



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

SECOND SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

BCECD 207: CIVIL ENGINEERING MATERIALS II

Date: 26/4/2016

Time: 8:30 – 10:30 AM

INSTRUCTIONS

This paper consists of FIVE questions

Answer question one and other two questions in this paper

1.
 - a)
 - i) Define the term concrete (2 marks)
 - ii) Discuss 4 properties of wet concrete (6 marks)
 - b) Discuss 3 ingredients used in manufacture of Portland cements (3 marks)
 - c) Sketch any two machines used in mixing concrete (10 marks)
 - d) Discuss two methods of curing concrete (6 marks)
2.
 - a) Outline six qualities of good concrete (6 marks)
 - b) Sketch two equipments used for transporting concrete (10 marks)
 - c) Discuss how concrete should be placed (4 marks)
3.
 - a) with aid of sketches, discuss the following joints in concrete:-
 - (i) Contraction joint
 - (ii) Isolation joint (6 marks)
 - b) Sketch a suitable formwork for a rectangular concrete column (10 marks)
 - c) Discuss wet process method of manufacturing cements (4 marks)

4. a) Differentiate between additives and admixtures stating two example of each (5 marks)
- b) Explain the following test carried on concrete:-
- i) Slump test
- ii) Tensile test (5 marks)
- c) Outline 5 precautions to be observed when transporting concrete (10 marks)
5. a) Discuss two methods of batching concrete ingredients (5 marks)
- b) Explain concrete mix design (5 marks)
- c) Discuss the following types of concrete:-
- i) Plain
- ii) Reinforced concrete
- iii) Precast concrete
- iv) Light concrete (10 marks)