



(KNOWLEDGE FOR DEVELOPMENT)

**KIBABII UNIVERSITY
(KIBU)**

**UNIVERSITY EXAMINATIONS
2016/2017 ACADEMIC YEAR**

**SUPPLEMENTARY/SPECIAL EXAMINATIONS
SECOND YEAR SECOND SEMESTER
FOR THE DIPLOMA IN INFORMATION
TECHNOLOGY**

COURSE CODE: DIT 074

COURSE TITLE: INTRODUCTION TO

SOFTWARE ENGINEERING

DATE: 12/10/2018 TIME: 11.30A.M. – 1.30P.M.

INSTRUCTIONS

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [24 MARKS]

- a. Define the software engineering [2 marks]
- b. A software has been proposed and the client needs an expert to teach the company employees on how to go through its engineering process.
 - i. What is a software process? [2 marks]
 - ii. Describe the software process activities to the employees [8 marks]
 - iii. Why is Software Engineering Important? [6 marks]
- c. Software engineering in the 21st century faces three major challenges. Explain these challenges [6 marks]

QUESTION TWO [18 MARKS]

- a. List the activities during project Initiation. [4 marks]
- b. Outline FOUR reasons for the Failure of Water Fall Model. [4 marks]
- c. State and explain the fundamental activities of a software process? [8 marks]
- d. A new system can be achieved using prototyping model, what are the prototyping approaches in software process? [2 marks]

QUESTION THREE [8 MARKS]

- a. What are functional vs nonfunctional requirements? [4 marks]
- b. How would you contrast requirements and design? [2 marks]
- c. What are the characteristics of SRS? [6 marks]
- d. Assuming you are a software engineer in a company, what are the important roles of Conventional Component within the Software Architecture would you consider to have a successful project? [6 marks]

QUESTION FOUR [18 MARKS]

- a. Analyse and design a simple management information system of a library using one of the structured methodology and the OO methodology. The system allows the users to manage books (including adding, deleting, displaying and updating books) and readers (including adding, deleting, displaying and updating readers, borrowing and returning books). Write out the following specifications briefly:
 - i. Requirements specification [8 marks]

- ii. Design specification [6 marks]
- b. What are the types of software maintenance? [4 marks]

QUESTION FIVE [18 MARKS]

- a. Discuss each of the following software development process models. [12 marks]
 - i. The Waterfall Model
 - ii. The Spiral Model
 - iii. Incremental
- b. Current trends in software engineering are moving away from the waterfall model for large projects and moving toward iterative methods such as the spiral model? What are we gaining and losing as a result? [6 marks]