

2765/105

2707/105

2709/105

CONSTRUCTION, DRAWING
AND PLANT

Oct./Nov. 2011

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN BUILDING TECHNOLOGY
DIPLOMA IN CIVIL ENGINEERING
DIPLOMA IN ARCHITECTURE

CONSTRUCTION, DRAWING AND PLANT

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Pocket calculator;

Drawing paper size A3.

This paper consists of EIGHT questions in THREE sections A, B and C.

Answer FIVE QUESTIONS choosing TWO questions from section A, TWO questions from section B and ONE question from section C.

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

This paper consists of 5 printed pages.

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

SECTION A: (50 marks)

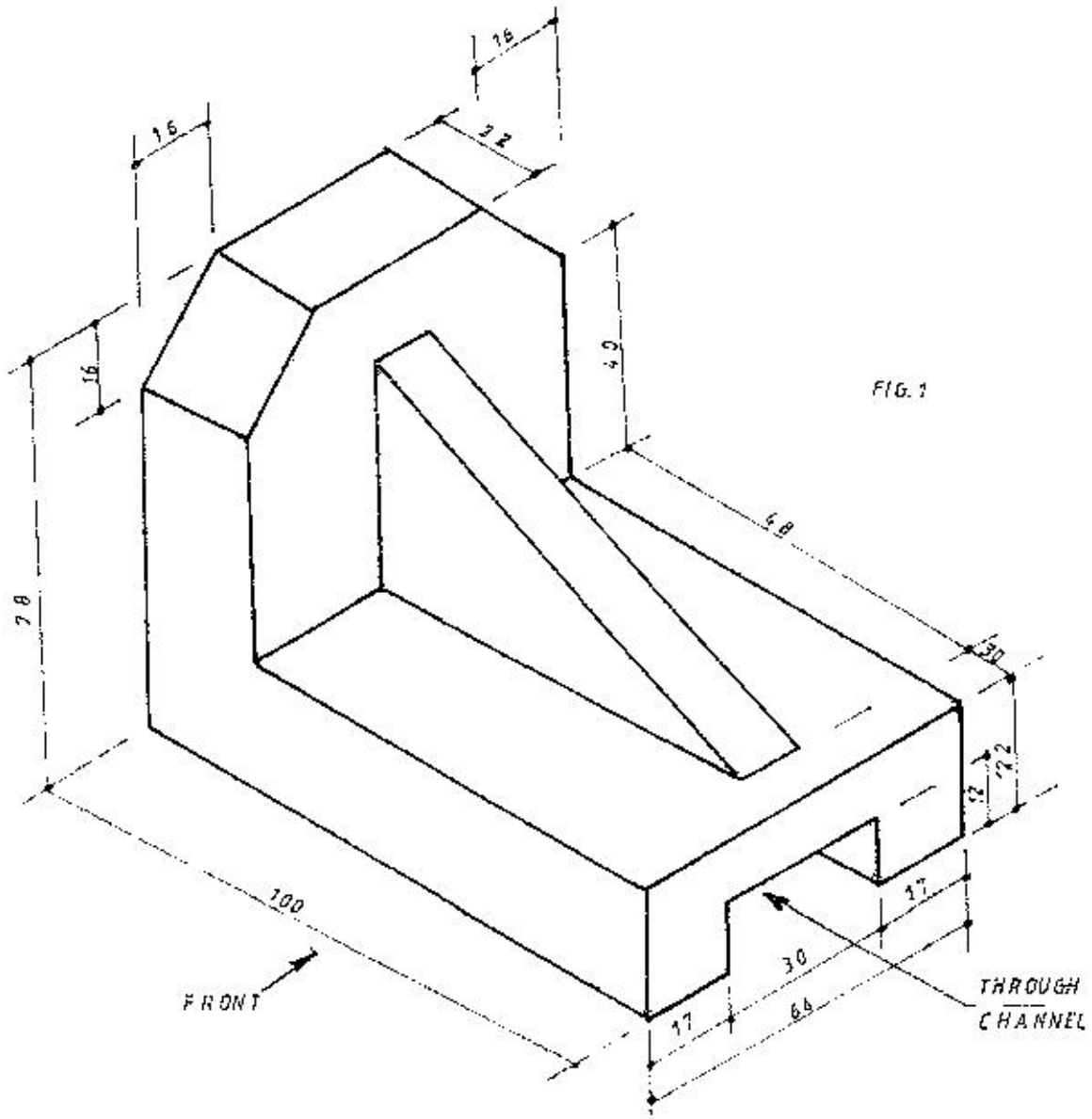
Answer any TWO questions from this section.

