

Name:

Index No:

Candidates signature:

Date:

449/1

DRAWING AND DESIGN

PAPER 1

TIME 2 ½ Hours.

MACHAKOS COUNTY KCSE TRIAL AND PRACTICE EXAM 2015

Kenya Certificate of Secondary Education (K.C.S.E)

449/1

DRAWING AND DESIGN

PAPER 1

Instructions to candidates

- a) You should have the following materials for this examination:
Drawing instruments
3 sheets of A3 drawing papers.
Scale rule
- b) This paper consists of three sections: A, B and C
- c) Answer all questions in section A and B and any two questions in section C.
- d) Questions in section A must be answered on the answer sheet provided.
- e) Questions in section A, B and C should be answered on the A3 sheets of drawing papers.
- f) All dimensions are in millimeters unless otherwise stated.
- g) Candidates may be penalized for not following instructions given in this paper.
- h) This paper consists of 12 printed pages.
- i) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no question is missing.
- j) Candidates should answer the questions in English.

SECTION A (50MARKS)

Answer all five questions in this section in the spaces provided

1. a) Give the following information regarding parastatal organizations in Kenya with respect to:
(i) Ownership (1mark)

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- (ii) Management. (1mark)

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- (iii) Services (1mark)

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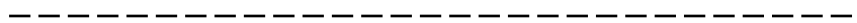
- b) Describe four main steps involved in design process. (4marks)

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2. a) i) State one reason for using different types of lines in drawing. (1mark)

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- ii) Explain one use of each of the following lines. (1mark)



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b) Outline six advantages of using computers in drawing.

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3. a) State one disadvantage of using each of the following items to hold paper on the drawing board .

(i) Masking tape. (1mark)

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(ii) Thumb pins (1mark)

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b) Describe each of the following manufactured boards.

(i) Plywood (1mark)

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(ii) Chipboard (1mark)

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(iii) Block board (1mark)

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4. Figure 1 shows a template drawn full size.

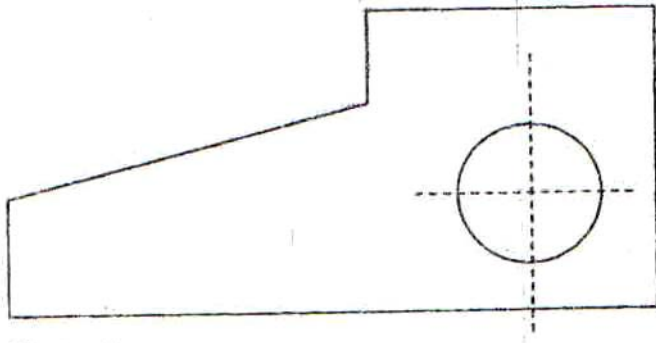


Figure 1

Measure and dimension the hole and angle of the slanting face.

(2marks)

5. Figure 2 shows a pictorial view of a block.

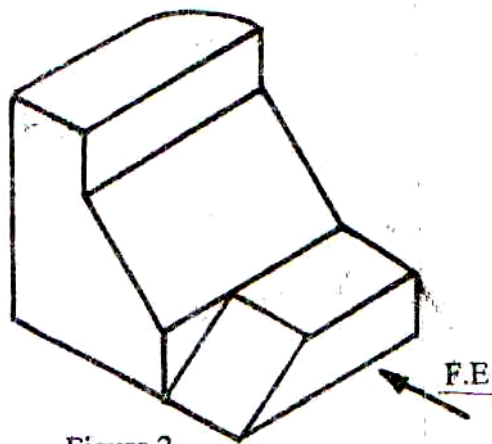


Figure 2

Using third angle projection, sketch in good proportion the orthographic views of the block.

