1301/312
1304/312
1305/312
TECHNICAL DRAWING
June/July 2011
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN CARPENTRY AND JOINERY
CRAFT CERTIFICATE IN MASONRY
CRAFT CERTIFICATE IN PLUMBING

TECHNICAL DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Drawing paper size A2;
Drawing instruments.

*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 8 printed pages.

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

Turn over

1. (a) Construct an ellipse whose major axis is 100 mm and minor axis is 60 mm using the rectangular method. (5 marks)

(b) Using the universal method, construct a regular pentagon with the length of one side equal to 30 mm. (5 marks)

(d) Construct a diagonal scale of 1:100 to read up to 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)

2. Figure 1 shows the front view of a truncated hexagonal prism. Using first angle projection draw the following views:

(a) end elevation;
(b) plan;
(c) development of the truncated prism with the base only;
(d) true shape of the cut portion.

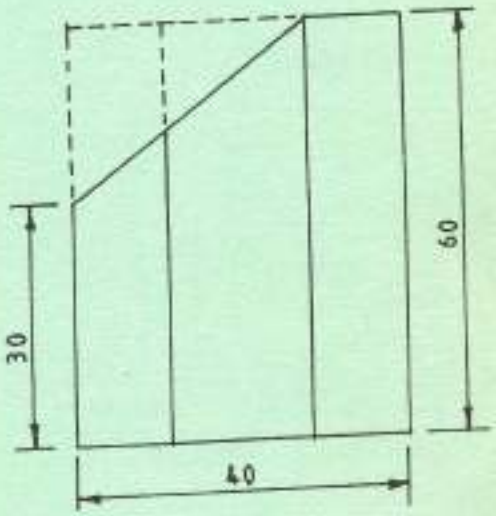

Fig. 1

(20 marks)

3. Figure 2 shows three views of a machine block drawn in third angle projection. Draw an isometric projection of the block making corner "x" the lowest point. Include the major dimensions.

