ELIZADE UNIVERSITY
ILARA-MOKIN

FACULTY: BASIC AND APPLIED SCIENCES
DEPARTMENT: MATHEMATICS AND COMPUTER SCIENCE
2nd **SEMESTER EXAMINATION**
2020 / 2021 **ACADEMIC SESSION**

COURSE CODE: CSC 426

COURSE TITLE: Computer Modelling and Simulation

COURSE LEADER: Prof. B. Ojokoh

DURATION: 2.5 Hours

HOD's SIGNATURE

INSTRUCTION:

Candidates should answer any **FOUR** Questions.
Students are warned that possession of any unauthorized materials in an examination is a serious assessment offence.

1a) What is Simulation? Itemize five application areas of Simulation

b) Outline five scenarios that necessitate simulation

c) With respect to major milestones, give a brief history of simulation

2a) Differentiate between the following, with the aid of relevant examples:

i)Static and dynamic model , ii) Discrete and continuous model

iii) Stochastic and deterministic model

b) The modelling process is cyclic as it applies in the software development life cycle (SDLC). Briefly discuss the steps involved.

c) Differentiate between Interval-Oriented and Event-Oriented timing in simulation

3a) With the aid of a diagram, describe a single-server queue system and the parameters involved.

b) Enumerate and describe four possible dispatching disciplines in a queue system.

c) Describe the fundamental task of a queuing analysis in terms of the input and output information.

4a) Customers' calls arrive at a software support centre with exponentially distributed inter arrival times with an average time between arrivals of 20 minutes. What is the probability that 5 customers will arrive between 1 and 2.30pm? b) Discuss five uses of simulation while citing specific examples

c) Continuous Simulation Languages can be classifiied in two ways; describe these

5a) Object Oriented Simulation can be considered as a special case of Object Oriented Programming, with some certain important features. Discuss four of these.

b) What are the peculiarities of Advanced Continuous Simulation Language (ACSL) and Graphic Simulation language (GSL)?

c) Enumerate four reasons why SIMULA is not a commonly used language

6a)Discuss the four categories of discrete simulation languages

b) Describe the concept of multi-server queues, with the aid of diagrams and examples

c) In recent times AI has played valuable roles in modelling and simulation. Discuss