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ENGINEERING DRAWING
Oct./Nov. 2017
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN MECHANICAL ENGINEERING (PLANT OPTION)
(CONSTRUCTION PLANT OPTION)
DIPLOMA IN AUTOMOTIVE ENGINEERING

MODULE 1

ENGINEERING DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:
- *Answer booklet;*
- *Drawing instruments;*
- *Drawing papers.*

*This paper consists of **TWO** sections: **A** and **B**.*
*Answer Question **1 (compulsory)** in section **A** and any **THREE** questions from section **B**.*
Maximum marks to each part of a question are indicated.
All dimensions are in millimeters.
Candidates should answer the questions in English.

This paper consists of 6 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A

(Compulsory)

1. Figure 1 shows a metal bracket. Draw the following views in **first angle** projection:

   (a) a front elevation in the direction of arrow A;
   (b) an end elevation;
   (c) a plan.

   - include **six** major dimensions.
   - show all the hidden details. (40 marks)

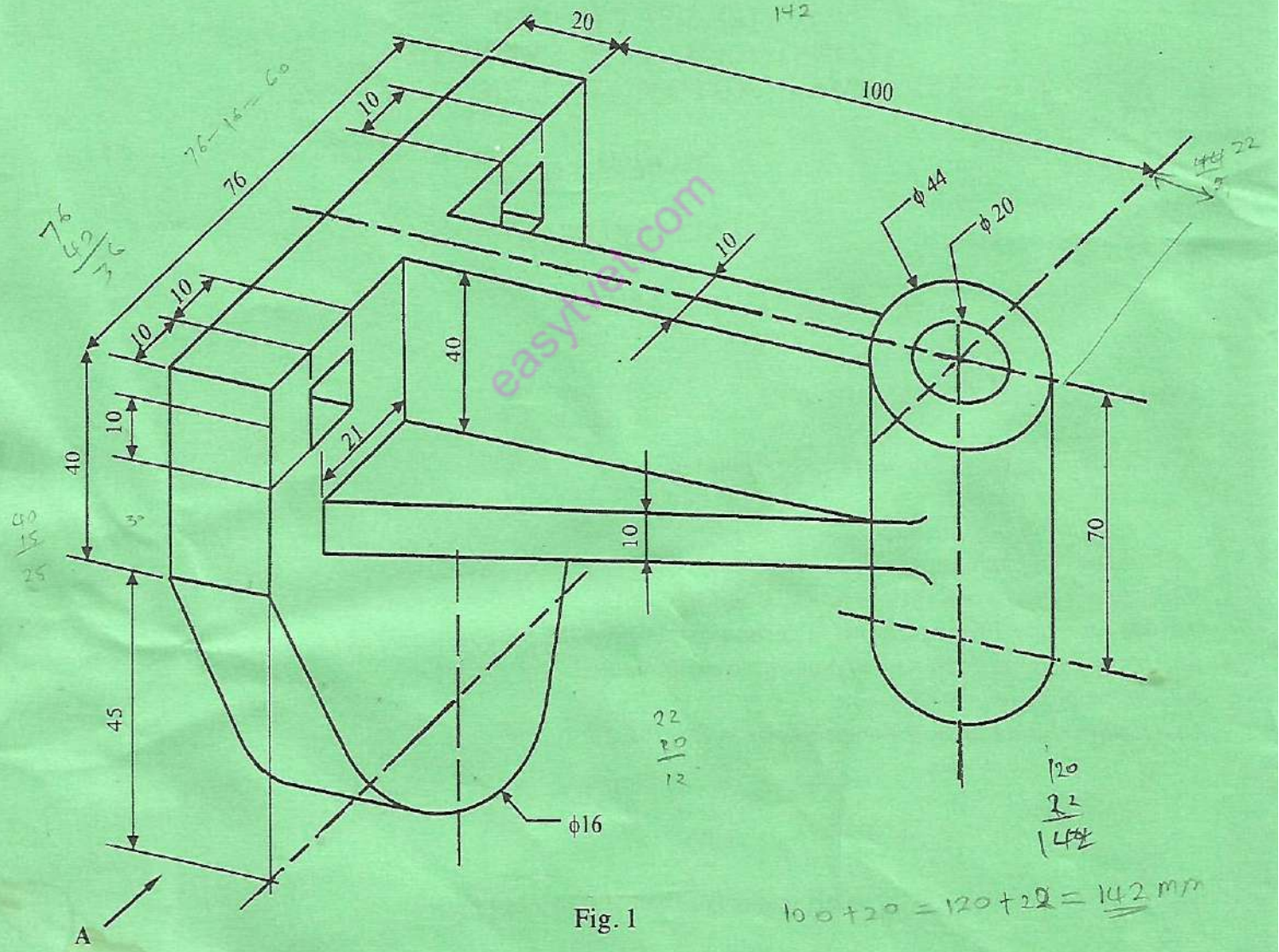

Fig. 1

SECTION B

*Answer **THREE** questions from this section.*

2. Figure 2 shows two views of a mild steel bracket. Draw an isometric view of the bracket with point x as the lowest point. (20 marks)

