



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

INTRODUCTION TO MATERIALS AND CONSTRUCTION I

AAR 1104

Examination Paper

December 2017

This examination paper consists of 3 pages

Time Allowed: 2 hours

Total Marks: 100

Special Requirements: NONE

Examiner's Name: Mr. M. A. Sibanda

INSTRUCTIONS

1. Answer all questions
2. Illustrate your answers with sketches where appropriate

MARK ALLOCATION

QUESTION	MARKS
1.	20
2.	20
3.	20
4.	20
5.	20
TOTAL	100

QUESTION 1

- a. Earth and grass construction are one of the oldest forms of building. Discuss the contemporary uses of earth and grass in modern building construction. (5)
- b. Explain the characteristics of timber that make it a good building material (10)
- c. What are the objectives of timber seasoning? (5)

QUESTION 2

- a. Briefly discuss the composition of ordinary cement. (5)
- b. Explain the hydration of cement in concrete manufacture. (7)
- c. State and briefly explain the function of all the materials that make up concrete. (5)
- d. What is the function of sand in a mortar mix? (3)

QUESTION 3

- a. List any five properties of bricks. (5)
- b. Masonry is the art of construction using stones. Explain in detail the classification of building stones. (10)
- c. State the properties of good building stones. (5)

QUESTION 4

- a. Explain the properties of plastics which make them suitable for construction (5)
- b. Differentiate between thermo plastics and thermo-setting plastics. (5)
- c. What preventative measures can be used to guard against the corrosion of metals used in construction? (10)

QUESTION 5

- a. Define the term foundation. (2)
- b. What factors should be considered in the selection of a foundation type? (10)
- c. Name and explain two types of loads that act on buildings. (4)
- d. State one use of asphalt in construction? Name 3 methods through which asphalt can be manufactured. (4)