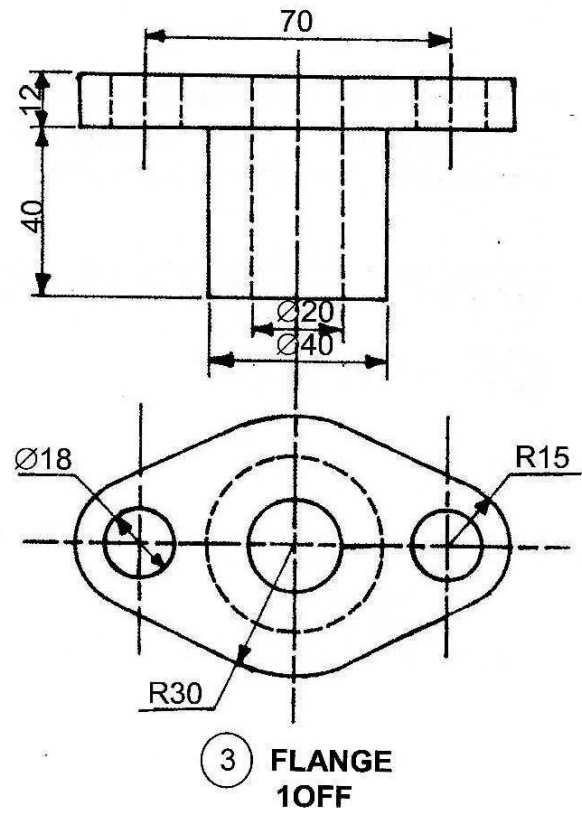
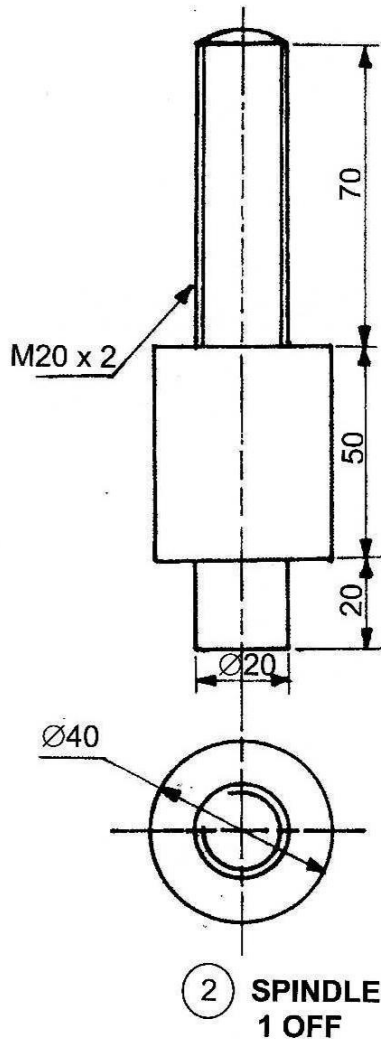
Standard drawing equipment

Time: 2 hours 40 minutes

MARKS: 100

INSERT

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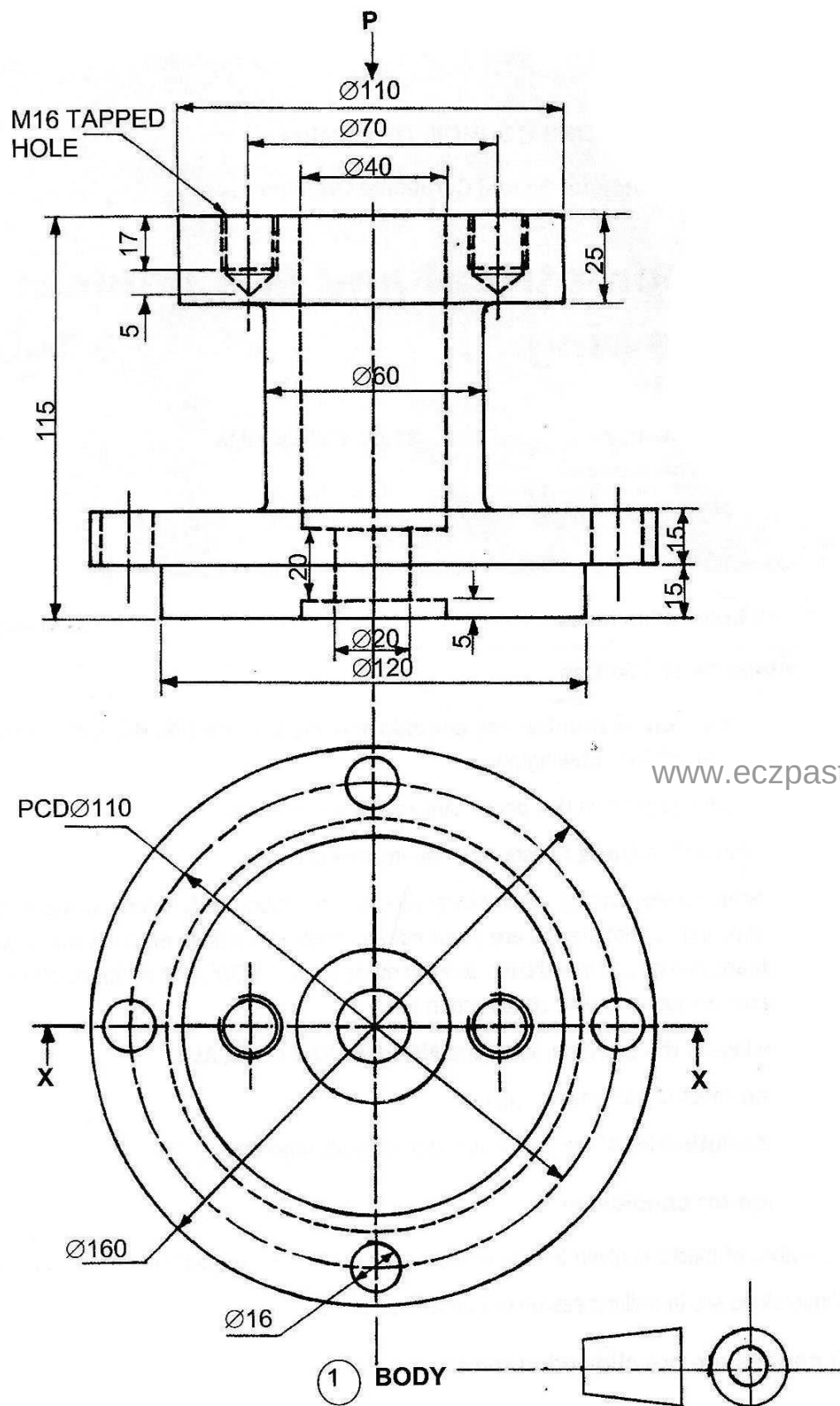


FIGURE 2

Geometrical and Mechanical Drawing/7040/2/Z2014 insert

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