Name: _____ Index No: _____ / _____

Candidate's Signature: _____

Date: _____

2710/106
ARCHITECTURAL COMMUNICATION
AND TECHNICAL DRAWING
June/July 2015
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN ARCHITECTURE
MODULE I

ARCHITECTURAL COMMUNICATION AND TECHNICAL DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided above.
Sign and write the date of examination in the spaces provided above.
You should have drawing paper size A_y drawing instruments and a scientific calculator for this examination.
This paper consists of EIGHT questions in TWO sections; A and B.
Answer FIVE questions choosing THREE questions from section A and any TWO questions from section B in the spaces provided in this question paper.
All questions carry equal marks.
Maximum marks for each part of a question are indicated.
Do NOT remove any pages from this booklet.
Candidates should answer the questions in English.

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1	20	
	2	20	
	3	20	
	4	20	
	5	20	
B	6	20	
	7	20	
	8	20	
	TOTAL SCORE		

This paper consists of 20 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

SECTION A: ARCHITECTURAL COMMUNICATION

Answer any THREE questions from this section.

1.　(a)　Describe each of the following types of perspectives:

　　　　(i)　　one-point perspective;
　　　　(ii)　　two-point perspective;
　　　　(iii)　　three-point perspective.

(6 marks)

　　(b)　A rectangular block size 32 mm x 22 mm x 16 mm is lying on ground on one of its largest face. One of its vertical edge is in the picture plane and the longer face containing edge is inclined at an angle 30° to the picture plane. The station point is 52 mm infront of the picture plane, 35 mm above the ground plane and passing through the centre of the block. Draw a two-point perspective view of the block.　　(14 marks)

2.　(a)　List any six tools used in model making.　　(3 marks)

　　(b)　Explain any **four** types of building models.　　(6 marks)

　　(c)　Figure 1 shows the front elevation of a semi-circular arch. Arcs ab, bc and cd are equal and lines passing through points b, c and d are normals to the curve. Draw the arch to a scale of 1:10.　　(11 marks)
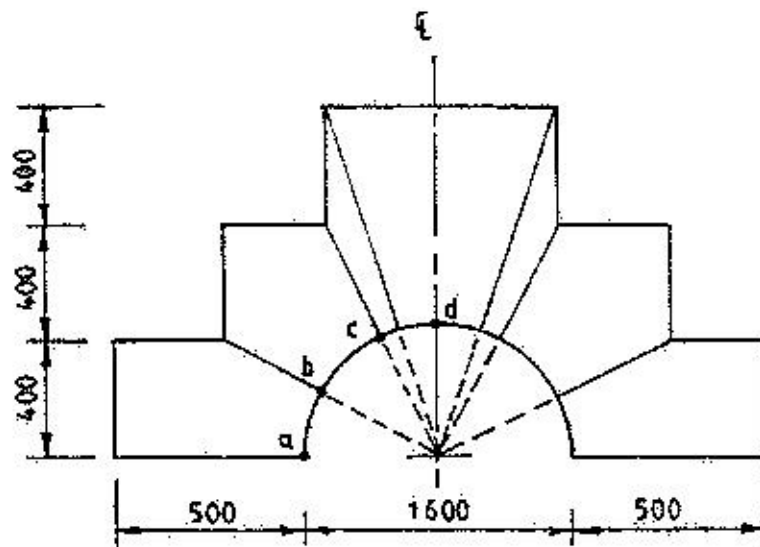

Fig. 1

3. Figure 2 shows part of a plan for a house. To a scale of 1:20 draw section A-A from the foundation to the roof using the following information: (20 marks)

   (i)   foundation strip: 800 mm below ground level;
   (ii)   foundation walls: 200 mm thick stone wall;
   (iii)   floor: oversite concrete 150 mm th with 25 mm th cement/sand finish;
   (iv)   wall plate 100 x 50 mm;
   (v)   ring beam 225 x 200 mm;
   (vi)   gabled roof pitch 30°;
   (vii)   floor to ceiling level 2600 mm;
   (viii) roof covering: galvanized iron sheets.

