THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

HIGHER DIPLOMA IN COMPUTER STUDIES

ECT 3217: SOFTWARE ENGINEERING

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: FEBRUARY/MARCH 2012
TIME: 2 HOURS

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

This paper consist of **FIVE** questions in **TWO** sections **A & B**
Answer question **ONE (COMPULSORY)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1

a) Define the term software engineering.

(2 marks)

b) Differentiate between
   i.   Software engineering and System engineering.
   ii.   Software process and Software process model.
   iii. Generic software and bespoke software

(6 marks)

c) Outline the general activities in all software processes.

(4 marks)

d) Differentiate between Upper-CASE and Lower-CASE as used in Software engineering.

(4 marks)

e) List **FOUR** attributes of good software?

(4 marks)

f) State the key challenges facing software engineering?

(8 marks)

SECTION B (Answer any two questions)

Question 2:

a. Explain the **two** steps of Software Design   (4 marks)

b. Explain the **four** activities of Software Design and their features   (16 marks)

Question 3:

a) Differentiate between validation and verification.   (2 marks)

b) Describe the relationship between schedule, system features, and system cost.

(3 marks)

c) Describe the waterfall model of software development. State its disadvantage and where it is mostly employed.

(10 marks)

d) State **FIVE** good practices when using the Rational Unified Process of modeling.

(5 marks)

Question 4:

a) State the **THREE** types (levels) of testing. Which one primarily would use use-cases to drive the test cases?   (4 marks)

b) Differentiate between functional and non-functional requirements. Give an example of each.

(**6** marks)

c) List **FOUR** user interface design principles.

(4 marks)

d) Explain what the purpose of a rapid prototype is. What are the key issues related to reuse of a rapid prototype?   (6 marks)

Question 5:

a) Explain the **FOUR** issues of professional responsibility that software engineers should respect.

(8 marks)

b) Explain the **TWO** productivity measures used in software cost estimation.

(4 marks)

c) Briefly Describe the COCOMO model of software cost estimation.

(4 marks)

d) Explain **THREE** factors that affect the confidence in verification and validation of software.

(6 marks)