ELIZADE UNIVERSITY

ILARA-MOKIN

FACULTY: BASIC AND APPLIED SCIENCES
DEPARTMENT: MATHEMATICS AND COMPUTER SCIENCE
1st **SEMESTER EXAMINATION** 2019 / 2020 **ACADEMIC SESSION**

COURSE CODE: CSC 423 **COURSE TITLE:** Software Engineering

COURSE LEADER: Dr. Ibraheem Ogundoyin **DURATION:** $2\frac{1}{2}$ Hours

HOD's SIGNATURE

INSTRUCTION:
Candidates should answer **QUESTION 1** and any other **THREE** Questions.
Students are warned that possession of any unauthorized materials in an examination is a serious assessment offence

Question One

A(i). Using Use Case Diagram, represent the transactions involved in an ATM system. **4marks**

(ii). Represent the mathematical formula (a*b) + (c*d) using Data Flow Diagram. **4marks**

(iii). Differentiate between HIPO and IPO diagrams in system design

B(i). The modern world cannot be run effectively without using software. Expatiates this statement. **2.5marks**

(ii). How can the lack of proper software engineering methods cause operational software to fail? **2.5marks**

C. Categorize the following terms into the suitable ***software attribute*** essential for good software:

(i). Reliability, security, safety.
(ii). Evolution.
(iii). Responsiveness, processing time, memory utilization.
(iv). Understandable, usable, compatible. **4marks**

D. Why is interface testing necessary even when individual components have been extensively tested? **2.5marks**

Question Two

A. Illustrate diagrammatically, and explain the activities that led to the production of a software product. **8marks**

B(i). Define software engineering. **2.5marks**

(ii). Why is software engineering regarded as an engineering discipline? **2.5marks**

C. Distinguish between software verification and validation. **2marks**

Question Three

A. Illustrate and explain the activities involved in Requirements Engineering showing the relationships between the outputs of these activities. **7marks**

B. Assume you are a software engineer and you have existing software components that can be modified or integrated without having to start developing from the scratch. What generic model should you adopt and why?. **5marks**

C. Distinguish Software Engineering from Systems Engineering. **3marks**

Question Four

A(i). Choose a software development project of your choice. State how you will go about its requirement gathering. **3marks**

(ii). Identify entities in the system being developed. Use UML diagrams (use case, sequence and class diagrams) to specify the system. **6marks**

B. Explain why systems developed as prototypes should not normally be used as production systems. **3marks**

C. Enumerate the design process for an information system. **3marks**

Question Five

A. Suggest architecture for an authentication system that is capable of acquiring login details from users, validate login details, verify that the details validated exist in the database and store into the database where the login details do not exist. **7mark**

B. Explain why incremental development is the most effective approach for developing business software system. **5marks**

C. Highlight the major attributes of a good requirement. **3marks**

Question Six

A. Discuss the type of development environment suitable for the development of critical system. **6marks**

B. Do you think the cost of maintaining software is greater than the cost of developing it? Give reasons for your answer. **3marks**

C(i). Highlight the processes involved in testing software. **4marks**

(ii). Differentiate between unit testing and interface testing. **2marks**