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.

©ECZ/2016/GCEAH1  This question paper consists of 3 printed pages and insert.
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 26mm 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 (1) 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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INSERT
1) SWIVEL BRACKET 1 OFF

2) PIVOT BLOCK 1 OFF

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FIGURE 2

Geometrical and Mechanical Drawing/7040/1/22016
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