ELIZADE UNIVERSITY

ILARA-MOKIN

FACULTY: BASIC AND APPLIED SCIENCES
DEPARTMENT: MATHEMATICS AND COMPUTER SCIENCE
1st SEMESTER EXAMINATION
2017 / 2018 ACADEMIC SESSION

COURSE CODE: CSC 423

COURSE TITLE: Software Engineering

COURSE LEADER: Dr. Ibraheem Ogundoyin

DURATION: 2 ½ Hours

HOD's SIGNATURE

INSTRUCTION:

You should answer any FOUR Questions. **QUESTION ONE IS COMPULSORY.**

Students are warned that possession of any unauthorized materials in an examination is a serious offence

1 A(i). Using level 0 and level 1 Data Flow Diagram abstraction depict Online shopping System. **4marks**

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

(iii). Draw a control flow graph for the following triangle problem.

```
read x,y,z; type = ''scalene'';
if (x == y or x == z or y == z) type =''isosceles'';
if (x == y and x == z) type =''equilateral'';
if (x >= y+z or y >= x+z or z >= x+y) type =''not a triangle'';
if (x <= 0 or y <= 0 or| z <= 0) type =''bad inputs'';
print type;
```

4marks

(iv). What are the various testing Levels? **1.5marks**

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

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

C. Explain Alpha testing, state its advantage. **2.5 marks**

D. Under what conditions would you recommend top down and bottom up software design approaches. **4marks**

2. 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**

3. A. What is software requirements definition? 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? Give reasons for your answer. **5marks**

C. When does one decides to re-engineer a product? **3marks**

4. A(i). Choose a software development project of your choice. State how you will go about its requirement gathering. **2marks**

(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. **4marks**

C. Reuse-based software engineering is a software engineering strategy where the development process is geared to reusing existing software. Explain **3marks**

5. 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. **7marks**

B. Define cohesion and coupling. List their types. **5marks**

C. What is meant by specification?. **3marks**

6. 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 . **2marks**

C(i). Differentiate between fault and failure of a system. **4marks**

(ii). Write short note on Software failure, Black box testing and White box testing **3marks**