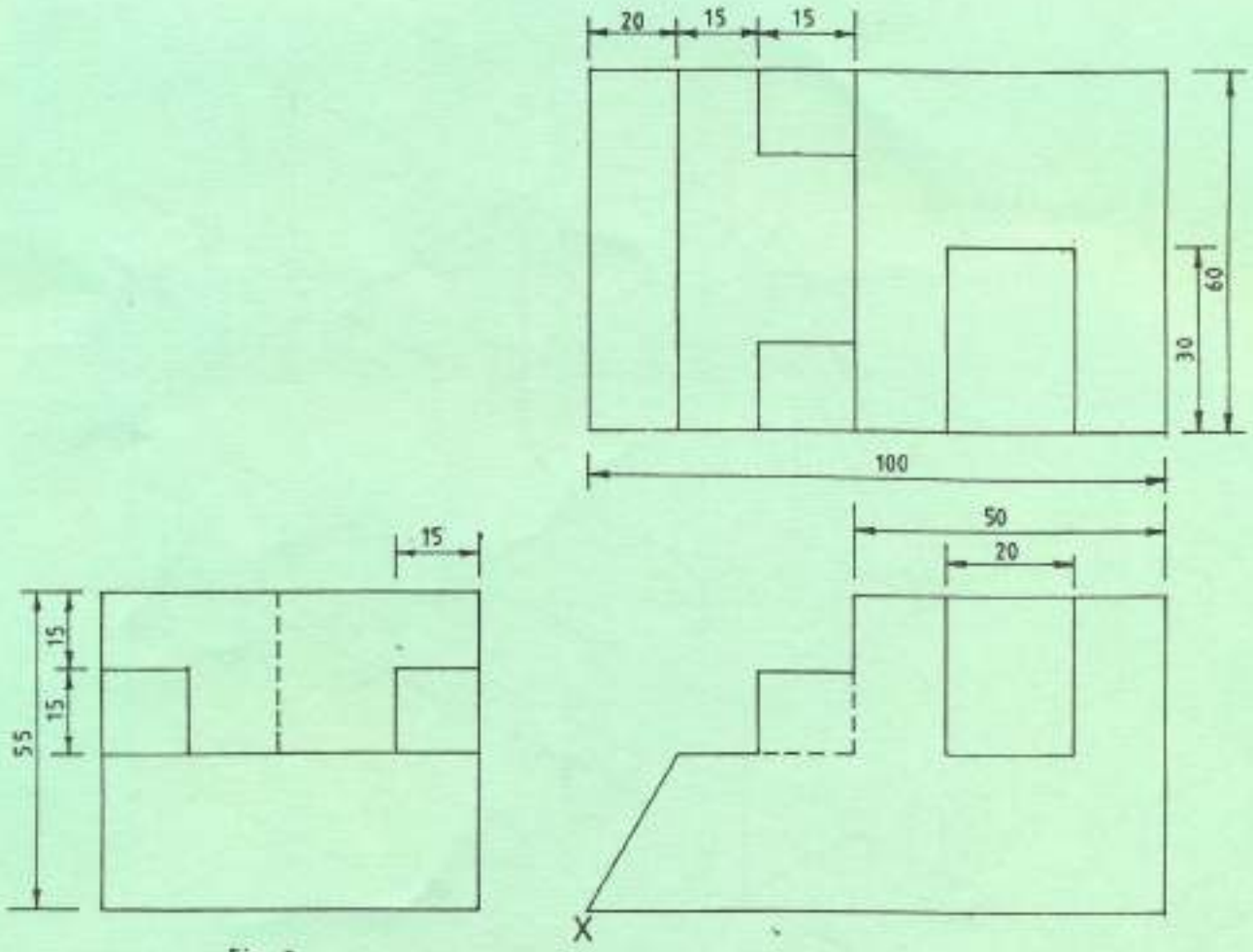

Fig. 2

(20 marks)

4. Figure 3 shows an isometric drawing of a machine block. Draw the following views full size in first angle projection. Include six major dimensions.

(i) sectional elevation along the cutting plane "A-A";
(ii) plan;
(iii) left end elevation.

