

SCAN

Candidate's Name: _____ Index No: _____ / _____

1301/312

1304/312

1305/312

TECHNICAL DRAWING

June/July 2015

Time: 3 hours

Candidate's Signature: _____

Date: _____



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CARPENTRY AND JOINERY CRAFT CERTIFICATE
MASONRY CRAFT CERTIFICATE
PLUMBING CRAFT CERTIFICATE**

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 A₂ and drawing instruments for this examination.
All dimensions are in millimeters.
Answer any **FIVE** of the following **EIGHT** questions in the A₂ paper provided.
ALL questions carry equal marks.
Maximum marks for each part of a question are as shown.
Do **NOT** remove any pages from this booklet.
Candidates should answer the questions in English.*

**For Examiner's Use Only**

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | TOTAL SCORE |
|-------------------|---|---|---|---|---|---|---|---|-------------|
| Candidate's Score | | | | | | | | | |

This paper consists of 16 printed pages.

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

1. (a) Construct a regular pentagon of sides 40 mm. (5 marks)
- (b) Figure 1 shows a rectangle of sides 35 mm and 65 mm. Construct a square equal in area to the rectangle. (5 marks)

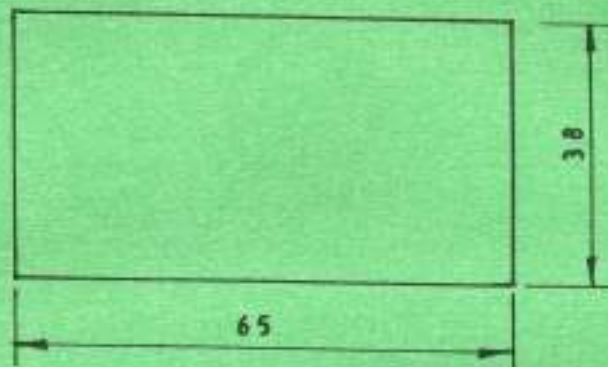


Fig. 1

- (c) Figure 2 shows the layout of a crank mechanism, in which crank OB rotates about O and A slides as shown. Draw the locus of point C for one revolution of crank OB. (10 marks)

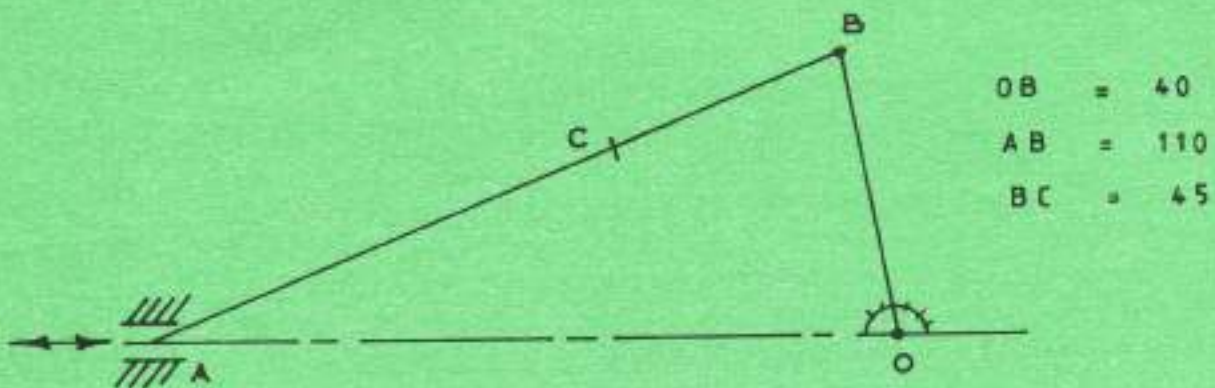


Fig. 2

2. Make free hand pictorial sketches of the following hand tools:

- (i) hand saw;
 (ii) claw hammer;
 (iii) firmer chisel;
 (iv) try square;
 (v) wooden mallet.



