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(Knowledge for Development)

**KIBABII UNIVERSITY
(KIBU)**

**UNIVERSITY EXAMINATIONS
2021 / 2022 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS
YEAR ONE SEMESTER TWO EXAMINATIONS**

**FOR THE DIPLOMA IN
(INFORMATION TECHNOLOGY)**

COURSE CODE: DIT 074
**COURSE TITLE: INTRO. TO SOFTWARE
ENGINEERING**

DATE: 01/09/2022 TIME: 2.00 P.M.-4.00 P.M

INSTRUCTIONS

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

Paper Consist of 3 Printed Pages

QUESTION ONE [24 MARKS]- COMPULSORY

- a. Define the following terms and concepts. [6 marks]
- i. software engineering
 - ii. system engineering
 - iii. software process model
- b. Outline **FOUR** reasons for the Failure of Water Fall Model. [4 marks]
- c. A new system can be achieved using prototyping model, what are the prototyping approaches in software process? [2 marks]
- d. State and explain challenges facing software engineering today [4 marks]
- e. Discuss **FOUR** quality attributes of software product. [8 marks]

QUESTION TWO [18 MARKS]

- a. Briefly explain the term “SDLC” [2 marks]
- b. Discuss each of the following software development process models. [12 marks]
- i. The Waterfall Model
 - ii. The Spiral Model
 - iii. Incremental
- c. Discuss factors to consider when selecting a software development model [4 marks]

QUESTION THREE [8 MARKS]

- a. Explain the following types of software requirements. [6 marks]
- i. User requirements
 - ii. System requirements
- b. What are functional vs nonfunctional requirements? [4 marks]
- c. How would you contrast requirements and design? [2 marks]
- d. Discuss **Three** examples of non-functional requirements [6 marks]

QUESTION FOUR [18 MARKS]

- a. Define the following terms as used in Software Engineering [2 marks]
 - i. Software testing
 - ii. Software maintenance
- b. What are the types of software maintenance? [4 marks]
- c. Testing in software engineering can be defined at various levels of SDLC. The testing process runs parallel to software development. Discuss **FOUR** testing levels in Software Engineering. [8 marks]
- d. Describe the White Box testing in relation to software development [4 marks]

QUESTION FIVE [18 MARKS]

- a. Explain the following terms and concepts as used in the study of Software Engineering. [6 marks]
 - i. Software project management
 - ii. Deliverables
 - iii. Milestone
- b. State and explain **THREE** reasons why software projects need to be managed [6 marks]
- c. Discuss **THREE** main problems associated with software project management. [6 marks]