

2506/104

2507/104

ENGINEERING DRAWING

June/July 2017

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AERONAUTICAL ENGINEERING
(AIRFRAMES AND ENGINES OPTION)
(AVIONICS OPTION)

MODULE I

ENGINEERING DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Drawing papers size A2;

Drawing instruments;

Non programmable scientific calculator;

Drawing table/Board.

This paper consists of TWO sections; A and B.

Answer question ONE in section A (compulsory) and THREE questions from section B in the drawing papers provided.

Maximum marks for each question are as indicated.

All dimensions are in millimeters.

Candidates should answer the questions in English.

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.

SECTION A: (Compulsory)

1. Figure 1 shows parts of an inspection jig. The jig is to be assembled with a 150 mm length, 20 mm diameter shaft clamped between the jaw and the vee groove in the base. The shaft protrudes 10 mm beyond the right side of the base. Assemble the jig and draw full size in third angle projection the following views:

- (a) sectional front elevation viewed along the cutting plane A-A;
- (b) end elevation viewed in the direction of arrow B.

Include a parts list and insert six major dimensions.

(40 marks)

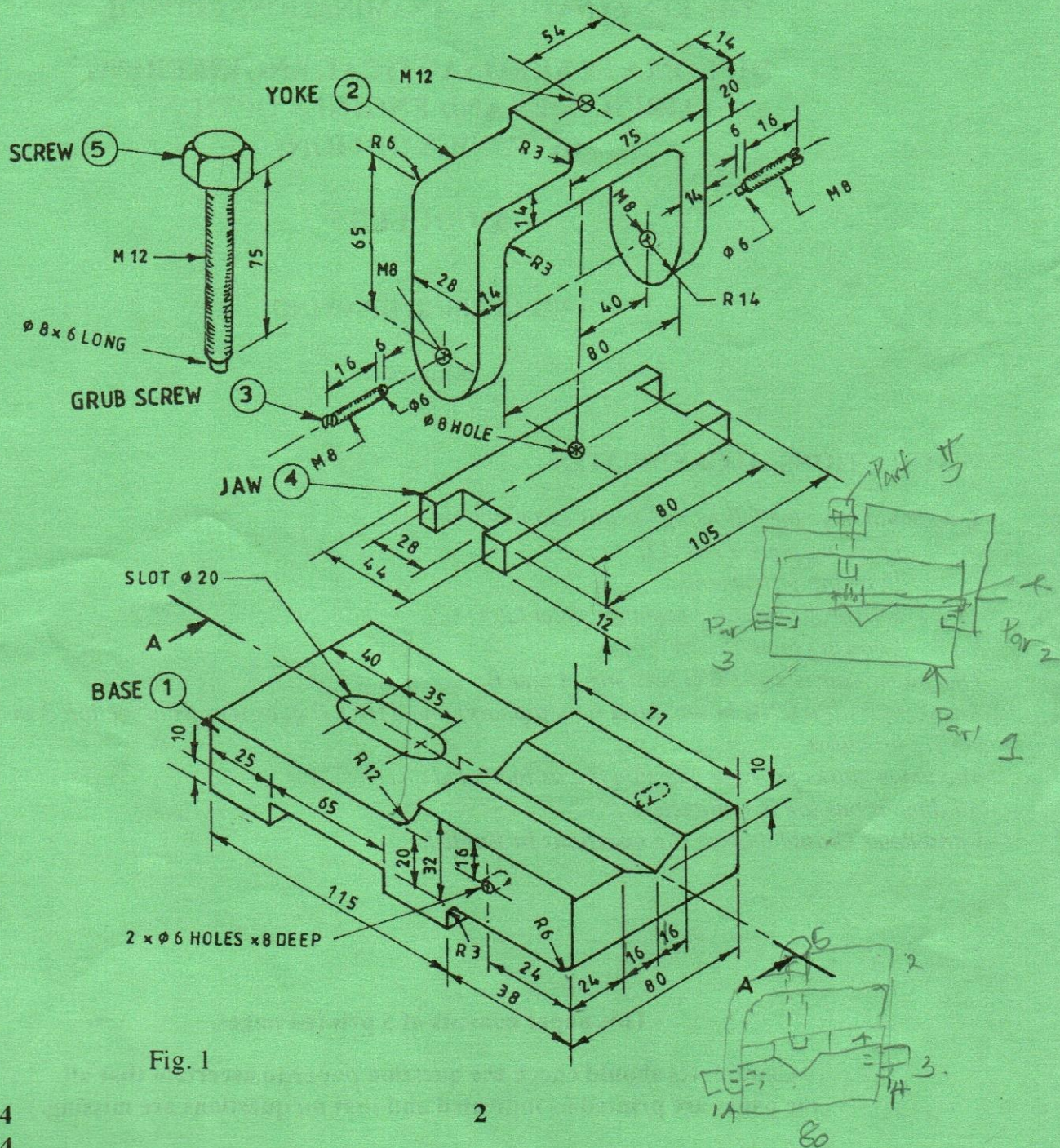


Fig. 1

SECTION B

Answer THREE questions from this section.

2. Figure 2 shows a link mechanism pivoted at A and D and pin jointed at C, E and B. The link EG is free to slide through the swivelling guide F at all times. Plot the paths traced by point E and G for one revolution of crank AB. (20 marks)

