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**CONSTRUCTION MANAGEMENT II AND
ESTIMATING AND COSTING II**

June/July 2016

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**DIPLOMA IN BUILDING TECHNOLOGY
DIPLOMA IN CIVIL ENGINEERING
DIPLOMA IN ARCHITECTURE**

CONSTRUCTION MANAGEMENT II AND ESTIMATING AND COSTING II

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Mathematical tables/Scientific calculator.

*This paper consists of **EIGHT** questions in **TWO** sections; **A** and **B**.*

*Answer **FIVE** questions; choosing **THREE** questions from Section **A** and **TWO** questions from Section **B** in the answer booklet provided.*

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

Candidates should answer the questions in English.

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.**

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SECTION A: CONSTRUCTION MANAGEMENT II

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

1. (a) Define 'project management'. (2 marks)
- (b) List the **four** elements of project management. (2 marks)
- (c) Outline any **five** characteristics of a project. (10 marks)
- (d) Explain the following stages of a project life cycle:
- (i) conception;
- (ii) feasibility;
- (iii) planning. (6 marks)
2. (a) Outline the procedures of establishing standard time of a job to be carried out. (7 marks)
- (b) Table 01 shows time measurements observed and recorded by a work study officer. Using fly back technique, make necessary adjustments to these time and determine the basic times for each element of work. (13 marks)

Table 1

ELEMENT	RATING	WATCH READING	OBSERVED TIME	ADJUSTED OBSERVED TIME	BASIC TIME
Check time		2.4			
Load brick	90	0.8			
Lift onto shoulder	100	0.24			
Walk to stairs	80	0.30			
Climb stairs	110	0.60			
Walk to point of operation	95	0.46			
Unload	105	0.35			
Studies the scenery	17	1.00			
Walk back to stairs	90	0.33			
Descend to stairs	85	0.50			
Walk to brick stack	90	0.24			
Check time	-	1.35			

Start of study - 11.00 am

End of study - 11.53 am

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3. (a) Outline the activities at the following stages of a contract:
- pretender planning;
 - contract planning.
- (10 marks)
- (b) Explain any **five** purposes of the following on site:
- job layout;
 - signs and notices.
- (10 marks)
4. (a) State any **six** objectives of human resource planning in an organisation.
- (9 marks)
- (b) List any **five** factors that determine the supply of labour in each of the following:
- internal supply;
 - external supply.
- (5 marks)
- (c) Explain any **three** advantages of arbitration over court actions.
- (6 marks)
5. The following is the trial balance extracted from the books of Sole trader, A. K. David as at 31st December 1989.

	Dr Sh.	Cr Sh.
Stock as at 1st January 1989	50,000	
Free hold premises	240,000	
Bills receivable	30,000	
Purchases	280,000	
Salaries and wages	35,000	
Sales		520,000
Fixtures and fittings	25,000	
Discount allowed	7,500	
Discount received		4,500
Plant and machinery	140,000	
Rates	5,600	
Advertising	10,400	
Insurance	3,800	
General expenses	7,200	
Provision for bad debts		1,800



Sundry debtors	60,000	
Bills payable		15,000
Sundry creditors		43,000
Cash in hand	2,400	
Bank overdraft		18,600
Drawings	6,000	
Capital account		300,000
	<u>902,900</u>	<u>902,900</u>



Additional information:

- (a) Prepaid insurance - Ksh. 500
 (b) Rates accrued - Ksh. 400
 (c) Closing stock - Ksh. 60,000
 (d) Mr. A. K. David took goods worth Ksh. 2,000 for personal use during the year.

Prepare:

Trading, Profit and loss account.

(20 marks)

SECTION B: ESTIMATING AND COSTING II

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

6. (a) Using the information given below, build up cost for preliminary item 'water for the works'. (7 marks)

Information

- Skilled labour - Ksh. 50 per hr
- Unskilled labour - Ksh. 25 per hr
- Duration of contract - 50 weeks
- Cost of pipework, fittings and tap - Ksh. 15,000
- Connection to mains - Ksh. 6,000
- Estimated consumption per month - Ksh. 3,600

- (b) Using the data given below, build up a unit rate for the following item:
 'Half brick wall in commons laid in stretcher bond and bedded in cement sand mortar (1:4) per m².'

(13 marks)

Data

- Cost of cement - Ksh 820 per 50 kg bag
- Density of cement - 1440 kg/m³
- Cost of common bricks - Ksh. 10,000 per 1000 batch on tipper lorry

Hire of mixer	-	Ksh. 5,000 per day
Skilled labour	-	Ksh. 50 per hour
Unskilled labour	-	Ksh. 25 per hour

7. (a) Define the term 'unit rate'. (2 marks)
- (b) Using a hypothetical example show the price of disposal of general surface water. (7 marks)
- (c) Using the data given below, build up hourly labour rate for a skilled labour. (11 marks)

Data

- Working period	-	40 hrs per week
- Overtime	-	2 hrs on weekend
- Annual leave	-	30 days per year
- Sick leave	-	14 days per year
- Basic hourly rate	-	Ksh. 50 per hour
- Medical benefit	-	Ksh. 120,000 per year
- Redundancy payment	-	30% of basic hourly rate
- Trade supervision	-	Ksh. 10 per hour
- NSSF	-	5% of direct earning

Workers are accommodated on site.

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

Data

Skilled labour	-	Ksh. 50.00
Unskilled labour	-	Ksh. 25.00
- Cement per 50 kg bag	-	Ksh. 820.00
- Sand per tonne	-	Ksh. 2,000.00
- Ballast per tonne	-	Ksh. 1,500.00
Hire of mixer and vibrator	-	Ksh. 8,000.00
Output of mixer	-	2.5 m ³ /hr

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