1301/312 1304/312 1305/312 TECHNICAL DRAWING June/July 2009 Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

CARPENTRY AND JOINERY CRAFT CERTIFICATE MASONRY CRAFT CERTIFICATE PLUMBING CRAFT CERTIFICATE

TECHNICAL DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Drawing paper size A2 Drawing instruments Metric scale rule.

Answer any FIVE of the following EIGHT questions.

All questions carry equal marks,

Maximum marks for each part of a question are as shown.

All dimensions are in millimetres.

This paper consists of 9 printed pages.

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

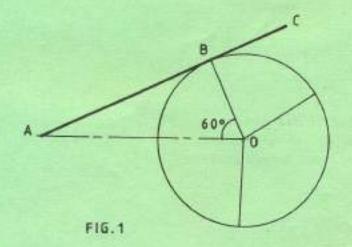
- (a) State clearly the proper use of the following instruments:
 - (i) Tee square
 - (ii) Set square.

(2 marks)

- (b) Construct a diagonal reduction scale of 1:100 to read upto 14 metres to an accuracy of 0.05 metres. Indicate the following readings on the scale:
 - (i) 8.25 m
 - (ii) 6.55 m

(10 marks)

- (c) Using the concentric circles method, construct an ellipse with major axis of 80 mm and a minor axis of 60 mm. (8 marks)
- (a) Figure 1 shows a reciprocating water pump system. Draw the locus of point "C" when the crank BO makes one revolution given that B is pin jointed to AC and A is allowed to move horizontally. (10 marks)

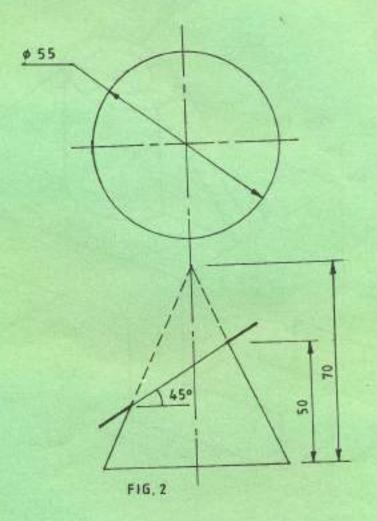


OB = 25mm

AB = 55 mm

BC = 30 mm

- (b) Figure 2 shows the front elevation and plan of a truncated right cone. Copy the given views and draw full size the following:
 - (i) truncated plan;
 - (ii) the left end elevation;
 - (iii) true shape of the truncated face. (10 marks)



- Figure 3 shows an isometric view of a shaped block. Draw full size the following views in first angle projection:
 - (i) sectional elevation "A-A";
 - (ii) plan;
 - (iii) left end elevation.

(20 marks)

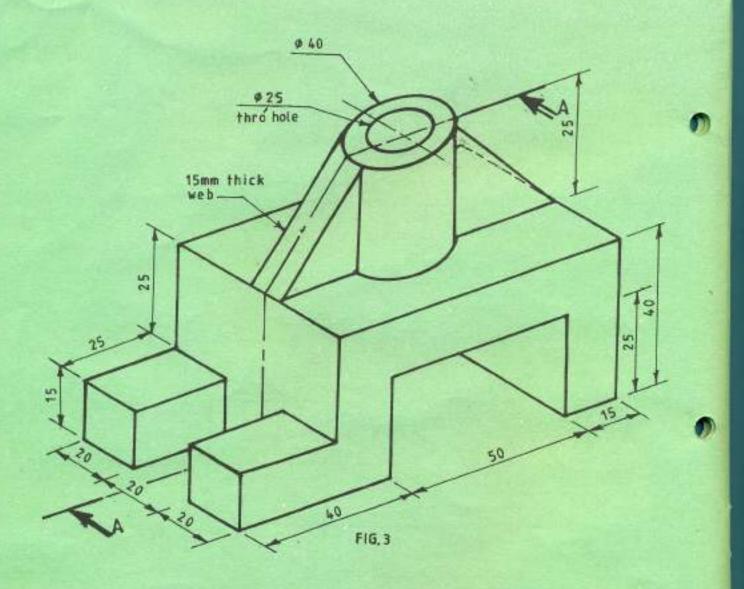


 Figure 4 shows a security light reflector consisting of elliptical and parabolic curves. Construct the reflector using a scale of 1:1. (20 marks)

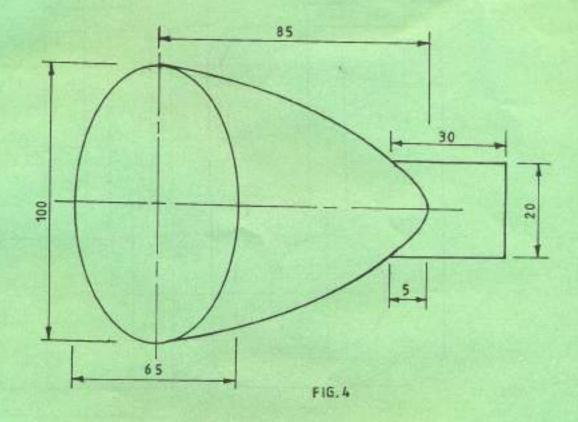


 Figure 5 shows two views of a bracket. Using a scale of 1:5 draw the oblique view of the bracket making 'X' the lowest point. (20 marks)