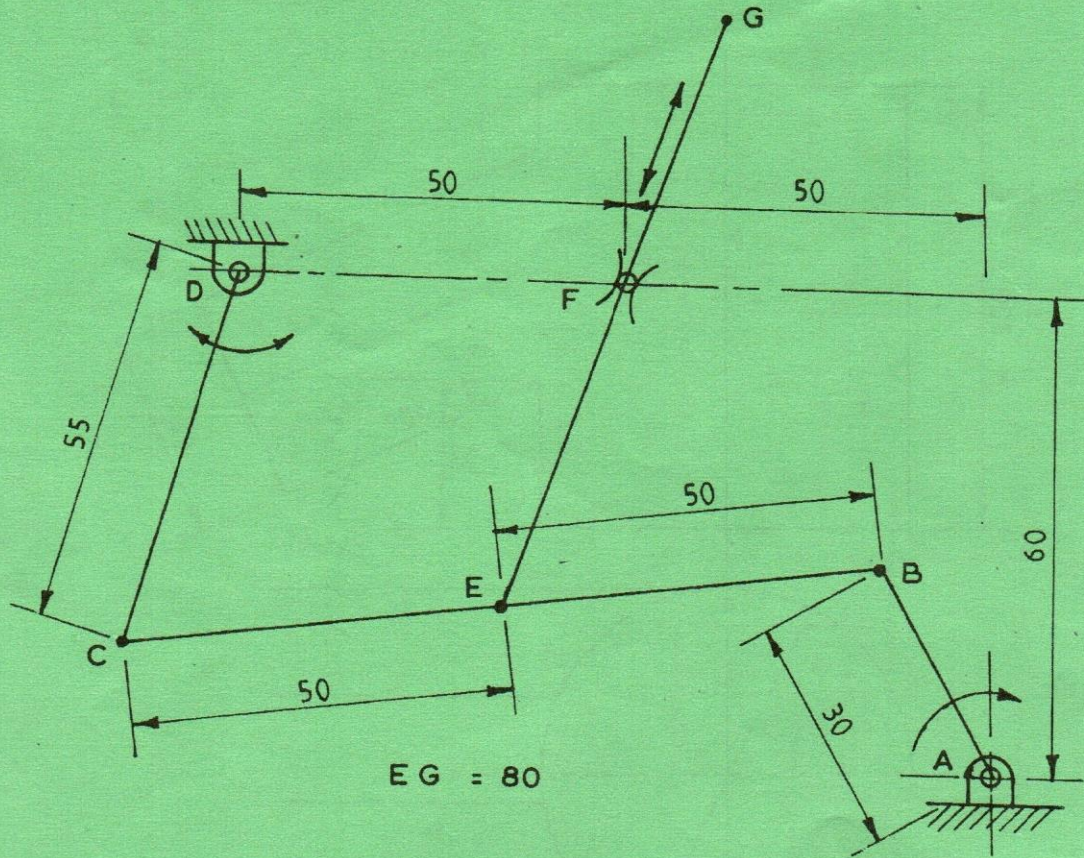


Fig. 2

3. Figure 3 shows an inclined square prism intersecting an upright cylinder. Copy the given views and:

- complete the plan;
- construct the line of intersection in the front elevation;
- draw the surface development of the square prism.

(20 marks)

