



TEST CODE **01247020**

FORM TP 2014117

MAY/JUNE 2014

CARIBBEAN EXAMINATIONS COUNCIL
CARIBBEAN SECONDARY EDUCATION CERTIFICATE®
EXAMINATION

TECHNICAL DRAWING

Paper 02 – General Proficiency

1 hour 40 minutes

13 MAY 2014 (a.m.)

GENERAL INFORMATION

1. Each candidate should have the following for this examination:

Traditional Drawing Method

Two sheets of drawing paper (both sides may be used)
Drawing instruments
Drawing board and tee-square
Metric scale rule

Computer-Aided Drafting Method

A minimum of six sheets of size 8½" × 11" OR three sheets of size 11" × 17" paper
Personal computer with monitor, keyboard, mouse and printer
Computer-Aided Drafting software

N.B. ALL solutions to questions attempted for this Option **MUST** be **PRINTED** for submission.

2. All dimensions are given in millimetres unless otherwise stated.
3. When first-angle or third-angle is not specified, the choice of projection is left to the candidate's discretion, in which case the type of projection used **MUST** be clearly stated.
4. Where scales to be employed are not stated, the full size should be applied.
5. Each candidate should use his/her own judgement to supply any dimension or detail not directly shown on the drawings.
6. The number of each question answered **MUST** be written next to the solution.
7. Each candidate **MUST** enter his/her school code and registration number in the appropriate space at the bottom right-hand corner of the drawing paper.
8. All geometrical construction lines **MUST** be visible on all answers submitted for **BOTH** Traditional Drawing and Computer-Aided Drafting Methods.
9. You are advised to take some time to read through the paper and plan your answers.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

Copyright © 2013 Caribbean Examinations Council
All rights reserved.

01247020/F 2014



This paper has TWO sections: Section I – Plane Geometry and Section II – Solid Geometry. Answer FOUR questions, TWO from Section I – Plane Geometry, and TWO from Section II – Solid Geometry.

Each question is worth 20 marks.

SECTION I – PLANE GEOMETRY

Answer any TWO questions from this section.

1. A rectangle, ABCD, has a diagonal of 150 mm and the length of one side = 70 mm. Construct
 - (a) the rectangle
 - (b) an ellipse within the rectangle with the major axis equal to the length and minor axis equal to the width of the given figure. **(20 marks)**

2. **Figure 1** shows an irregular polygon, ABCDE with BC = 40 mm, AE = 60 mm, CD = 75 mm and ED = 45 mm. Construct
 - (a) the given irregular polygon
 - (b) a similar figure with its base AB, increased from 50 mm to 70 mm.

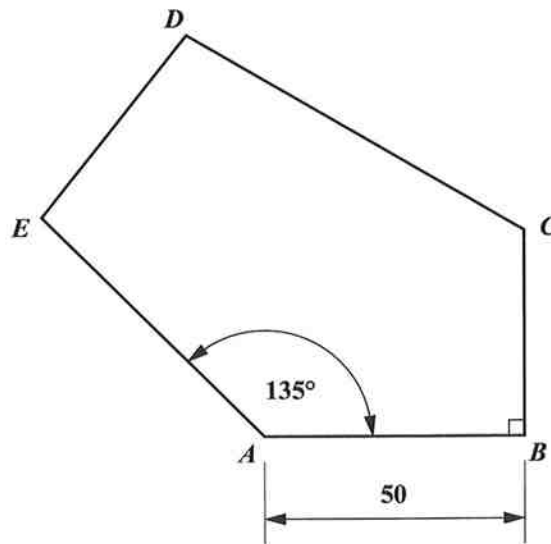


Figure 1

(20 marks)

GO ON TO THE NEXT PAGE

3. **Figure 2** shows a template of a metal cutter.

- (a) Draw the given template showing clearly how the following are obtained:
 - (i) The centres for arcs A and B
 - (ii) The straight line from point 'P'
- (b) Identify EACH point of tangency with a 'DOT'.

