THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AUTOMOTIVE ENGINEERING

MODULE I

ENGINEERING DRAWING I

3 hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided above.
Sign and write the date of the examination in the spaces provided above.
You should have the following for this examination:
  A3 Drawing paper;
  Drawing instruments.
This paper consists of TWO sections A and B.
Answer ALL questions in section A and any other two questions from section B.
Maximum marks for each part of a question are as shown.
All dimensions are in millimeters.
Do NOT remove any pages from this booklet.
Candidates should answer the questions in English.

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1	30	
	2	30	
B		20	
		20	
	Total Score		

This paper consists of 5 printed pages.

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

Turn over

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Answer ALL questions in this section.

1. Figure 1 shows the front elevation and plan of pipe intersecting a regular hexagonal pyramid of length 70 mm A/C. Draw the following in first angle projection:

    (i)   complete front elevation with line of interpenetration;

    (ii)   complete plan;

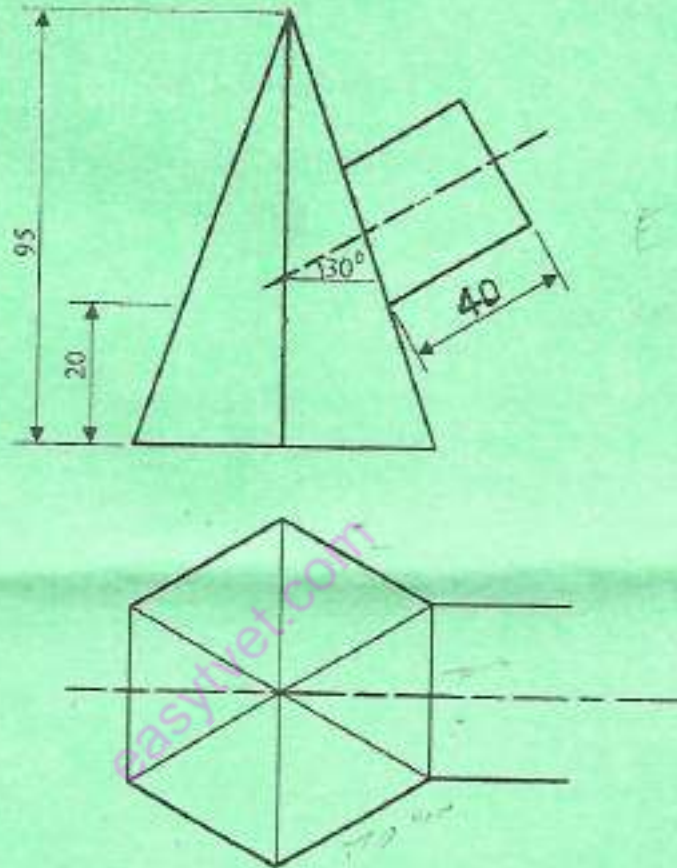   (iii) complete end elevation.

    (30 marks)

Fig. 1

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2. Figure 2 shows the views of a machined bracket drawn in first angle projection. Draw full size, the bracket in isometric projection with corner Y as the lowest point. (30 marks)

Fig. 2

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Answer any TWO questions from this section.

3.   (a)   A conic section has an eccentricity of $\frac{3}{4}$. It has a focus of 40 mm from the directrix. Construct the conic section and print its name.   (9 marks)

      (b)   The wheel of a car is 360 mm in diameter. The wheel rolls on a flat straight path without slipping. Plot the path traced by an embedded stone on the circumference of the tyre for one complete revolution. Use a ration of 1:9.   (11 marks)

4.   Figure 3 shows an elevation of a hexagonal pyramid whose side of the base is 30 mm. If the pyramid is cut along X-X, draw;

      (i)   the view shown in figure 3

      (ii)   A plan along cutting plane X-X;

      (iii)   An auxiliary view in the direction of arrow B.

      (iv)   An end elevation.   (20 marks)