(6marks)

6. Figure 3 shows two views of a block drawn in first angle projection. In good proportionality sketch the block in oblique projection. (6marks)

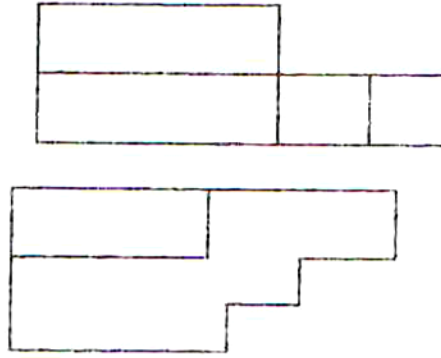
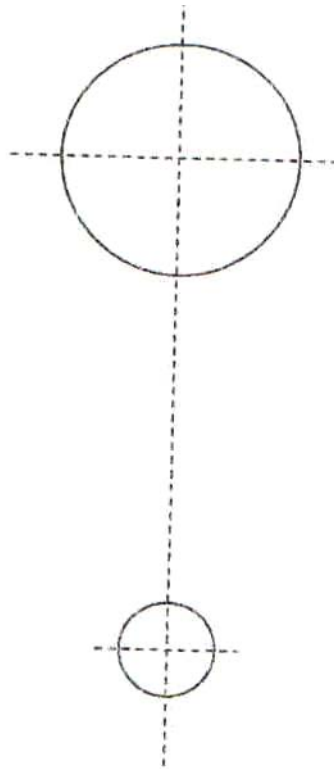


Figure 3

7. Construct an internal common tangent to the circle given in figure 4.

Figure 4



(7marks)

8. The following lines were drawn using different scale.

a) A _____ B

b) C _____ D

Determine the distance represented by each line using the given scale.

(3marks)

i) Line AB if the scale used is 1:2

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ii) Line CD if the scale used is 2:1

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9. A right square pyramid is truncated along X-X and Y-Y as shown in figure 5.

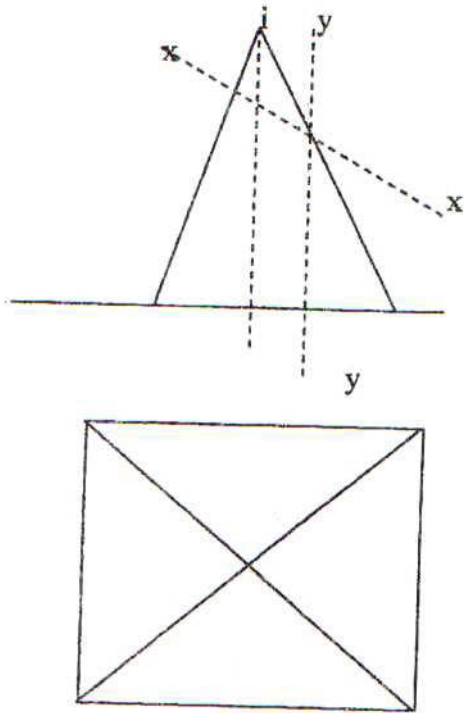
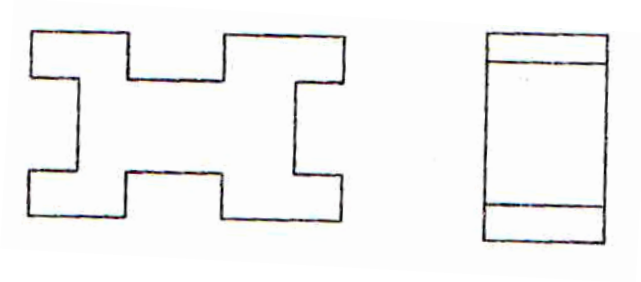


Figure 5
Complete the plan

(4marks)

10. Figure 6 shows two views of a shaped block drawn in first angle projection. Sketch the third view by projecting from the given views. (5marks)