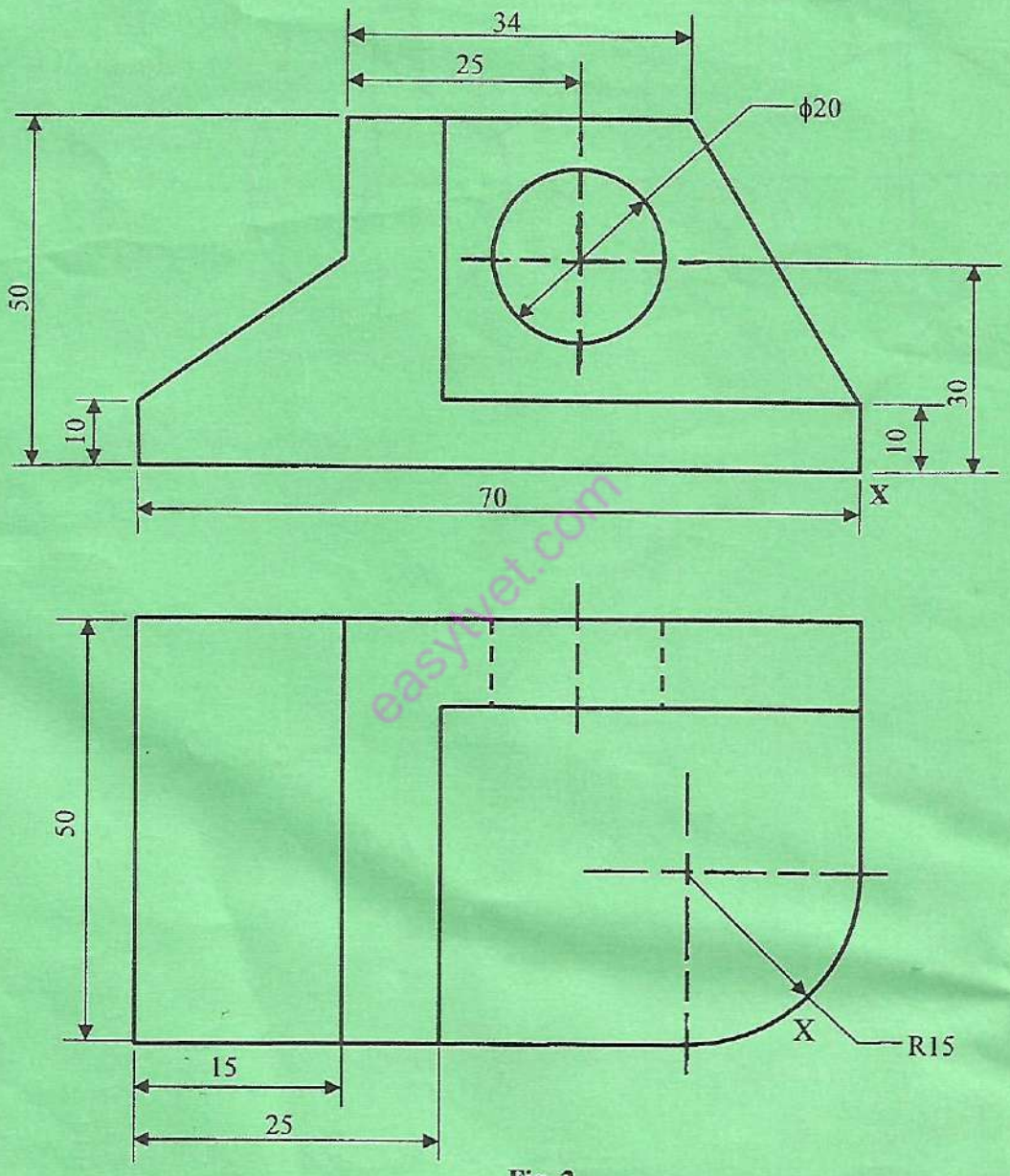

Fig. 2

3. (a) Construct the epicycloid for a rolling circle of radius 15 mm and base circle of radius 92 mm.

(8 marks)

(b) Figure 3 shows a mechanism with cranks AO and BQ revolving in opposite directions at the same speed and are joined by the rods AC and BCP. Plot the locus of P for one revolution of the cranks, if AO and BQ are 25 mm, AC and BC is 100 mm each while CP is 20 mm.

