MURANG'A UNIVERSITY COLLEGE

(A Constituent College of Jomo Kenyatta University of Agriculture and Technology)

University Examinations 2014/2015 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

SECOND YEAR 1ST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

ICS 2302: SOFTWARE ENGINEERING

TIME 2 HOURS

MAIN CAMPUS

SPECIAL/SUPPLEMENTARY EXAMINATIONS –

DATE:5TH AUGUST 2015

Instructions: Answer Question 1 and Any Other Two.

Question ONE: (30 marks) – Compulsory

a) Define the term software engineering.

i.) Process model (2 marks)

ii.) Refactoring (2 marks)

iii.) Software Project Management (2 marks)

iv.) Software Quality Assurances (2 marks)

v.) Software inspection (2 marks)

b) Explain three Objectives of Requirement Analysis. (6 marks)

c) Discuss the various strategies of design. Which design strategy is most popular and practical? (6 marks)

d) Explain in detail any four different types of testing tools. (8 marks)

Question TWO

a) Define requirements elicitation in the context of software development and describe approaches to requirements elicitation. Outline the key steps involved in each approach. (12 marks)

b) 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. (8 marks)

Question THREE

a) Explain the key principles and practices of Software Reverse Engineering and Re-engineering. (8 marks)

b) Distinguish between acceptance testing and beta testing. (4 marks)

c) Though testing is an important part of system development and leads to a valid, verified and efficient system, it also faces some limitation in its scope. Explain some of the limitations of testing. (8marks)

Question FOUR

a) 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. (12 marks)

b) Discuss the problems faced during software maintenance. (8 marks)

Question FIVE

a) You have recently joined the team of a large IT department that has used the Spiral Model as the basis of its development life-cycle for many years.

   i.) Write a report to address the team's concern about the benefits and potential problems of the continued use of the Spiral model in building applications for the modern business environment. (6 marks)

   ii.) Give a brief outline description and justification for using an alternative process model considered to share many of the benefits of the Spiral model, but none of its problems. (6 marks)

b) 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)