



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

**SECOND YEAR SECOND SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN INFORMATION
TECHNOLOGY**

MAIN CAMPUS

CIT 214: SOFTWARE ENGINEERING

Date: 20th June, 2017

Time: 12.00 - 3.00 pm

INSTRUCTIONS:

- Answer ALL questions in SECTION A and any other TWO from SECTION B
- Write your registration number on all sheets of the answer book used.
- Use a NEW PAGE FOR EVERY QUESTION attempted, and indicate number on the space provided on the page of the answer sheet.
- Fasten together all loose answer sheets used.
- Mobile phones and PDAs are NOT allowed in the examination room.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION {30

MARKS}

Question 1

- a) What is aim of software engineering? What does the discipline of software engineering discuss? (4 Marks)
- b) Define the term “Software engineering”. Explain the major differences between software engineering and other traditional engineering disciplines (4 Marks)
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- c) Differentiate between the following
- (i) Deliverables and milestones (2 Marks)
- (ii) Product and process (2 Marks)
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- (iii) Measures, metrics and measurement (2 Marks)
- d) List the advantages of using waterfall model instead of adhoc build and fix model. (5 Marks)
- e) List the advantages and disadvantages of involving a software engineer throughout the software development planning process. (5 Marks)
- f) What is the significance of use case metrics? Is it really important to design such metrics? (5 Marks)

SECTION B ANSWER ANY TWO QUESTIONS FROM THIS SECTION { 20 Marks Each}

QUESTION 2 (20 Marks)

- a) with the help of an appropriate diagram Discuss the crucial process steps of requirement engineering in software engineering (8 Marks)
- b) Enumerate the use-case guidelines for Writing *Effective Use Cases* that can be used in software engineering? (6 Marks)

- c) Using a use case approach of requirements elicitation. Write a clear use case elicitation for withdrawing cash from an ATM. (6 marks)

QUESTION 3 (20 Marks)

- a) Draw a DFD for borrowing a book in a library which is explained below: “A borrower can borrow a book if it is available else he/she can reserve for the book if he/she so wishes. He/she can borrow a maximum of three books (10 Marks)
- b) Discuss the objectives of modular software design. (5 Marks)
- c) What are the effects of module coupling and cohesion? (5 Marks)

QUESTION 4 (20 Marks)

- a) Briefly discuss the following
- (i) Test case design, Test & Test suite (3 Marks)
- (ii) Verification & Validation (2 Marks)
- b) Consider a student admission system for Maseno University, which is to be automated. For this system,
- (i) Make a DFD for 2-3 levels (4 marks)
- (ii) Draw an ER diagram (6 marks)
- c) As an analyst of a large software development project, discuss the aspects of software product you would include in the software requirement specification (SRS) document. What will be the organization of your SRS document? (5 marks)

QUESTION 5 (20 MARKS)

- a) Distinguish between generic and customized software products. Which one has larger share of market and why? (5 Marks)
- b) Discuss the sections forming the part of software design documentation. (9 marks)
- c) Describe with examples how the choice of programming language, programming tools and libraries can affect the reliability of software development using them. (6 marks)