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ENGINEERING DRAWING I
Oct./Nov. 2021
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

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

MODULE I

ENGINEERING DRAWING I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:
Answer booklet;
Drawing papers;
Non-programmable scientific calculator.
*This paper consists of **TWO** sections; **A** and **B**.*
*Answer **ALL** the questions in section **A** and any **THREE** questions from section **B**.*
Maximum marks for each part of a question are as indicated.
All dimensions are in millimiters unless otherwise stated.
Estimate any dimensions that are not given.
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 fabricated bracket. Draw the following views in first angle projection in full size:

   (a) The front elevation in the direction of arrow A.

   (b) The end elevation in the direction of arrow B.

   (c) Plan.

   Include:

   - six major dimensions
   - projection symbol
   - all hidden details.

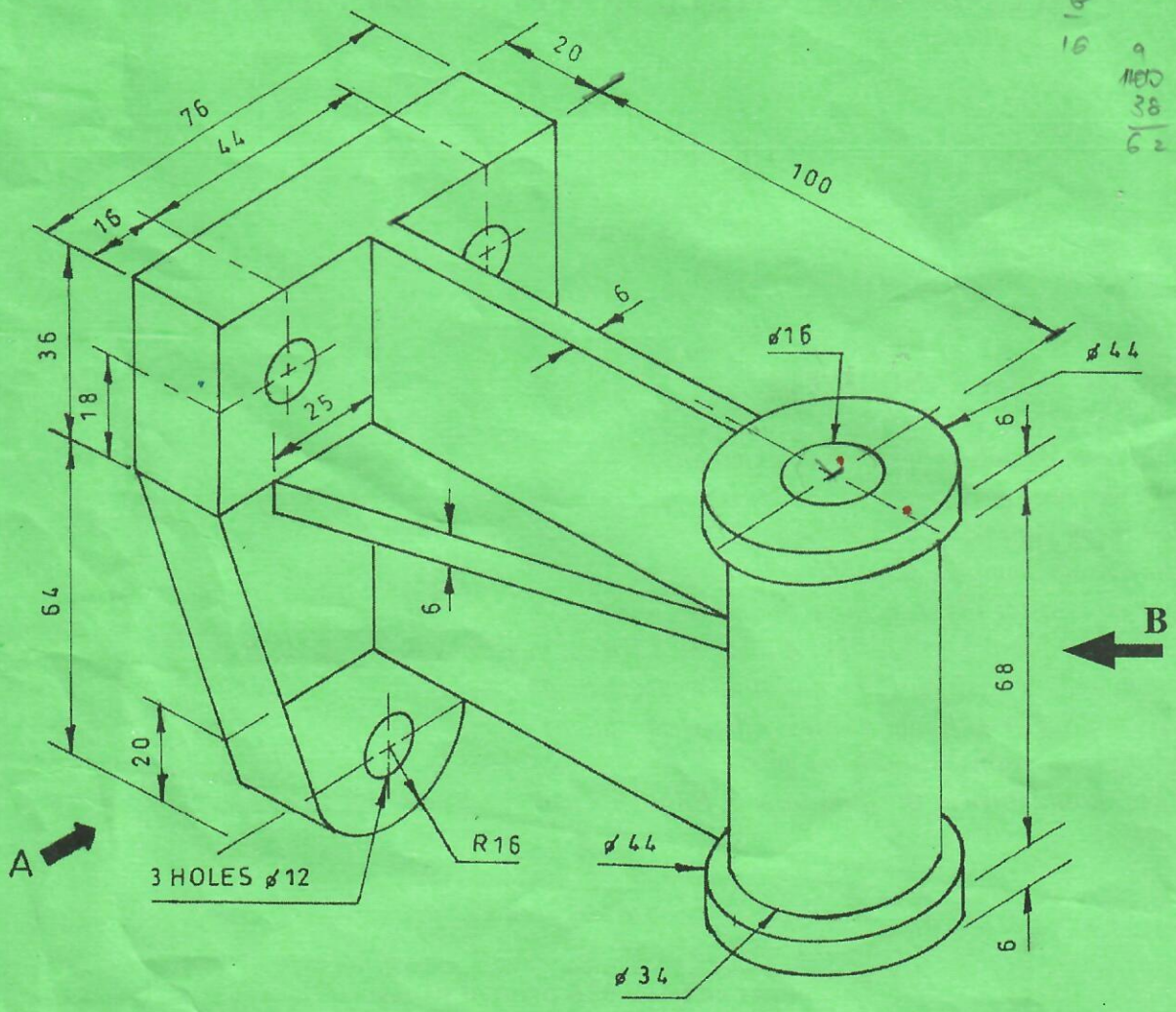


Fig. 1

SECTION B

*Answer any **THREE** questions from the section.*

2. (a) Construct an isosceles triangle whose perimeter is 150 mm and an altitude of 60 mm. (5 marks)

(b) (i) Figure 2 shows a link mechanism. Construct the locus of point E for a complete revolution of AB.

(ii) Design a guard outline with a minimum clearance of 12 mm.

(15 marks)

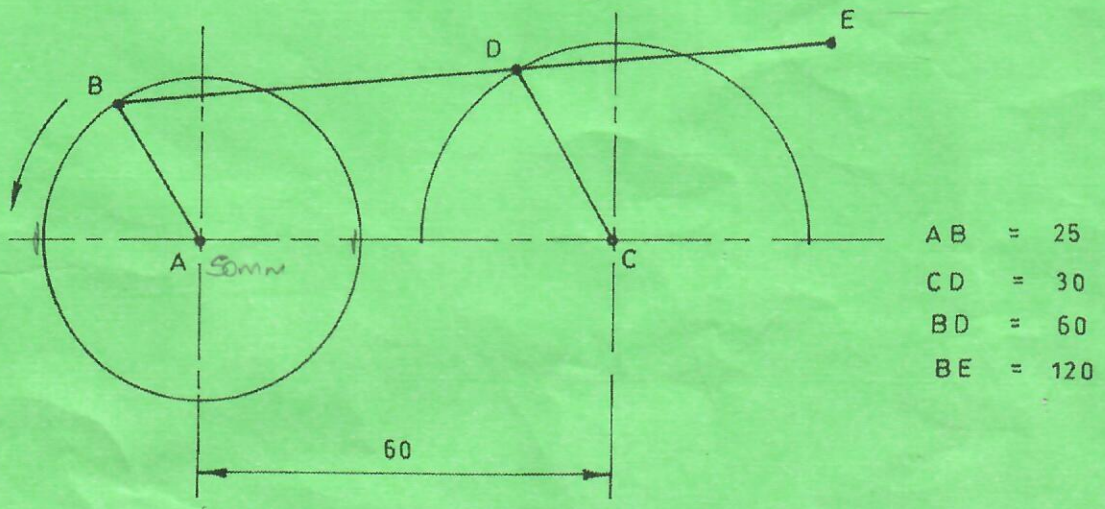


Fig. 2

3. (a) Figure 3 shows a disc rolling along a curve AB without slipping. Plot the locus of point P as the disc makes one complete revolution. Name the locus. (8 marks)