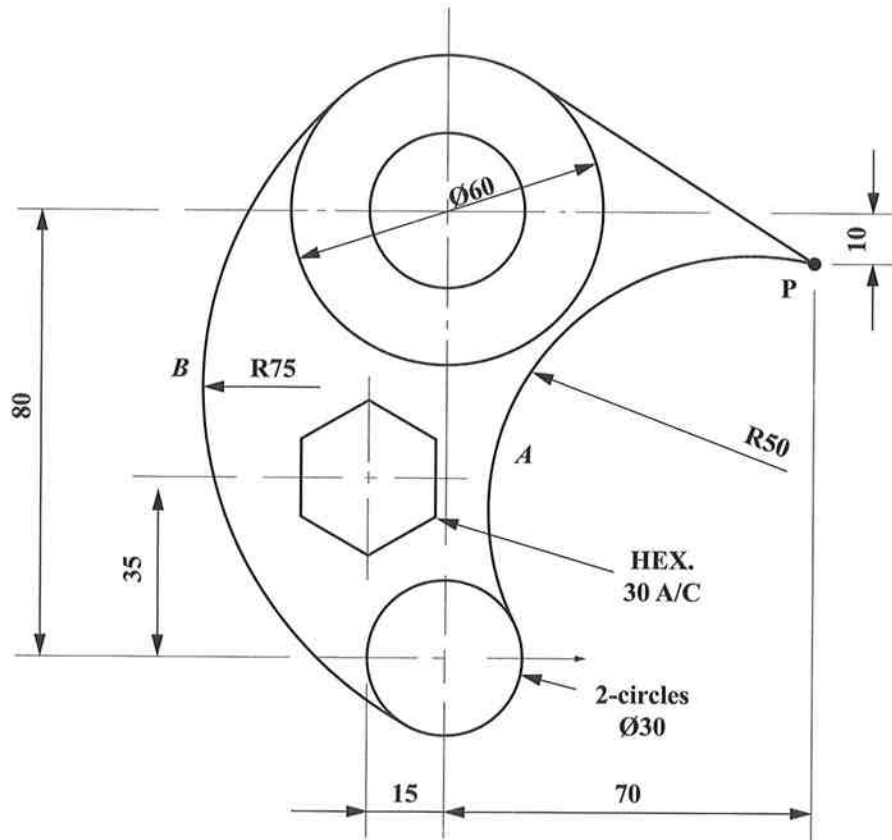


Figure 2

(20 marks)

4. **Figure 3** shows a crank mechanism in which OA revolves clockwise about O. The end, B, of the rod AB is constrained to move horizontally along XY.

- (a) Copy the given mechanism.
(b) Plot the locus of P for one revolution of OA.

OA = 30 mm
AB = 110 mm
AP = 50 mm

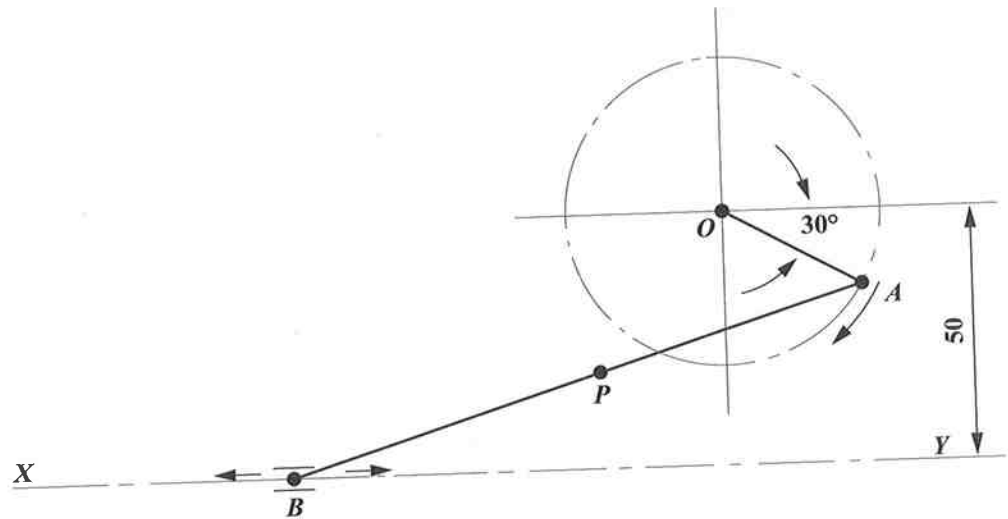


Figure 3

(20 marks)

SECTION II – SOLID GEOMETRY

Answer TWO questions from this section.

5. **Figure 4** shows the end elevation and incomplete front elevation of a cylinder intersecting a triangular prism. Construct
- (a) the given end elevation
 - (b) the front elevation showing the curves of interpenetration. Show hidden details.