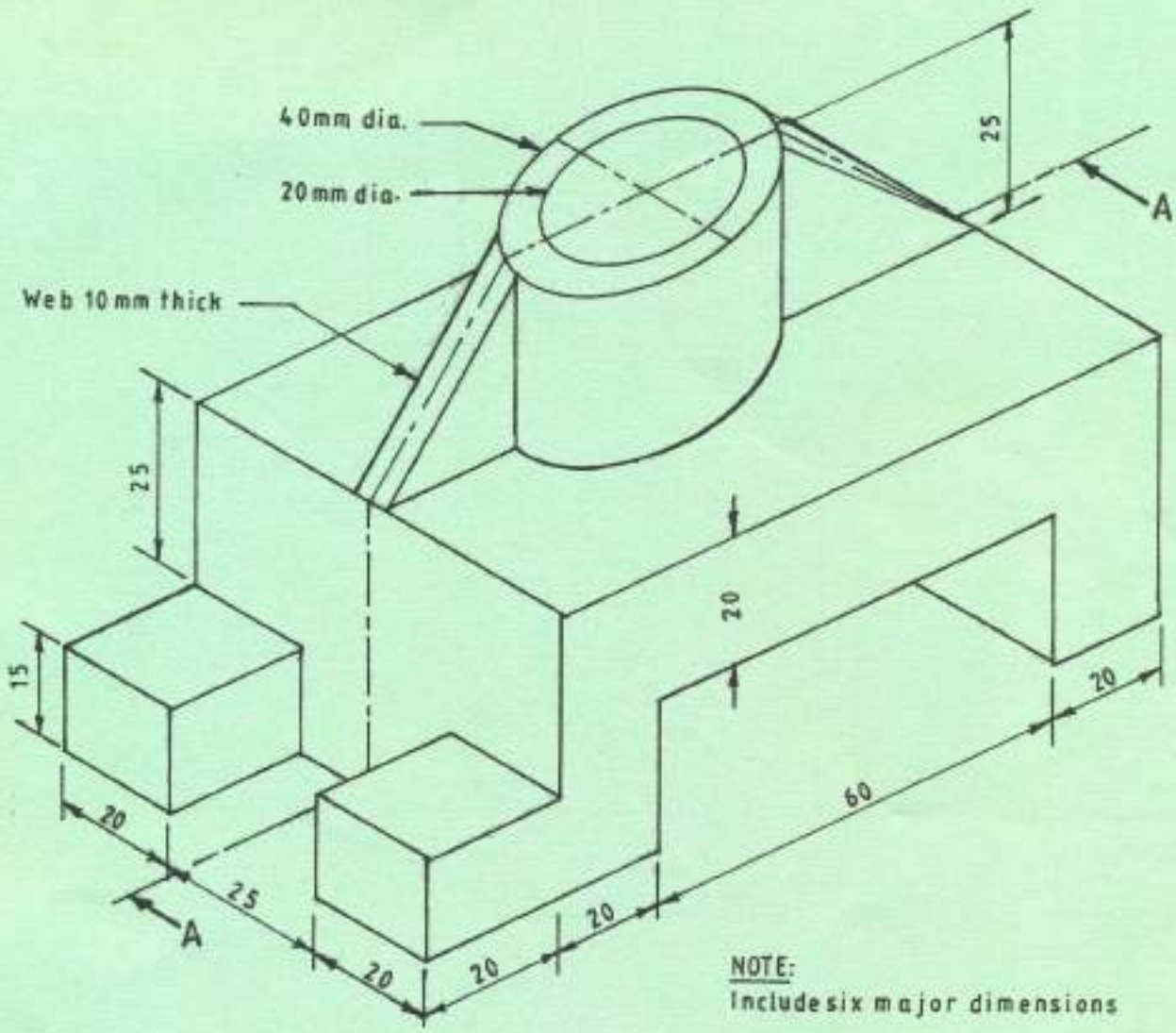

Fig. 3

(20 marks)

5. Figure 4 shows two views of a triangular prism and its perspective layout. Copy the layout and draw the prism in two point perspective.