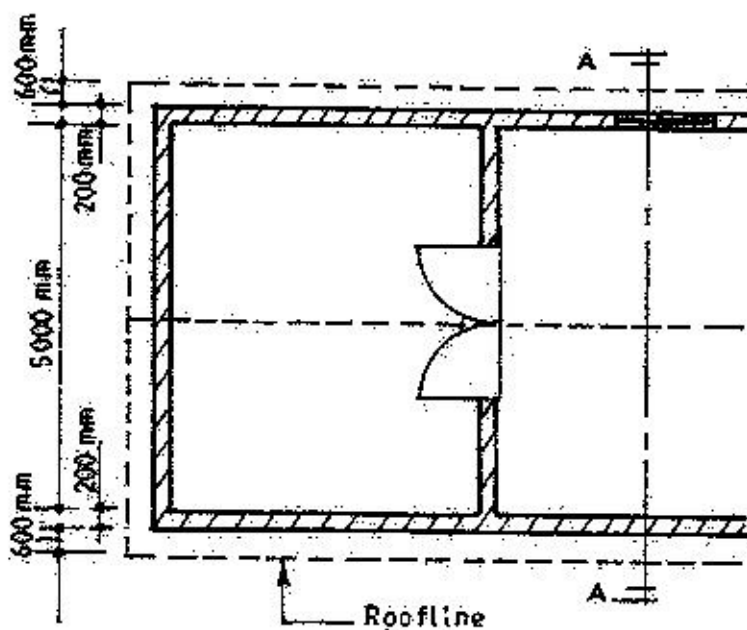   (Assume any other information not given).

Fig. 2

4. Figure 3 shows the plan of residential house. Taking the level of the ring beam from the floor level as 2100 mm

Draw to a scale of 1:100:

(a) elevation 02; (10 marks)
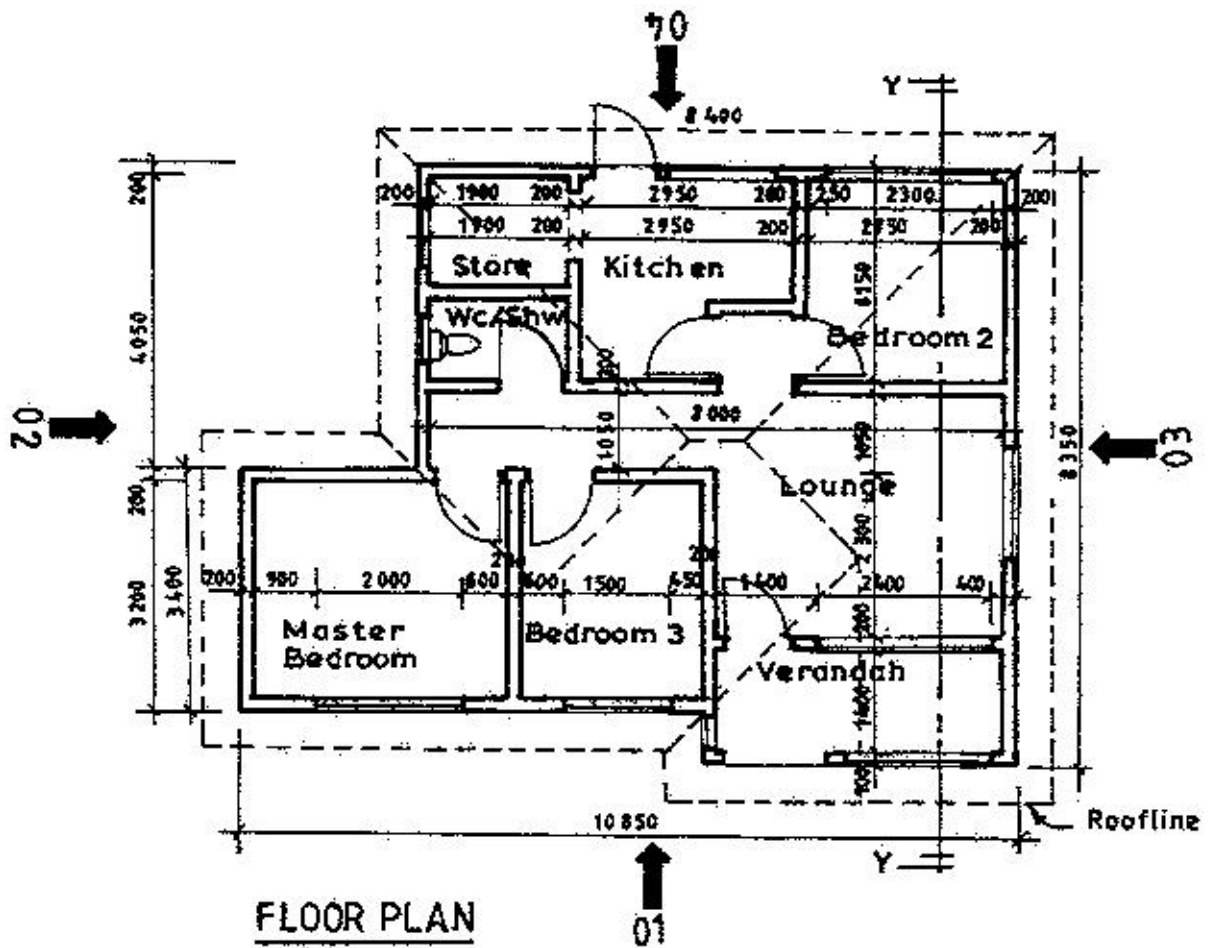
(b) elevation 03. (10 marks)