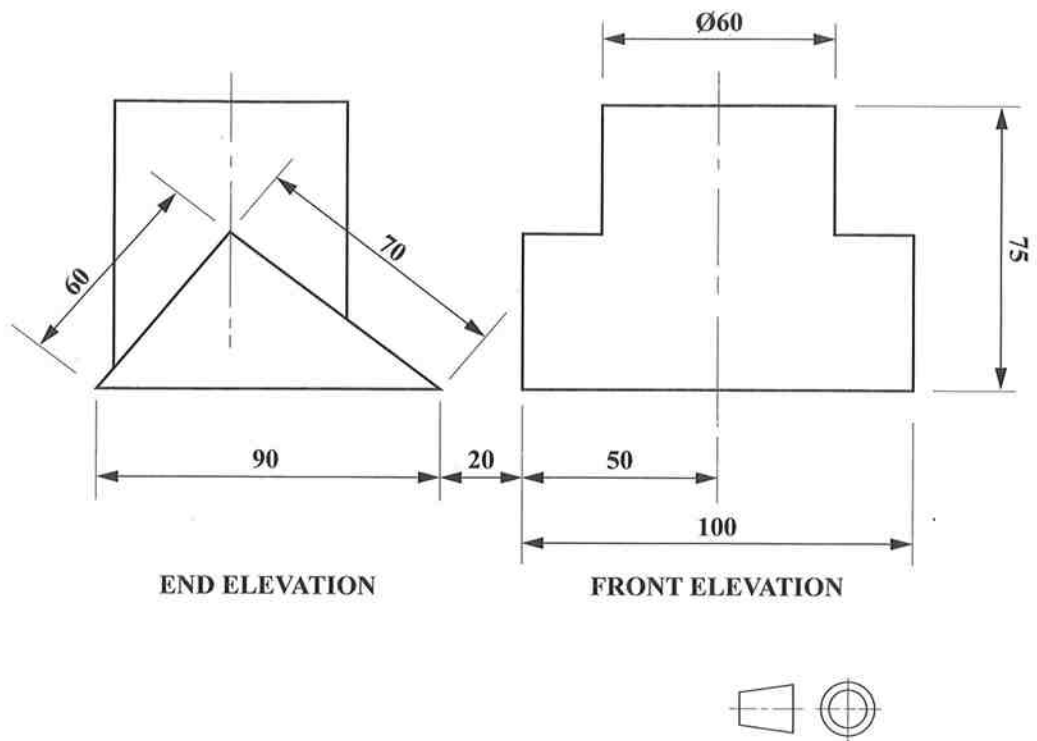


Figure 4

(20 marks)

6. **Figure 5** shows the elevation of two square sheet metal pipes 'A' and 'B' intersecting each other at 45°.
- (a) Copy the given view.
 - (b) Construct the development of pipe 'A' using the seam as shown on the given view.

