



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

FIRST YEAR SECOND TERM EXAMINATION FOR

DIPLOMA IN BUILDING TECHNOLOGY

DIPLOMA IN CIVIL ENGINEERING

2705&7 / 103 CM: CONSTRUCTION MATERIALS

DATE: 5/4/2022

TIME: 2.30-5.30 PM

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## INSTRUCTIONS

- *This paper consists of **Eight** questions.*
- *Answer **Five** questions.*
- *All questions carry equal marks.*
- *Maximum marks for each part of the question are as shown.*

1.

- a) Explain **Two** classifications of construction materials, giving two examples in each case. (6 marks)
- b) Distinguish between mineral and organic construction materials giving two examples for each. (6 marks)
- c) Outline **Four** properties of construction materials. (8 marks)

2.

- a) State **Five** reasons for seasoning timber. (5 marks)
- b) Explain **Three** geological classifications of building stones, stating two types of stone in each classification. (9 marks)
- c) Illustrate **Three** defects that occur in building stones. (6 marks)

- 3.
- a) Explain **Two** methods of grading timber, giving one type of grade in each method. (5 marks)
  - b) Outline **Three** tests carried out on building stones. (6 marks)
  - c) Explain **Three** methods of extracting natural stones from a quarry. (9 marks)
- 4.
- a) Explain the term “conversion” as used in timber, giving **one** reason for converting timber. (3 marks)
  - b) Explain **Two** classifications of timber defects, illustrating one type of defect in each classification. (8 marks)
  - c) Illustrate **Three** methods of converting timber. (9 marks)
- 5.
- a) State **Five** methods of preserving timber. (5 marks)
  - b) Explain **Three** timber products used in the construction industry. (6 marks)
  - c) Outline **Three** tests used to determine the strength of timber. (9 marks)
- 6.
- a) State **Four** types of clay products, stating two uses of each type. (8 marks)
  - b) Outline the process of manufacturing clay bricks (12 marks)
- 7.
- a) Explain **Three** properties of metals. (6 marks)
  - b) Explain **Four** heat treatments given to steel during manufacture. (8 marks)
  - c) Outline one process of extracting metals from an iron ore. (6 marks)
- 8.
- a) State **Four** types of plastic, stating one use of each type. (4 marks)
  - b) Explain **Four** methods of processing plastics during formation of objects. (8 marks)
  - c) Outline the process of manufacturing rubber products. (8 marks)