NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS
DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: Bachelor of Information Technology: Business Computing, Bachelor of Information Technology: Software Development, Bachelor of Information Technology: System Administration and Networks	
QUALIFICATION CODE: 80DIT,80BSBC,80DSSD,80BSAN	**LEVEL:** 5
COURSE: INTRODUCTION TO SOFTWARE ENGINEERING	**COURSE CODE:** ISW120S
DATE: JANUARY 2019	**PAPER:** THEORY
DURATION: 3 HRS	**MARKS:** 80

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION PAPER	
EXAMINER(S)	**Mr. JEREMIAH LUMBASI**
MODERATOR:	**Mr. GEREON KOCH KAPUIRE**

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[12 marks]

1.1 Develop your own answers to the following questions: [6 marks]

        a. Why does it take so long Why does it take so long(beyond planned time) to get software finished?

        b. to get software finished?

        c. Why are software applications development costs so high?

        d. Why can't we find all errors before we give the software to our customers?

1.2   List three(3) ways fixing one bug can cause others [3 marks]

1.3   List any 3 characteristics of a system with high degree of usability [3 marks]

Question 2[17 marks]

2.1   Briefly describe the five(5) activities of a generic process framework for software engineering. [10 marks]

2.2   Is the following statement **true** or **false**, motivate your answer *"Software requirements continually change, but change can be easily accommodated because software is flexible."* [3 marks]

2.3   Give four(4) drawbacks of prototyping [4 marks]

Question 3[14 marks]

3.1   Please explain in detail what is agile software development? And a point to highlight the importance [6 marks]

3.2   Suppose you're working for NamSoft CC, an old-fashioned company that calls employees "assets," puts Suggestion Box labels on its wastebaskets, and uses a classic one-pass waterfall model for software development. Which of the four(4) agile values does that model violate? [8 marks]

Question 4 [37 marks]

Read the following narrative of a proposed employee hiring system and answer the following questions. {4.1 – 4.7}

Nam Engineering Consultants is an engineering firm with approximately 500 engineers in different specialties. New employees are hired by the personnel manager based on data in an application form and evaluations collected from other managers who interview the job candidates. The secretary assists in capturing new applications on paper.

Prospective employees may apply at any time. Engineering managers notify the personnel manager when a job opens and list the characteristics necessary to be eligible for the job. The personnel manager compares the qualifications of the available pool of applicants with the characteristics of an open job and then schedules interviews between the manager in charge of the open position and the three best candidates from the pool.

After receiving evaluations on each interview from the manager, the personnel manager makes the hiring decision based upon the evaluations and applications of the candidates and the characteristics of the job, and then notifies the interviewees and the manager about the decision.

Applications of rejected applicants are retained for one year, after which time the application is purged. When hired, a new engineer completes a nondisclosure agreement, which is filed with other information about the employee.

4.1   From the above narrative who will you elicit your requirements from? List three.

[3marks]

4.2   Discuss two(2) possible problems that could occur when requirements are elicited from the different stakeholders of the employee hiring system.   [3marks]

4.3   Name a strategy to resolve the problems named in 4.2   [4 marks]

4.4   Which four(4)) non-functional requirements do you consider most relevant for the employee hiring system?   [4 marks]

4.5   Name two(2) functional requirements of the EHS   [4 marks]

4.6   Using the employee hiring system as an example, explain what you understand by requirements validation and give one(1) technique of performing it.   [4 marks]

4.7   Draw a use case diagram for the proposed employee hiring system   [15 marks]

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