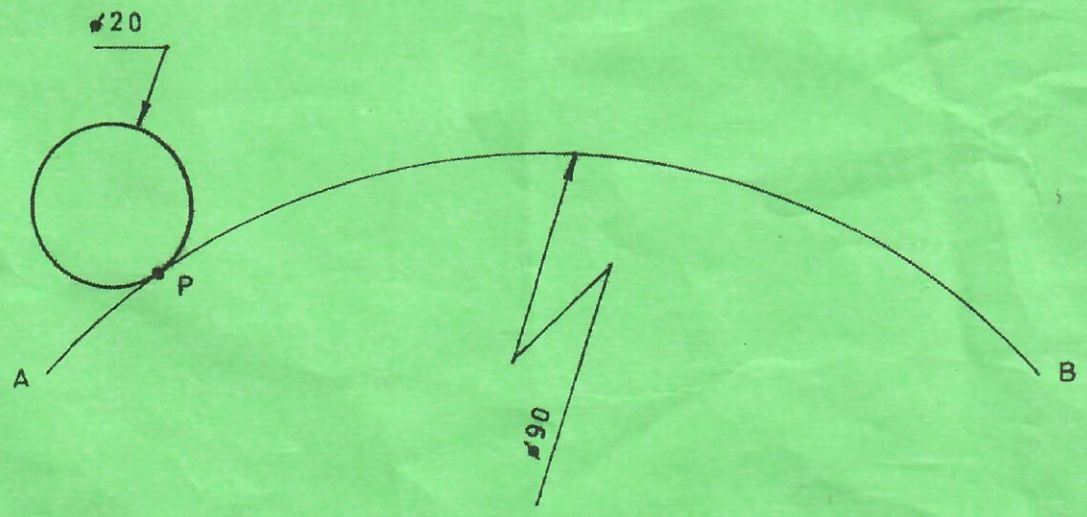


Fig. 3

(b) Figure 4 shows the outline of an electric bulb. Draw the bulb full size showing all the constructions. (12 marks)

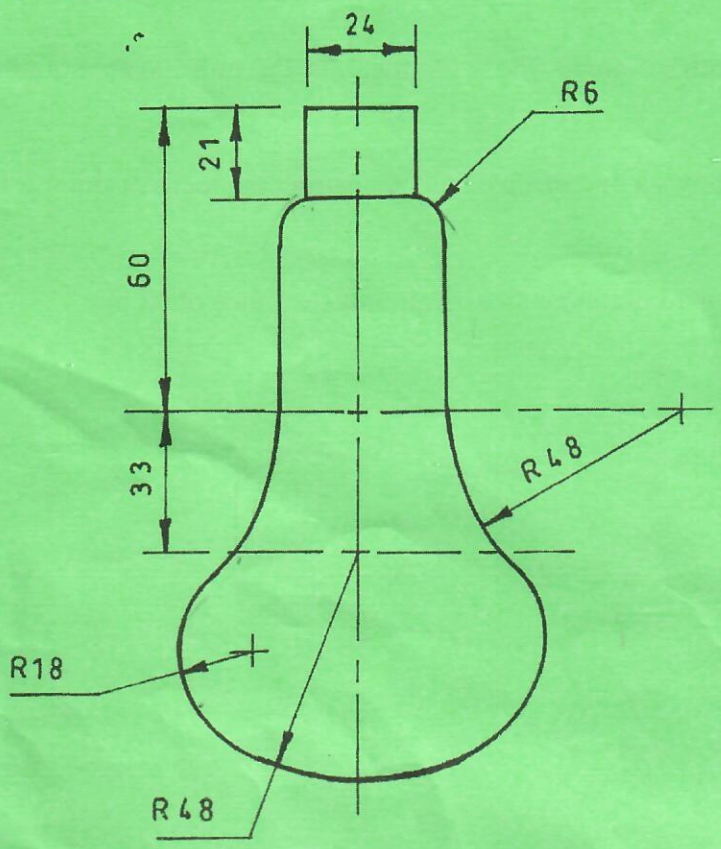


Fig. 4

4. Figure 5 shows the intersection of two offset cylinders. Copy the given views and draw:

(a) the line of intersection.

(b) the surface development of the horizontal cylinder.

(20 marks)