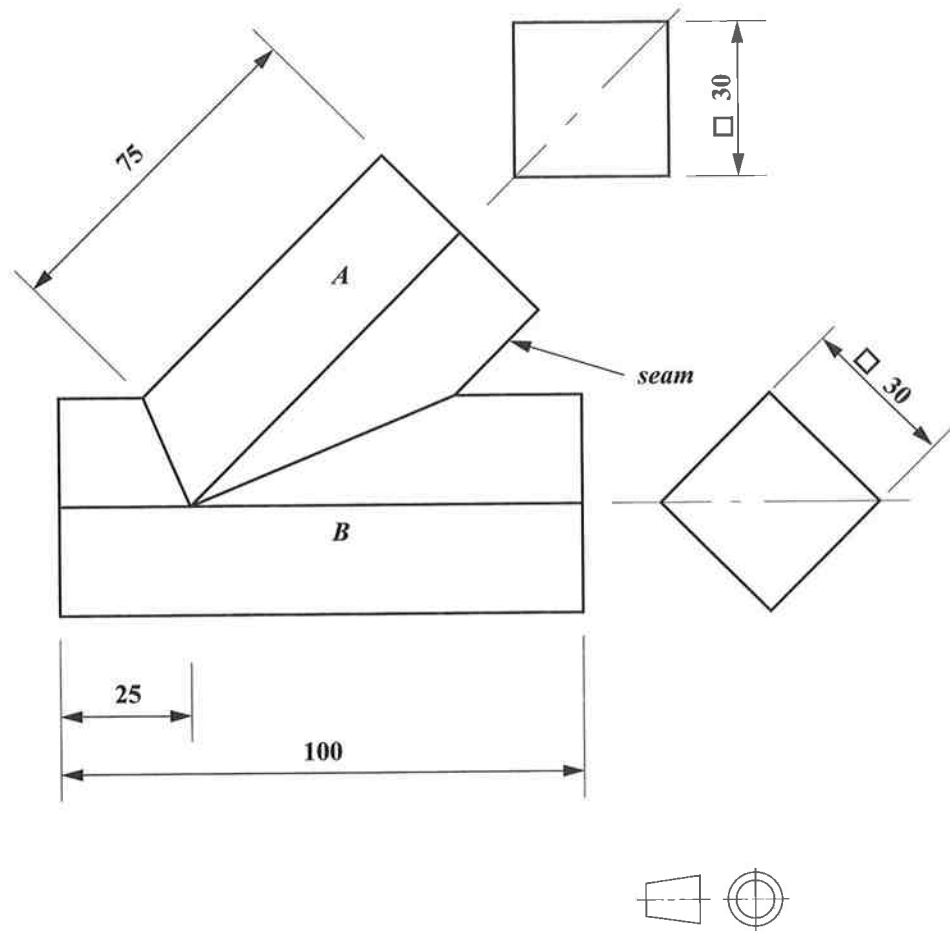


Figure 5

(20 marks)

7. **Figure 6** shows the plan and elevation in orthographic projection of a truncated hexagonal prism. Draw

- (a) the given views
- (b) an auxilliary elevation on X^1Y^1 .

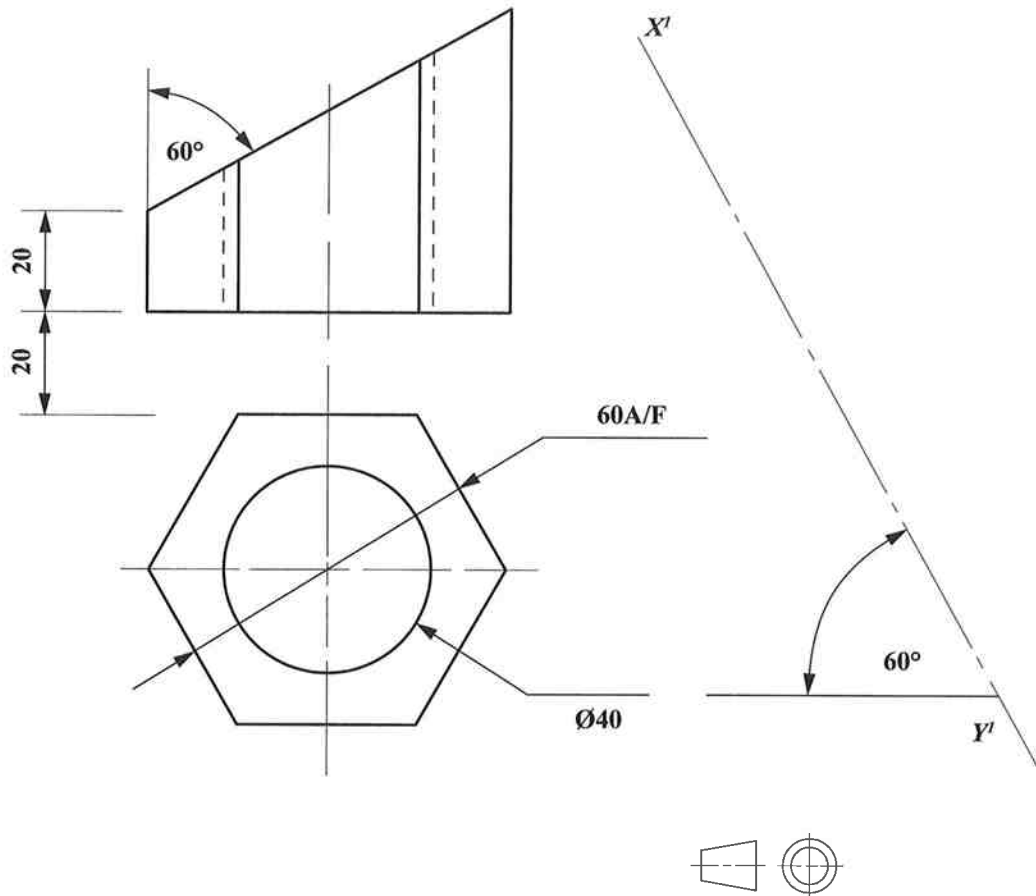


Figure 6

(20 marks)

8. **Figure 7** shows two orthographic views of a Location Bracket.

