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(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

**UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR**

**SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR TWO SEMESTER ONE EXAMINATIONS**

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

COURSE CODE : DIT 074

**COURSE TITLE : INTRODUCTION TO SOFTWARE
ENGINEERING**

DATE: 01/02/2021

TIME: 2.00 P.M. – 4.00 P.M.

INSTRUCTIONS TO CANDIDATE

ANSWER QUESTION ONE AND ANY OTHER TWO

QUESTION ONE (COMPULSORY) [24 MARKS]

- a) Define the following terms:
- i) Software engineering [2Marks]
 - ii) Software Maintenance [2Marks]
 - iii) Feasibility study [2Marks]
 - iv) Project planning [2Marks]
 - v) Analysis [2Marks]
- b) Define the term “software Development Lifecycle” [2 marks]
- c) What is a software process model? [2 Marks]
- d) Briefly describe the following software development lifecycles models. [4 Marks]
- (i) Waterfall model
 - (ii) Spiral model
- e) Discuss any two types of software maintenance. [4 Marks]
- f. Differentiate between validation and verification. [2 Marks]

QUESTION TWO – [18 MARKS]

- a) Describe in details the different phases of Spiral Model [8 Marks]
- b) State any FOUR reasons why software testing is important. [4 Marks]
- c) Describe three factors considered in selecting the software development model when developing software. [6 Marks]

QUESTION THREE – [18 MARKS]

- a) Briefly explain the meaning of the following terms;
- i. Software Engineering [2 Marks]
 - ii. Software product [2 Marks]
 - iii. Software [2 Marks]
- b) Explain two categories of software paradigms [4 Marks]
- c) What are the characteristics of good software? [4 Marks]
- d) Explain the needs of software engineering [4 Marks]

QUESTION FOUR – [18 MARKS]

- a) Discuss **two** software cost estimation techniques [4 Marks]
- b) Discuss three examples of non-functional requirements [6 Marks]
- c) Discuss four sources of changes in software requirements. [4 Marks]
- d) Define the term software maintenance [2 Marks]
- e) Discuss two importance of maintenance [2 Marks]

QUESTION FIVE – [18 MARKS]

- a) Discuss the following quality factors in software [6 Marks]
 - a. Portability
 - b. Usability
 - c. Reliability
- b) State and explain two challenges facing software engineers in the 21st Century [4 Marks]
- c) Project Management is concerned with the activities involved in ensuring that software and other information technology related projects are delivered on time and on schedule and also in accordance with the requirement of the organizations' developing and procuring the software.
 - i. Discuss any two attributes of software projects. [4 Marks]
 - ii. Discuss the major distinctions between industrial projects and those related to information technology. [4 Marks]