JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF INFORMATION COMMUNICATION TECHNOLOGY

3RD YEAR 2ND SEMESTER 2016/2017 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: ICT 3326

COURSE TITLE: SOFTWARE ENGINEERING

EXAM VENUE: STREAM: ICT AND BIS

DATE: JAN-APRIL 2017   EXAM SESSION:

TIME: 2.00 HOURS

Instructions:

1. Answer Question 1 (Compulsory) and ANY other two questions

2. Candidates are advised not to write on the question paper

3. Candidates must hand in their answer booklets to the invigilator while in the examination room

QUESTION ONE [30 MARKS]

a) Explain any FIVE mythology surrounding Software development   (10 marks)

b) Compute the nominal effort and development time for *m* organic type software
product with an estimated size of 500,000 line of code.   (6 marks)

c) Explain the important steps to be followed during the architectural design of
distributed systems.   (4 marks)

d) Define and the four critical concepts of software management spectrum

(4 marks)

e) Explain using diagram Iterative software development model listing its advantages

(6 marks)

QUESTION TWO [20 MARKS]

a) What are Functional and Non Functional Requirements in Software Engineering?

(6 marks)

b) What is Requirement Engineering?   (2 marks)

c) Documenting software engineering process is key, discuss the critical phases of
the structure of a requirements document   (8 marks)

d) Explain with relevant examples why software testing is an important exercise

(4 marks)

QUESTION THREE [20 MARKS]

 a) Explain any Four factors that generally make vulnerable the success of software
development   (8 marks)

b) Explain following type of testing   (6 marks)

        i. Black box testing

       ii. White box testing

      iii. Integration testing

c) Write short notes on any Two of the following: (6 marks)

    i.   Project estimation technique.

    ii.   Coupling and cohesion

QUESTION FOUR   [20 MARKS]

a) Explain any   FOUR differences between   Functional and Non-functional requirements   (8 marks)

b) software processes but all must include four activities that are fundamental to software engineering: (4 marks)

c) List and discuss four main activities in the software requirements engineering process   (8 marks)

QUESTION FIVE [20 MARKS]

a) XYZ group of companies are interested in developing software that would keep the demand of its customers. As a developer you have asked to design the said software Discus software design principles that you would adopt to come up with quality software   (8 marks)

b) List and Explain any **Three** golden rules of user interface design   (6 marks)

c) Explain the following Project estimation technique as used in software engineering

      i. Heuristic Techniques

     ii. Empirical Estimation Techniques

    iii. Analytical Estimation Techniques   (6 marks)