



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR
DIPLOMA IN BUILDING CONSTRUCTION TECHNOLOGY

DIPLOMA IN CIVIL ENGINEERING

BCECD 116: CIVIL ENGINEERING MATERIALS I

DATE: 5/6/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

- This paper comprises of **five** questions
- Question **one** is **compulsory** and carry 30 marks
- Answer any **other two** questions

- a) Discuss the four trends that necessitate the developments of the current building materials (8 marks)
 - b) Discuss the formation of sedimentary stone and state two types in this class (4 marks)
 - c) Outline the characteristics of hardwood (8 marks)
 - d) Discuss the manufacture of wrought and state its two uses (6 marks)
 - e) Outline four properties of structural timber (4 marks)
- a) Discuss the procedure of manufacturing of clay bricks (8 marks)
 - b) Discuss the following clay products:-
 - i. Roofing tile
 - ii. Bricks
 - iii. Blocks (6 marks)

- c) State and discuss two methods of glazing clay products (6 marks)
3. a) Describe the process of producing pig iron and state its characteristics (8 marks)
- b) Define the following terms as used in metals:-
- i. Creep
 - ii. Ductility
 - iii. Strains
 - iv. Ageing (8 marks)
- c) State 3 uses of copper (3 marks)
4. a) Sketch a cross section of a tree trunk naming all the parts and stating the function of each part (12 marks)
- b) Discuss the following methods of converting timber:-
- i. Tangential
 - ii. Through and through (6 marks)
- c) State four timber defects which occur during growth of tree (2 marks)
5. a) Outline five qualities of a good stone (5 marks)
- b) Discuss kiln and air seasoning methods of drying timber (6 marks)
- c) Discuss crushing test of stones (4 marks)
- d) Discuss the formation of igneous stone (5 marks)