

2306/305
BUILDING ECONOMICS, CONSTRUCTION LAW,
ESTIMATING AND COSTING
Oct./Nov. 2011
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN QUANTITY SURVEYING

BUILDING ECONOMICS, CONSTRUCTION LAW,
ESTIMATING AND COSTING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Pocket calculator.

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

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

All questions carry equal marks.

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

This paper consists of 6 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: BUILDING ECONOMICS

Answer any **TWO** questions from this section.

1. (a) (i) Define the term "inflation".
- (ii) Outline six effects of inflation to the construction industry in Kenya. (10 marks)
- (b) Cost limits imposed by the client's brief is one of the challenges which pre-occupy the mind of the Architect while designing a building. With suitable illustrations, discuss how the plan shape of a building influences the cost. (10 marks)
2. (a) Explain five conditions necessary for a perfect market. (7½ marks)
- (b) A proposed 12 storey office building is at the scheme design stage. If you were commissioned to prepare a cost plan:-
- (i) Explain how you would carry out the task using unit cost of elements method.
- (ii) List seven headings under which you would allocate the costs in order to prepare a compressive cost plan. (12½ marks)
3. (a) Briefly explain four factors of production. (6 marks)
- (b) Explain the Process of Project formulation stage in Project development. (5 marks)
- (c) Describe a suitable valuation method for each of the following properties:
- (i) old house being converted into a flat.
- (ii) residential property in the open market.
- (iii) property which produces income. (9 marks)

SECTION B: CONSTRUCTION LAW

Answer any ONE questions from this section.

4. (a) Explain each of the following in contracts:
- (i) Breach of contract;
 - (ii) Quantum Meruit;
 - (iii) Discharge of contract. (10 ½ marks)
- (b) Identify **four** common law and three statutory requirements which an Award should comply with in Arbitration. (7 marks)
- (c) Explain the meaning of the expression "costs follow the event" in arbitration. (2 ½ marks)
5. (a) Describe the procedure to be followed when transferring an agricultural land to a new owner. (8 marks)
- (b) Discuss the following torts stating their essential elements:-
- (i) vicarious liability;
 - (ii) nuisance;
 - (iii) trespass. (12 marks)

SECTION C: ESTIMATING AND COSTING

Answer any TWO questions from this section.

6. Using the data given, build up a unit rate for "vibrated reinforced concrete(1:2:4 - 20mm aggregates) in 150mm thick suspended slab" (per m²). (20 marks)

Data:

- skilled labour per hour	Sh. 62.50
- unskilled labour per hour	Sh. 37.50
- cement per 50Kg bag	Sh. 650.00
- ballast per tonne	Sh. 1,200.00
- bulking of sand	25%
- density of sand	1,600Kg/m ³
- density of ballast	1,500Kg/m ³
- purchase price of 200 litre capacity mixer	Sh. 310,000.00
- economic working life of mixer	5 years
- resale value of mixer	Sh. 45,000.00
- efficiency of mixer	90%
- interest on capital per year	16% of purchase price per year
- maintenance and major repairs	35% of annual depreciation
- haulage to and from site per year	Sh. 20,000.00
- diesel consumption per hour	1 ½ litres
- all-in hire rate for pocker vibrator	Sh. 2,000 per day
- hire rate for hoist per day (including running cost)	Sh. 5,000.00
- height of suspended slab from ground level	6 metres
- insurance of mixer per year	Sh. 10,000.00
- reasonable assumptions to be made for information not given.	

7. (a) (i) Discuss the superficial method of approximate estimating.
- (ii) Figure 1 shows the plan and evaluation of a proposed church. Using the cubic method, determine, the cost of the proposed building. (12 ½ marks)
- (b) Explain **three** reasons as to why contractors are better estimators than quantity surveyors. (7 ½ marks)

8. Using the data given below:

- (a) Price for the preliminary item 'General Foreman'. (7 marks)
- (b) Building up unit rate for "sawn form work to vertical sides of columns" (m^2). (13 marks)

Data:-

I General Foreman

- contract duration	1 year
- basic salary per month	Sh. 30,000.00
- house allowance per month	Sh. 15,000.00
- medical allowance per month	Sh. 5,000.00
- car allowance per month	Sh. 12,000.00
- insurance per year	Sh. 10,000.00
- profit expected	10% of contract sum
- contract sum	Sh. 10,000.00
- bonus	2% of profit earned
- overtime allowance per week	Sh. 3,000.00

