NYAHOKAKIRA CLUSTER TWO 2024

Kenya Certificate of Secondary Education

449/1 **DRAWING & DESIGN** Paper 1

July 2024 – 2½ Hours

Name: …… Adm. No: ……..

Stream…….…… School…….

Instruction to candidates

(a) You should have the following for this examination:
Drawing instruments
3 sheets of drawing paper size A3
(b) This paper consists of three sections: A, B and C.
(c) Answer all questions in section A and B and any TWO questions from section C.
(d) Questions in section A must be answered on the spaces provided.
(e) Questions in section B and C should be answered on the A3 sheets of drawing paper provided.
(f) All dimensions are in millimeters unless otherwise stated.
(g) Candidates may be penalized for not following the instructions given in this paper.
(h) This paper consists of 10 printed pages.
(i) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(j) Candidates should answer the questions in English.

FOR EXAMINERS USE ONLY

SECTION	Questions	Maximum score	Candidate's score
A	1-10	50	
B	11	20	
C	12	15	
	13	15	
	14	15	
TOTAL SCORE			

SECTION A (50 MARKS)

1. Distinguish between a draughtsman and a designer. (2 marks)

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2. a) Name two instruments used for drawing vertical lines. (2 marks)

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   b) State two precautions in handling a T-square. (1 marks)

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3. Using a cube, show the three types of pictorial drawings. (3 marks)

4. a) Define the term "mock-up" and state its purpose in the design process. (2 Marks)

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   b) State two advantages of using computers in drawing. (1mark)

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5. a) Give two reasons for using each of the following. (2 marks)

   i. Plastics in making set squares.

   ii. Block boards in making drawing boards.

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b) Outline four properties of copper. (2 marks)

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6. The figure below shows two views drawn in first angle projection. From the views make the oblique view of the block to a scale of 1:2. (7 marks)

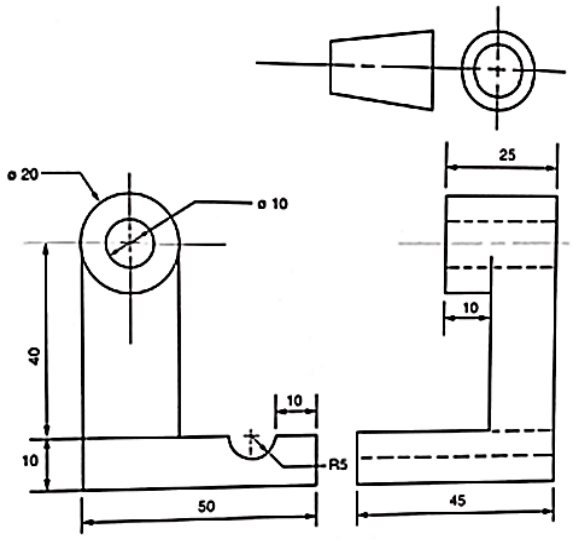


Figure 1

7. a) **Figure 2** shows an elevation of a template.

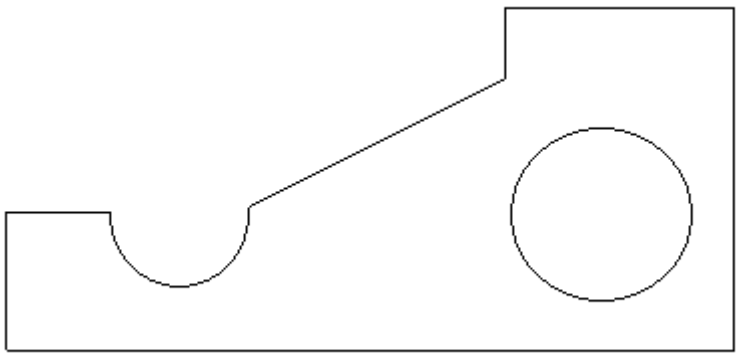


Figure 2

Measure and dimension: (3 marks)

i. Circle.
ii. Radius.
iii. Angle of the slanting face.

b) Construct a regular pentagon given that the length of one side is 40mm (4 marks)

8. Construct a diagonal scale of 1: 5 to measure to an accuracy of 5mm up to 800mm. Show a reading of 615mm on the scale. (6 marks)

