



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

BCE CD 209: CONSTRUCTION PLAN AND EQUIPMENT

DATE: 8/4/2015

TIME: 8:30 – 11:30 am

Instructions

- *This paper consists of five questions*
- *Answer question 1 (compulsory) and any other two questions*

1. a) List four factors to consider when selecting a construction plant. (10 marks)
 - b) Sketch the following excavating plant and state two function of each
 - i) Bull dozer
 - ii) Wheeled face shovel (10 marks)
 - c) Discuss two methods of maintaining plants. (6 marks)
 - d) Sketches a drum mixer. (4 marks)
 - e) i) State four plants used for lifting. (2 marks)
 - ii) With an aid of sketch discuss rotary drilling. (4 marks)
2. a) Describe three types of explosives used in blasting. (6 marks)
 - b) Explain percussion drilling. (6 marks)

- c) List and sketch two type of forklift and explain each. (8 marks)
3. a) With an aid of sketch, discuss dragline and state where its used. (8 marks)
b) With an aid of sketches, differentiate between a grader and scraper and state where each is used. (12 marks)
4. a) Using sketches, differentiate between a hoist and a crane. (10 marks)
b) With a well labeled sketch, describe a gantry. (10 marks)
5. a) The volume of concrete to be placed is 185m^3 . A mixer of 0.35 m^3 is to be used. Its cycle time is 3 minutes and it works at 85% efficient. Concrete has being programme to take seven working days will the machine be adequate. Complete the work? (Assume 9 working hours). (7 marks)
- b) Sketch a poker vibrator. (5 marks)
- c) i) State 4 plants used in Bitumen laying.
ii) Sketch any two plants used in bitumen laying (8 marks)