(12 marks)

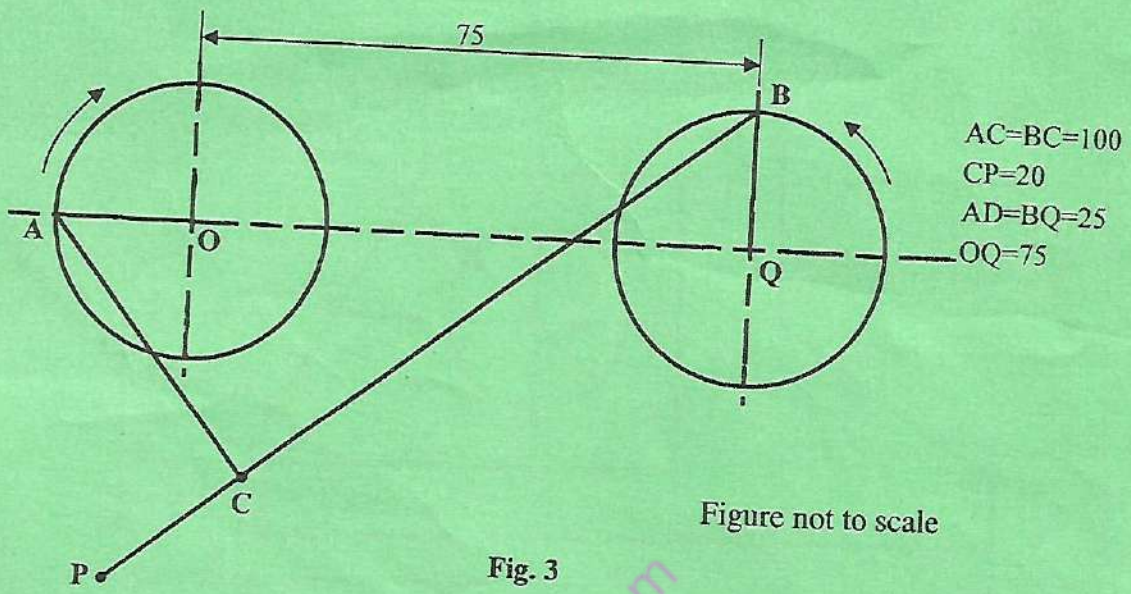

Figure not to scale

Fig. 3

4. Figure 4 shows the intersection of two cylinders. Copy the given views and draw:

(a) the line of intersection;
(b) the surface development of the minor cylinder Y. (20 marks)

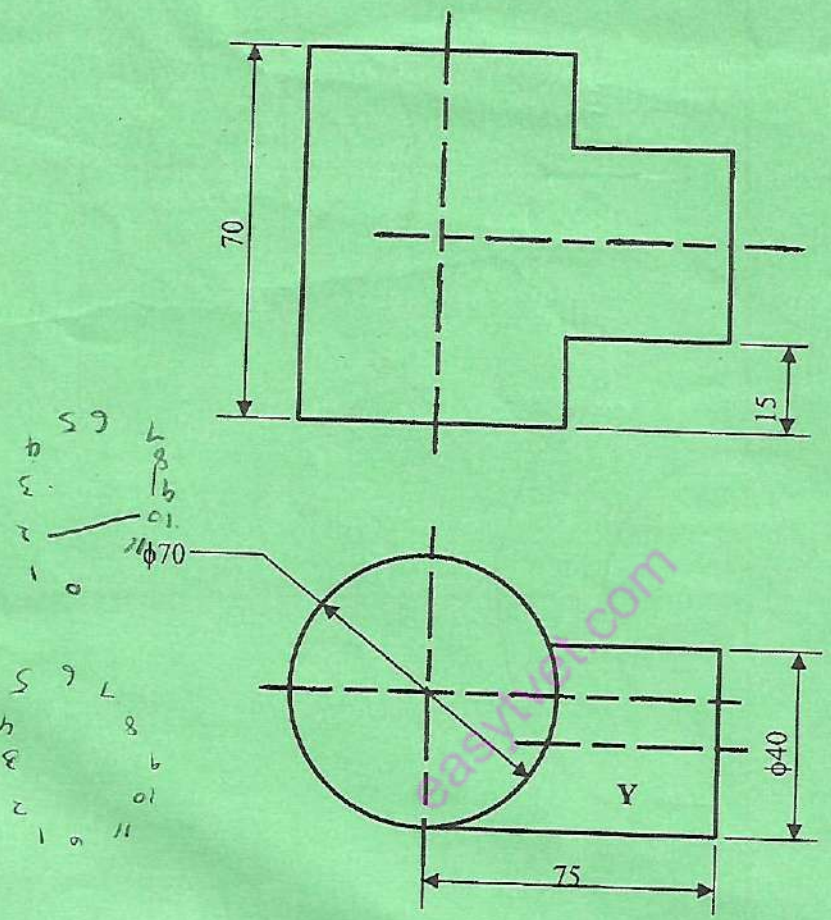

Fig. 4

5. (a) Construct a triangle with a perimeter of 170 mm, whose sides are in the ratio 2:4:5. (6 marks)

