



# **MURANG'A UNIVERSITY OF TECHNOLOGY**

## **SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY**

### **DEPARTMENT OF INFORMATION TECHNOLOGY**

#### **UNIVERSITY ORDINARY EXAMINATION**

**2017/2018 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE BACHELOR  
OF SCIENCE IN SOFTWARE ENGINEERING**

**SCS 103 – FUNDAMENTALS OF SOFTWARE ENGINEERING**

**DURATION: 2 HOURS**

**DATE: 24<sup>TH</sup> APRIL 2018**

**TIME: 2.00-4.00PM**

#### **Instructions to Candidates:**

1. Answer **Question 1** and **Any Other Two** questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

## **SECTION ONE – ANSWER ALL QUESTIONS IN THIS SECTION**

### **QUESTION ONE (30 MARKS)**

- a) i. Explain two causes of software project failure (4 marks)  
ii. State four essential attributes of good software (4 marks)
- b) i. Distinguish between software process and software process model (4 marks)  
ii. Describe three benefits of incremental development (6 marks)
- c) In software design highlight four design activities (2 marks)
- d) Differentiate between functional and non functional requirement as used in software engineering (4 marks)
- e) With the aid of a diagram explain the software evolution process (6 marks)

## **SECTION TWO – ANSWER ANY TWO QUESTIONS IN THIS SECTION**

### **QUESTION TWO (20 MARKS)**

- a) Explain any four benefits of verification and validation in software development(4 marks)
- b) Explain any three quality parameters which are used in a software system (6 marks)
- c) Describe the following types of user testing
  - i. Alpha testing (2 marks)
  - ii. Beta testing (2marks)
  - iii. Acceptance (2 marks)
- d) Differentiate between corrective and adaptive maintenance (4 marks)

### **QUESTION THREE (20 MARKS)**

- a) With aid of a diagram describe phases of waterfall model (10 marks)
- b) Define requirements elicitation In the context of software's development and describe four approaches to requirements elicitation (10 marks)

#### **QUESTION FOUR (20 MARKS)**

- a) Explain why change is inevitable in complex systems and give examples of software process activities that help predict change and make the software being developed more resilient to change (8 marks)
- b) Explain how the principles underlying agile Methods lead to the accelerated development and deployment of software (8 marks)
- c) Some people argue that developers should not be involved in testing their own code but that all testing should be the responsibility of a separate team. Give arguments for and against testing by the developers themselves (4 marks)