(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
YEAR TWO SEMESTER TWO EXAMINATIONS

FOR DIPLOMA
(INFORMATION TECHNOLOGY)

COURSE CODE: DIT 074

COURSE TITLE: INTRODUCTION TO SOFTWARE ENGINEERING

DATE: 19/04/2023   **TIME: 2.00 P.M. - 4.00P.M.**   2HRS

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE (COMPULSORY) [24 MARKS]

a. Define the following terms and concepts as used in the study of software engineering.

[6 marks]

   i.   Software engineering

   ii.   Software product

   iii.   Software evolution

b. Outline **FOUR** reasons for the Failure of Water Fall Model. [4 marks]

c. There are various ways to discover requirements of a software in software engineering, discuss any five. [5 marks]

d. Discuss the two generic approaches for software design [4 marks]

e. Differentiate between the Static-type (S-type) and Practical-type (P-type) as far as software evolution laws are concerned [5 marks]

QUESTION TWO [18 MARKS]

a. What is SDLC? [2 marks]

b. Discuss each of the following software development process models.

   i.   The Waterfall Model [4 marks]

   ii.   The Spiral Model [4 marks]

   iii.   Iterative model [4 marks]

   iv.   Big bang model [4 marks]

QUESTION THREE [18 MARKS]

a. Define the following terms [3 marks]

   i.   Project

   ii.   Milestones

   iii.   Deliverable

b. Discuss any three project management tools used in project management [6 marks]

c. List the activities during project Initiation. [5 marks]

d. Distinguish between software validation and software verification [4 marks]

QUESTION FOUR [18 MARKS]

a. Discuss **FOUR** quality attributes of software [8 marks]

b. The need of software engineering arises because of higher rate of change in user requirements and environment on which the software is working. Highlight any **FOUR** instances in which software engineering is needed. [4 marks]

c. Software engineering in the 21st century faces three major challenges. Explain these challenges [6 marks]

QUESTION FIVE [18 MARKS]

a. Define the following [4 marks]
   i. Software requirement specification
   ii. Software maintenance

b. What are the characteristics of SRS? [6 marks]

c. Discuss the difference between functional requirement and non-functional requirement [4 marks]

d. Modifications and updations are done after the delivery of software product. Highlight **FOUR** reasons, why modifications are required [4 marks]