



MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR SECOND SEMESTER FOR

DIPLOMA IN BUILDING AND DIPLOMA IN CIVIL MODULE 1(TIVET)

2705,2707/103: CONSTRUCTION MATERIALS 1

DATE:17/4/2019

TIME: 8:30 – 11:30 AM

INSTRUCTIONS:

This paper consists of **FIVE** questions.

Answer **ALL the** questions.

1.
 - a) Mention four types of clay products used in the construction industry. (4 marks)
 - b) Outline the procedure of manufacturing clay bricks. (16 marks)
2.
 - a) Briefly explain the classification of rocks on the basis of their geological formation, physical characteristics and chemical composition. (16 marks)
 - b) Mention four methods of quarrying stones. (4 marks)
3.
 - a) Draw and label a cross-section of a mature tree. (5 marks)
 - b) State the principal causes of decay in timber. (3 marks)
 - c) Explain the following defects in timber;
 - i) Shakes
 - ii) knots
 - iii) checks
 - iv) end splits (6 marks)
 - d) Mention two methods of seasoning timber and briefly explain how each of them is done. (6 marks)

4. a) i) Differentiate between ferrous and non-ferrous metals (2 marks)
ii) State three methods of casting iron. (3 marks)
- b) Define the following heat treatment for steel;
- i) Hardening
ii) Tempering
iii) Annealing
iv) Normalizing (8 marks)
- c) i) Mention any four non-ferrous metals (2 marks)
ii) List down three types of steel and mention two uses of each. (5 marks)
5. a) With the aid of sketches, explain four methods of converting timber. (8 marks)
- b) Explain two classification of rubber giving one example of each. (6 marks)
- c) Outline four functional requirement of building stones. (6 marks)