



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

ECU 108: INTRODUCTION TO THE ENGINEERING PROFESSION

DATE: Monday, 16th April, 2012

TIME: 8.00 a.m. – 10.00 a.m.

INSTRUCTIONS:

- i) There are **Five** questions.
- ii) Question No. 1 is **Compulsory** and carries **30 marks**.
- iii) Select any **other Two** questions, each of which carries 20 marks.
- iv) Define all symbols used.
- v) Marks will be awarded for procedure, methodologies used and not necessarily on the final answer.

- Q.1
- a)
 - i) Explain what the *Building Code* is. (3 marks)
 - ii) Briefly describe the role of the Engineer in Society. (4 marks)
 - b)
 - i) Indicate the main engineering branches and explain how they have developed over the ages. (7 marks)
 - ii) State who a Professional Engineer is, and give his/her role in Building Works. (6 marks)
 - c)
 - i) Outline the stages of large industrial projects. (5 marks)
 - ii) Describe how the profitability of such projects is determined. (5 marks)

- Q.2 a) Give the stages of Building and Civil Works as articulated in the Building Code (4 marks)
- b) Describe in detail exactly what is to be accomplished in each stage mentioned in (a) above. (16 marks)
- Q.3 During the implementation of an industrial project, explain what consideration would influence an Engineer's decisions in the following aspects:-
- a) Land area requirements. (6 marks)
- b) Civil Works. (7 marks)
- c) Machinery and Equipment. (7 marks)
- Q.4 a) i) Give a brief history of engineering during the Ancient era, Renaissance era, and Modern era. (4 marks)
- ii) Giving typical examples, outline the Standard of Achievement in the practice of Mechanical and Electrical Engineering disciplines. (6 marks)
- b) i) Give the primary responsibility of the different consultants involved in Building Works. (4 marks)
- ii) Write an essay on *Civil Engineering* giving its definition, sub-disciplines and scope; as well as the major specialities. (6 marks)
- Q.5 a) i) Outline the steps towards becoming a *Professional Engineer*. (4 marks)
- ii) Discuss the Professional Engineer's role during the supervision period of the Project Construction Stage. (6 marks)
- b) i) Compare and contrast *Engineering* and *Science*. (5 marks)
- ii) "*Building Works*" is a technical term under the Building Code. Explain its meaning. (5 marks)