Using the information given, produce an isometric drawing of the bracket with 'X' as its lowest point. DO NOT COPY the views.

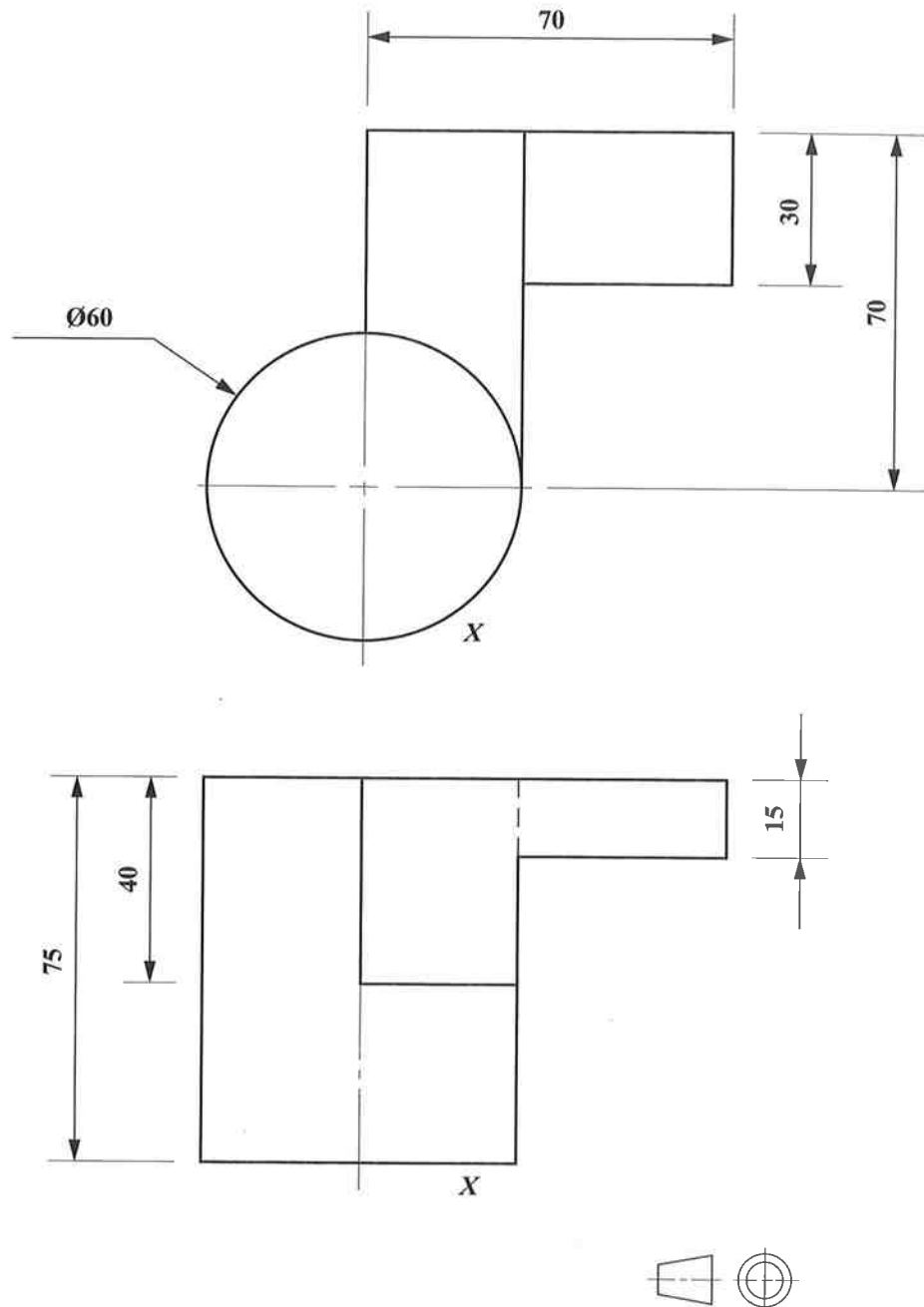


Figure 7

(20 marks)

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.