1. (a) (i) List **four** tools used in levelling. (2 marks)
- (ii) With the aid of sketches describe three methods of ground levelling. (6 marks)
- (b) (i) Sketch a pictorial corner profile. (4 marks)
- (ii) Using a sketch, outline the 3:4:5 method of setting out a building. (4 marks)
- (c) With the aid of sketches describe three methods of dewatering. (9 marks)
2. (a) With the aid of elevational sketches differentiate between the flemish bond and English bond. (5 marks)
- (b) Outline **two** methods of investigating soil in a building construction site. (4 marks)
- (c) Sketch and label the following types of foundations:
 - (i) Deep strip;
 - (ii) Raft. (8 marks)
- (d) (i) State **two** ways of ensuring quality when setting out a building from a drawing. (2 marks)
- (ii) List at **least three** functional requirements of ground floors. (3 marks)
- (iii) Name **three** common methods of fixing window frames. (3 marks)
3. (a) Sketch and label a vertical cross section of a fire place viewed from the side. (10 marks)
- (b) Using labelled sketches, show **three** appropriate positions for DPM in a concrete ground floor. (6 marks)
- (c) With the aid of a sketch, describe timbering to a loose soil ground. (5 marks)
- (d) Outline the procedure of fixing a door frame as work progress. (4 marks)

SECTION B: TECHNICAL DRAWING

Answer any TWO questions from this section.

4. The figure 1 shows an isometric drawing of a block. Draw the plan, front elevation and side elevation in first angle orthographic projection. (15 marks)



2705/105
2707/105
2709/105

5. **Figure 2** shows the elevation of a truncated cone. Draw the following:
- the given elevation.
 - plan.
 - surface develop

(15 marks)

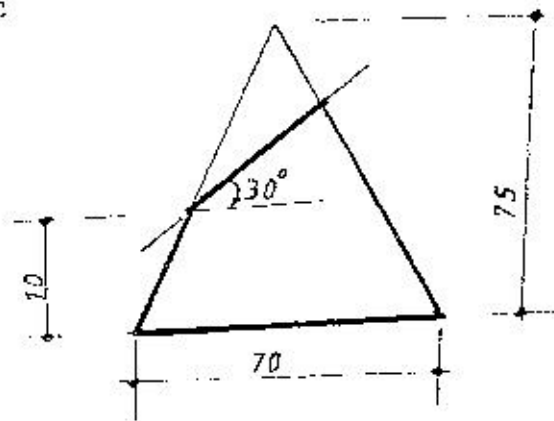


FIG. 2

6. Draw a one point perspective from the given elevation in **figure 3**.

(15 marks)

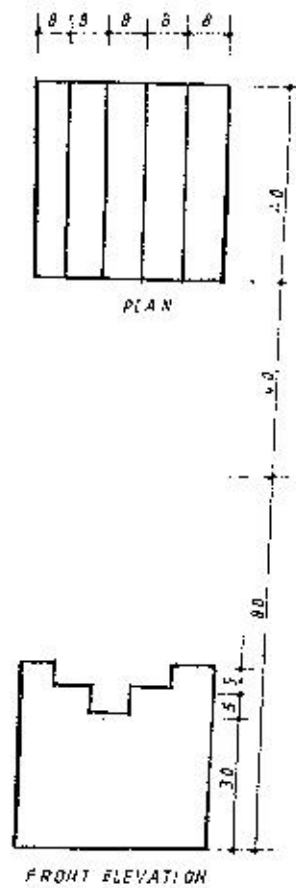


FIG 3

2705/105
2707/105
2709/105

SECTION C: CONSTRUCTION PLANT

Answer any ONE question from this section.

7. (a) Explain **three** methods in which a site manager can acquire equipment, stating **two** advantages and **two** disadvantages of each method. (12 marks)
- (b) State **four** warning symptoms that indicate a machine is due for overhaul. (4 marks)
- (c) Explain the following;
(i) standard equipment.
(ii) special equipment. (4 marks)
8. (a) (i) State **five** factors that may affect the productivity of a face shovel.
(ii) Sketch and label a face shovel. (11 marks)
- (b) Describe **three** categories of plant maintenance. (9 marks)