THARAKA   **UNIVERSITY**

COLLEGE
(A Constituent College of Chuka University)
UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGRE OF
BACHELOR OF SCIENCE IN COMPUTER SCIENCE**

COSC 332: SOFTWARE ENGINEERING

STREAMS: BSC (COSC)   Y3S1   **TIME: 2 HOURS**

DAY/DATE: MONDAY 06/04/2020   **11.30 AM – 1.30 PM**

Instructions:

Answer question one and any other two questions

Question One [30 marks]

(a) Explain how you, as a user interface designer, might get feedback on an interface before coding even starts.   (2 marks)

(b) Explain four attributes of a good software.   (4 marks)

(c) Software requirements can be classified as either functional or non-functional requirements. Explain the difference between the two.   (4 marks)

(d) Explain why plan – driven development approach is ideal for large complex software projects especially where developers are far from each other.   (4 marks)

(a) Explain four general software testing guidelines for an online banking system.
                                                                  (4 marks)

(b) Distinguish between functional requirements and non-functional requirements.
                                                                  (4 marks)

(c) Discuss two major advantages of agile methodologies over the waterfall model of software development.   (4 marks)

(d) Explain four reasons why software maintenance is a compulsory phase for every software in use. (4 marks)

Question Two (20 marks)

(a) Compare and contrast waterfall model and incremental development.(10 marks)

(b) Compare and contrast plan – driven processes and agile planning processes.
(10 marks)

Question Three (20 marks)

(a) Considering a university operations and environment, generate two user functional requirements and two system functional requirements for a student management system for Tharaka University College. (4 marks)

(b) The first phase in software development is requirements definition. In this phase there are several activities involved. For either a small project or large project, explain the importance of this phase and the activities involved. (8 marks)

(c) Describe what software prototyping is and its benefits as a software development process. (8 marks)

Question Four (20 marks)

(a) What is *Integration testing?* Why is integrating testing harder than unit testing?
(3 marks)

(b) Explain the purpose of each of the following testing strategies

i)	Release testing	(3 marks)
ii)	Regression testing	(3 marks)
iii)	Component testing	(3 marks)

(c) Explain the problems of natural language in documenting software requirements.
(8 marks)

Question Five (20 marks)

(a) Explain the two reasons of testing software. (4 marks)

(b) In software development, one of the phases in development is requirements phase. Giving relevant reasons, explain the activities involved in this stage. (8 marks)

(c) Discuss test driven development approach in software development. (8 marks)