



# MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

CERTIFICATE IN BUILDING TECHNOLOGY (T.I.V.E.T)

1704/105: SITE AND WORKSHOP MANAGEMENT.

DATE: 15/4/2019

TIME: 8:30 – 11:30 AM

## INSTRUCTIONS

-This paper consists of FIVE questions

-Answer all FIVE questions.

1. a) List the five main reasons for introducing equipments and machines in a building site. (10 marks)
- b) State five advantages of buying a plant and five advantages of hiring a plant. (10 marks)
2. With aid of drawings show the following documents which are applicable in a building site
  - i)Material transfer form.
  - ii)Material delivery note.
  - iii)Inventory.
  - iv)Advice note. (20 marks)
3. a) Define the term preliminancy items and state three preliminary items that have to be considered before carrying out the works. (12 marks)
- b) Explain how water can be got in a building site. (4 marks)

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*Examination Irregularity is punishable by expulsion*

- c) State two reasons why we need electricity in a site. (4 marks)
4. a) A young contractor intends to build a house for a client. Draw a site plan and indicate the following:
- i) Sand dump.
  - ii) Aggregate dumps.
  - iii) Building stones dumps.
  - iv) Workers Guts.
  - iv) Site offices.
  - v) Sentry box.
- (12 marks)
- b) List three essential services of a workshop (3 marks)
- c) Briefly explain the term measured type of a contract (5 marks)
5. a) State six safety rules observed in a carpentry workshop. (6 marks)
- b) State four factors which enhance efficiency in a workshop. (4 marks)
- c) Explain the meaning of the following terms in purchasing;
- i) contract
  - ii) tender
  - iii) purchasing order
  - iv) quotations
  - v) material requisition note
- (10 marks)



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CERTIFICATE IN BUILDING TECHNOLOGY (T.I.V.E.T)

FIRST YEAR SECOND TERM EXAMINATION FOR  
CRAFT CERTIFICATE IN BUILDING TECHNOLOGY

1704/105 CP: CONSTRUCTION PLANT.

DATE: 18/4/2019

TIME: 2:30 – 5:30 AM

## INSTRUCTIONS

-This paper consists of FIVE questions

-Answer all FIVE questions.

1. a) State **FOUR** classifications of construction plant. (4 marks)
- b) Determine the output of a construction plant considering the following;
  - container holding capacity 1m<sup>3</sup>
  - maximum cycles per hour 25
  - operator efficiency factor 0.8
  - machine efficiency factor 75% (6 marks)
- c) i) State any **TWO** reasons for having a pump on a construction site.
- ii) With the aid of sketches explain how the following equipment works;
  - boring auger
  - drop hammer. (10 marks)
2. a) i) Explain the operations of a scraper.
- ii) List **SIX** factors that influence the output of a scraper. (9 marks)

- b) i) List **TWO** types of construction plant that compact by;  
 -rolling  
 -vibration.
- ii) Outline any **THREE** factors affecting compaction. (8 marks)
- c) Explain **THREE** reasons for plant management in a construction site. (3 marks)
3. a) Explain the operation of central concrete mixing plant. (6 marks)
- b) Sketch and label a reversing drum mixer. (11 marks)
- c) Distinguish between a pan mixer and a tilting drum mixer. (3 marks)
4. a) i) List any **THREE** types of bitumen laying plant.
- ii) With the aid of a sketch explain the operation of any of the bitumen laying plant mentioned in 5.(a)(i) above. (10 marks)
- b) Explain the following operations of a low loader transporting plant truck;  
 i) loading  
 ii)hauling  
 iii)discharging. (6 marks)
- c) Describe the following types of plant maintenance;  
 i) corrective  
 ii) preventive  
 iii) planned. (4 marks)
5. a) Explain two reasons for using construction plants in a site. (4 marks)
- b) Explain the following types of construction equipments;  
 i) pumps  
 ii) concrete compacting equipment  
 iii) powered hammer (6 marks)

- c) Explain the following operations of concreting plants;
- i) batching
  - ii) mixing
  - iii) vibrating
- (6 marks)
- d) State four personnel safety precautions observed when concreting. (4 marks)