TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

UNIVERSITY EXAMINATIONS FOR DIPLOMA IN TECHNOLOGY (ELECTRICAL & ELECTRONIC ENGINEERING)

EEE 2205

ENGINEERING SOFTWARE DEVELOPMENT AND APPLICATIONS I

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2019

TIME: 2 HOURS

DATE:

Instructions to Candidates

You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of **five** Questions
Attempt any THREE Questions.
Do not write on the question paper.

QUESTION ONE

(a) Define the following terms and give ONE example for each case.

i. Operating system.
ii. Applications software
iii. Customized software
iv. Utility programs (8 marks)

(b) Distinguish between generic and customized software (4 marks)

(c) Using a diagram, describe the waterfall model of software development. (8 marks)

QUESTION TWO

(a) Explain the functions of the following system analysis models:

i. Data flow models
ii. Inheritance model
iii. Object model (6 marks)

(b) Draw a data flow diagram for an order process (4 marks)

(c) Software is required to manage the operations of library users in a university. Model this scenario using:

(i) Class diagram

(ii) Sequence diagram (10 marks)

QUESTION THREE

(a) Explain the following terms as used in DBMS

i. Database
ii. Cardinality
iii. Primary key
iv. Composite key (8 marks)

(b) Differentiate between entity integrity and relational integrity (4 marks)

(c) Explain any FOUR components of a DBMS (8 marks)

(d) State any FOUR properties of a relation. (4 marks)

QUESTION FOUR

(a) Write statements in Visual Basic to declare any THREE data types (6 marks)

(b) Use appropriate examples to write Visual Basic statements for each of the following:

(i) If … Then statement
(ii) For … Next Loop statement
(iii) While … Wend statement
(iv) Do While… loop statement (8 marks)

(c) Write a Visual Basic program to add and display the sum of any two integers (6 marks)

QUESTION FIVE

(a) With the aid of a diagram explain the component based software development model (8 marks)

(b) Using a diagram, describe the spiral model of system development (6 marks)

(c) Explain the function of a use case diagram (2 marks)

(d) Draw a use case diagram with FIVE uses for issuing tools in a workshop. (4 marks)