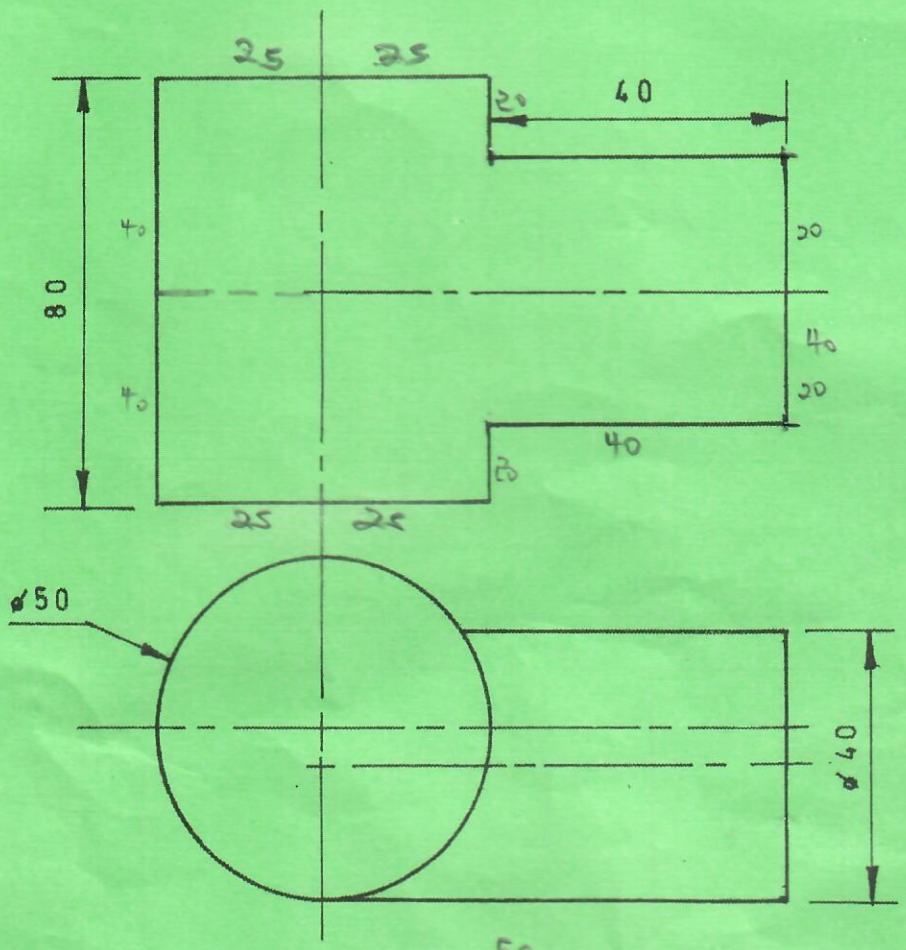
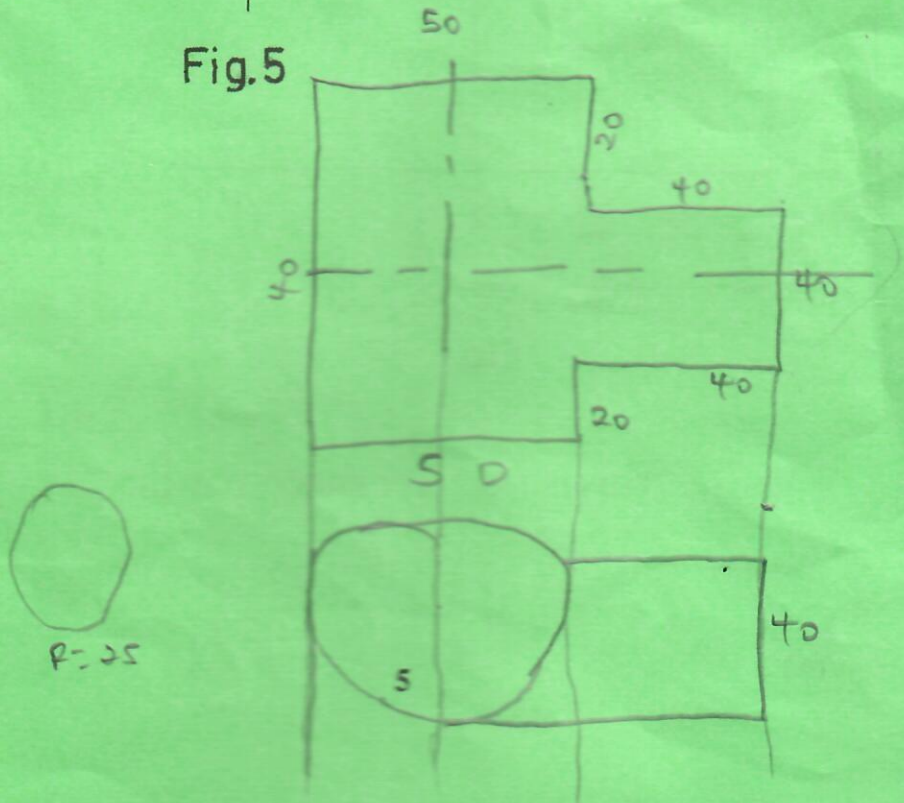