(20 marks)

3. Figure 3 shows a truncated hexagonal pyramid. Using first angle projection draw the following:

- (i) end elevation in the direction of arrow EE;
- (ii) plan;
- (iii) true shape of the cut surface;
- (iv) surface development of the frustrum.

(20 marks)

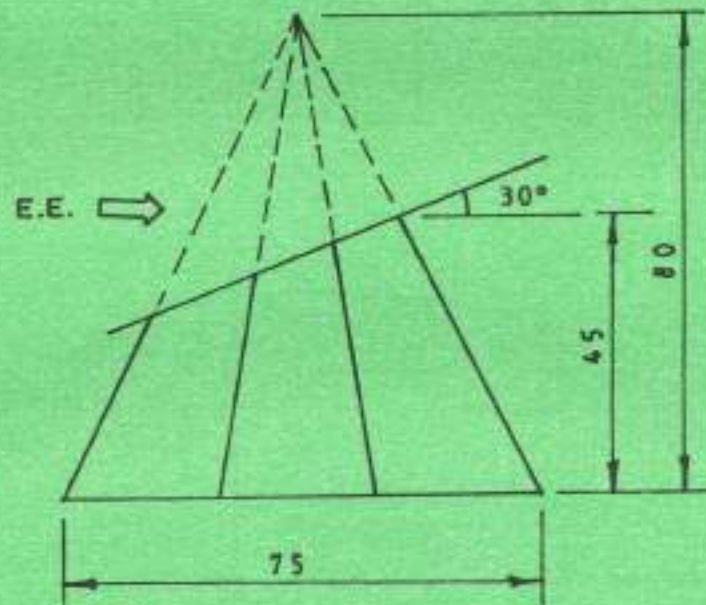


Fig. 3

4. (a) Construct a diagonal scale twice full size to measure to an accuracy of 0.5 mm upto 60 mm. Show the following readings on the scale:

- (i) 34.5 mm;
- (ii) 48.5 mm;
- (iii) 26.5 mm.

(5 marks)



- (b) Figure 4 shows two views of a vee block drawn in first angle projection. Draw the block in oblique cabinet projection. (15 marks)