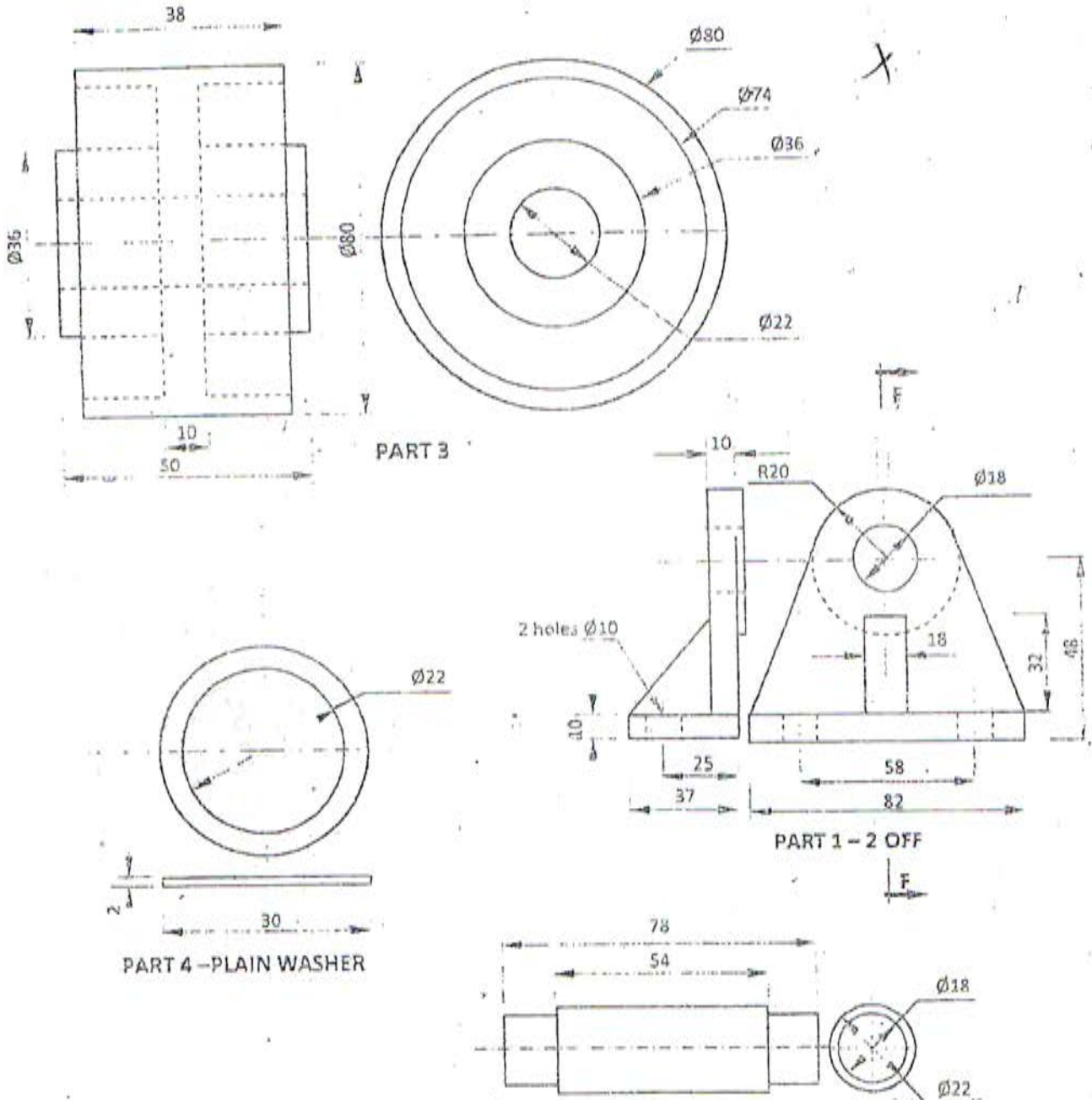
SECTION B (20MARKS)

This question is compulsory.

