



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST SEMESTER THIRD YEAR EXAMINATIONS FOR DIPLOMA IN CIVIL
ENGINEERING

BCECD 309: CIVIL ENGINEERING CONSTRUCTION II

DATE: 1/8/2017

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

1.
 - a) Describe five factors that will determine the choice of a type of dredging equipment. (10 marks)
 - b) Give two functions for sleepers in railway (4 marks)
 - c) Give two problems encountered during tunnel construction. (4 marks)
 - d) Explain two methods used in the maintenance of dams. (4 marks)
 - e) The rolling gradient is 1 in 200 on a section of B.G track. If the track is laid on that place in a curve of 5° , determine the allowable rolling gradient on the curve. (6 marks)
 - f) Explain what is meant by a water front structure. (2 marks)
2.
 - a) Give five functional requirements of an ideal rail (10 marks)
 - b) With an aid of a sketch, describe the cast iron pot type of chairs (4 marks)
 - c) With an aid of a sketch, describe the sea wall water front structure. (6 marks)

3. a) With the aid of sketches, describe the following water front structures. (12 marks)
- i. Moles
 - ii. Dry docks
 - iii. Dolphins
- b) Give four reasons for reclamation. (8 marks)
4. a) With an aid of a sketch, explain any joint involved in rigid pavement construction. (4 marks)
- b) Describe with sketches the following dredging equipment's;
- i. Cutter suction dredger
 - ii. Trailing suction dredger
- c) With a sketch explain the heading and benching method of tunneling construction.
- d) Describe the following as in railways (6 marks)
- i. Diamond crossing
 - ii. Super elevation
 - iii. Turn out
5. a) With a sketch, describe a fish plate fastening. (6 marks)
- b) With the aid of sketches, differentiate bull headed rails from double headed rails. (6 marks)
- c) Explain briefly the procedure involved during reclamation process (6 marks)
- d) Explain what is meant by super elevation in rails (2 marks)