FLOOR PLAN

Fig. 3

5. Figure 4 shows a plan of a concrete staircase measuring 3700 mm by 2600 mm. Taking the riser as 150 mm and to a scale of 1:10; draw section Y-Y.
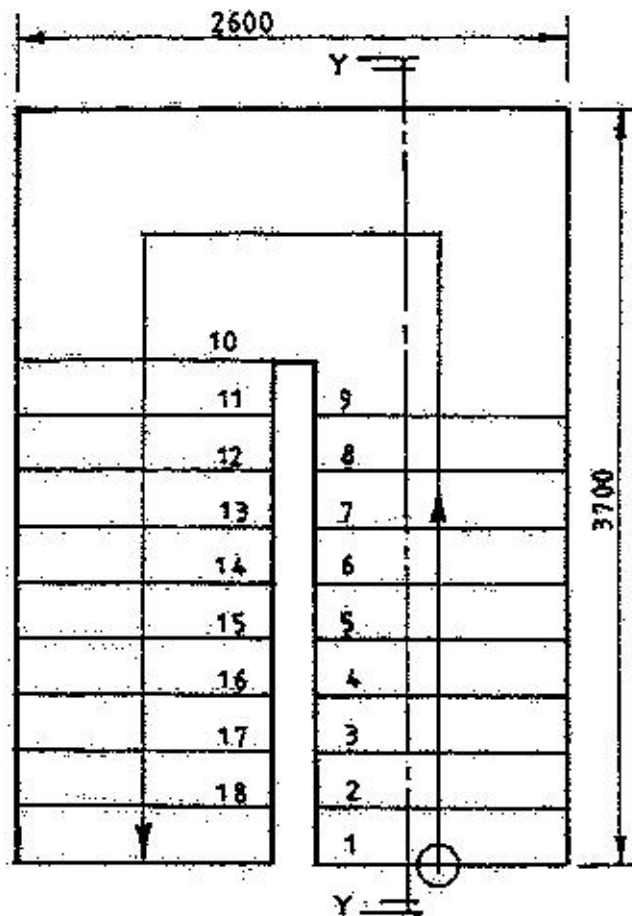(Assume any relevant information). (20 marks)

Fig. 4

SECTION B: TECHNICAL DRAWING

Answer any TWO questions in this section.

6. (a) List any six instruments used in technical drawing. (3 marks)

(b) Draw an archimedean spiral commencing at a point 20 mm from its centre and finish at a point 50 mm from its centre after one complete revolution. (17 marks)

7. The slider-crank mechanism of a reciprocating engine has a crank of length 35 mm and a connecting rod of length 140 mm. Using the compass method, draw the locus of a point P located on the connecting rod at a distance, AP, of 70 mm from the big end. (20 marks)

8. Figure 5 shows the front elevation and plan of a hexagonal pyramid. The truncated hexagonal pyramid base edges are 30 mm long, height = 70 mm and sloping face at 45°. Draw to a scale of 1:1 in first angle projection each of the following views:

     (i)   front view;
     (ii)   end view;
     (iii)   plan;
     (iv)   true shape of cut surface;
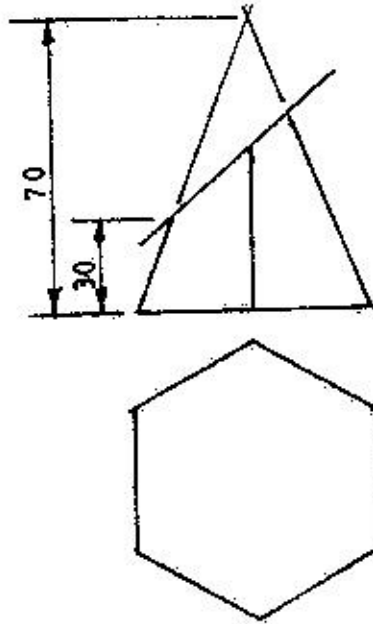   (v)   surface development.

(20 marks)

Fig. 5