Fig.5



5. Figure 6 shows the views of a machine block. Draw an isometric drawing of the block with point X as the lowest point. (20 marks)

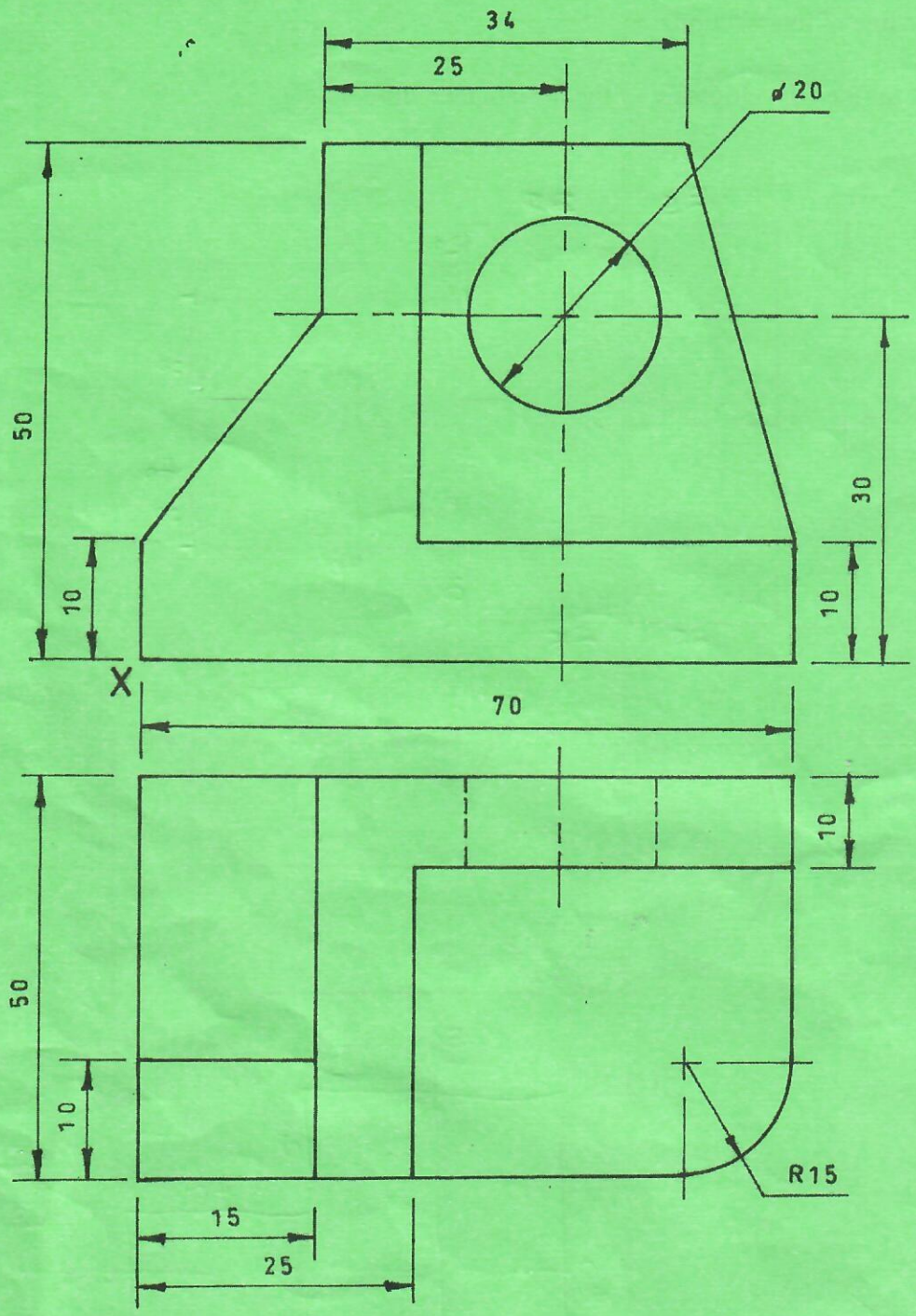


Fig.6

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