



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2011/2012
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE (SOFTWARE ENGINEERING)
SSE 315: SOFTWARE REQUIREMENTS ANALYSIS

DATE: FRIDAY, 13TH APRIL 2012

TIME: 2.00 P.M – 4.00 P.M

INSTRUCTIONS TO CANDIDATES

- **STUDENTS FROM COMPUTING AND INFORMATION TECHNOLOGY TO ATTEMPT QUESTIONS IN SECTION I.**
 - **STUDENTS FROM ELECTRONIC AND ELECTRICAL ENGINEERING DEPARTMENT TO ATTEMPT QUESTIONS IN SECTION II.**
- SECTION ONE: SOFTWARE ENGINEERING**

ATTEMPT ONE QUESTION AND ANY OTHER TWO QUESTIONS FROM THE SAME SECTION

Question One (30 marks)

- a) Define the following terms. (6 marks)
 - i. Requirement
 - ii. Requirement Engineering
 - iii. Requirements Capture
- b) Define feasibility Study. And give two purposes of conducting a feasibility study. (5 marks)
- c) Differentiate between volatile and enduring requirements. (6 marks)
- d) List five guidelines for drawing data flow diagrams (5 marks)
- e) Outline two techniques that can be used to describe an existing system? (4 marks)
- f) Explain four reasons why it is almost inevitable that the requirements of different stakeholders will conflict in some way. (4 marks)

Question Two

- a) What are the crucial process steps of requirement engineering? Discuss with the help of a diagram. (8 marks)
- b) Give four reasons why it is essential to follow these steps (identified in (a) above). (4 marks)
- c) Discuss the difference between the following
 - i. Functional and non-functional Requirements. (4 marks)
 - ii. User and system requirements. (4 marks)

Question Three

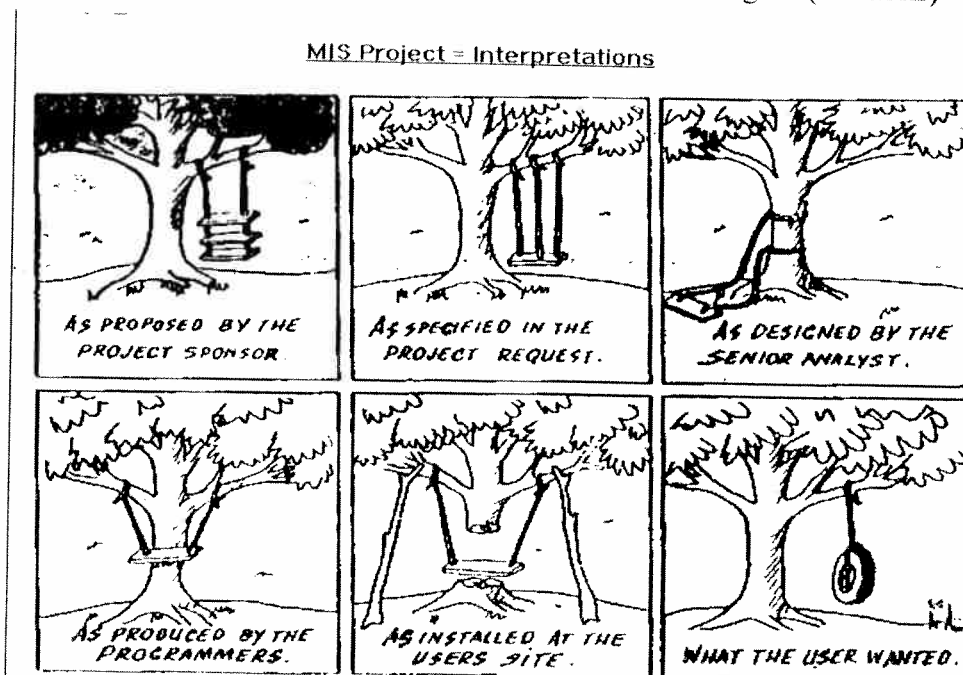
- a) i. What do you understand with the term requirement elicitation? (3 marks) - ii. Discuss any three elicitation techniques in details. (6 marks)
- b) i. Briefly describe what is involved in a requirement review process. (2 marks)
 - ii. Who should be involved in a requirement review process and what do they check for. (8 marks).

Question Four

- a) Describe five desirable characteristics of a good Software Requirement Specification (SRS) document. (10 marks)
- b) Explain in details five important issues which SRS document must address. (10 marks)

QUESTION ONE

- (a) Provide a working definition of the terms below
- Requirements Analysis
 - Requirements Specification
 - Requirements engineering
 - Stakeholder in Requirements Specifications
 - Data Modeling in system development
- (5 Marks)
- (b) Provide a working definition of software requirements “base lining”. (1 marks)
- (c) What are some of the challenges in requirements gathering? Name TWO(2 marks)
- (d) Quality management standards and processes often have their roots in manufacturing industry. Software engineers now integrate standards in their work. Briefly explain TWO benefits of integrating standards in software engineering. (2 marks)
- (e) Provide a working definition for formal software specification (2 marks)
- (f) List the FOUR stakeholders for the Kandy stores case above (2 marks)
- (g) Software testing is usually performed for one of two reasons, name them: (2 marks)
- (h) The diagram below shows poor requirements elicitation. Discuss **THREE** ways in which the correct requirements could have been got (2 marks)



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QUESTION FOUR

- (a) What four possible issues should a software requirements specification (SRS) document address (4 marks)
- (b) A well designed Software requirements Specification will accomplish several goals. List and discuss any FOUR (8 marks)
- (c) Discuss the following requirements modeling tools citing why each is necessary, strengths of using it:
 - i. UML and Use Case
 - ii. Activity Diagram
 - iii. Data Flow Diagrams
 - iv. Flow Charts (8 marks)

QUESTION FIVE

CASE 2: E-Commerce on Kandy and Sons Ltd

Kandy and Sons Ltd is an online trading company that deals with computer accessories. It mainly supplies ink cartridges for printers which are sold only through the internet. When customers place an order, the order is checked, a confirmation is sent back to the customer and the details of the order are sent to the warehouse.

- a) Define what you understand by Data Flow Diagram (DFD) (1 mark)
- b) What is a DFD used for (1 mark)
- c) List FIVE benefits of using drawing a DFD in system analysis (5 marks)
- d) From case 2 of Kandy and Sons Ltd:
 - i. Draw the context diagram (3 marks)
 - ii. Draw complete DFD (10 marks)

