QUALIFICATION: BACHELOR OF COMPUTER SCIENCE, BACHELOR OF INFORMATICS, BACHELOR OF GEOINFORMATION TECHNOLOGY			
QUALIFICATION CODE: 07BACS,07BAIF, 07GITB		**LEVEL:** 6	
COURSE: SOFTWARE ENGINEERING 1 & HCI		**COURSE CODE:** SEH620S	
DATE: JANUARY 2019		**PAPER:** THEORY	
DURATION: 3 HRS		**MARKS:** 100	

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION - PAPER	
EXAMINER(S)	**Mr. JEREMIAH LUMBASI**
MODERATOR:	**Mr. MIKE ABIA**

THIS QUESTION PAPER CONSISTS OF 3 PRINTED PAGES
(Including this front page)
INSTRUCTIONS
1. Answer ALL the questions,
2. Write clearly & neatly and number the answers clearly.
3. When answering questions you should be guided by the allocation of marks in [ ].
4. Use of any electronic devices (e.g. cell-phones)
5. NUST examination rules and regulations apply.
PERMISSIBLE MATERIALS

Non programmable Scientific Calculator.

Question 1[20 marks]

1.1 Software differs in important ways from the types of artefacts produced by other types of engineers explain 4 of these differences [8 marks]

1.2 ***Uncertainty about software engineering skills***, is one of the problems that affects software success(a) briefly describe this problem, and (b)how can this problem be resolved? [5marks]

1.3 **Deterioration of software design**. Software deteriorates due to successive changes that introduce bugs. Explain three approaches which software engineers can adopt to prepare for deterioration [3 marks]

1.4 Often, software engineers improve one quality at the expense of another. In other words, they have to consider various *trade-offs*. Using two examples explain how this affects quality [4 marks]

Question 2[33 marks]

2.1 There are many different software processes but all must include four activities that are fundamental to software engineering: explain these activities [4 marks]

2.2 Differentiate *Incremental development* from *Reuse-oriented software engineering.* [4 marks]

2.3 Developers are sometimes pressured by managers to deliver throwaway prototypes, particularly when there are delays in delivering the final version of the software. However, this is usually unwise. Explain your views [6 marks]

2.4 Describe any 2(two) common fundamental characteristics of rapid software development [4 marks]

2.5 State the 4 agile manifesto comparative values and state which they value most [5 marks]

2.6 Explain any 5 principles or practices of Extreme Programming. [10 marks]

Question 3 [13 marks]

3.1 One of the difficulties and risks in software engineering as a whole is *uncertainty about requirements (a)*explain how this is usually discovered and (b)a resolution to this problem [5 marks]

3. 2 Explain 3 benefits of domain analysis [6 marks]

3.3 Give one(1)Why should requirements analysis be continuous throughout the life of a software? [2 marks]

Question 4[6 marks]

4.1   Consider an Automatic teller Machine (ATM) system. Identify three different actors with these system?   [3 marks]

4.2   Distinguish the following between a requirement, a scenario and a use case.

[3 marks]

Question 5[7 marks]

5.1   What is the difference between alpha testing and beta testing? [3 marks]

5.2   Test-first development and automated testing usually results in a large number of tests being written and executed. However, this approach does not necessarily lead to thorough program testing. Explain any two(2) reasons for these?   [4 marks]

Question 6 [21 marks]

6.1   As a software developer, Why should one study HCI?   [3 marks]

6.2   list 6 characteristics that information appliances, should have   [6 marks]

6.3   Perform a brief PACT analysis for an online grocery shop. The grocery shopping available seven days a week but the orders have to be placed by 10:00 PM on the day before the delivery.   [8 marks]

6.4   When designing a user interface, describe two(2) ways on how does the designer will minimize memory load on the users part when interacting with the system.   [4 marks]

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