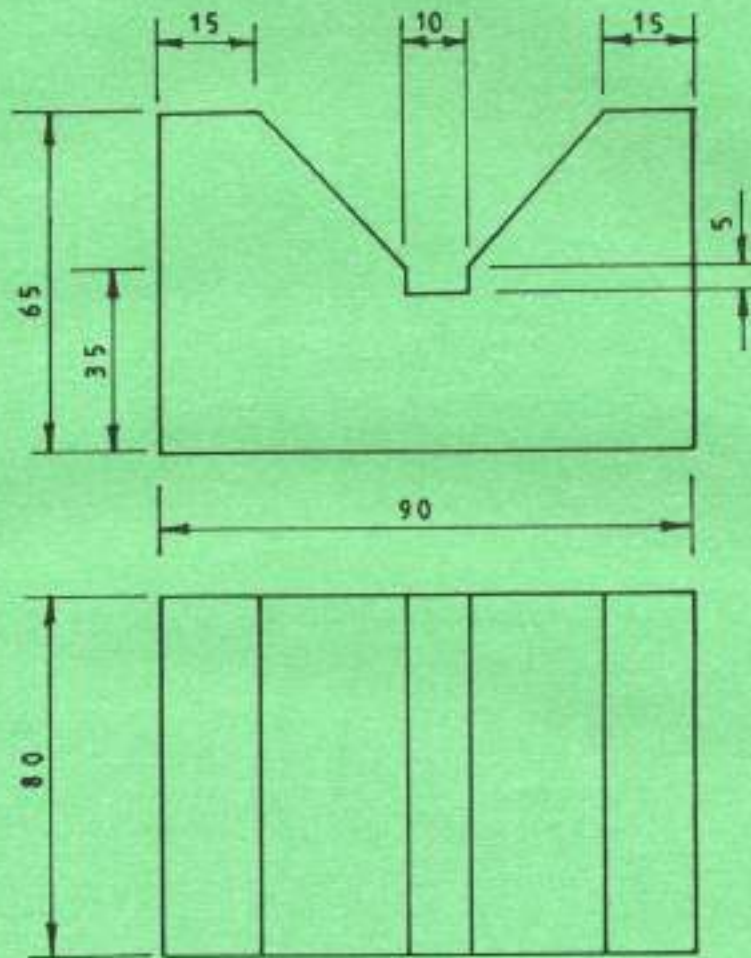


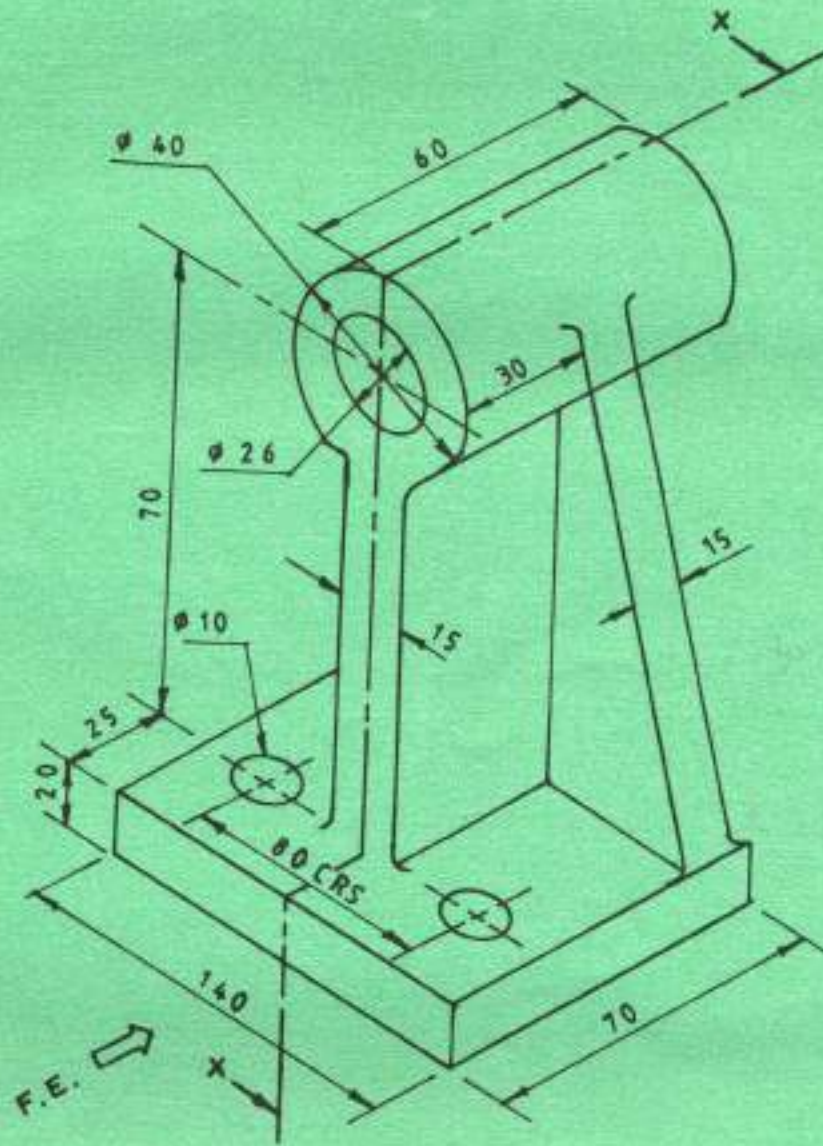
Fig. 4



5. Figure 5 shows a rocker bearing drawn in isometric. Using first angle projection, draw the following in full size and indicate six dimensions.

- (i) front elevation in the direction of arrow F.E.;
- (ii) section x-x;
- (iii) plan.