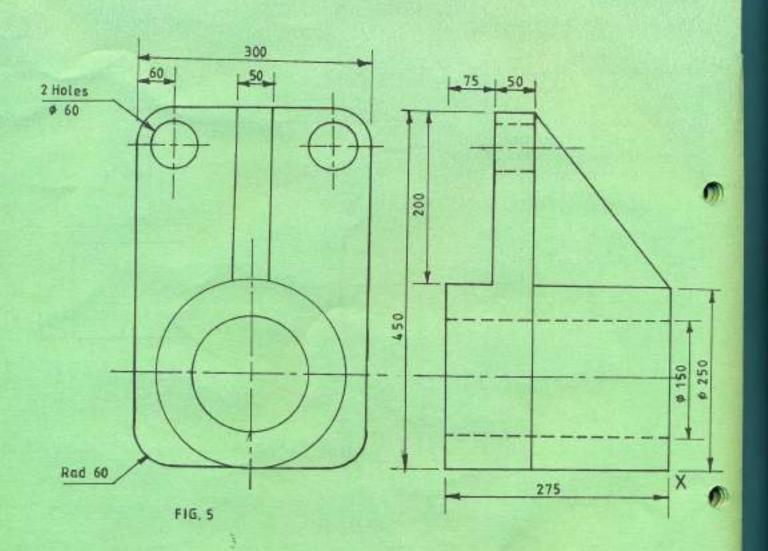


 Figure 6 shows three interpenetrating pipes. Construct the curves of interpenetration between the intersecting pipes. (20 marks)

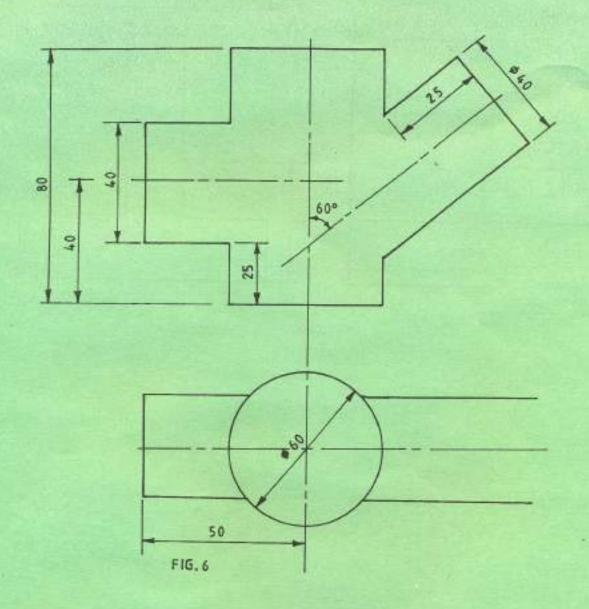
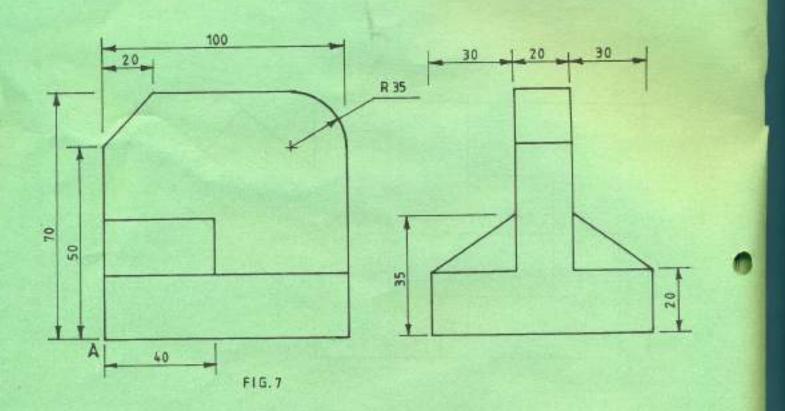


 Figure 7 shows two views of a block. Make full size isometric drawing of the block taking corner "A" as the lowest point. (20 marks)



8. Figure 8 shows the floor plan of a proposed school canteen which is to have a pitched roof. Using a scale of 1:20 draw section "A-A" from the foundation to the roof given the following specifications:

SPECIFICATION

Strip concrete foundation
Foundation wall
Oversite concrete
Hardcore
Superstructural wall
Window "B"
Lintel
Floor to ceiling height
Wall plate
Rafters
Ceiling joists
Fascia board
Purlins
G.C.I sheets

SIZE

600 x 200 mm
225 mm thick
100 mm thick
200 mm thick
150 mm thick
150 mm thick
1000 x 1000 mm
150 x 225 mm high
2600 mm
100 x 50 mm
100 x 50 mm
150 x 50 mm
150 x 50 mm
30 gauge

(20 marks)