II Formwork

- sawn softwood	Sh. 14,000.00 per m^3
- column size to be considered	300 x 200 x 3000mm high
- mould oil	Sh. 60.00 per litre
- nails	Sh. 75.00 per Kg
- size of cleats	100 x 25mm at 600mm spacing
- size of struts	100 x 75 x 2000mm long
- hire of clamps	Sh. 100.00 per column

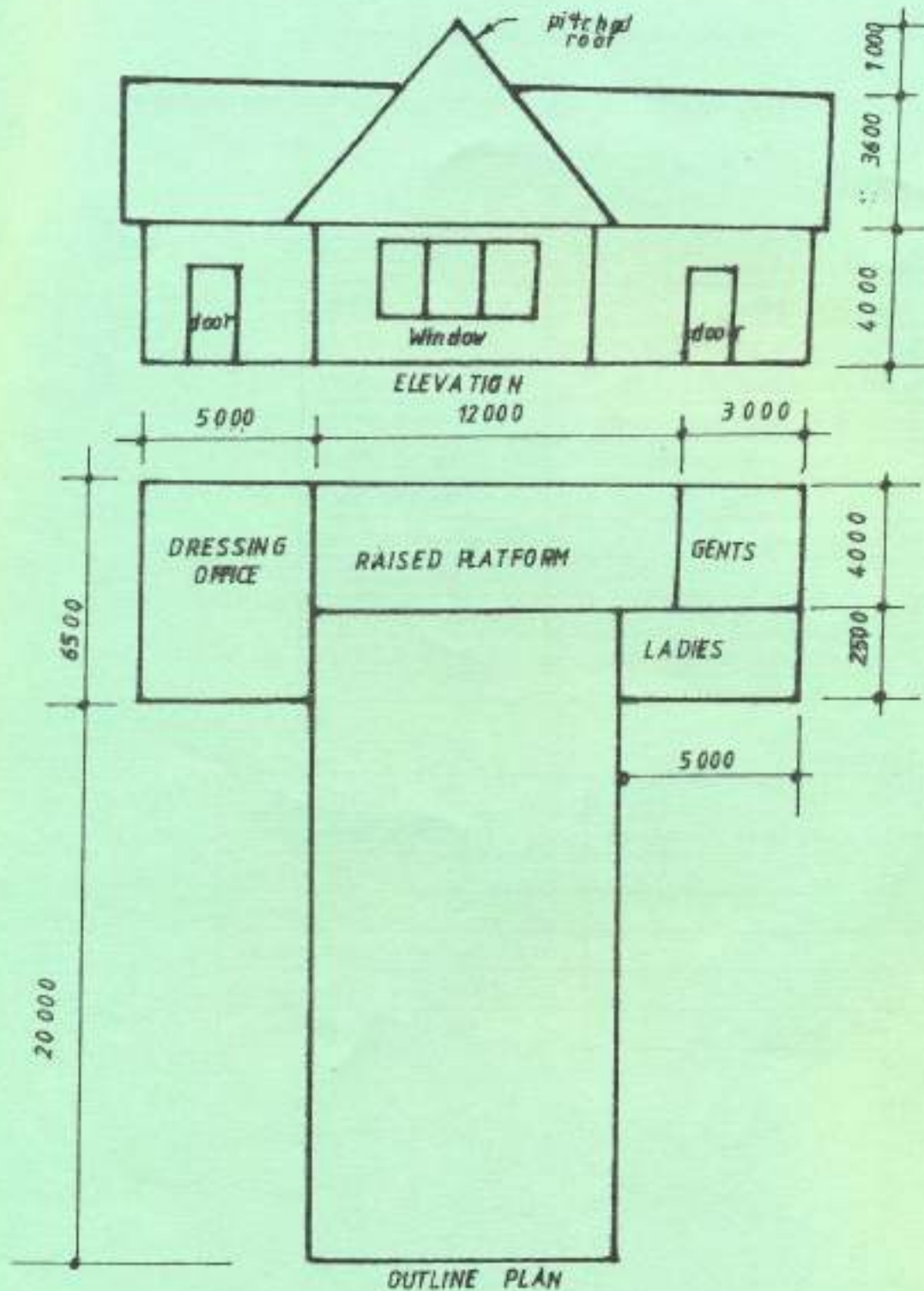


Figure 1

NOTE:

1. All external and dividing walls are 225mm thick.
2. All dimensions are taken to the external faces of walls.
3. Foundation concrete thickness is 250mm.
4. Depth from ground level to bottom of foundation concrete 1800mm
5. Cubic content rate per m³ of similar completed building sh. 2,000.00.