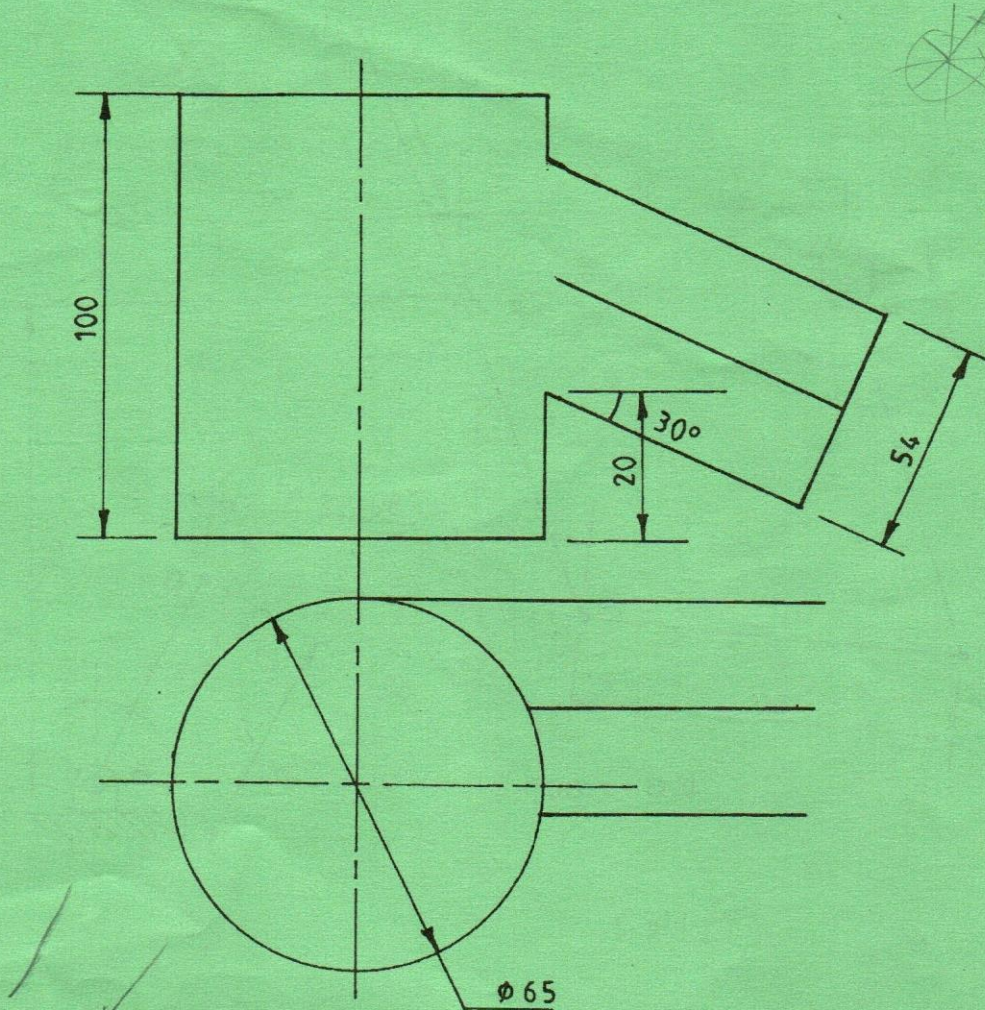
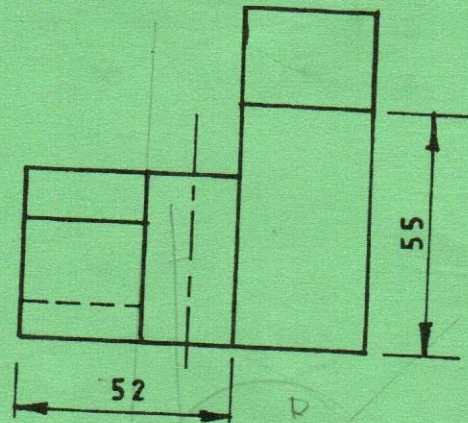
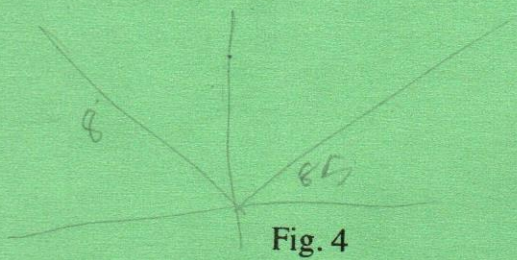
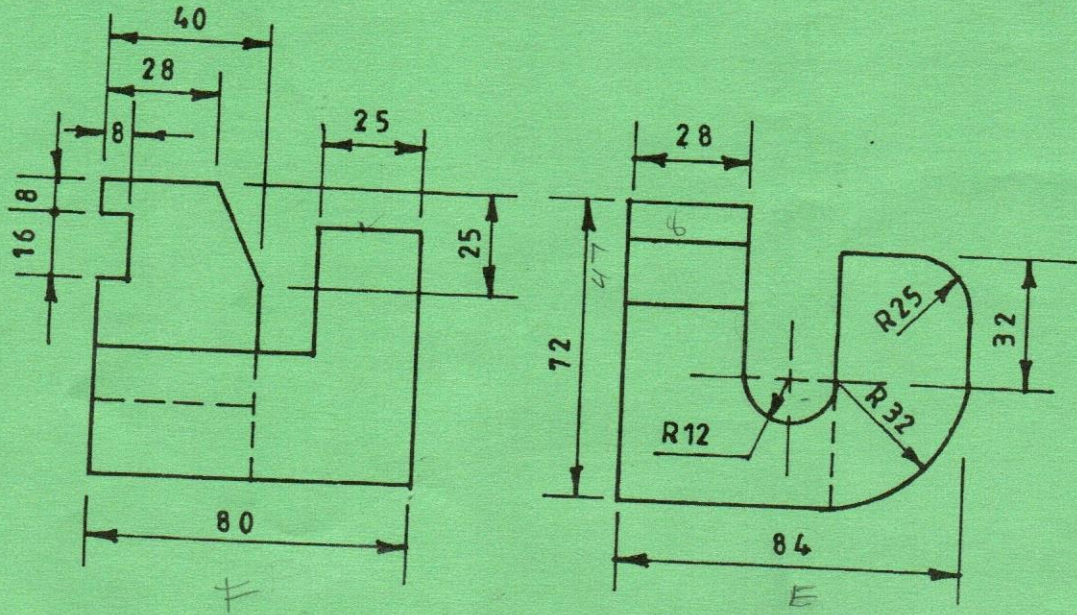


Fig. 3

- Construct a regular heptagon with a circle of 60 mm diameter. (6 marks)
 - Construct two circles of diameter 30 mm and 44 mm within a circle of radius 40 mm such that all the three circles touch one another. (7 marks)
 - Construct a cycloid of a point on the circumference of a circle of 30 mm diameter if the circle rolls without slip along a straight line. (7 marks)

5. Figure 4 shows three views of a machine component drawn in first angle projection. Draw full size an oblique (cavalier) view of the component. (20 marks)



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