Fig. 3
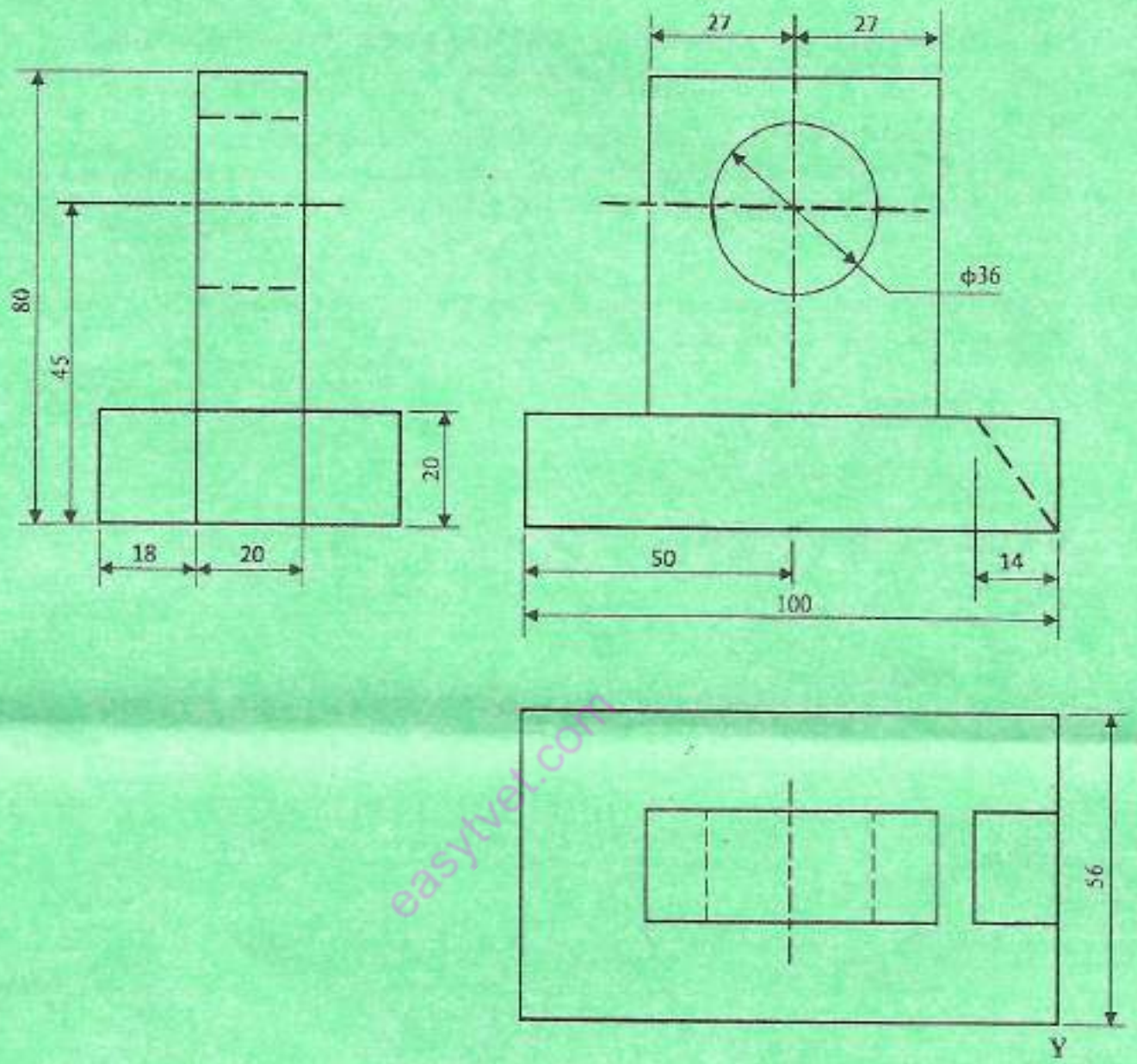
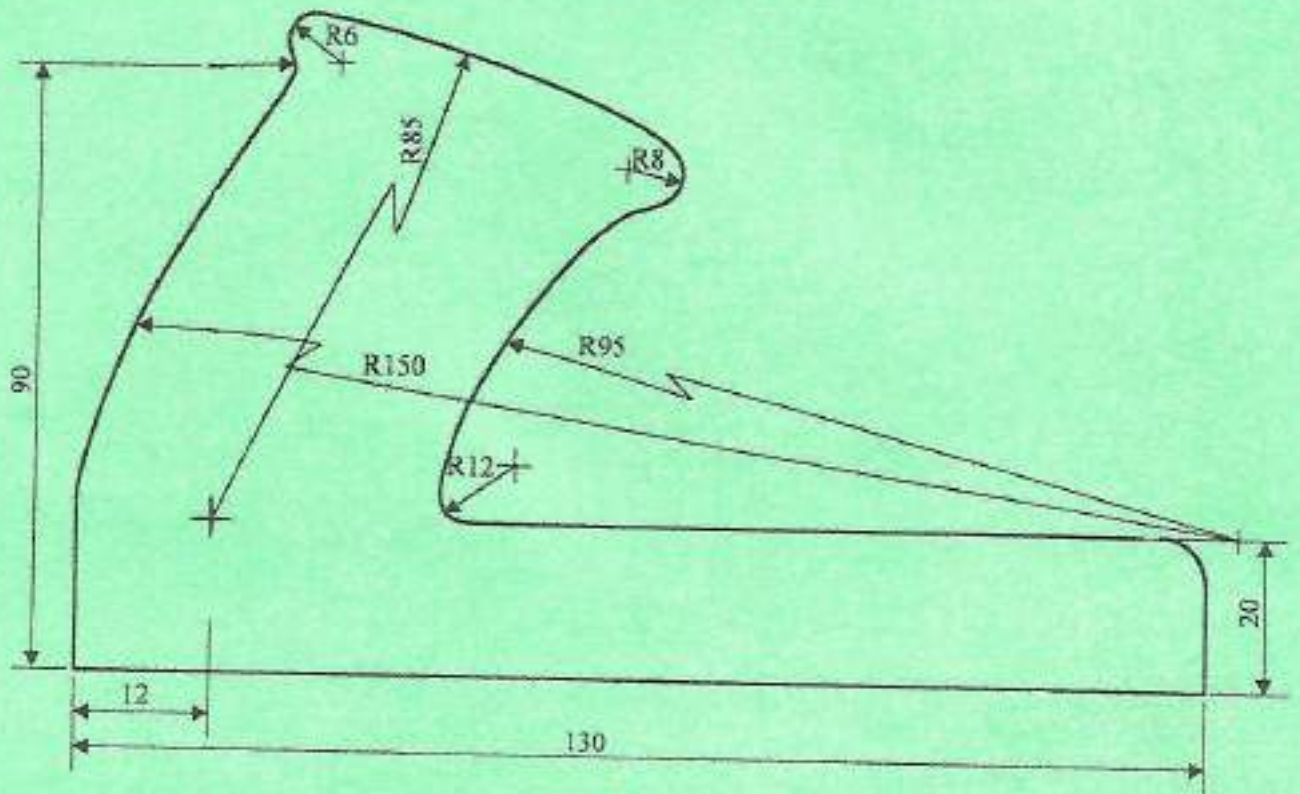5.   Figure 4 shows the profile of a jack plane's handle. Construct the profile.   (20 marks)

Fig. 4