MURANG'A UNIVERSITY COLLEGE

(A Constituent College of Jomo Kenyatta University of Technology)

SCHOOL OF BUSINESS & ECONOMICS

FIRST SEMESTER END OF SEMESTER 2013/2014 EXAMINATIONS

BACHELOR OF BUSINESS AND INFORMATION TECHNOLOGY

UNIT NAME: SOFTWARE ENGINEERING

UNIT CODE: ICS 2302

1ST SEMESTER YEAR 2

DATE: 11 DECEMBER **TIME: 2 HOURS**

Instructions

Answer Question ONE and any other TWO Questions

Question One

a) In analysing requirements, the software engineer must determine what the customer requires from the new software. In doing this the analyst will produce a requirement specification document.

i.) Define the term requirement engineering (2 marks)

ii.) Highlight four reasons why requirement engineering is difficult (8 marks)

iii.) Briefly explain the structure of requirement specification document . (10 marks)

b) Compare and constrast software inspection and software testing . (6 marks)

c) Explain the term refactoring as used in software development. (4 marks).

Question Two

a) Discuss five factors that a software project manager should take into account when selecting staff to form a software development project team. In each case explain the importance of the factor in contributing to the project team's success. (10 marks)

b) Explain the practice of software prototyping and identify how it can improve the quality of a software system during the following phases of the software life cycle giving examples in each case:

i. requirements analysis and specification (4 marks)

ii. design (3 marks)

iii. testing (3 marks)

Question Three

a) Explain keys features and practices that distinguish the Extreme Programming approach to other software processes. (10 marks)

b) Give in details what is meant by "Software Evolution" and discuss the need to plan for the future evolution of software during its initial development. (10 marks)

Question Four

a) 'The term Software Maintenance is somewhat misleading as software isn't just maintained, it evolves.'

i.) Define the term software maintenance and describe, with examples, the three types of software maintenance. (10 marks)

ii.) Sometimes it is necessary to re-engineer a system. Describe what is meant by re-engineering, and explain why it may be essential and how it might be undertaken. (10 marks)

Question Five

a) Define requirements elicitation in the context of software development and describe any four approaches to requirements elicitation. (8 marks)

b) Besides counting errors and defects, explain any **two** characteristics of software that imply quality and show they can be measure. (4 marks)

c) Briefly describe each of the **four** elements of the design model. (8 marks)