



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

(BSITMAY2011/J-FT)

BACHELOR OF TECHNOLOGY IN INFORMATION COMMUNICATION TECHNOLOGY

(BTITMAY 2011/S-EV)

ICS 2302/EIT 4302: SOFTWARE ENGINEERING

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: MAY/JUNE 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions

Answer any **THREE** questions. Question **ONE** is Compulsory

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

SECTION A (Compulsory - 30 marks)

Question One (30 Marks)

a) A law firm has approached you to design and develop for them an online information management system. Use the following guidelines to explain how you would carry out the project.

- i) Requirement determination
- ii) Analysis
- iii) Specification Building
- iv) Design and Development
- v) Content writing
- vi) Coding
- vii) Testing
- viii) Documentation
- ix) Maintenance and Updating

(18 marks)

b) Identify the tools you would use for this project

(4 marks)

- c) Outline the benefits of using a software development application framework in this project (4 marks)
- d) Most software development framework are based on the model-view-controller (MVC) architecture. Explain what you understand by this term. (4 marks)

SECTION B (Answer any TWO questions – 40 Marks)

Question Two (20 marks)

- a) Describe the attributes of the software engineering framework for software development (10 marks)
- b) Identify **FIVE** steps of tests carried out on developed software (5 marks)
- c) Describe the key characteristics of the spiral model of software development (5 marks)

Question Three (20 marks)

- a) Define the term “Software Development Lifecycle” (2 marks)
- b) Explain any **FOUR** fundamental activities in all software development processes (8 marks)
- c) Briefly explain any **FOUR** professional and ethical responsibilities of software engineers (8 marks)
- d) Distinguish between software engineering and computer science (2 marks)

Question Four (20 marks)

- a) Define the term “Software” as used in software engineering (2 marks)
- b) Briefly explain any **FOUR** attributes of good software (8 marks)
- c) Explain the meaning of the term “Software Crisis” (2 marks)
- d) Briefly describe the software engineering framework for software development (8 marks)

Question Five (20 marks)

- a) State any **FOUR** characteristics of software development lifecycles (4 marks)
- b) Briefly describe the following software development lifecycle models (16 marks)
- i) Waterfall model
 - ii) Spiral model
 - iii) Incremental model
 - iv) Prototyping model