TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
(BSIT 12S)

ICS 2302: SOFTWARE ENGINEERING

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2013
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (Compulsory)

a) Distinguish between the following:
   (i) Software engineering and requirements engineering **(4 marks)**
   (ii) Functional and non-functional requirements **(4 marks)**

b) Briefly explain FOUR main characteristics of good software **(8 marks)**

c) With an aid of a diagram show the main components of software Engineering framework **(10 marks)**

d) Briefly distinguish between the following as used in software engineering:
   (i) Verification and validation
   (ii) Coupling and cohesion **(4 marks)**

Question Two

a) Define the term "Software Development Lifecycle" **(2 marks)**

b) Explain the FIVE main characteristics of Software Lifecycles **(10 marks)**

c) Describe the waterfall lifecycle model stating clearly its bad and good features **(8 marks)**

Question Three

a) State the FOUR fundamentals activities in all software development processes **(4 marks)**

b) Describe the incremental lifecycle model stating clearly its bad and good features **(8 marks)**

c) Explain any FOUR key challenges facing modern Software Engineering **(8 marks)**

Question Four

a) Explain the meaning of the term "Software Crisis" **(4 marks)**

b) Briefly explain any FOUR professional and ethical responsibilities of software engineers. **(8 marks)**

c) Distinguish the following types of requirements and provide example for each.

- **(i)** Software requirements
- **(ii)** System requirements
- **(iii)** User requirements
- **(iv)** Business requirements **(8 marks)**

Question Five

a) With an aid of a diagram, describe the software testing process **(10 marks)**

b) Describe the spiral lifecycle model stating clearly its good and bad features **(10 marks)**