11. Figure 7 shows parts of a machined component drawn in first angle projection.

Assemble the parts and draw the following:

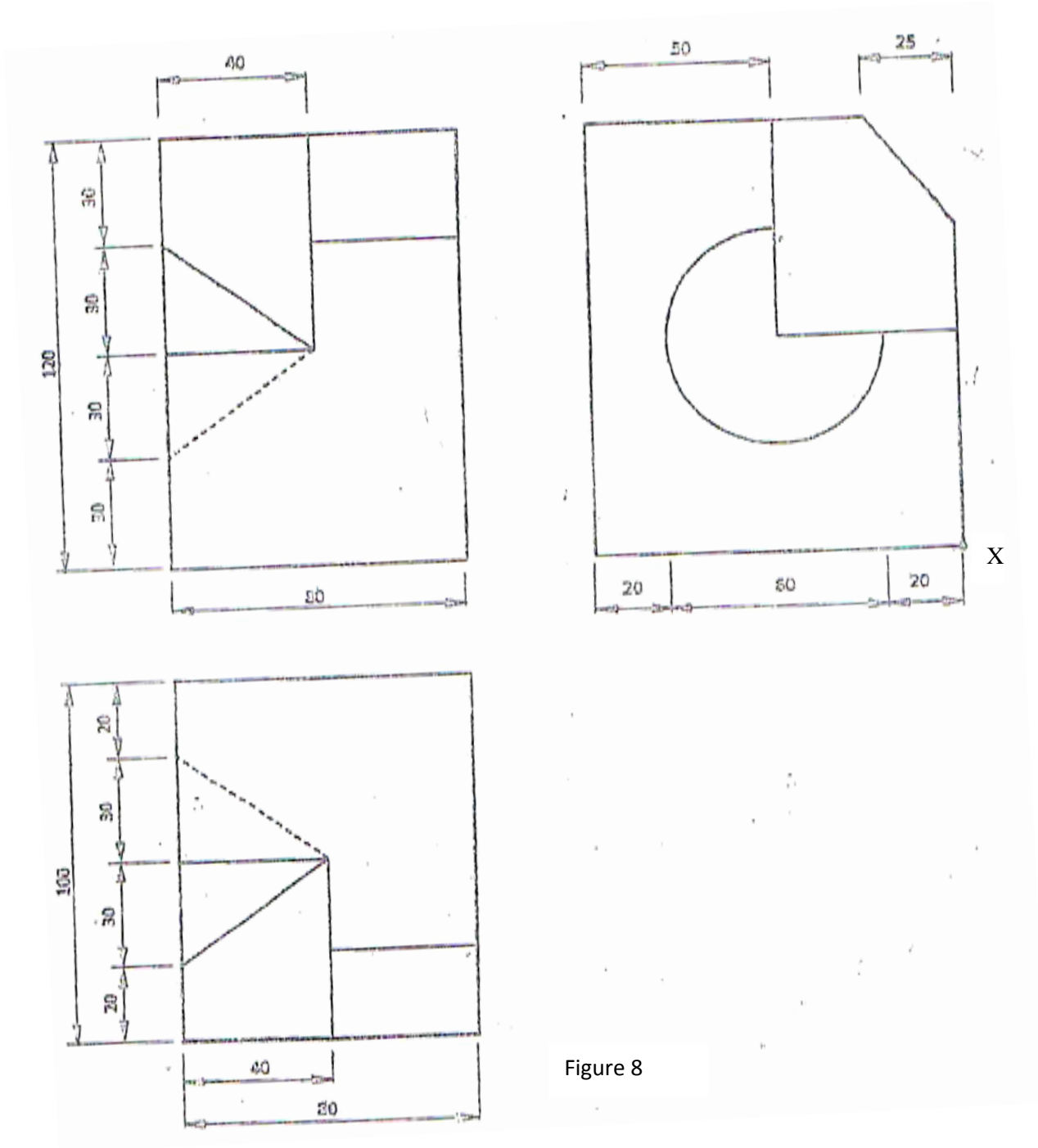
- Sectional front elevation through the cutting plane F-F.
- The plan.



