MURANGA UNIVERSITY COLLEGE
(A constituent College of Jomo Kenyatta University of Agriculture & Technology)

MAIN CAMPUS

ORDINARY UNIVERSITY EXAMINATIONS

2015/2016 ACADEMIC YEAR

SECOND YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE OF
BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

COURSE CODE: ICS 2302

COURSE TITLE: SOFTWARE ENGINEERING

DATE: 14TH DECEMBER, 2015 **TIME: 2 hours**

INSTRUCTIONS TO CANDIDATES

Question ONE (1) is (compulsory) AND any other TWO

QUESTION ONE (COMPULSORY)

a) Explain any TWO software characteristics that distinguish it from hardware. (4 marks)

b) Describe THREE ways in which the Spiral process model is superior to the Waterfall model. (6 marks)

c) State any THREE most important characteristics of a requirements specification. Explain why each of them is so important. (6 marks)

d) Explain the purpose of the acceptance test plan. (2 marks)

e) Briefly explain the term coupling and explain the problems that may arise if two modules have high coupling. **(**4 marks)

f) Explain in brief the following terms
   i) Software process flow (2 marks)

   ii) CASE workbench (2 marks)

   iii) ISO 9000/9001 (2 marks)

   iv) Software configuration management (2 marks)

QUESTION TWO

a) Testing is an important part of system development and leads to a valid, verified and efficient system , Explain in details the different levels of testing. (10 marks)

b) Explain any FOUR advantages of using testing tools. (4 marks)

c) A computer system is to be developed using multiple programming languages to satisfy a long list of requirements including: functionality; usability; and portability. Discuss the various methods used to measure the functionality and portability of this particular software product, and explain the underlying software design techniques on which such measurements might rely. (6 marks)

QUESTION THREE

a) Throw-away prototyping and evolutionary prototyping are two prototyping method used in requirement elicitation. Discuss the differences between the two. (10 marks)

b) Explain any FOUR activities entailed in software project planning. (6 marks)

c) Explain software process model best supports development of applications with successful user interfaces, and why? (4 marks)

QUESTION FOUR

Describe the various types of restructuring techniques. How does restructuring help in maintaining a program? (10 marks)

a) Explain FOUR reasons why it is difficult to improve software process. (6 marks)

b) Explain FOUR reasons why the software design improves when we use object-oriented concepts. (4marks)