(b) Figure 5 shows a rocker arm. Construct the profile showing all your construction work clearly. (14 marks)

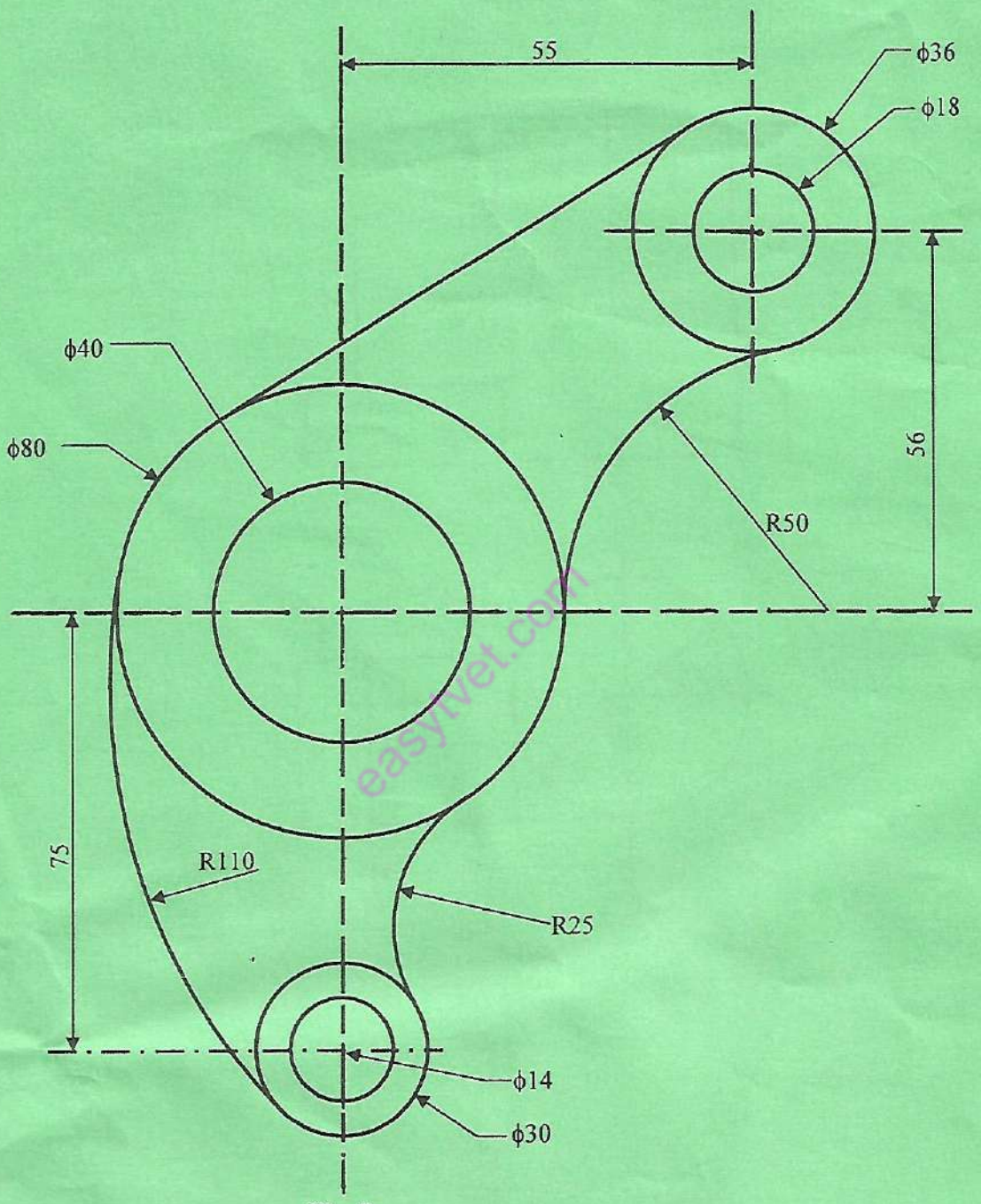

Fig. 5

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