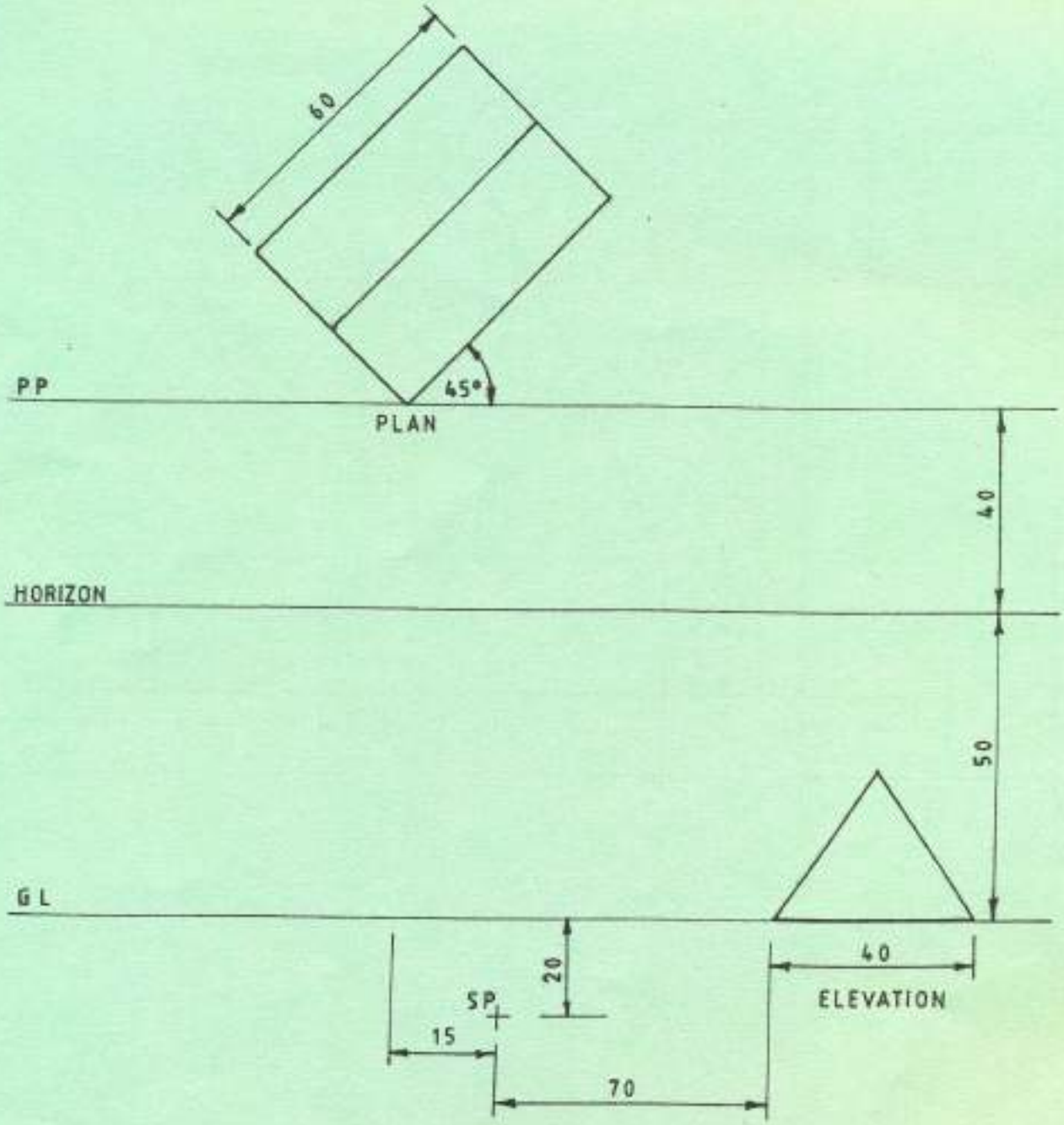

Fig. 4

(20 marks)

6. Figure 5 shows two views of a bracket drawn in first angle projection. Use the scale of 1:2 to draw the bracket in oblique cabinet projection.
Include six major dimensions.