(20 marks)



6. Figure 6 shows an elevation of two intersecting cylinders. Copy the given view and draw the following:

- (a) plan;
- (b) line of intersection;
- (c) development of cylinder A.

(20 marks)

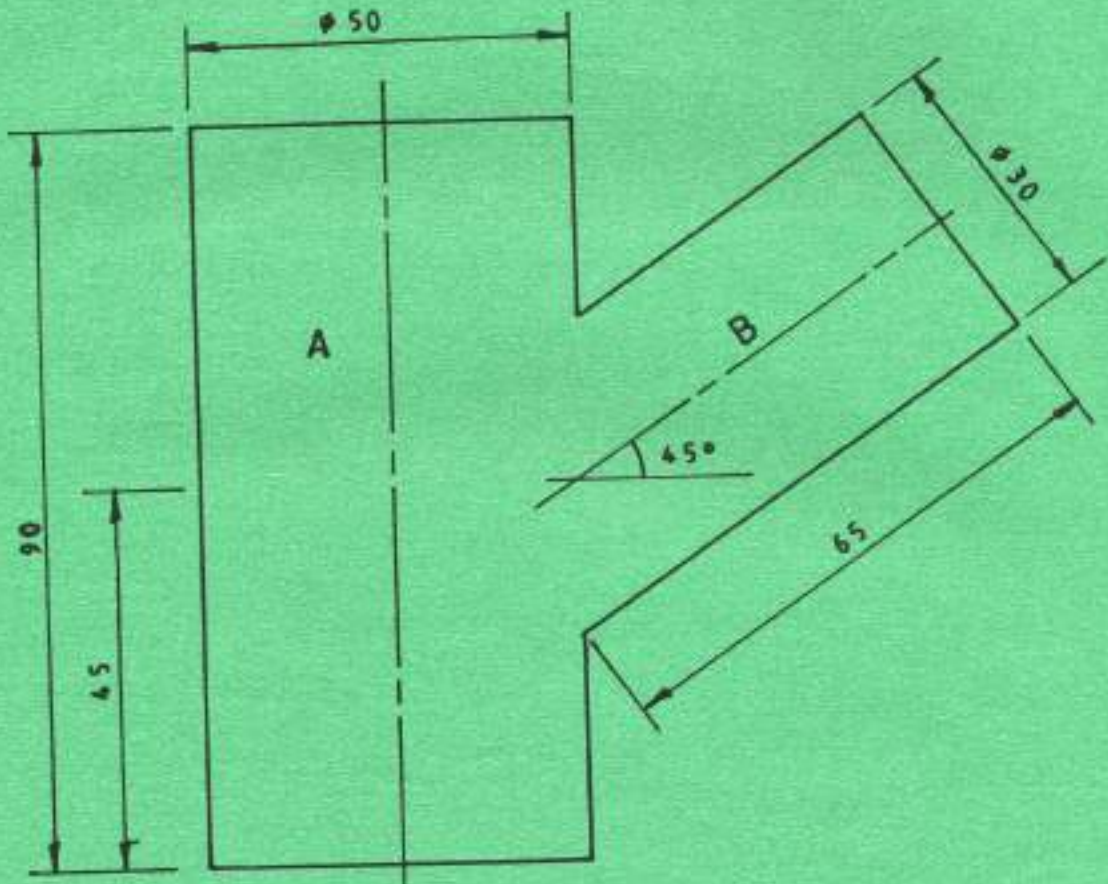


Fig. 6



7. Figure 7 shows three views of a block diagram in third angle projection. Draw the block in isometric making point "X" as the lowest point. (20 marks)

