



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN BUILDING TECHNOLOGY

DIPLOMA IN CIVIL ENGINEERING

2707/102/CT & 2705/102/CT CONCRETE TECHNOLOGY I

DATE: 18/12/2020

TIME: 8.30-11.30 AM

INSTRUCTIONS TO CANDIDATES

Answer all questions

- 1
 - a) outline the wet process of manufacturing cement (10 marks)
 - b) Discuss suitable water for making concrete (4 marks)
 - c) State 6 characteristics of aggregates for making concrete (6 marks)
- 2
 - a) sketch any two machines used in transporting concrete (10 marks)
 - b) State five functional requirements for a formwork (5 marks)
 - c) Sketch a suitable formwork for a circular column (5 marks)
- 3
 - a) Discuss two methods of batching concrete ingredients (6 marks)
 - b) Discuss any five ingredients present in cement manufacturing and state their functions (10 marks)
 - c) Explain two methods of mixing concrete (4 marks)
- 4
 - a) Discuss the following machines used in concreting mixing stating their advantages and disadvantages - :
 - i. Tilting drum mixer
 - ii. Non tilting drum mixer
 - iii. Pan mixer (12 marks)
 - b) Explain how a mixer is maintained (8 marks)

- 5 a) State 5 factors to consider when choosing the method of transporting concrete (5 marks)
- b) With an aid of sketches discuss two machines used in compacting concrete (8 marks)
- c) State 3 precautions observed when placing concrete (3 marks)
- d) Discuss two methods of curing concrete (4 marks)