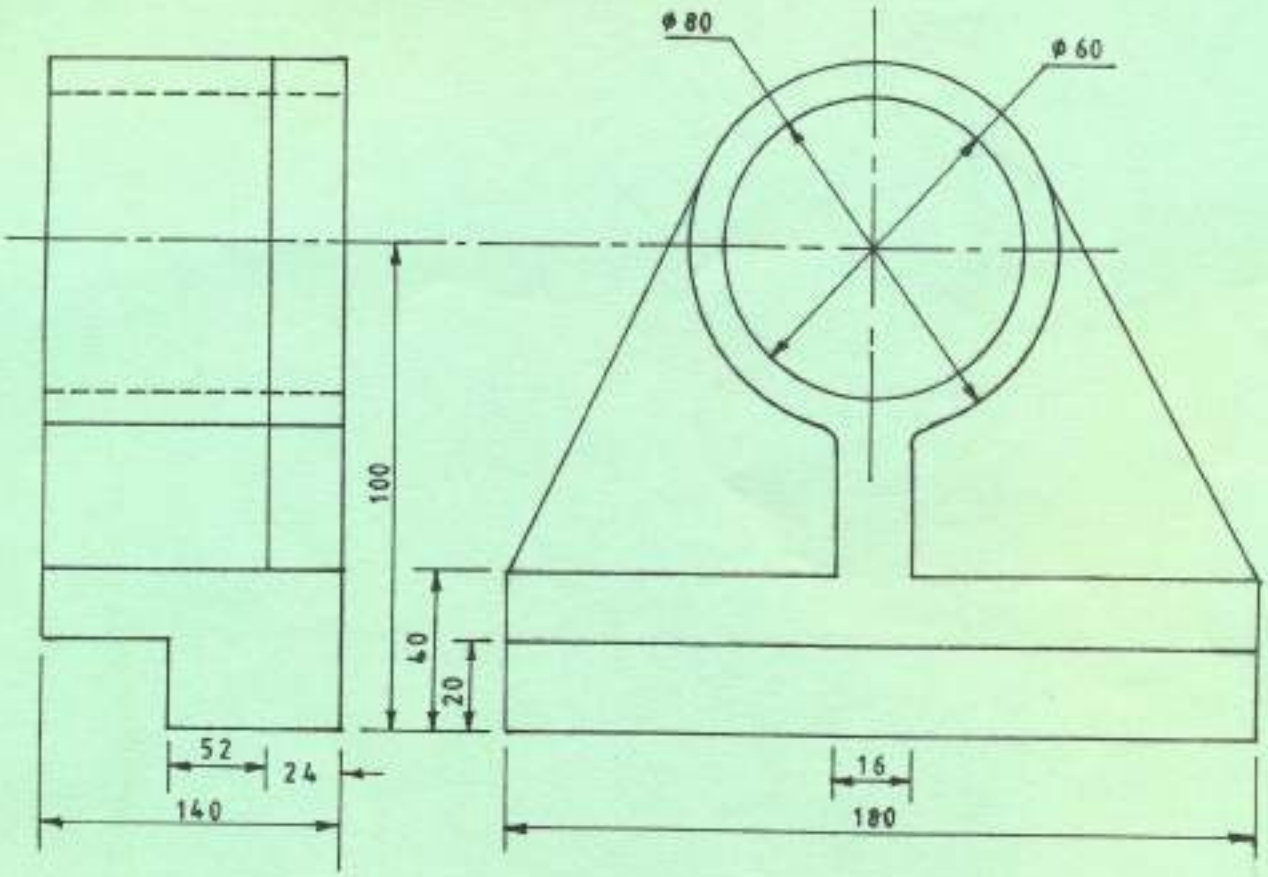

Fig. 5

(20 marks)

7. Figure 6 shows an incomplete front elevation of two pipes of unequal diameters intersecting at 30°. Complete the front elevation by including the line of intersection and draw the following:

(a) plan;
(b) development of pipe 'A";
(c) development of pipe 'B'.

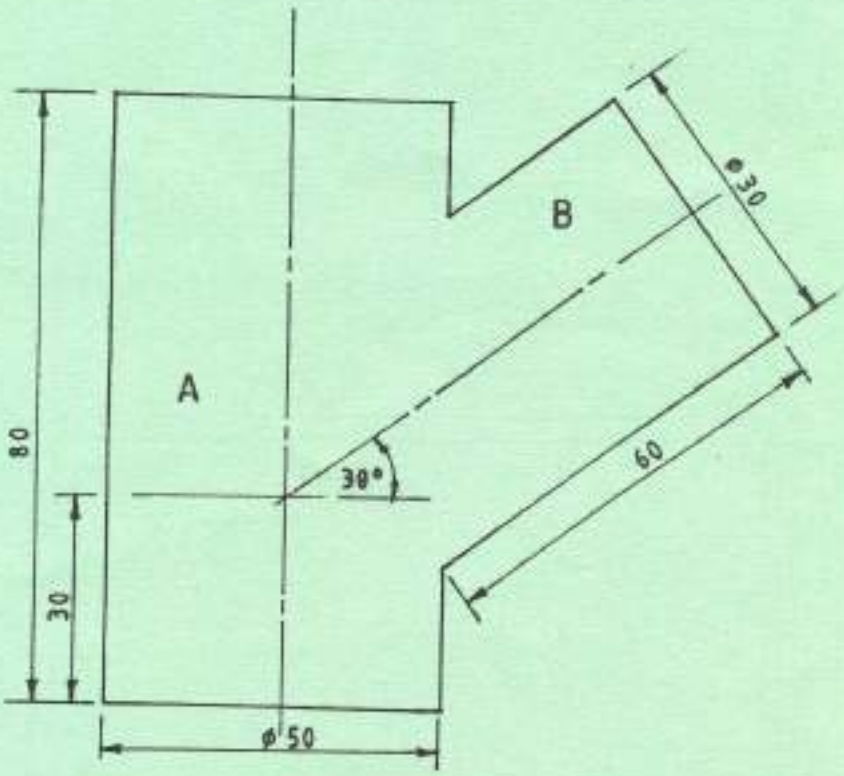

Fig. 6

(20 marks)