9. Construct a scale of 8:5 and draw the figure below using the scale. (7 marks)

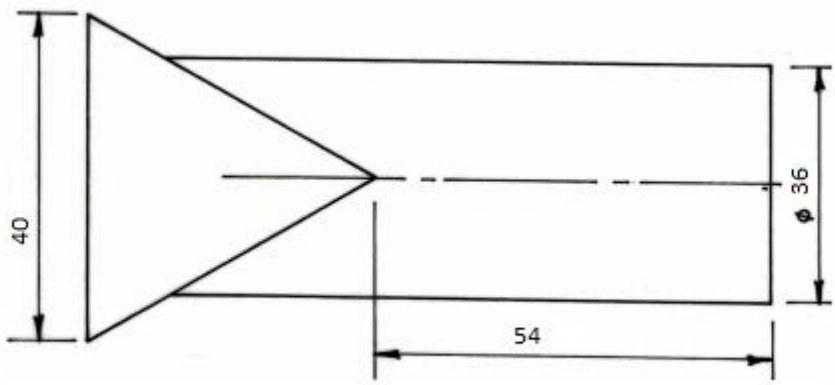
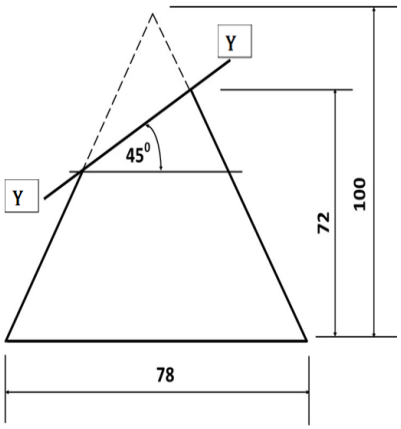


