



**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**FACULTY OF THE BUILT ENVIRONMENT**  
**DEPARTMENT OF ARCHITECTURE**  
**INTRODUCTION TO MATERIALS AND CONSTRUCTION II**  
**AAR 1204**

**Main Examination Paper**

**April 2015**

This examination paper consists of 2 pages

**Time Allowed: 2 hours**

**Total Marks: 100**

**Special Requirements: NONE**

**Examiner's Name: Miss H Sakupwanya**

**INSTRUCTIONS**

1. Answer any all questions
2. Each question carries 25 marks
3. Illustrate your answers with sketches where appropriate

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
1.	25
2.	25
3.	25
4.	25
<b>TOTAL</b>	<b>100</b>

### **Question 1**

- a) Define the term foundation. (2)
- b) What factors should be considered in the selection of a foundation type? (6)
- c) Name 2 types of loads that act on buildings (2)
- d) Name 3 methods through which asphalt can be manufactured (6)
- e) Mastic asphalt is applied on top of concrete flat roofs to provide waterproofing. Draw and annotate the cross section showing the various materials and how they are layered. (9)

### **Question 2**

- a) Explain the properties of plastics which make them suitable for construction (10)
- b) Differentiate between mild steel and hard steel in terms of carbon content and properties. State where each can be used in construction. (10)
- c) What preventative measures can be used to guard against the corrosion of metals used in construction? (5)

### **Question 3**

- a) Name 5 types of roofing materials outlining how they are fixed. (25)

### **Question 4**

- a) What factors are considered in the selection of a wall finish? (5)
- b) Ceramic tiles are proving to be a popular finishing material
  - i. Discuss where tiles can be applied in a building (4)
  - ii. State the advantages and disadvantages of using ceramic tiles as a finish (6)
- c) Discuss the defects that can occur after painting in construction? (10)