8. Figure 8 shows the plan of a garage attached to the main house. Draw section "A - A" from the foundation to eaves. Use the scale of 1:20 given the following information:

(i) foundation strip 900 mm below ground level size 675 x 225 mm;
(ii) block wall 225mm thick below ground level;
(iii) oversite concrete floor with cement/sand screed;
(iv) casement steel window 750 mm deep;
(v) roof-lean to towards window, pitch 30° and timber frame covered with plain tiles;
(vi) floor to ceiling height 2500 mm;
(vii) wall finish is 15 mm thick plaster.

Assume any information not given.

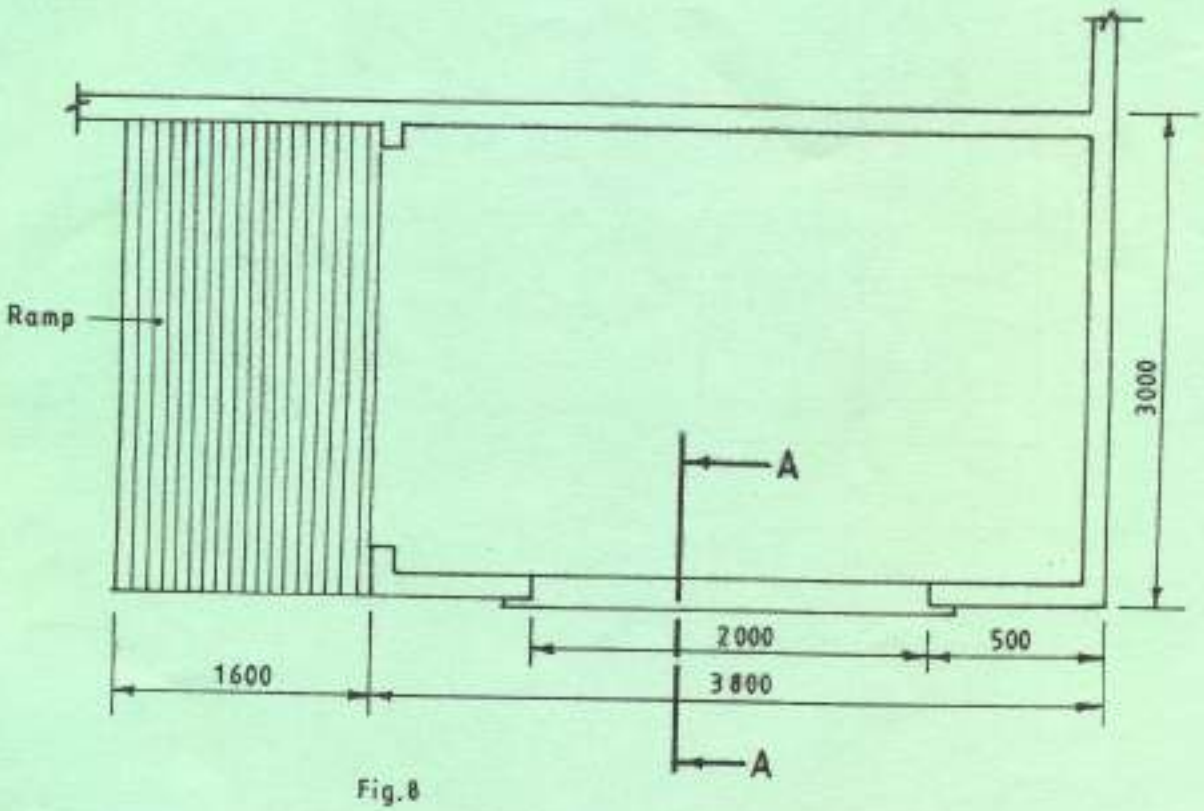

Fig. 8

(20 marks)