



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2013/2014

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

Examination for diploma and civil Engineering

Construction management II & Estimating & Costing II

Date:

Time:

Instructions

*This paper consists of **two** sections A & B*

Answer all questions in section A and any other two questions in section B

Maximum marks for each part of a question are as shown

All measurements are in millimeters.

SECTION A: answer two questions

1. a) Define the term work study. (2 marks)
- b) List down four objectives of work study. (4 marks)
- c) The work of an operative pre-casting concrete saddles for a pipeline is a subject of

time study. The preliminary information has been entered on the work study shot shown in table

2. Using the allowances given in table 1, calculate the standard time for the operation. (14 marks)

Element	Personal	Body position	Muscular effort	Heat and humidity	Mental strain	Monstory	contingency
1	6	2	1	4	1	0	8
2	6	2	2	4	2	0	8
3	6	2	3	4	2	0	8
4	6	2	2	4	1	0	8
5	6	2	1	4	1	0	8

Table 1 : allowances

Table 3: work study sheet

ELEMENT		Rating	WR
	Check time		00.00
1.	Clean mould	80	03.05
2.	Insert reinforcement	75	14.25
3.	Place concrete	70	23.50
4.	Vibrate	75	27.00
5.	Trowel level	75	31.15
	Light cigarette	IT	33.20
1.	Clean mould	90	37.50
2.	Insert reinforcement	80	48.75
	Speaking to operator	IT	56.50
3.	Place concrete	75	61.00
4.	Vibrate	75	64.00
5.	Trowel level	75	69.00
1.	Clean mould	80	71.50
	Working around	IT	81.75
2.	Insert reinforcement	90	93.00
3.	Place concrete	90	97.15
4.	Vibrate	95	102.00
5.	Trowel level	80	105.15
	Check Time	IT	107.00

2. a) i) Define the term law. (2 marks)
- ii) Give two reasons that make people to obey the law. (2 marks)
- b) Mention and briefly describe two major classification of law. (6 marks)
- c) State and explain five sources of law in Kenya. (10 marks)
3. a) List down four objectives of critical path analysis (CPA). (4 marks)

b) A manufacturing company is planning to introduce a new product for sale in the market. Table 3 provides a list of the activities required to plan and control this marketing project effectively.

- i. Draw a network to represent the various activities of the market project
- ii. Determine the critical path and minimum project time. (16 marks)

Table 3

	Activity	Immediate predecessors	Expected time (days)
A.	Initial discussion		6
B.	Product design	A	22
C.	Market survey	A	17
D.	Market evaluation	C	3
E.	Product costing	B	9
F.	Sales plan	C	12
G.	Product pricing	D,E	4
H.	Prototype construction	F,G	22
I.	Market information	B	15
J.	Prototype testing	H,I	17

4. a) State **FIVE** essentials of a valid contract. (5 marks)
- b) Outline four ways by which remedies for breach of contract can be carried out. (6 marks)
- c) Outline four defenses against tort of negligence. (6 marks)
- d) State three uses of staff appraisal. (3 marks)

SECTION B ANSWER ANY TWO QUESTION

Using the data given build up a unit rate for excavaticus for excavating in rocks (C M). (20 marks)

Using data given built up a unit rate for the following iitem