SECTION C (30MKS)

Answer any two questions from this section

12. Figure 8 shows the three orthographic views of a machined block drawn in first angle projection. Draw full size, the isometric view of the block taking corner X as the lowest point. (15marks)



13. In the mechanism shown in figure 9, the crank EF rotates about centre E while GH oscillates about G.

Plot the locus of point P for one complete revolution of EF.

(15marks)

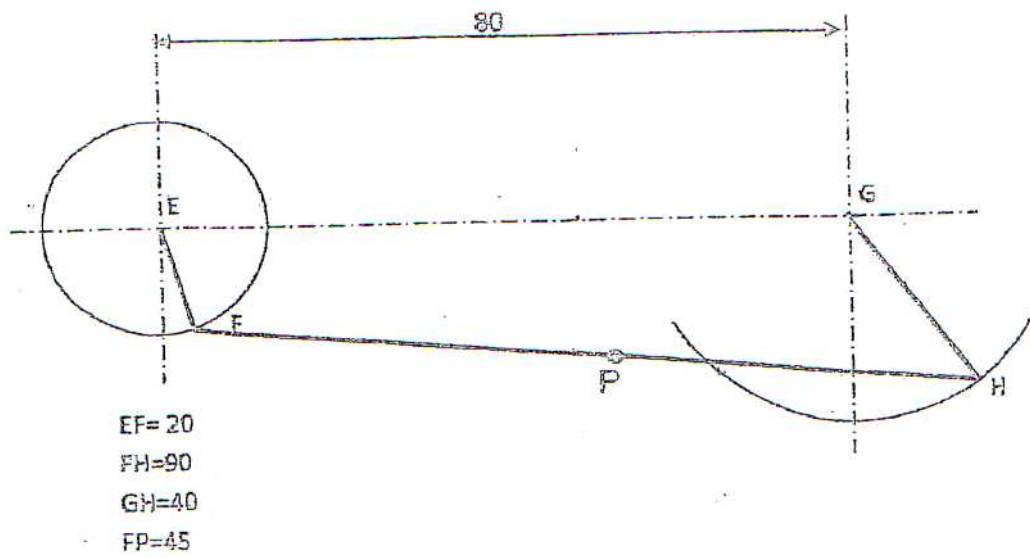


Figure 9

14. Figure 10 shows a branch pipe A connected to a conical shaped base of a chimney B.

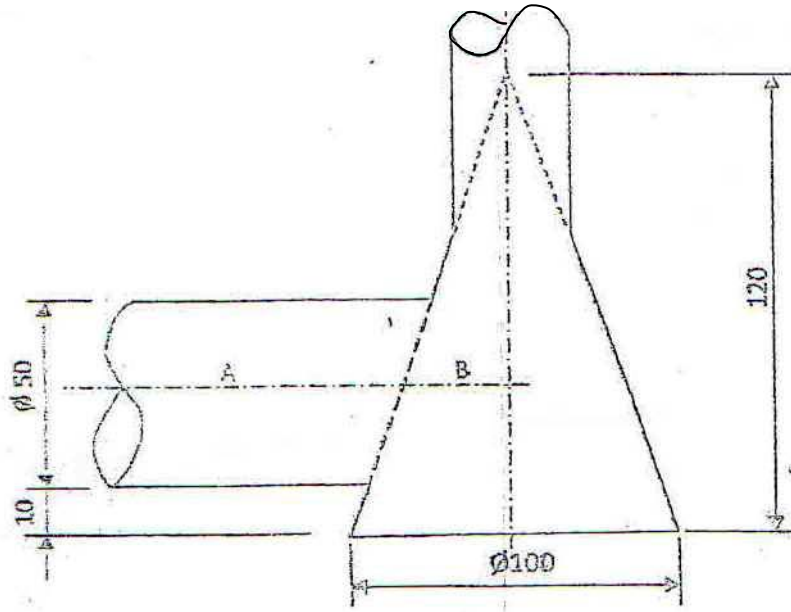


Figure 10

Draw the curves of interpenetration between the pipe and the conical base in:

- a) Plan
- b) Elevation

(15marks)