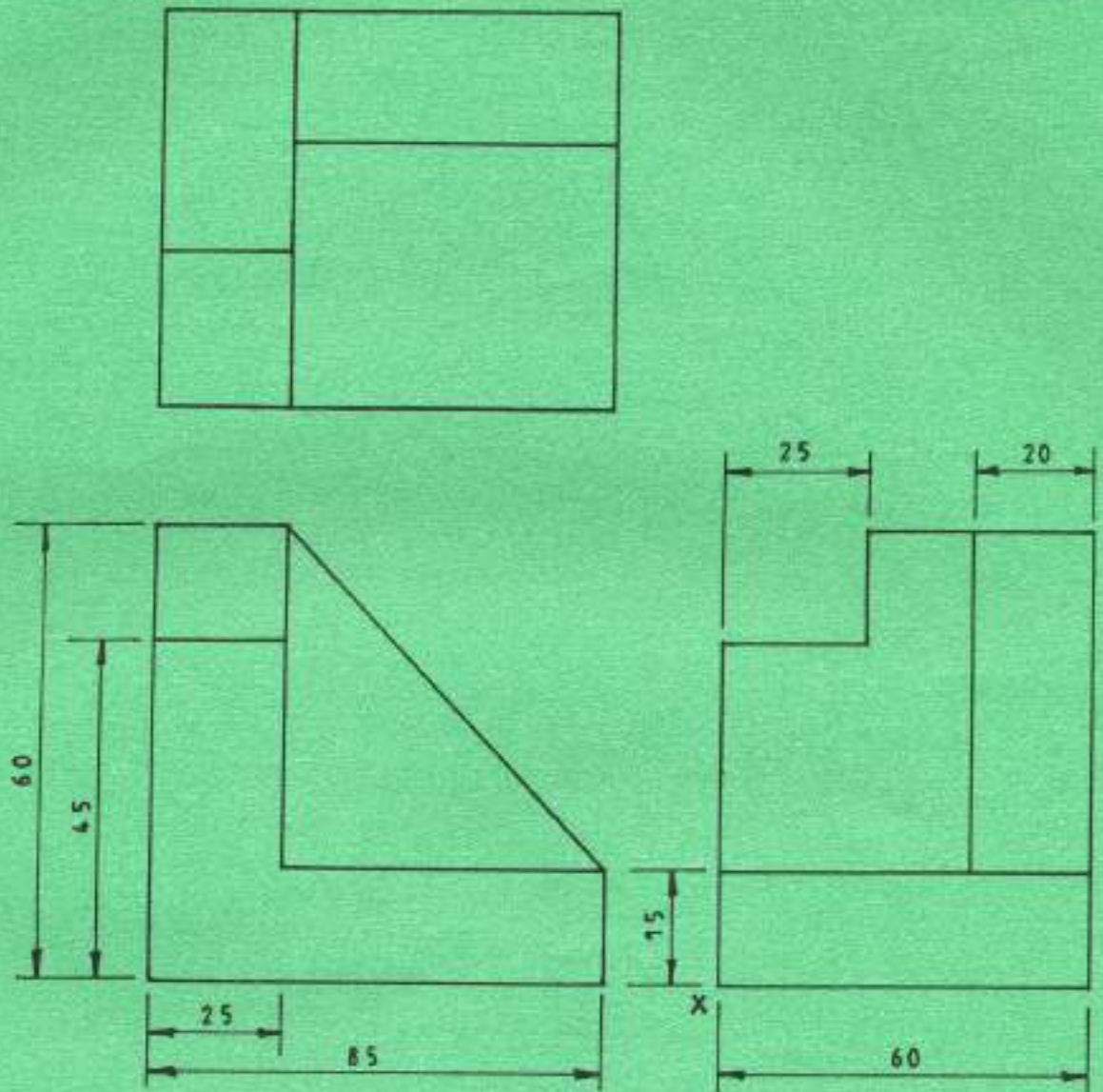


Fig. 7

8. To a scale of 1:20 draw a section through one flight of a reinforced concrete staircase given the following information:-

| | | |
|---------------|---|--------------|
| Storey height | - | 3000 mm |
| Goings | - | 250 mm |
| Risers | - | 150 mm |
| Landing | - | 1000 mm |
| Brick wall | - | 300 mm thick |



(20 marks)