Figure 3

10. The figure below shows the frustrum of a cone truncated along **Y-Y.**
Using the figure draw the following

a) True shape along **Y-Y**

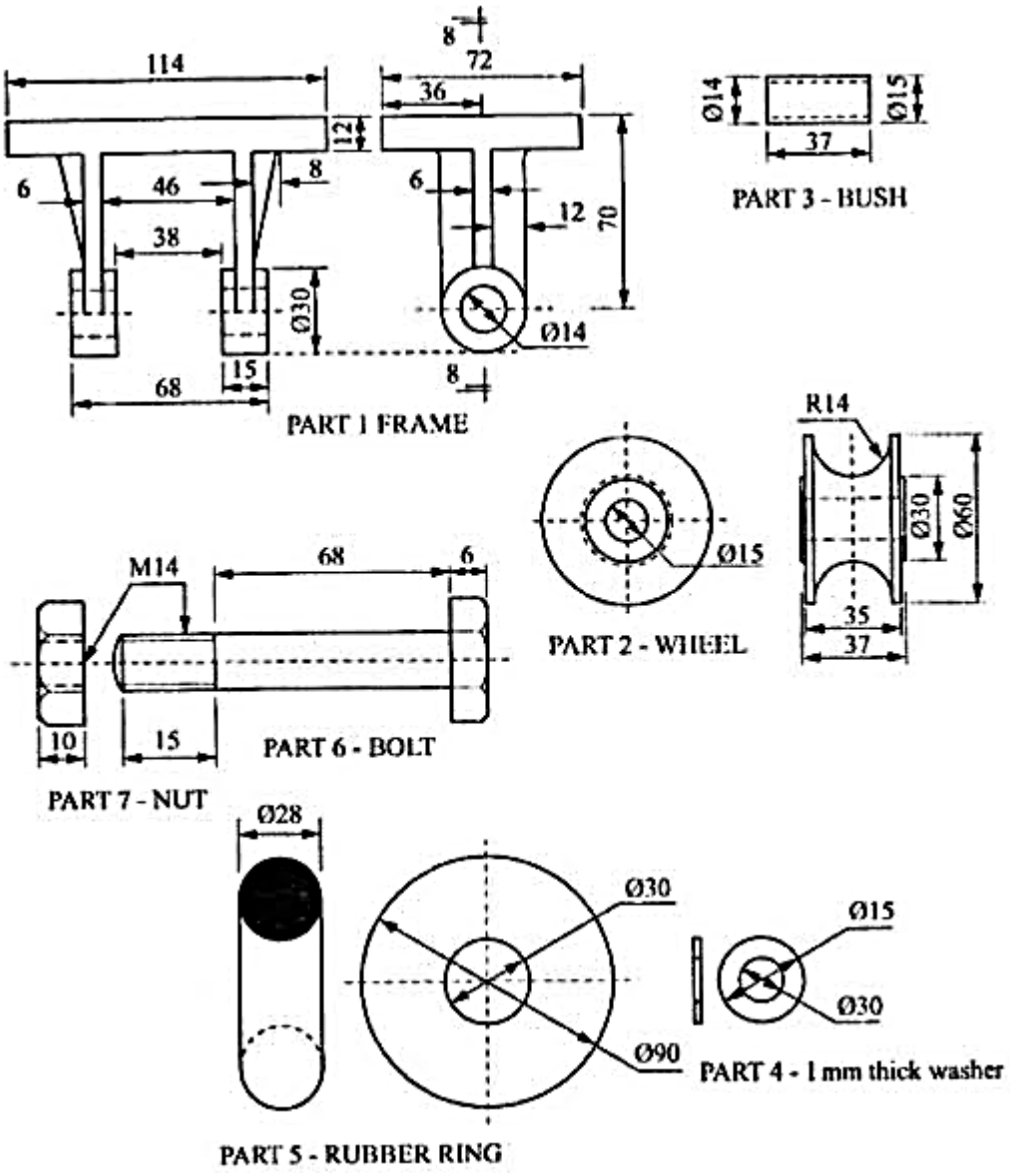
b) The plan (8 marks



SECTION B (20 MARKS)

This question is compulsory. Candidates are advised to spend no more than one hour on this question.

11. **Figure 6** shows parts of a machine component drawn in first angle projection.



Assemble the parts and draw, FULL SIZE the following :

a. Sectional front elevation along the cutting plane **B-B;**
b. End elevation (20 marks)

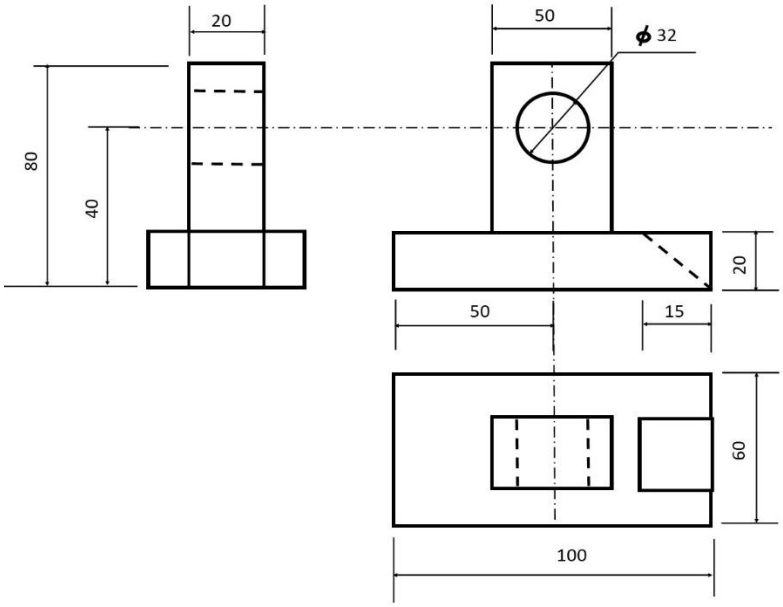
Insert three leading dimensions

Unspecified dimensions are left to the candidate's discretion. Hidden details are not required.

SECTION C (30MARKS)

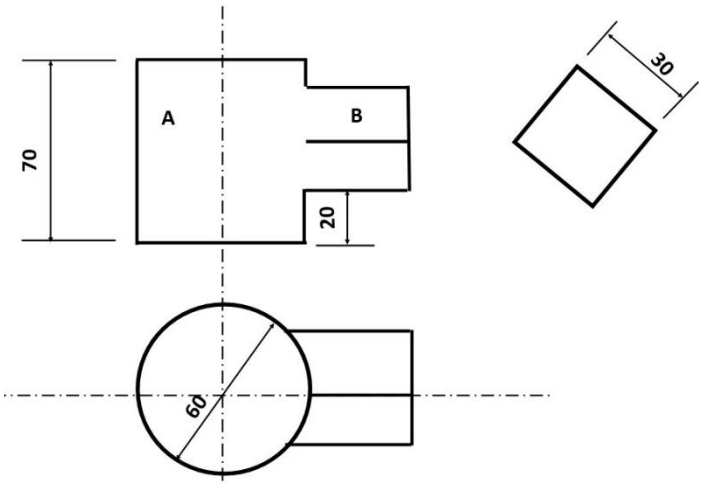
Answer any two questions in this section

12. The figure below shows the orthographic views of a machine bracket drawn in first angle projection. Draw full size, bracket in isometric projection taking point X as the lowest point. (15marks)



13. An Archimedean spiral has its nearest point 15 mm from the centre (pole) and the further point 85 mm from the centre. Draw the spiral. (15 marks)

14. The figure below shows two views of intersecting cylindrical tube A and square tube B.



Copy the views and:

a) Complete the front view
b) Development of tube B (15marks)